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THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED BY

DAWSON WILLIAMS, M.D., D.Sc.(Hon.),

AND

NORMAN GERALD HORNER, M.A., M.B.

VOLUME II, 1920.

JULY TO DECEMBER.

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President's Address
ON
THE UNIVERSITIES IN MEDICAL RESEARCH AND PRACTICE.

BY

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WHEN last year we gathered together for the first time after the War we set ourselves only to the austerer purposes of our Association; then in my Address I did my best to review the principles and operations of modern Medicine in the light of the natural sciences, and by their standards to measure our progress and to forecast our future. To-day we meet full of diligence no doubt, but with more leisure. While ready indeed for those severer tasks which we are not to spare you, you will be glad also to brighten "the thorny pilgrimage of the understanding" with the pleasantness and beauty of our great Cambridge Houses, and the story of them; and after the rigours of natural law to find some ease in gossip and in the byways of the fallible.

When University College was founded in Oxford, and Peterhouse in Cambridge, England, after a long and painful gestation, was entering upon a new and a national epoch. Edward I, relinquishing claims for Continental dominion, set himself to make a kingdom and a nation at home. Dante was soon to sing the swansong of the Middle Ages; Chaucer—the father of Shakespeare—the morning carol of the new peoples. Gothic architecture, breaking through the uncouth grandeur of the Norman minster, lifted into the air its storied portals, and soaring arcades. Roger Bacon and William Ockham brought doctrine before the bar of reason, challenged tradition, and asserted secular rights, and Wickliffe the rights of private judgement and of freedom of thought; the clergy began to preach sermons in English. Of the thirteenth century were the great surgeons Hugh of Lucca, William of Salicet, and Lanfranc, and it was in those years that the Polo family crossed the Pamir plateau and explored China, Sumatra, and Ceylon. Half a century later came the still greater surgeon Guy of Chauliac. Letters also were shaking themselves free of the Church; John Van Eyck invented painting in oils; science and history were awaking from a long sleep; the universities were undermining the feudalisms of Pope and noble; Oxford, and still more Cambridge, were rebelling against the pharisaism of the University of Paris; Oxford, by the Thames valley, and Cambridge, by the streams of the Wash, were busy commercial ports whither the merchants of Florence, Venice, Nuremberg, and other foreign lands were bringing their wares to England; and in our Eastern Counties the woollen trade, still manifest in its noble churches, was entering upon a period of high prosperity. And not only was there new privilege for merchant scholar and burgher, but things were stirring also amongst the populace. The skilled craftsmen, a stubborn folk, were striking for their rights; and in the peasants' insurrection such cries as the rights of man, and natural equality, preludes to the insurrection of labour in the Eastern Counties two centuries later, were heard for the first time. Such was the dayspring of the thirteenth century and the first half of the fourteenth, a glory too soon to be quenched in the lurid cloud of the Black Death, and the miseries of the Hundred Years War. Yet even then in the desolated courts of Oxford and Cambridge the unconquerable mind of man did not fail to fan the perennial fire and to hand on the torch. To speak, as in duty bound, of my own College, Dr. Caius in defiance of faction and persecution, and under the shadow of war and pestilence, never lost his high courage, but held fast to an ideal afterwards to be abundantly real. Yet hardly before the spacious days of Elizabeth did the sun of peace and hope shine again upon our buffeted people. And now, if by the ascendancy of Medicine we have repelled the assaults of the greater epidemics, we have not escaped the desolations of war. The Allies, the living and the dead, have saved their honour, and we breathe again; are we saving our souls? As after the Hundred Years War, shall we see another renascence—a Columbus, a Colet, an Aldus, a Dürer, a Copernicus, a Vesalius, a Michael Angelo, a Paré? In science, it is true, we may be thankful; we have our Galileos, our Gilberts, our Parés, our Vesals; our heralds of creative art may come. A quire of new singers we have; are they tuning their harps to a new era? To-day our thoughts are turned to science, but the poets are our prophets.

A notion is abroad that Universities were "founded"; perhaps this is not true of any of the older universities; they grew. They grew in the needs of the age. In the religious houses, once the wardens of a learned tradition, the standard of learning, even among the Benedictines, had fallen very low. Not only in the thirteenth century but even a century or two later, our neighbours the monks of Peterborough and Croyland were unable to translate the homely Latin of their service books. The University of Paris grew, not without strife, out of her cathedral schools; and a stiffnecked and bigoted mistress she grew into. Generally speaking, universities grew up in centres of trade; and Oxford and Cambridge merchants with their primitive seats of learning were protected from raids by marsh and woodland. Colleges, as hostels for poor students—there was a trade Collegium or Guild in Cambridge in Roman times—were a later and not always an allegiant offspring. "Founded" they were, it is true; the older ones in part after the plan of the convent, in part of the manor house. The rule of Walter of Merton was on larger than monastic lines—wider and humaner. Moreover in the thirteenth century the sudden invasion of learning by the Franciscans, as curious as it was transitory, made at least for some enlightenment, and some loosening of the bonds of tradition.

Mediaeval medicine in Britain was flat; it was far below the standard of Salerno and Montpellier. It consisted almost entirely in so-called "theory"—that is, readings of traditional galenic-humoralism, and uncritical excerpts from the Hippocratic Corpus conveyed through Syriac and other corrupt texts. Long and fantastic dissertations on the Pulse and the Urine formed a great part of these lectures. In the sixteenth century things were improving. The first Pharmacopoeia—to take the place of the innumerable and grotesque traditions of recipes—edited by Valerius Cordus, was issued from Nuremberg, in 1540, the year of the foundation of the Regius Professorships.[1] Quantities of medical books were published in the fifteenth and sixteenth centuries, a few of interest in so far as they brought some French and Italian Surgery into Britain, but otherwise mostly rubbish. But also about this time clinical records—the so-called "*Consilia*" or consultations—began to stuff theory with a little practice. Then followed the magnificent procession of Vesalius in anatomy, of Harvey and Haller in physiology, of Morgagni in pathology.

THE UNIVERSITIES AND THE PROFESSIONS.

We cannot meet in a University town without some reflections upon Education; but I fear your hearts will sink at the mere sound of the word. We are out of breath after our fights in many a dusty room with the "Classical" men; moreover for the present Sir George Newman, in his masterly Reports, has cleared our sight and defined our action. Still in Cambridge we must say a few words about our own business, and my scraps shall be few and short.

Boldly I will begin with the claim that the universities, ancient and modern, from Alexandria to Edinburgh, have made the professions. Universities have fostered research, and maintained standards—those standards so hard for us to keep in view. As somebody said, "van der Helst and Bol are good till you have seen Rembrandt." Conversation in universities keeps the mind open and flexible, and teaches that no craft is limited to the material with which it deals; we are not insects. Hence for each student the university stands for something larger than the field of a particular calling, for a more comprehensive design. We must be trained not only to learn particulars but also how to handle ideas. Tacitus[2] told us that no man should apply his mind to some particular profession till he had extended and strengthened it by a general culture, even as the earth is not sown until it has been turned and turned again several times. We are teaching Medicine well; but we need badly a *common literary basis.* I sometimes think "Classics" will have to come back as a "Modern Side." The public schools are teaching science far better than they did, far more seriously; but they teach too much detail and do not give concentration, nor grasp of principles. Narrow "specialization"—I use the common word—is found in medicine, as in other arts, among people of narrow culture; never among the Greeks, but abundantly among the Egyptians, the Romans before our era, the third century folk, and to-day in the tribes of Melanesia, Torres Straits, and Papua. Specializing is prone to be quackish; an acute observer says that "it means only an unequal distribution of ignorance." Such "experts," like mine ponies, never found their way, as happily many do in our day, through their little postern gate into the citadel of wisdom; the broader lines of the sciences are now more in view. But while the public has no standard the pretender flourishes, and the artist and the scientist, feeling themselves "misunderstood," become self-conscious and fretful.

Education must therefore from the first be an introduction to life; not forgetting that some study is a part of life. We must not suppose that cram, or as it is now called "intensive teaching," is only a feature of boys and examinees; many persons of multifarious learning are monsters of cram—cranks as we call them for short; they have little sense of selection, of relative values. Such products Gray had in view when he said to Walpole that "learning should not be encouraged, as it only drew out fools from their obscurity." Competitive teaching makes cranks, but happily the English boy is good at making "antibodies" to neutralize this perversity. Our scholarships are still too much on cram lines; the science boy cannot construct an English sentence, he knows no history, no art, and hardly any foreign language. The school teacher either works to a pattern to make the work of the examiner easy, or he is tethered lest he lead the pupil to browse beyond the common plot. The half medieval teaching of Medicine in the Oxford and Cambridge of my undergraduate days was deficient in solids; we were not even examined in surgery or midwifery; but we got far more of the imponderables. We did, and do, "teach people to think at least as well as any university in the world";[3] we do not, as Aristotle says,[4] present our pupils with their shoes ready made; we do not pass results without acquaintance with method and the work of the mind-building hands. We try to build up, first, character, the quality which has governed the world; secondly, to train in clear thinking, and to learn not to go beyond the evidence; thirdly, to impart particular knowledge and experience. In the words of Plato, we educate that "virtue and reason may become part of our natural being, and so easy and pleasant to us."

But we hope also to nourish yet another and still more precious quality than these, though not so well as we ought; it is most difficult to see how to nourish the imagination, the shaping and foreseeing faculty. The memory is exercised, the intellect is more or less called upon, but the centre of creative life and action—the imagination—is left out in the cold. If in Cambridge we have inherited from our forefathers some of the means of cherishing it, we do not face the duty as directly as we ought. The old university builders built for the imagination; not so the new. The artist and the craftsman[5] live their lives now in an alien world; for lack of exercise imagination languishes: yet science has sore need of it.

In Medicine the "curriculum" may well be called a *race!* The enlargement of knowledge and means implies more and more instruction; but the limits of the human mind are not indefinitely extensible. Some casement may be had however by simplifying our studies; by teaching our teachers; by recognizing two curriculums—one of the diploma and another of the university; by postponing some studies till after graduation. Let us consider first the alternative courses of study—of the diploma and of the university. Five years is long enough in all conscience for a young man to spend in learning to be a safe practitioner; many men have not the ambition or the private or bursarial means to aim at more than this. Some of them are more clever than intellectual, yet the world has need of them; and, if a university education is to be of a larger and more liberal kind, such a training cannot be given in diploma time, except to a few men who may come up a little later in life and partly prepared. The mean duration of our course is, I find, about six years and a half; some pass through in six years, some—and these often our best men—take seven. The last fraction of so long a course is taken either in clinical appointments after passing the "Conjoint"—the usual way, or in laboratory work. Unfortunately the medical student has virtually to decide before he begins which way he will take, for foundations must be laid in view of the superstructure. Pieces may be patched on afterwards, but, a few men of genius excepted, the later powers of mind are in proportion to the breadth of the whole educational plan. Even in geniuses—in John Hunter for instance—a lack of the larger early training makes itself felt in the later life.

I have so often urged the need of the "One portal system" that I will not now argue it again. Given the one portal, each university could enjoy freedom to mould its teaching after its own fashion and standards, and to transform its interior tests. The diploma course, on the contrary, must play up to outside examiners and, beginning with anatomy and physiology, must put immediate utility in the first line; although to seek utility may be to lose it. The tendency now is to make the Conjoint Examination a little too large and difficult. Again, the medical curriculum could be substantially lightened by better teaching. Upon individual teachers I make no reflections, many are admirable; I say only that almost none of them has been taught to teach; and but few are in a position to compare the methods of others with their own. The mind of a master moves much quicker than the mind of his pupil, and too often flies over his head. My young graduates tell me that some teachers mumbled, dropped their voices, and failed to construct the lesson with symmetry, coherence, and emphasis. If so, can we wonder if the progress of a class be tardy? To despise rhetoric, as a good Englishman does, it is not necessary to be formless or inarticulate. It took me five and twenty years to teach myself to lecture decently; a good instructor could have put me into the way of it in three weeks. Thirdly, the course may be shortened, and yet be enriched, by more blending of details into larger principles. To work out the detail of a soap-bubble needed a Kelvin; after him it could be expressed concisely in terms of surface tension. For our biology course the time is short, and there is no field work; we have therefore to do our best to illustrate its principles.

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[1] The first London Pharmacopoeia was issued in 1618.

[2] Dial. 30.

[3] Testimony in House of Lords, July 12th, 1916

[4] Last chapter of the Soph. Elench.

[5] The beautiful bridge and river gates of Clare College were designed by a craftsman, Master Grumbold, at a fee of three and sixpence.

A very important report on our curriculum by the College Supervisors of medical study is now before our Special Board of Medicine. Among its proposals are better links between the several departments of study; and this implies short revision, or "rubbing up," courses at subsequent dates; as for instance of physics and chemistry in the pathology period. So again, as one of our advisers says, the student is slow to translate medicine into terms of physiology; these subjects too often lie in separate compartments of his mind. To pull things together some formal lecturing is indispensable. The first part of the Natural Sciences Tripos is invaluable in broadening the outlook of the student, and disciplining his thought; the Second Part is more for the abler men, or those who aim rather at research than at practice. Likewise, as regards Clinical teaching, unless in the case of students engaged in the scientific departments, who do not intend to practise Medicine, we do not encourage our pupils to pursue either clinical medicine or surgery in the University. Our field is too small. But, both in respect of the education and of the eagerness of the student, we find it of great advantage so to select cases from the Hospital as to illustrate the academic work on which he is then chiefly engaged. He is apt to wonder why he is shepherded along purely scientific courses while he, and perhaps his father, want to get to business. They ask if all this science teaching be not too remote, too "speculative." We meet such demurs by showing the student how directly practice is enlightened or fortified by the science even of the remoter ancillary departments. We show him, for example, a case of dropsy, of diabetes, of renal or suprarenal, or of cardiac disease, or of the action of a drug, in order to dwell upon the physical laws—mechanics, osmosis, adsorption, surface tension, etc., or on the biochemical laws, by which these morbid processes are disentangled. Thus we try to bring disease from an outer circle into the midst of physiology and chemistry.

Above all let us beware lest our teaching stiffen into formulas, the fetters of those practitioners who prefer the old theories with which they are familiar to the new facts which are unfamiliar. We remember the Télémaque of our childhood, "qui semblait n'avoir jamais compris ces maximes, quoiqu'il en fût rempli." Plowing and replowing without breaking new soil makes a hard-pan. So we get to value experience by formulas instead of formulas by experience; the entrance of wisdom is blocked, ignorance is disguised, habits harden, and the living issues are determined by the dead. Let us not rest in possession even of a truth.

The question often returns to medical and engineering teachers, whether or no some apprenticeship, some experience of the shop, be desirable for the student at the beginning, or in an early stage, of his career. There is some gain in it; the student is better aware of what he is after; on the other hand he picks up tricks, tips, and rules of thumb that have too high a melting point; on the whole, the loss seems to be more than the gain. But I think before undertaking private practice a year with a competent general practititioner might be made compulsory.

The Theses and Acts for M.B. and M.D. at Cambridge are invaluable to the young graduate. In the M.B. thesis, probably for the first time, he undertakes and has to put together a piece of original work; thus he finds what research means, and the use of his own wings, so thereafter he is a different man. The M.D. theses, which are submitted to a Special Committee, are of course on a larger and more arduous scale; many of them are permanent contributions to medicine or its ancillary sciences. For a diploma a thesis should not be required; many a one may make a fair practitioner who has neither time nor perhaps capacity to work up a thesis; but to allow graduation to any candidate who has not prepared for it a work of original research is, if I may venture to say so, unworthy of a university.

Of Graduate Classes I need say little; the subject has been well discussed. Hitherto this kind of teaching has been by a selection of side shows, not organized about the central schools. Thus, as the Jonathan Hutchinsons retired, the schemes fell to pieces. But now that, after infinite persuasions, we are obtaining "Clinical Units" at the great English schools, there will be some complete systems to attract disciples, some bones to the limbs. The duty of the full time professor will be not so much to instruct the younger pupils, who may find indeed more advantage in the various qualities of other teachers, but rather to organize and inspire a smaller body of senior students, and to offer the freshest and most arduous work for the riper home and foreign graduate visitors. The tentative, sceptical method of the investigator is hardly profitable to the junior student.[6]

THE DEBT OF OTHER SCIENCES TO MEDICINE.

I have said that I would not plunge with you this evening into the ocean of Science; but if you are a little tired of hearing of the dependence of Medicine upon Science you may find refreshment or diversion in contemplating the debts of Science to Medicine. My old medical friend Mr. Meade of Bradford was almost the only man who knew much about flies at the time when Manson and Ross began to watch these little pests. Without Medicine bacteriology, and the study of the cell, would have made slow way; yet it is the study of the cells of bacteria, of algae, of protozoa—not of mandarins—which has brought us nearer to the secret of life. On the wonderful world of the cell I have spoken before. Professor Hopkins has lately described to us the almost incredible coexistence in it of different constitutions, phases, and events; though every change in any phase affects the equilibrium of the whole cell system. And every one of these is essential to the whole; "so long, for example, as a liver cell remains alive its glycogen constituent cannot be wholly removed." If a cell be so ground up as to become more homogeneous, its reactions fall out at haphazard, and the cell dies by mutual destruction of its parts. This process of nature is illustrated on a mighty scale to-day in the disintegration of the Russian social organism.

Some of the apparently simple cell constituents, haemoglobin for instance, are incredibly complex; this substance is specific for every kind of animal; in allied species, if concordant, it is not identical. Of the chromosomes I need say nothing; except to hope that as x rays have analysed crystalline structure some such rays may analyse nuclear constitutions.

By another way, Medicine has promoted research on organic syntheses; and conversely on the reduction of foods into the more complex amino-acids before being rewoven into the tissues of life. From Medicine began our recognition of the plowman as the first parent of animals and man, and our fuller knowledge of "the green plant as the fundamental capitalist."

> Herbs gladly cure our flesh, because that they
> Finde their acquaintance there.

In the dark soil the nitrifying bacteria live on inorganic matter; so in the light some inorganic colloidal systems can build up formaldehyde (B. Moore). Medicine has introduced the chemist to the domain of the hormones and chalones, themselves also bodies of the simpler chemical constitution—some crystallizable, all able to resist prolonged boiling—blended into a wonderful physico-chemical co-ordinating system, secretly at work all the time under the diagrams of the innocent neurologist. We may suppose indeed that every active tissue of the body, or every cell, even of bone and skin, or of the substrate of mind itself, like every individual of a social organism, contributes some element to the organic whole, some inward production necessary for growths, or for signals.[7] There may be a world of pathological (alien or perverted) hormones as yet unexplored. May the dive inwards of epithelial cells in cancer be due to some inversion of chemotaxis, possibly under the influence of an alien (parasitic?) enzyme? Within the body then all parts are the "environment" of each— so that we have both an inner and an outer "climate," an aspect of the microcosm not to be forgotten in the field of Mental Disease. Thus it is that "Each part may call the farthest, brother." And these agents have a field of action far beyond the body, as we see for example in the sexual hormones. If there be a "migration hormone" its sphere is the world.

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[6] This I say because I infer from some prospectuses that the chief and his staff are proposing to organize junior classes.

Again, is it not largely by Medicine that the study of enzymes has thrown light upon the operations of catalysis which, like the rollers under a log or, as we now think, more by engagement and disengagement like rack and pinion, is incessantly forwarding, by various intermediate series, and by reversible actions at points of concentrative equilibrium, the processes of nature? The vitamines may be of this kind, agents which have upset our cruder calculations of nutritive values; for instance, in the feeding of children, we no longer take cane sugar to be the vital equivalent of lactose, nor margarine of butter; not all the nitrogen of nutrition is included in protein, nor are phospho- and amino-lipins, nucleic acid, amino-acids, and so on, mutually convertible in the body. We must admit that the fundamental principles of nutrition have yet to be redetermined. Moreover the war has forced us to remember the mutual dependence of food kinds; that of course fats and carbohydrates are not wholly independent or equivalent; the carbohydrates cannot make up any great lack of fats, nor can oxidation of fats proceed in the absence of carbohydrates.

Another system of balances in the body, as of the reciprocal functions of lung and kidney, is more obviously chemical. Medicine has taught us how the lung deals with the CO_2 ions, the kidneys with sundry other acids, so that the blood reaction is maintained with extreme nicety; and that other systems—for example, the vasomotor—are probably little less sensitive, and that there are other subtle causes of anoxaemia besides the cardio-pulmonary (Haldane); so that in Medicine it is of the first importance that in all abnormal conditions the oxygen tension of bloods should be systematically ascertained and compared. The hydrogen ion concentration is consistently higher upon flesh diet, lower upon vegetable diet; but I think we have not yet learned to discriminate so subtly as Charles Kean who is said to have chosen his viands according to the parts he had to play—pork for tyrants, beef for murderers, mutton for lovers.

Next after the origin of life itself, from ancient times to this day no enigma has attracted and baffled the curious mind of man more than that of living "form." Many of our keenest minds—Haldane, D'Arcy Thompson, Osborn, Dendy, McBride, I mention a few names as they occur to me—are still chasing this Will-o'-the-wisp; and moth-like I cannot but flutter after them. Of the nitrifying bacteria which assimilate inorganic matter, of the synthetic amines of animal nutrition, of the properties of colloids, I have spoken already to-day and last year; but "how," says Dr. Haldane, "is constant form maintained amid the continuous changes of our changing matter?" and I may add of variations of parts. Is "form" something after the manner of a seal, which is impressed upon matter? or is it, in Aristotle's sense, a kind of soul (entelechy) which shapes the potential, or capacity, into integral being? Here we hover between metaphysical or ontological concepts and natural law, or the properties of matter. A few years ago all notion of self shaping was dismissed, and the animal regarded merely as a diagram of incident forces; to-day there is some harkback, if not to moulding entities, at any rate to some phases which partake both of germ and nurture. We had been taught that for development functional stimuli were all that was necessary; for instance, that the heart grew, even beyond the normal, only in response to demand for its work and by increased supply of blood to its tissues. But is there any functional adaptation from within? If a limb be not used the bone will still grow more or less; but why does the bone grow *round*? And an eye will grow, from a germ of it, in the dark (Loeb). Is there such a property in living matter as "functional adaptation"? Is function in its effect upon form adaptive or purposive? Is environment met by adaptive variation—for instance in a germ cell? Again, if so, can specific properties of such a kind be acquired? Biologists seem to have proved that evolution of form may go on continuously when environmental change is suspended, or remains constant; and conversely that environmental change does not necessarily induce evolution. On a broad view, says Professor Osborn,[8] during the infinite variety of the widely diverging forms of the Mammalian period of the earth, the reptiles have shown very little change. We perceive that these questions arise in some contrast with the hypothesis of the selection of "chance" variations.

On the other hand, we find reason to marvel at the constancy of bacterial species; humble and embryonic beings that we should not expect to have become fixed in their habits. Yet they and their enzymes are very exacting about it; as we find, for example, with the several enteric bacteria, or with the meningococcic or pneumococcic varieties, of which each has its own serous or agglutinin test, and is indifferent to the rest. And there is more still to be said: when the microbe finds itself in the host's body it may be wholly out of tune, or wholly in tune, with any or all cells that it approaches; in either case presumably nothing morbid would happen, perhaps, by a kind of zygosis, a benefit; morbid happenings would lie between this microbe and body cells within its range but not in tune with it. Now there seems to be reason to suppose that a microbe, on its approach to a body cell only just out of its range, may try this way and that to get a hitch on. If so, the microbe, at first innocuous, would become noxious. So on the other hand body cells may educate themselves to vibrate in harmony with a microbe before dissonant; or there may be mutual interchange and coadaptation. Such considerations arise out of many known phenomena at phase boundaries, of sympathetic vibrations, of acquired immunity, of new virulences, and so forth; the cells out of tune getting nearer and nearer into consonance with each other.

But, if things be so, surely we are face to face with a marvellous and far-reaching faculty, *the faculty of choice*, and this rising from the utter bottom of biology to the summit—formative faculty—"auto-determination," or, if you please, "mind." Can the microbe do as the retriever does when with a hare in his mouth he comes to a gate; he tries this way and that, then thrusts the hare under the gate, leaps over and pulls the hare through? So the microbe tries it on, this way or that, till it succeeds, by self education in the school of experience—*Bildungstrieb*. This is far more—radically more—than "*élan vital*"; not merely energy but *choice*—plasticity driven to choose or fail; thus new devices are tried and new habits established. So likewise Dr. Topley has dwelt upon a microbe acquiring a capacity to bring about certain fermentations,[9] an ability, as he says, "to be regarded as something inherent in the organism itself." We may be reminded also of Professor Stanley Gardiner's "education" of his oysters—a very curious observation.

So far as I can think upon it there seems to be but one alternative hypothesis, but this does not cover so many phenomena. As I have said, if the vibrations of an alien cell are out of range of a certain body cell so as just to be indifferent but yet not far out of range, the vibrations of the one might induce like vibrations in the other, and meanwhile interference waves would arise in the field; thus disturbances—symptoms—would begin and continue until the two sets of waves should blend into unison; and this would mean acquired immunity. If a number of wag at the wall clocks are hung near each other, in a calculable time they will get to swing in unison. But this hypothesis does not lead on, as does the trial and error hypothesis, to larger and larger gains. We see only a discord and a mode of acquiescence; no line of development. What we apprehend is something more than orderliness of chemical reaction; that *cells are teachable*; a key to illimitable progress. Was not Coleridge right when he said

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[7] [illegible], *[illegible]* coordination, p. 8.

[8] Osborn, *Origin and Evolution of Life*, p. 137.

[9] *Lancet*, May 22nd, 1920, where he quotes "Penfold and others."

> For I had found
> That outward forms, the loftiest, still receive
> Their final influence from the Life within.

I am not for one moment forgetting that the physical modes of energy adsorption, surface tension, and so forth—may count for much in these advances, arrests, immunities, and disintegrations. Adsorption, or other physical condition, may put up a block. How remarkable are the effects of anaesthesia and palsy which may follow injections of sodium oxalate and magnesium sulphate, and of their quick removal by calcium salts; indeed the whole influence of calcium on metabolism—probably all of them surface (interface) actions, as of any radio-active element upon cell function.[10] Indeed, as in the relation of foodstuffs to amines, so in the physics of the cell we may discover a comparative accessibility and intelligibility of the processes of life—Poincaré's "*simplicité cachée*." It seems that God has more "respect to the measure and ease of the human understanding" than Boyle supposed.

RESEARCH.

Thus we are led to the thaumaturgic word "Research" which, for some of us, means remote and rather unreal speculations; for others the discovery of short cuts to making more money; for others again the ideal of pure knowledge. Research may be regarded as of two kinds, as natural observation and as artificial experiment; the one yielding more and more to the other as investigation penetrates from the more superficial to the deeper processes. Still, if we are to surprise and "capture wild nature in her secret paths," the two ways are strictly inseparable. Indeed the infinitely little does man more harm than the enormously great. War may bring with it some redemptive virtues; pestilence only raw superstitions. The advance of the last half-century from the deadhouse pathology to more refined and penetrating methods we have witnessed in our time, and yet more intimate methods, those of biochemistry for instance, are being rapidly unfolded. Research, as it is working to-day, advances from fixed and measured bases: as observation it watches Nature's march past; then as experiment it puts events to test under artificial conditions of separation or isolation, and measures their phases. But the laboratory cannot, as Nature does, contrive the unexpected; so we must "gear up our tiny machines to the vast wheel of Nature," and try for a first roughing out of an idea or concept. If we are to select our facts to any considerable purpose as crucial, we must first have an idea in our minds; and for this a certain kind of imagination is needed, one of general concepts rather than of the concrete individualizing imagination of the artist. Thus there are two kinds of discoverers, whose comparative outlines we have not yet well discerned. Of scientific discovery Henri Poincaré gives an interesting appreciation; he says that discovery consists of three stages: the first stage is of laborious work at the problem on all sides; the next is not one of conscious occupation with the subject, but of unconscious cerebration, during which a promising hypothesis may unexpectedly arise in the mind; the third is deliberate verification and completion of form. Thus out of an unlimited number of possible combinations, and by many speculations, the discoverer at length divines the true one. In Medicine this has been clearly the course of surgery, the side of Medicine which is closer to nature.[11] The surgery of my young days was only too "observational"; the friendly fingers of curious colleagues were popped in and out of an operative incision with no apprehensions about "the infinitely little." Now the observer is sadly pushed aside; the ritual of surgery is become like the magic rites of old of which, if a point were dropped or a word changed, the virtue went out. But the rite could be done over again by the penitent; unluckily in surgical rites there is little room for repentances.

A new scheme of research into the origin of diseases, lately instituted at St. Andrews, claims our respectful attention. And may I be forgiven if here I pay a tribute to the rare devotion which inspired Sir James Mackenzie to forsake place and honour to follow after knowledge; indifferent whither he were led so long as truth was the leader. Sir James argues that the man in charge of the first deviations from health is the general practitioner; and that, if we are to detect diseases in their incipience, he must be the detective. One evening about the year 1879, when staying with Sir George Humphry, he and I sat into the small hours devising a method by which we hoped to engage the general practitioner in scientific investigation. We secured the co-operation of this Association and of many coadjutors[12]; Dr. Mahomed joined us as secretary. We hoped by gathering in large numbers of observations to eliminate error; and several series of questionaries were distributed. Four volumes of reports were issued, under such Editors as Humphry himself, (on Old Age), Butlin (on Cancer), Whipham (on Rheumatic Fever), and Isambard Owen (on Intemperance). But the effort was premature; the data were too rickety, the reports too often irregular, dilatory and imperfect, and the reporters untrained in observation, punctuality, and precision. As things are, few of our colleagues remember to let us know the issues of cases seen in consultation. We may hope now for better material and more accurate workers; not only so, but Sir James Mackenzie is developing another and no doubt better method; he is working with intense culture, on a small holding, and on a more intimate clinical plan.

In exploring a country the great watersheds and rivers are first laid down; to map out these and their valleys and tributaries is the first great work. These main features known, bearings are obtained whence to discover the contours of the hills, and to track up to the hidden sources of the streams. This is Sir James's mission—to track out the nascent rivulets, and with his divining rod to dig for the springs which feed the streams of disease.

Let us not suppose that this research will be but a matter of cleverness, sagacity, or even of intensive observation; nor flatter ourselves that because Mackenzie produced his great work on the *Pulse* while a general practitioner that he achieved this by ordinary clinical observation, however acute. The progress of Medicine must in large part be endogenous. While our pathologists in balloons were working on morbid phenomena without ever seeing a sick man, Mackenzie was bringing laboratory equipment, and exquisite laboratory methods, to the bedside. The polygraph, no easy instrument to handle even now, was the grandchild of the kymograph; and by it was proved again that science consists—as Plato said five centuries before Christ—*in measurement*. So in the St. Andrews research, not only have the initial warpings to be discovered, in their many ways and tides, but their volumes and their curves also to be measured as precisely as were those of the circulation by the polygraph. The physicist and the biochemist will need all their expertness in valuing molecular motions, analysing secretions, recording blood tests and morphologies, and so forth, in their earliest and subtlest phases. For it is in molecular dynamics that the first deviations will arise; massive visible changes come later, and happily are now in large part calculated, or calculable. Mere observation—Nature's march past—will not count for much now; and as to family histories—well, they vary with each historian. And we practitioners will need a more searching discipline before we can occupy ourselves with problems so subtle.

The laws of inheritance must, I think, be sought out, at any rate at first, on animals; the generations of Man are too long for comprehension; besides, something else seems lacking in this study of the Genetics of Man? . . . Is it a sense of humour?

COMPARATIVE PATHOLOGY.

And there is something more to be said. If light is to be thrown upon the generation of diseases in Man it must be in part also by study in a far larger field; we must discover and compare the elements and phases of disease in Animals and in Plants. Sir James Paget, in his admirable address to the Pathological Section of this Association at Cambridge in 1880, reflected on the difficulties of human pathology because of its great complexity. He had "long and often felt that in this difficulty we might gain help from studying the consequences of injury and disease in the structure of plants" as less complex and under simpler conditions. To this field of pathology he devoted almost the whole of the address. A large part of my address in Medicine to this Association in Glasgow in 1888 was given to this appeal; it has found no response, hardly an echo. Yet what would anatomy be without comparative anatomy; language without comparative philology; anthropology, law, history, and even religion, without a like comprehension? Without an *Institute of Comparative Pathology* in Cambridge our range of vision and work is contracted. In the "Field Laboratories," it is true, Professors Woodhead and Nuttall, ably seconded by Dr. Stanley Griffith, are doing as much as lies in the power of a few individuals; but any such effort is puny beside the sphere of observation and research awaiting us. The comparative survey must cover the diseases of plants as well as of animals; of the lowest of living things up to the highest. The money loss year after year caused by the depredations and the diseases of animals and plants is enormous; and many of the methods of dealing with them—as with Foot and Mouth Disease and Swine Fever—barbarous; if at present imperative.

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[10] Gates and Meltzer, Rockf. St., vol. xxv, and *Journ. of Physiol.*, February 20th, 1920.

[11] See C. A., *Hist. Relations of Medicine and Surgery.*

[12] See Sir G. Humphry's Presidential Address at Cambridge, 1880.

Yet no one stirs, save to gyrate each in his own little circle. There is no integration, no organization of research, no cross light from school to school, no mutual enlightenment among investigators, no big outlook. The destruction by insects in forestry and agriculture alone in Great Britain is put at £30,000,000 per annum.[13] An Institute of Comparative Pathology in Cambridge with the endowment of professorial chairs and subordinate workers would cost no doubt a quarter of a million, a big sum; but what is this to the wastage of disease throughout the world of life!—to swine fever, diseases of cattle and horses, of crops, of forests, and so forth—utilitarian ends it is true, but to be followed on paths of discovery which would illuminate the whole field of nosology. Diseases are not "entities," nor even recurrent phases of independent events, but partial aspects of a universal series. The young graduates we have, many of them of great capacity; but every day we are losing them because they are not taken up at once into scientific teams; so they slacken, or drift into some other means of livelihood, and things muddle on as before. How blind we are!

PSYCHOTHERAPY.

Even in a sketch of our present occupations, it is hard to avoid the subject of Psychotherapy; though I would gladly do so. Of late this pursuit has stirred up much mud, and once more the human heart is declared to be a very messy place. Perhaps we make it still more messy by talking so much about it; by making it a storm centre of faddism. Of transcendental psychopathology—of "Oedipus complexes" and their kind—I lie in an ignorance with which, as a Philistine, I am content. A distinguished professor in another field, of whom I inquired concerning certain transcendentalists of his own science, answered and said, "Of their opinions I can give no judgement, for I have not soared into their regions; I can only say that when perchance they stray within my orbit they are generally wrong." The psycho-analysts may in their own regions be great prophets, but where they come within ken they seem, to my presumption, to be vulnerable. The reader who in his own field has been wont to look for definition of terms, and for precision and economy of language, may think he sees in them loose thinking, vague outlines, and formless pseudoscientific verbiage volumes of what undergraduates and others call "gas." There is the man who gets ahead of us by calling mind "mentality"; whose instinct prompts him generally to avoid facts by making his nouns more and more abstract. If painfully the reader tries to render recent psycho-analytic paragraphs into stricter terms he finds himself coming back to little more than Locke told the world three hundred years ago.[14] Many indeed of their postulates seem shaky. For instance, one cardinal, or at any rate dominant, axiom is that the sexual is the strongest instinct of mankind, and therefore a common denominator. But is it so? Offhand I should guess that self-preservation is stronger; and, for herding animals, the gregarious instinct yet stronger than either. Concupiscence a man may govern and abate, for months or years; of his life he may be reckless; but put him in solitary confinement and he goes mad. A sane mind consists in the good digestion of experience; in mental dyspepsia no doubt sexual and other instincts are prone to rebel—I am thankful to know that it does not fall to my lot to seek for pearls in that sty—but it is a long spring thence to deem that almost any mental dyspepsia is a sexual repression. Such speculations seem as ill digested as the "complexes" themselves. However, if such it be, what do we gain by the eructation of it? Something no doubt, but what? Mere liberty for the sexual idea? Hardly; let us try to guess. If we look back to Rousseau, and again to Augustine—the first self-analyst—we shall perceive that to many an agonized spirit Confession has been a great solace—just Confession. A murderer may be driven by inward strife to confess his crime, even to the first comer. The drive of the idealist to self-expression is the admiration of the historian. Why? Not, or not only, because his "complexes" are awry, or inhibition exhausted, but because a part of his mind is in solitary confinement. We all feel better when we have "had it out" with an adversary—we are restored to social communion. If it be true that sociable women cannot keep a secret, here may be the reason of it. But in the past experience has shown that the abuses of formal confession outweighed the advantages. We peer into the soul of another to discern the individual, and to tempt him back to the common opinion; and he in his turn is likewise sorely tempted to live again with his herd, or his gang. Yet to try to gain a mastery over the soul of another is not quite chivalrous, not quite generous; the propensity to spiritual "direction" may be as arrogant for the director as enfeebling of the will for the directed.

If then the socializing of the soul is to be handled by this kind of loveless confession, the method must be hedged about with stricter rules and guarantees. Let us hear no more that an enterprising medical psychologist had poured a stain into the heart of a pure minded woman which, do as she may, she cannot wash away; or, on the other hand, that "the confession did me good but never let me see that confessor again." The solace in weakness becomes in stronger moments a shame. Let us see to it that doctorism shall not come to sit beside militarism and ecclesiasticism.

The disorder then lies not so much in mutiny of the repressed as in feebleness of control. All normal mind building consists in the supersession of higher ideas upon the lower; that is in part on vigilant inhibition. No repressed idea should escape into the open without transmutation as it passes through the ideas above it. We see day by day how, as higher faiths weaken, the deeper superstitions in their crudity get loose. "*Jam vaga prosiliet fraenis natura remotis.*"

We are learning in fresh terms the old truth that in the life of a social animal the power of "Suggestion" upon the mind and body is enormous; effects which again depend largely upon social reciprocity. We hardly realize that every hour we are living upon suggestions as we live upon the atmosphere. For good and evil, "suggestion" affects us most vividly in the experience of active life; but it is potent also in the written word. Our everyday lives are still full of taboos, and of the magic of mutual mimicry. A certain man in the War trenches swallowed by mischance a spider; his mate told him it was a venomous insect, and foolishly conspired with others to exclaim upon his ghastly looks. The jest was carried on too far; the victim fell into a collapse very near death. So likewise "ghost shooting" is a deadly sport.[15] "Miracles" are in large proportion works of healing, and certainly much of our pharmacy works by suggestion. "Put yourself under the treatment while it is curing people" was the shrewd advice of a late eminent physician. But, after all, suggestion makes for credulity; it is the method of the conjurer; and I repeat that its practice must be hedged about with precautions. It is a resort, if but for a while, to a lower plane, to a herd method; it uses an intolerable deal of emotion to a ha'p'orth of reason. Temporary uses it may have, to tidy up a mind in confusion; but—to say the least of it—it is not educative. We must trust others, it is true; we must walk in faith; but we must judge when and why. Are we not getting tired of such catchwords as "Will to power," and the like? for of course there are no such separate faculties, or even concepts, as Will, or Inhibition. Impulses must drive through some machinery, and the products depend on what the machinery may be. If then we are to train the impulses of another person we must first make or remake his higher mechanism. Suggestion without reconstruction, a simple change of gear, gives but a transitory relief; and what happens to chambers left only swept and garnished?

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[13] Mr. L. Scott, M.P., in the House of Commons.

[14] Locke told us of the sinking of the products of experience into the darker chambers of our hereditary nervous framework, below the limits of voluntary memory; that our minds, like our bodies, are voluntary in part, and in part involuntary; and that thorns may catch in either.

[15] Codrington, quoted Rivers, Fitzpatrick Lectures, No. I, 1915.

Albeit a remarkable and striking clinical research is being made into the psychic complement of structural diseases. I admit that in such diseases as tabes, disseminated sclerosis, even in ordinary hemiplegia, I had not fully perceived how far such a complement may be more than a fringe; that it may constitute much of the going symptom group. A study of like diseases in animals, and in the insane, who give no thought to the miseries of others nor their own, may throw much light upon the meditative and imitative tendencies in mankind.

The moral on the whole is that we must use much circumspection in straying beyond the strand of experimental psychology—a fruitful inquiry so long as pursued on the methods of science. I do not say that in its applications to the many and variable callings and stresses of life, there is no place for psychic empiricism, no place for prying beyond the margins of evidence; but the surer must be our footing on the known, and the closer our watch upon our terms. Not for one moment do I forget the admirable work done in psychology in our own laboratories, at Oxford, and in the great pathological schools of the Maudsley, and the London Hospitals, and elsewhere. And the methods of the Industrial Fatigue Research Board, for the study by "vocation tests" of the "psychological relations between management and labour," seem to me, if I may say so, to be on sound lines, and to be likely to shed light upon the economy of both mental and bodily work. Again, such researches as those of Dr. Scripture on the speech of epileptics, whether verified or not, are at least conceived on sound lines of scientific method.

The black fate which befell the insane, once so humanely, rationally, and happily treated by the ancient Greek peoples from Empedocles to Galen or later, is one of the monstrous depravities which befoul the history of man; centuries of cruelty which lasted down to our own times.[16] When a Commissioner in Lunacy, I did my best, encouraged by the late Dr. Hack Tuke, to convert the plans of new asylums from the barrack system to a village system; but every such attempt was thwarted by a stolid, idealess body, the Local Government Board of that day. A village community, with its homely associations, its groups of cottages, hospital, park, gardens, home farm and workshops, church, town hall and theatre, and its various social scenes and interests, would provide for nervous disorders of all kinds, and so lighten the shadow of insanity. Patients could be moved within the groups from one section to another without formal inquisition; with no more ceremony than precise entries in the case books open to the Visiting Justices. In the treatment of any case of mental disorder the physician may soon, and often suddenly, be faced with the necessity of bodily restraint; and I cannot satisfy myself that patients should become liable to mechanical restraint, or to confinement, without the strictest precautions and guarantees. At Whitehall we were never without some information, only too often true, of concealment of insane persons, and of their ill treatment in the sense of cruelty, or of bonds, or of coercion, or of neglect of proper domestic or medical care. The present obstacles to early treatment, it is true, are a grave hindrance to successful therapeutics, but the legal and practical problem is more intricate than public opinion is aware of.

GENERAL PRACTICE.

When I turn to Public Medicine I am met by two chief problems that call instantly for solution. If by studying the past we can better build up the future, what will history tell us of the future of the "General Practice" of medicine; and what of the Voluntary Hospital? He is a bold man who will pretend to foresee even the near future of either; yet neither can stand where it is at present. Let us consider General Practice first.

In England we cling to concrete experience; we look for friction, unexpected turns, compromises, chances; we have little belief in systems of thought and dialectics, and in medicine, as in political and social affairs, have trusted to experiment, to touch; we find safety not in ideal revolutions, nor in rigid organization, but in broadening down, in criticism, and in the fertility of intuitive action. Scientific therapeutics are not to cast out empirical methods. The compass of large principles is often too wide for daily needs. We want theories within theories, axioms of less scope but more readily adaptable to the wantonness of life. Very true; but also the craftsman must bow his head to the deeper and wider principles which will eliminate the inessentials, and economize the direction of his work. If the family physician must be rather receptive than productive, by the diffusion of scientific knowledge, and increasing familiarity with the spirit of science, the climate of thought will be changed throughout the profession.

The better class of general practitioner of fifty years ago was rather after the kind of Hippocrates, or of Paré, than of the modern graduate. His university, in the days before great cities,—the "great wens" of Cobbett—was nature; in his clinical experience he enriched the instruction, half empirical, half dogmatic, of his medical school by the shrewd, observant, self-reliant, resourceful qualities of the naturalist. His science and his practice were of the naturalist, not of the biologist. In my early days a country drive with such a doctor in Yorkshire used to be one of the rewards of the consultant; and a bedside talk with him a lesson in quickness of wit and hand, and of instructive inference and prognosis. He was as clever as the modern cardiologist in knowing when to give digitalis, when to withhold it; if he were content to diagnose a case as "some bedevilment of the liver," his rules of thumb were not without their efficacy, and his *flair* for the issues of disease marvellous. He did not come across much "science," and what he did see of it, chiefly in casual "locums," did not attract him; for in truth half-science was less useful to him than whole craftsmanship. He was a woodland guide, not a geographer; but, as Aristotle and Darwin well knew, the woodlander gathers much curious lore. However, in the march of intellect this comrade, kindly and loyal as he was, is gone: and his sort of wisdom dies with the individual. Who is to come next? The official doctor, or a family physician more intellectual and no less independent?

An official doctor would be as alert and as progressive as a country parson, whose service is not much kindled by the chances of promotion to an archdeaconry or a bishopric; while to shift an official doctor from place to place would be to cut the inner threads of those intimacies which we are now declaring to be clews to the detection of diseases at their sources. Yet, as things are, the independent practitioner is isolated; even in a town he is apt to make a little orbit for himself, to drift out of intimacy, perhaps into some jealousies, with his brethren; he lacks mental incentive, and gradually lets slip occasions of scientific reunion and renewal. Indeed, he cannot readily leave home to attend public and scientific meetings, so that too often—as Morant complained—"medical men do not think nor express themselves in a statesmanlike way." His time even at home is so broken up that he loses the habit of study. He may leave his hospital school full of ardour and in rapid growth, but in practice his ardour cools and he drops into routine; or at any rate such is his peril, and so less and less may the doctor feel himself a member of a great profession; he may drift out of public affairs, his outlook and sympathies may shrink, his work become a trade, and his medical neighbour his "opponent."

Again, for some years past a few of us have been protesting against the clipping of family practice by official shears. We see the subjects of infectious fevers carried into isolation, and the tuberculous and syphilitic disappearing with them. The children are turned over to the school doctor, the parturient woman to the new midwife, and so forth. What is to be the end of this pollarding of family practice? Are its branches to be scattered about in a wilderness of "specialists," and the family physician a mere sweeper up of unconsidered trifles?

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[16] Pinel d. 1826; Schröder v. d. Kolk d. 1862; Conolly d. 1866.

Panel practice, for some time discredited by its hereditary taint of the Club of infamous memory, and by the continual dearth of the means of its development, should, if duly provided, expand into a large, honourable, and even universal department of medical work: the terms of engagement are to be more liberal; the clockwork is complete. But how is the practitioner to rise to higher standards of modern science and skill when no means of investigating disease, or of making an intimate diagnosis, are provided for him? He is well aware that the modern methods of medicine depend on such means as *x* rays, a battery of stains, and other cultural and biochemical apparatus: and not only an education in the use of these but also the time to give to them. What should we think of a regiment of recruits called out to fight the enemy but unprovided with weapons or munitions? If the doctor be near a university centre he can get blood tested for morphological elements, or for sugar or nitrogen content, excretions analysed, bacterial examinations and vaccines made, and so forth; but it is imperative that these opportunities, now confined to a few, shall be universal. Moreover if they are to be fruitful, the practitioner must consult personally with the scientist. These plants, then, and their staff must be established in all districts, together with a much larger provision of cottage hospitals. This university and its sisters are sending out every year bands of young graduates quite competent to deal with disease in all its forms, and to use refined means of diagnosis, if these means are supplied. If not, how can we blame them if they fall into some stagnant routine? In district laboratories panel work would be paid by the Ministry of Health; for private practice a tariff of fees would be agreed upon.[17] A considerable sum for the commencement of these local centres was contained in the stillborn Budget of 1914.

In the United States I am told that medical men are banding together in districts for such a development of their private practices. Five or six of them combine to rent a house with consulting rooms for each, and a common apartment for minor surgery, etc. Each member of the alliance—they are not exactly partners—is expected, in addition to his general practice, to take up special work in some department supplementary to the others; so that a fair variety of special skill may be available in the house; skill, if not of high expert value, which must still be sought elsewhere, yet quite sufficient for ordinary diagnosis and treatment. For this purpose visits of members to special clinics, and ordinary holidays, are mutually arranged. Patients like the system; they see that it is more thorough. Domiciliary visits become fewer, yet there is always one of the group on the spot. The fees are received by a secretary-attendant on the separate account of each member: and, after all upkeep expenses are met, the surplus is divided according to the credits of each. The individual earnings are higher than they were on the separate practices. Such are some of the material advantages; the spiritual are the disappearance of petty jealousies in a spirit of comradeship, and a larger freedom for scientific and social life, and for public service. The patients learn that a due remuneration of medical service is no longer gained by a multiplication of visits, nor by profits of dispensing.

These ends may no doubt be attained by different methods; but the essential need is the generally accessible laboratory and staff, to be a little academy and place of reunion; a centre, let us say, for the meeting of the Divisions of this Association. But one word of caution: the centre must not be municipal; it must be free of all kinds of officialism, and kept alive by a small committee of local practitioners in alliance with the Insurance Commission.[18]

As regards the Voluntary Hospitals, I omit what I had written because the Report of the Consultative Council has covered a much larger ground, and so ably, that my passing reflections would be of little use. The dilemma between the lack of funds and the fear, almost an assurance, that public grants in aid would discourage private munificence, might I think be avoided if, on proof of efficiency, grants in aid were offered in some proportion to the amount raised by voluntary effort. To range up the Poor Law Infirmaries with other hospitals and schools would enrich our clinical fields beyond all anticipation.

PREVENTIVE MEDICINE AND CLINICAL PRACTICE.

On the social mission of Public or Preventive Medicine, and on its integration with clinical practice, Sir George Newman and others of our leaders have said what is needful, better than I could say it. It is strange that not until the other day—so to speak—has the public awakened to its own needs in this matter; seeing that, at least from the seventh century before Christ and onwards, public health officers were appointed in the Greek countries. Yet twenty-five centuries later my old friend Dr. Warburton of Pateley wore out his life, and much of a good practice, by his not unsuccessful fight against enteric fever in the valley of the Nidd; and, thank God, he was but one devoted warrior among many. Let us remember however that the public has neglected science partly because science has neglected it. Now the medical service of the Panama Canal, and of the Great War,[19] by specific immunization, brilliant sanitation, and modern methods such as the isolation of carriers, has brought medicine home not to each nation only but to all men as an international and reforming influence. Of late years surgery has made our advances conspicuous, but inner medicine is coming again into her own; nay, they are one. From lesser to larger groups the standard of health must be more and more the guide and the signal of the nation, of the country, of the city, of the workshop; for public health is purchasable. If, by his invention of tools, Man has become the destroyer of creation, let Medicine show that tools can also be its saviour. Every righteous physician regards his practice as a social service, a means not only of bodily but also of social reconstruction, and of moral and intellectual health. Thus Medicine will become more and more a binding force in societies, a bond between nations, and a purification of the world.

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[17] Since this address was written the valuable Report of the Consultative Council has been issued; I cannot well recast these paragraphs, and must be content to welcome the Report and to express my agreement with it.

[18] Such a laboratory was built before the war at Wolverhampton, and as I had urged the institution of such centres I was honoured by a request to open it. It was of course held up during the war, but I hear it is now full at work again, and much frequented by the practitioners of the district.

[19] See Sir Douglas Haig's Dispatch of December, 1917: "the preventive medicine man has saved his tens of thousands."

Proceedings of Sections.

SECTION OF MEDICAL EDUCATION.

Sir GEORGE NEWMAN, K.C.B., M.D., F.R.C.P.,
President.

INTRODUCTORY ADDRESS
ON
THE PLACE OF PRELIMINARY SCIENCE IN THE MEDICAL CURRICULUM.

BY

SIR GEORGE NEWMAN, K.C.B., M.D., F.R.C.P

THE form and content of the medical curriculum are dependent on two principal factors: (*a*) the advance of our knowledge of the science of medicine, and (*b*) the demands made upon the practitioner of the art of medicine. The purpose of a medical education is the equipment of the practitioner in knowledge and skill. In recent years there have been immense extensions of medical science, and in considering from time to time the character of the curriculum this is the first fact which must be borne in mind. The curriculum must incorporate the principles of medicine as interpreted in current knowledge. It must also comprehend its practice in relation to the needs of the time and the art of the practitioner. The expansion of applied medicine and the widening of the demand which the community makes on the medical man must thus find its counterpart in the curriculum. Science inspires art, even as the practitioner is the interpreter of science.

Let me refer to the first point. Sir Clifford Allbutt has told us that "the new birth of medicine," of which we are witnesses,

> "is nothing less than its enlargement from an art of observation and empiricism to an applied science founded upon research: from a craft of tradition and sagacity to an applied science of analysis and law; from a descriptive code of surface phenomena to the discovery of deeper affinities; from a set of rules and axioms of quality to measurements of quantity."

Illustrations of the truth of these words are to be found in many paths of clinical work in medicine and surgery—in the diagnosis and treatment of diseases of the heart or the kidney, in abdominal surgery, in orthopaedics, in vaccination, antitoxin inoculation and serum therapy, in neurology, in parasitology and its applications to infective diseases, in our knowledge of the part played by the secretions and excretions of the body, in the treatment of syphilis, in the new understanding of metabolism, and in the application of the preliminary and intermediate sciences to the art of medicine. Nor is it only in practical medicine that we see signs of expansion—there is the new work on the cell—in physics, in chemistry and in biology. In science, as in every other field of human endeavour, the centre of knowledge is for ever shifting, but though it shifts in the direction of the infinitely little it is towards unity and cosmos. In 1801 Dalton announced his atomic theory. He showed that the element consisted of atoms, a view that was based on the proportions by weight of different elements in various chemical compounds, the constituent particles of which were of one kind. But by means of the electric spectrum it has now been shown that as the molecule had been divisible into atoms, so atoms are divisible into corpuscles or electrons, 1,700 times smaller than the atom, themselves divided into groups and systems and with potential and kinetic, chemical and electric, properties. The organic cell is also being reduced to its component parts. The cell theory—cell basis, cell division, the nucleus, the nucleolus—is yielding its secrets, and we now know something of the hidden powers of the chromosome of the germ cell and the internal secretion of chemical substances, whether they be hormone, toxin, or antitoxin. "The greater part of natural philosophy," says the Master of Trinity, "is the outcome of the structure and mechanism of the atom," and it is equally true that biological science is built upon the structure and function of the living cell. As we pass from the morphology of the cell to its physical and chemical powers and their interaction, there is unfolded an even larger field of vision, first of the functions of the human body as an aggregate of cells, then of their regulation, and then of their powers of regeneration and defence. It seems impossible to exaggerate the effect on the science of medicine of the new knowledge of the chemical and electrical changes going on in the cells of living tissue. From the discovery of hepatic glycogenesis by Claude Bernard in 1855 to the work of Schafer, Bayliss and Starling on internal secretion, one chain of evidence runs. It is certain that we must establish the student on this foundation of the cell, inorganic and organic, and its potentialities in individual or aggregate form, and the operation of natural influences upon it—internally the power of growth, secretion, reproduction, adaptation; externally a variety of factors, heat, light, electricity, stress, strain and pressure.

Secondly, the character of the curriculum will also depend upon the medical needs of the time. Two centuries ago, in 1720, Dr. Richard Mead, the foremost physician of his day, published his *Short Discourse*, one of the classics of modern medicine, which ran through seven editions in a year. It dealt with Levantine plague and the means of its prevention, and it laid down for the first time the wide compass of medicine in relation to society. It was one of the books which, expressing the medical needs of the period, left its mark on the medical curriculum. In that same year the first Alexander Munro was appointed Professor of Anatomy at Edinburgh, and the medical school of that University began its fame. Munro brought to the curriculum the applied teaching of Boerhaave of Leyden, the founder of modern clinical instruction. A generation later the work of Linnaeus, John Hunter, Morgagni, Haller, Cullen, and Priestley left its mark. Then as now the movements in medicine found expression in the curriculum. To-day we have two such factors at work—(*a*) the new claims of the State upon the doctor, social, scientific, clinical, and (*b*) the further development of clinical teaching within the curriculum—making their insistent demand on the student.

CLINICAL TEACHING UNITS.

The establishment of "clinical units" is but an expression of the growth of integration. In the English and Scottish universities, and now in London also, we have a connecting up of all the subjects of the science and art of medicine, a further step in the abolition of isolated instruction.

> "The whole curriculum of the medical student," says Professor Lorrain Smith, "suffers essentially from the difficulties which arise from the water-tight compartment system of teaching."

There is nothing celestial about the "clinical unit." It is merely a matter of convenient arrangement by which we secure three general advantages:

(*a*) The clinical teacher devotes a regular and substantial portion of his time to his teaching work, and instead of being casual, secondary, incidental or spasmodic, it becomes his chief task, and for the student instruction in clinical medicine and surgery is thus systematized, thorough, and always available.

(*b*) The unit consists of a staff of competent men working as a group or team who pool their experience—the physician, the assistant physician, the resident physician, the house physician—wards, out-patient department, laboratory, auxiliary departments for special forms of treatment—all in a composite unit.

(*c*) There is full integration of the science and art of medicine and surgery, the teaching of which may thus be raised to university standard. There is the association of research with study, and the study itself is intimate and intensive—it should comprehend Sir James Mackenzie's subjective and associated phenomena, it should investigate the mechanism of symptoms, and it should follow end-results back to their origins.

Two examples may be named in London and Edinburgh. At University College, London, Mr. Choyce has been appointed whole-time Director of Surgery, with two whole time assistants, with 40 beds, out-patients, laboratory accommodation, and special departments. The work of the unit consists of routine clinical work, teaching, pathological investigation and research (pathological, experimental, statistical), recording cases, and certain special branches of surgery (urology and orthopaedics). The arrangements for teaching include clinical demonstrations in the wards, supervision of dressers, systematic lectures on surgery, operative surgery, surgical pathology, practical and clinical surgery (senior and junior), and a surgical revision class. The unit co-operates with the extra-unit clinics of the hospital. Now the advantage to the students is that their surgical teachers are always available, and thus they secure personal and continuous tuition. They see surgery as a whole, and they discover a complete integration of its science and art, its essential integrity and unity. It is an impressive discovery to make. At Edinburgh there are seven surgeons, but Sir Harold Stiles is Regius Professor of Clinical Surgery, with an assistant surgeon, a clinical tutor and a house-surgeon. The unit contains forty-four beds, out-patients, and laboratory accommodation adjoining. The work of the week comprises ward clinics, systematic clinical lectures, tutorial classes, and operations. There is intensive study of the cases and exceptionally full integration of anatomy and pathology with surgery. In varying degree this kind of teaching is becoming the usual practice in the best medical schools. It is bringing with it closer study, larger vision, wider comprehension, a more intimate co-ordination of all branches of medicine, a deeper unity. It is the grand adventure of tracing the river back to its source.

FOUR REFORMS.

Thus it is by the gradual evolution of this unit method over many years that we have come to see the necessity of further development in the curriculum. It is not Revolution we need, but Reform, and even reformers must have regard to the facts (*a*) that the scope and character of secondary education is not yet settled, (*b*) that medicine itself is in a transitional state, and (*c*) that the policy of the nation in regard to the ultimate nature of the public medical services has not yet crystallized itself.

Speaking generally, however, it appears that the main reforms needed in the medical curriculum are four:

1. *A lightening of the curriculum at both ends;* in other words, fuller preparation in science before entrance to the medical school, and a postponement of instruction in certain specialities and in general practice to the post-graduate period in order to provide continued education of the qualified man—teaching which requires organization on the basis of professoriate, hospital, laboratory and clinical experience—which may well be organized in such co-operative practitioner clinics as that devised by Sir James Mackenzie at St. Andrews, where knowledge is "pooled" and clinical research applied. This question of lightening without lengthening the curriculum is of cardinal importance. Much of our trouble arises from the overloaded condition of the five years. There is insufficient time allowed for true study, for digestion and assimilation. Several remedial steps may be suggested: elementary physics and elementary inorganic chemistry may be taken at the secondary school (the teachers of which, as suggested at Glasgow, may be brought into closer touch with the university and the needs of the student), though preliminary science for medical students must still be undertaken in the medical school; materia medica may be greatly reduced and some details of other subjects; the didactic lectures may be diminished in number; some overlapping may be eliminated; each term may be extended by a week and the medical course commenced in April; specialism may be unloaded from the final year or at least reduced in bulk; and above all the degree examinations may be shortened and modified by assessing the class examinations as an essential part of them. If the training of the student—his class marks, his preparations and dissections, his clinical records—be taken into account as part of his degree examination we should move the whole centre of gravity of the medical course away from the hazards and fortunes of the examination system, to the basis of a true and careful study of medicine. The examination should follow and not lead, it should test and not standardize, the training. The true criterion of university training in medicine is equipment for life, not preparation for an examination.

2. *A fuller study of the sciences preliminary to medicine* and a nearer application of these subjects to clinical work. Above all, there is great need of biology (anatomy and physiology). Its principles are the answer to many of our questionings. It is the fundamental theme.

3. *Development of clinical teaching of university standard*, particularly in relation to the beginnings of disease (the child and the out-patient), the science of prevention, the closer integration of various forms of clinical practice and of clinical with intermediate study, concentration on the protean diseases of tuberculosis, venereal, malaria, malignant disease, and an understanding of the social side of therapeutics (environment, diet, occupation, and the use of physical agents), as well as the social aspects of disease. Some of this clearly should come after graduation.

4. *There is need of further State aid*, though with a minimum of State control. The cost of proper medical training has now risen beyond the means of the average man, and yet it is in the interest of the State to secure well-equipped doctors. To provide a satisfactory medical education (*a*) we need more teachers, better teachers, and better paid teachers; (*b*) we need clinical units; (*c*) we need improved laboratory accommodation and better equipment; (*d*) we also need an extension of hospital and clinic facilities for teaching—and all this means money and organization, both of which have been lacking in the past. The education of the medical man is no longer a proprietary or merely professional interest. It is of national concern—for the health of the people is the principal asset of the State.

Preliminary Science in the Curriculum.

To-day, here at Cambridge, we are concerned with only one of these four subjects—the place of preliminary science in the curriculum. Other and more competent speakers will deal with the fine adjustments of this subject. It is my duty to offer a few introductory observations.

1. In the first place it seems evident that the development of clinical medicine and surgery in response to the demands of the age makes a new and clear call for the improved teaching of the Preliminary Science subjects. Some advocate their removal from the medical curriculum. I am convinced they are more essential than ever. Look where we will—physics, chemistry and biology are key-subjects, absolutely fundamental. They form the basis of a general education in science; by their study alone are the principles of science grasped; they alone provide an education in technique and the methods of measurement, they give the student his scientific tools; they provide the elements and foundation upon which he builds; they are the only basis of sound generalization. The great medical subjects consist of physics, chemistry and biology applied to the life, form, and function of the human body in health and disease. The patient is a case of anatomy, of physiology, of pathology, to be interpreted and treated on grounds, and by means, which are essentially physical, chemical, and biological. He is, of course, something much more, but that is the essence of the situation. Taking the issue even on a lower plane: the practitioner of medicine must be trained in the processes of physics and chemistry to practise his profession. The mechanics of labour, surgical and orthopaedic appliances, temperature and thermometry; weighing and measuring; blood pressure, the behaviour of fluids and gases, specific gravity, siphons and pumps; colloids, surface tension, viscosity, diffusion, osmosis; heating, ventilation, lighting; optics, polarization; the microscope, the laryngoscope, the ophthalmoscope, the dental mirror; the stethoscope and the conduction of sound, resonance; electricity, *x*-rays, radio-activity, thermo-therapy—the briefest catalogue demonstrates the enormous and expanding place which applied physics has in practical medicine. Every year adds to the medical uses of electricity—faradic current, galvanism, electric baths, high frequency—which is finding ever new fields of conquest. The physics of the cell has expanded beyond the wildest dreams of the atomist. Nor is chemistry one whit behind. The gathering of simples by the shores of the Aegean Sea and their medicinal preparation is recorded by Pliny as the earliest beginning of our science and our craft—five hundred years before Hippocrates and the golden age of Greece. From Galen to the herbalists little was done, but in modern times there has been prodigious advance. Iron and mercury; quinine, digitalis, opium, strychnine and belladonna; the coal-tar derivatives; ether, chloroform, salvarsan; fermentation, decomposition; the chemistry of colloids and of hormones; biochemistry and chemical physiology—all these remind us of our debt to chemistry, a debt which must be added to our growing knowledge of the chemistry of the cell.

Here it should be said that we are also in need of a closer association between physics and chemistry on the one hand and biology and medicine on the other. It is 120 years since Bichat and Dalton blazed this trail, but we do not pursue it in systematic fashion. We are content to ignore their mutual relationship and forget their current contribution to medicine. We shall do well to remember Huxley's warning that

> teaching in biology cannot be attempted with success until the student has attained a certain knowledge of physics and chemistry; for though the phenomena of life are dependent neither on physical nor chemical but on vital forces, yet they result in all sorts of physical and chemical changes, which can only be judged by their own laws.

Happily, the relation between chemistry and medicine is being drawn closer. At Edinburgh the teaching of both pharmacology and chemistry is being reorganized and co-ordinated under Professor Cushny, Professor Meakins and Professor Barger. There is to be a laboratory for clinical therapeutics in the hospital, the teacher of chemistry is to lay the foundations of physiological chemistry and clinical chemistry, there is an advanced course of medical chemistry for third and fourth year students, and after October 1921 students beginning the study of medicine will have to pass an entrance examination in elementary chemistry before admission. Professor Barger is not only expanding the teaching of chemistry but also dismissing a mass of conventional chemistry with which the medical student is not concerned.

> "General principles," he says, "are being illustrated by medical or biological examples . . . Frankly, one can only teach a few general principles and a few elementary facts, but these must be rubbed in deeply."

In physics too much excellent work is being done to give a new orientation to the student's mind in this regard. Miss Waller's course at the London School of Medicine for Women and the medical course in physics at Manchester illustrate representative methods, and in other schools the principles of physics are being brought into clinical application. The student is himself doing as well as reading. "Did you go yourself and examine this, or how do you know?" asks Socrates of Glaucon.

2. Secondly, the claim of biology is supreme. It is the very essence of medicine, which, indeed, is but one of its forms and expressions. It is not an introduction to medicine, but its foundation. If the medical man be not a biologist he is nothing. But to obtain its full value the student must be taught something much more than types. These are, after all, only pegs for principles—the types have their value as preparatory to human anatomy and physiology, to bacteriology and parasitology, but their real purpose is the demonstration of principles, the operation of biological laws—growth, reproduction, heredity, transmission, interdependence, the reserves of the body, the results of environment, cause and effect, use and disuse in organic life, adaptation, natural selection, variation, and mutation.

> "Biology teaches the problems of life at every point," said Osler, "and may claim as no other science completeness of view and a comprehension which pertains to it alone."

It is necessary for the student to be well equipped in parasitology—particularly in regard to malaria, plague, yellow fever, typhus, trench fever, and dysentery—and the relation of entomology, protozoology, helminthology to human disease. The mosquito, the flea, the fly, the louse, the rat, have all come into our ken as factors in the dissemination of disease. But there is a still more important aspect of biology than that which is immediately utilitarian, namely, as the basis of comparative medicine. If there be one thing more than another which is lacking in English medicine it is its comparative study. It is the chief evil of the watertight compartment system and of our methods of insularity. Here, perhaps, we need something of a revolution, for the absence of comparative medicine is a fundamental loss to the student and the practitioner. We render lip service to John Hunter, but we do not practise his method, except here and there in isolated fashion. But we must practise it everywhere if we would reap its harvest—in anatomy, in physiology, in pathology—in the vegetable kingdom, in the animal kingdom, in man, in men of all races. "We must know all disease to understand its several phases," and biology is the door. The great workers of the eighteenth century left us a rich legacy, and in our own day Prichard, Pasteur, Müller, Darwin, Virchow, Hutchinson, Turner, Allbutt, Bland-Sutton, have not left us without direction. Human anatomy, embryology, and physiology are parts of comparative anatomy; we build up our knowledge of man by study of the structure and function of animals. Likewise human pathology should be studied as part of a comparative pathology affecting both animal and vegetable worlds. Comparative bacterial infections; tuberculosis, anthrax, pneumonia, plague, cancer; the variety of bacterial species (forms of streptothrix, tubercle bacillus, typhoid bacillus, and pneumococcus), and their classification; parasitic disease and the skin diseases of animals; animal and vegetable poisons; tumours; the vast group of gastric diseases; the natural immunities of animals and man, race susceptibility; atrophy and hypertrophy—these are all illustrations of large groups of disease, characters or exceptions which are awaiting further comparative study.

There are two ways in which progress can be made. First, biology itself can be brought into a larger place in the curriculum instead of being, as in some medical schools, relegated to a subordinate position or even neglected—unequipped laboratories, poor salaries, little opportunity, perhaps feeble apprehension. No medical school is worthy the name if biology is subordinate. But if it is to be given its right place it must be taught in the right manner—as it has been taught by Herdman at Liverpool, by Hickson at Manchester, by Bower and Graham Kerr at Glasgow, by Arthur Thomson of Aberdeen, and in other ways also by Keith, by Elliot Smith, and by Karl Pearson. Secondly, much may be done by the teaching of applied biology as introduced by several of these teachers and by Professor Ashworth at Edinburgh.

> "My object," he says, "has been to change the emphasis from the pure description of the animals chosen for study to the significance of the principles they illustrate in relation to the studies of the subsequent years of the medical curriculum."

In due time the course may be transferred from the first to the third year. In such a course it is possible to give due emphasis to the comparative study of the development of the ectoderm and endoderm, the origins of the blood and nervous systems, the functioning of sense organs, the formation of the body cavity, mesenteries, primitive excretory organs, the alimentary canal and the processes of digestion and absorption.

> Special care is taken to show what a great step in advance is brought about by the coming-in of the mesoderm, giving rise to systems of organs and conditions which can be traced up to man—for example, the segmentation of the body, bilateral symmetry, separate muscle layers for the gut-wall (for peristalsis) and for the body wall (for locomotion), separation of the gut-cavity and body cavity, the appearance of excretory organs, blood system, central nervous system, the evolution of the anterior end, the parallel advance in development of the powers of locomotion and of sense organs, "cephalisation," which finally culminates in the vertebrate head.

The comparative study of protozoology, helminthology, and parasitology, and their relation to disease in man is the final issue of the course. This sort of work in conjunction with a broad grounding in the principles of biology seems to me to be the proper introduction to that wide grasp of comparative medicine which is as essential to the medical man of the future as it is to the advance of medical science. Here at Cambridge valuable comparative work is being done, a new movement has begun in Edinburgh, and the Bland-Sutton Institute of Pathology has been amalgamated with the Cancer Investigation Department at the Middlesex Hospital Medical School. In other schools also there are hopeful signs of progress.

3. There is a third point to be borne in mind, namely, the application of biology to society in the science of sociology where Huxley and Herbert Spencer led the way. The two chief needs of English medicine seem to be (*a*) the fuller integration of its several branches and constituent parts, and (*b*) its new relationship to sociology. Man is a social animal and all disease has its social aspect. The student must be taught this, he must learn to think how to use his stock of knowledge socially as well as logically. The great problems which will face him in practice have a social setting—tuberculosis, infant mortality, rickets, physical impairment, venereal, heart disease, mental abnormality—they all bear a highly complex relation to forms of human society, industry and government. I submit that the answer to these medical-social problems will be found in applied biology—for that is the basis of sociology, that is the science which deals with the problem of the real and ultimate nature of life, there the student and the practitioner will find what Wordsworth predicted in the *Prelude*—

> a Power
> That is the visible quality and shape
> And image of right reason; that matures
> Her processes by steadfast laws; gives birth
> To no impatient or fallacious hopes,
> No heat of passion or excessive zeal,
> No vain conceits; provokes to no quick turns
> Of self-applauding intellect; but trains
> To meekness and exalts by humble faith;
> Holds up before the mind intoxicate
> With present objects, and the busy dance
> Of things that pass away, a temperate show
> Of objects that endure.

It is not only a device here or an adjustment there, that is needed. It is the biological outlook and spirit that is required—the capacity "to see great truths than touch and handle little ones"—for biology, pure and applied, is the most educative, germinative and dynamic subject of the whole curriculum. It opens the windows of the mind, it makes possible a conception of the unity of things, and it gives proportion and measurement through the entire range of Medicine.

DISCUSSION ON PRELIMINARY SCIENTIFIC EDUCATION IN THE MEDICAL CURRICULUM.

OPENING PAPERS.

I.—COURSES OF STUDY IN SCIENCE FOR MEDICAL STUDENTS, WITH PARTICULAR REFERENCE TO BIOLOGY.

BY

SYDNEY J. HICKSON, F.R.S.,

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SINCE the time when I was a medical student at St. Bartholomew's Hospital, over forty years ago, there have been in medical education two important changes which have a bearing upon the subject of my address. In those days the majority of the students who entered the hospital were not required to pass any examination in chemistry, physics or biology, and they were able to complete their studies and become qualified medical men in four years from the time of entry. Since then, examinations in the science subjects have been made compulsory, and the period of study for a qualification has been raised to five years. The general result of these changes has been to bring the standard of medical education required both for those students who are contented with the ordinary qualification of the Royal Colleges, and for the university degree students, to a more uniform level. There is no longer the same distinction that there was in former times between the two classes of students, and in the first year of study all students devote practically the whole of their time to the study of science and all attend the same classes. Speaking from experience of the results of the examinations during the past twenty-five years, I feel certain that there is a tendency for the examiners of the Colleges to increase gradually the standard of their examinations, an increase of standard which is decidedly more noticeable than it is with the science examinations for a university degree.

I do not know whether it is the intention of the authorities of the medical profession to raise the standard of education for all medical men to the level required for a university degree, or to maintain and emphasize the distinction that at present exists; but in attempting to map out the courses of study in science that should be given to medical students as a whole, it is necessary to assume that potentially any one of them is capable of taking a position in the highest ranks of the profession. Any one of them may become a consulting physician or surgeon, a distinguished investigator of medical science, or a writer of standard works of reference. We cannot, at the present time, frame a course of study which is at the same time wide enough for a man who is to play a leading part in the profession and yet not include in it some subjects which may not be of much direct practical value to the man in a humble country practice. If a parent comes to me and says that the knowledge of the development of the chick or of the visceral arches of the dogfish will be of no use to his son in his practice, and that it is a waste of time to make him learn it, I can only reply that, while perhaps admitting the justice of his statement, my duty is to provide every medical student with such a scientific basis for his education as will enable him to rise to the highest ranks of the profession. It seems to me that, unless we have a clear direction from the General Medical Council to provide two distinct avenues, a higher and a lower, to a medical qualification, we, the teachers of science, are bound to assume that the same opportunities to acquire distinction must be offered to all students.

THE STANDARD OF GENERAL EDUCATION.

The question of the provision of the most suitable science courses for the first year study of the medical student is so closely connected with the question of his school education that it is necessary to consider what standard of education is, or should be, required before registration. At the present time a very large proportion of the students who enter the medical schools have passed some qualifying examination in languages, history and mathematics, but have no knowledge whatever of any of the sciences. It is necessary therefore for those in charge of the first year science courses to begin with the most elementary general principles before passing on to any branch or aspect of the sciences that have a direct bearing upon medical science.

On the other hand, there is a smaller number of such students who have had some instruction at school in chemistry, physics, and perhaps botany, and these may feel that the work of the first three months at the medical school is to some extent a waste of time. It seems, therefore, as if some of the difficulties might be overcome by providing two grades of courses for the first year, one in which an elementary knowledge of the principles of the sciences would be assumed, and the other in which these elementary principles would be taught. But such a plan is in my opinion both impracticable and undesirable. It would need a greatly increased staff and further laboratory resources; it would divide first year medical students into two classes which might easily become rival factions, and it would lead to serious difficulties in the conduct of courses in succeeding years. I am convinced that it is necessary to keep the first year students together as a single unit and to try to meet our difficulties in another way. The feeling that undoubtedly exists among many students that compulsory attendance on classes in elementary science, when they have already attended such classes at school, is a needless waste of time, is not justified. The principles of science as expounded by a new teacher and illustrated by new, and, in many cases, better experimental evidence, are usually both instructive and stimulating to the thoughtful student even if the substance of them is familiar to him. On the other hand, the student who has learned no science at school but has acquired the habit of study and mental exertion by a longer and deeper learning in the arts subjects, can grasp these first principles of science without much difficulty or repetition.

The real difficulty with all our science classes in the first year of medical study is caused by a minority—but often a substantial minority—of students with a low standard of school education. There are too many students entered by the medical schools whose vocabulary of their own language and facility in composition and correct spelling are not sufficient to enable them to profit by the lecture system, or to express what little they may have learned in a written examination. Further—and still more important—so many students do not possess a mind trained by mental efforts to remember or to think.

It is these students who act undoubtedly as a certain drag upon the machine, and so hinder the development of our courses in science on the lines which would be more suitable and more useful for medical men. With the resources at our disposal we are obliged to take the non-matriculated and the matriculated students in the same classes, at least for the greater part of the course, and there can be no doubt that the progress of the classes as a whole is seriously impeded by the presence of a minority of students of a low standard of general education. When we consider the long and arduous strain of a modern medical education, the variety of subjects and the mental flexibility that is required to grapple with them, and the ever-increasing demands for improvement in the medical qualifications, it seems as if the time has come when we ought to demand a higher standard of general education before a student is registered.

The first step in this direction is to insist that the lowest standard accepted for registration should be that of the matriculation examination of our universities. I will not discuss the vexed question whether Latin and mechanics of matriculation standard should again be made compulsory subjects for the entrance examination, but I believe that, if they were, the progress and success of students in the first year would be greatly facilitated.

There is another point in this connexion which should be also considered by the authorities, and that is whether the age at entry should not be raised. Every year there are several boys only a few months over sixteen years of age entering our classes as medical students. In some cases they do very well and may even become qualified by examination to practise before they are of age, but, in the majority of cases, they are too immature in intellectual development to profit by the first year's study and their early entry only leads to failure and discouragement. I think that, if the medical profession is to keep abreast with the educational movements of the times, to take advantage of the improvements in the teaching of the higher classes in our secondary schools and of the higher standards of the school leaving examinations—the age of entry to the medical schools should not be less than seventeen years.

It has been suggested that, in order to provide more time for clinical work in the later years, the preliminary science studies should be transferred to the school period of the student's education. It would undoubtedly be an advantage if every student before entering a medical school could present a certificate of attendance on science classes in school or at a college, but I believe it would not be in the interests of the students nor of the medical profession as a whole if the standard required were in any degree lowered. There are not many secondary schools in which the standard of the first M.B. Examination in Physics and Chemistry can be reached, and very few in which there is any provision for the teaching of biology, and in consequence such a transference of science subjects to the schools at the present time would inevitably lead to a lowering of the standard. But, whether there is to be a preliminary training in science in the schools, or not, the first six months at least of a medical student's career in the university should be spent in the science departments.

In dealing with the subjects taken in the first year of study I think it may be assumed that chemistry and physics are essential. They are the fundamental sciences, and it would, of course, be a hopeless task for any teachers to attempt to carry students into any branch of medicine unless they could assume some knowledge of the elementary principles of these sciences. With the time at present allotted to these subjects during the first year of study, it is not possible to carry the student much beyond the first elementary principles, and there are several important branches of them which, though of special interest and importance to the medical man, cannot be dealt with at all. Perhaps in the near future, when the teaching of science in schools is better and more universal than at present, and when the school leaving age is raised by at least one year—as I trust may be the case—the courses given to registered medical students in physics and chemistry may have a more direct and practical bearing upon medical science.

COURSES IN BIOLOGY.

It is not within my province, nor is it my desire, to discuss the possible lines of improvement in the courses provided for medical students in these subjects, and I therefore pass on to the consideration of the courses in biology.

Having been a teacher of biology to medical students for nearly forty years, the simple question has been constantly in my mind, "What am I trying to do to help these young people in their preparation for the medical profession?" They come to us fresh from school and from the scholastic methods of teaching, too often impressed with the idea that learning is a daily task to be done and not thought about, and frequently believing that all they have to learn will be found written down in books, and they are prepared to use the same methods of remembering and forgetting by which they scrambled through their school lessons. The study of biology, physiology, anatomy, and of the subjects of the later years, opens up a new intellectual field to such students. They have to learn to co-ordinate their hands and eyes with the task imposed upon their memories, to distinguish between fact and theory, to cultivate interest in what they see and hear, and to begin to use their own judgement in matters that are not concrete. I might put these thoughts in the words of that distinguished surgeon and great thinker Sir James Paget, whose lectures it was my privilege to attend at St. Bartholomew's Hospital. He said in his last address to medical students, "A man must cultivate the power of careful observation and of cautious thinking." A medical student cannot begin too soon to cultivate this power of cautious thinking, and I believe that by the medium of biology, even better than by other sciences, the teacher can instigate and stimulate the power of cautious thinking.

This may be the most important object of the course in biology, but it is not the only one. It seems to me that, before passing on to courses of study in human anatomy and physiology, some introductory course of training in biological nomenclature and methods is absolutely necessary. We must remember that most of the students who come to us have never used a scalpel or a microscope, have never seen a heart or a brain in situ, have never been accustomed to verify the facts they are taught by reference to objective nature, and are quite ignorant of the use and meaning of many words which in the second year are in daily use. For such students the training that is given by the lectures and laboratory work on the structure and histology of such types as the frog and earthworm is invaluable. He learns for the first time to verify the facts of anatomy by dissection; he learns to use the scalpel, forceps and scissors; he learns to manipulate the microscope and magnifying glass, and he becomes familiar with the meaning of many words and expressions which he is obliged to understand if he is to profit by the subsequent medical courses.

There is another direction in which the course in biology may be made of great value to the future medical man. It may be urged, and perhaps with some justice, that the kind of training of hand and mind that I have already mentioned, can be acquired by the courses in anatomy and physiology. It can, but with much greater difficulty both for the student and the teacher. Moreover if this training is left to anatomists and physiologists, the courses in these subjects must be either lengthened or greatly simplified. Further, there are some things that may be of immense value for the medical man which can and should be taught in the biological course and cannot, under ordinary circumstances, be dealt with at any later stage in the medical curriculum. In his address to the International Medical Congress in 1881, the late Professor Huxley said:

> Historically the connexion of medical science with the biological sciences and the full extent and intimacy of that connexion are only now beginning to be apparent.

Again:

> It is a peculiarity of the physical sciences that they are independent in proportion as they are imperfect, and it is only as they advance that the bonds which really unite them all become apparent.

I do not think that Huxley himself would have ventured to predict how rapidly the advance of knowledge would reveal the bonds that unite biology to the medical sciences. We have seen since 1881 the inception and rapid growth of medical protozoology and of medical entomology, and we have witnessed great advances in our knowledge of animal parasites and of the laws of heredity derived from biological research. All of these form a series of most important links with medical science. There is one time, and only one time, in the career of the medical student when the nature of these links between medicine and biology can be indicated, and that is in the course of his biological studies during the first year. With the time and opportunities at our disposal, it is, of course, impossible to deal adequately with any of these links, but a great deal can be done, by some reference in the biological course to all these later developments of the subject, to stimulate interest and to assist materially in future private study.

REFORM OF ZOOLOGICAL TEACHING.

With these three ideals in mind as to the aim of the course in biology, let me now consider how the course can be arranged so as to attain them as far as possible.

There was a period not very long ago in the history of medical education when the course in the zoological part of biology consisted in the study of the anatomy and development of a large number of animal "types" as they were called, and the detailed knowledge of these types that was given by the teachers and expected by the examiners left little time for any study of general biological problems or reference to the applications of biology to the medical sciences. This "type" system, as I may call it, had some advantages in the early days of its existence, for at least it provided a good training in accurate observation; but as time went on and the textbooks, illustrations, and notebooks increased and improved, it led too much to the method of "cram"—students tended to neglect their lectures, to commit passages from the textbooks to memory, and, worse still, to scamp their dissections in order to copy the diagrams. The first step in the reform, then, must be a reduction in the number of "types" of which a detailed knowledge of structure is required. But we cannot entirely abolish the type system, and a general knowledge of the anatomy of such forms as the frog, the earthworm, and hydra, should be given as an introduction to the study of animal structure, as a training in anatomical method and as a means of cultivating objective study.

For another purpose there should be given some lectures and laboratory work on an Elasmobranch fish and on a Mammal, but I think that the detailed knowledge of the whole anatomy of these vertebrates which is sometimes expected of students should not be required. I imagine that the dogfish was first introduced into the first M.B. biology schedule for the purpose of assisting the student to understand the complex anatomy of the human head and neck, and I believe that it has admirably served this purpose. To the student who begins his anatomy without some previous knowledge of the lower vertebrates, the distribution of the cranial nerves and of the larger arteries and their relation to skeletal structure is a chaos without interest or meaning, and the facts have simply to be committed to memory. A study of these parts in the dogfish does give an intelligent student the invaluable savour of interest and explanation. While, therefore, careful instruction should be given on the heart and arterial system, on the brain and cranial nerves, on the visceral arches and their relations, and also on the kidneys, there are many details of the structure of the dogfish which might well be omitted.

The same remarks apply to the Mammal. I think we give too much time at present to the details of the anatomy of the rabbit, time which could be far more profitably spent on other matters. In the study of the rabbit, stress should be laid on its essential mammalian characters, on the structure of the heart and aortic arches, the brain and cranial nerves, the mammalian characters of the vertebral column, pectoral and pelvic girdles, limbs and teeth, on the reno-reproductive system, on early stages of development and on the formation of the placenta. Such a study, I believe, is really a very great assistance to the student in the understanding of the human anatomy which he is taught in the second year, and it is also an introduction to the method of comparative anatomy which may be of immense value to him by stimulating scientific thought and indicating the importance of anatomical investigation.

In dealing with the three vertebrate animals just referred to, some lectures must be devoted to the question of the fertilization of the ovum and its segmentation, to the formation of the germ-layers, and to some of the elementary facts about the development of the organs. I regard this part of the course as one of the most essential, because it is the only time in the career of the medical student when the first principles of comparative embryology can be taught and illustrated by actual specimens or preparations of the early stages of development. Facilities for adequate laboratory work may vary in different schools, but at least the early stages of the development of the frog and the first three days of the development of the chick from the beginning of incubation can be demonstrated. In well appointed laboratories preparations can be shown of the formation of the polar bodies, of the fertilization of the ovum, of the blastula and gastrula stages, sections of the later stages of the frog and bird, and some preparations of the development of the mammal. In the later stages of his career the medical student has to learn something about human development—that is to say, about the development of one of the most highly organized genera in the animal kingdom—and it is only by learning some of these first principles of embryology in his first year that he can study intelligently the development of man.

In dealing with some selected examples of the protozoa we introduce the student to a field of thought which is probably quite new to him, and we have to try to meet the difficulties inherent in things of microscopic size and, apparently, of the simplest structure. But these things also bring him into contact with the fundamental phenomena of things that are alive, with protoplasm, which Huxley so aptly called "the physical basis of life"; with the essential features of nucleus and cytoplasm; with the function of sex and with the problem of death. When he has recovered from his first impression that amoeba is "the simplest living organism" and begins to realize the complexity and instability of all vital processes, and reaches the conclusion that there is no animal or living part of an animal that can be correctly described as simple, the time has come when reference should be made to some of the fundamental problems of biology. This may be the only time in his medical career when his attention will be directed to such questions as vitalism, the origin of sex, the cell theory in relation to the protozoa, the theory of epigenesis, and other problems of biology that are still controversial.

I have a strong conviction, which I venture to submit to your consideration, that some acquaintance with these fundamental problems should be a part of the equipment of every medical man. I do not suggest that it is possible to deal at all adequately with any one of them in the course of biology, but a few words in a lecture stating the problems and an impartial explanation of the current views concerning them often leads to habits of private study and contemplation which is of lifelong interest. There is no part of the whole course of biology in which the attention of the class can be more firmly held than that which deals with these important matters of controversy, and there is no better opportunity than this for the teacher to use his powers to stimulate in each student the habit of cautious thinking, which is undoubtedly one of the best results of a good medical education.

During the many years' experience I have had as a teacher of biology I have heard many criticisms of our course from eminent representatives of the medical profession. What is the use, it has been said, of teaching the medical student about the appendages of a crayfish or the foramina on the skull of a dogfish, or the course of the alimentary canal of an earthworm, or the structure of a rabbit's skull? With the many and increasing number of subjects that have to be taught to render a man proficient in his profession, it is waste of time to make him learn things in his first year which have no bearing on his professional work.

I have always felt that there is some justice in these criticisms, that too much detailed knowledge is taught in some of the schools, and that examiners in biology give more respect than they should do to a mere recitation of facts that have been committed to memory. I am inclined to think, also, that what I may call the schedule system has stereotyped the course in such a way as to check any tendency there may be to meet new needs as they arise. Many of the teachers of biology would, I am sure, be only too glad to vary the course from year to year in order to call attention to the new investigations of biological science which have a direct bearing upon medicine; but we are hide-bound by the schedules, which were in some cases drawn up and fixed for the students of ten or twenty years ago. I think we ought to make it an essential part of the course to give some instruction in those lines of advance which bind more closely biological and medical science.

Let me give a few examples to illustrate my meaning.

At the time when most of our schedules were drawn up very little attention was paid to the question of the relation of insects to disease, with the result that the medical student as a rule passed through his course in zoology without gaining any knowledge of the characters of an insect, or of the way in which it may carry the germs of disease. Anything of the nature of a course of lectures on medical entomology is out of the question at this stage, but in two or three lectures a great deal can be done to clear away the fog of complete ignorance of insect life. There are many ways in which this part of the subject could be illustrated. In the biology course at Manchester I have, for some years past, given a short account of the structure and life-history of the house-fly (*Musca domestica*) and for comparison have demonstrated the difference between the house-fly and the stable-fly (*Stomoxys calcitrans*). A few words of explanation of the different ways in which these two insects—so much alike to the naked eye and yet so different in important respects—may carry infection are quite sufficient to convince the medical student that he is learning something that has a direct bearing on his professional work. At any rate, I believe that none of my old students will tell their patients that the house-flies begin to bite in September.

There is another direction in which these bonds that link the sciences together should be illustrated. In dealing with the protozoa some reference should be made to the systematic position and life-history of the malaria organism, of the trypanosomata, and of the endamoebae of the human intestine. It is not necessary nor desirable that an attempt should be made to deal fully with these organisms. That should be left to the later stages in the departments of pathology or public health, but some reference to them in the first year should be made in order to clear the mind as to the relation between the two sciences.

There are many other subjects of the same kind that might be dealt with if time permitted, such as the story of ankylostoma, the miner's worm, the life history of bilharzia, the life history of the human cestodes, an outline of modern researches on heredity, and the zoological position and special characters of man.

I do not suggest that all these subjects can be included in a schedule which is to be rigidly adhered to, on the principle of "no more and no less," but I think the teachers in the schools should be encouraged in some way to indicate to the students more definitely than they have done in the past the bonds that bind together the sciences of the first year with those of the later years of their medical career. I would plead also for a greater freedom for the teacher, so that he may vary the course from year to year in certain directions, according to his discretion and personal qualifications, in order that the course, by experiment and by experience, may be improved and widened in accordance with the needs of the times.

It may seem to some who have heard me call attention to the various subjects which it seems desirable to include in the Zoological Section of the course in biology in order to make it useful to the medical student as an introduction to his medical studies in later years, that such a course would be unwieldy and cumbersome; but I have not included anything which practical experience has not shown can be dealt with in a six months' course, provided that the teacher has some control over the examination. It may be difficult to attain to an ideal course under any circumstances, but the difficulty is infinitely greater in those cases in which the examiners have no personal knowledge of the examinees, nor of the courses they have attended. Still, notwithstanding these difficulties I think the course in many medical schools could be greatly improved in quality and rendered less rigid than it has now become.

What is wanted, it seems to me, is to widen the basis of the course, to make it less an effort of memory of details than it is at present, and more an introduction to a wide field of scientific thought, to awaken interest and to encourage discussion, to stimulate inquiry and to cultivate the "habit of cautious thinking." It is true that the medical student forgets many facts and details learnt in the biology course; that is inevitable, but it is not a peculiarity of this particular course. Very few medical men, I take it, would like to sit again for a second M.B. examination without previous revision. The facts in themselves do not matter much: they are, as it were, the scaffolding which enables the structure of a medical education to be built up; and if they have performed their function of giving strength and purpose to the design as a whole, they can be discarded.

BOTANY IN MEDICAL EDUCATION.

Many of the remarks I have made about the zoological part of biology apply with equal force to the botanical part. The time has long gone by when a knowledge of the herbs of the fields and woods was a necessary part of a medical man's education. This link, which in former times bound botany with medical science, has broken, but there are other links which become stronger every year as our knowledge of the sciences advances. If it is one of the objects of the course in biology to impart some knowledge of the vital processes, of the actions and reactions of protoplasm, and the essential character of that unit of protoplasm which we call the cell, a course from which all reference to the vegetable kingdom is excluded would be almost grotesque. Whether it would be possible to shorten the botanical course by the omission of some parts that are not strictly relevant to the objects we have in view I do not feel competent to say, but from what I know of the courses in botany in the English medical schools I feel very strongly that the substitution of a preliminary course of human anatomy for a part of the course in botany, would not be a gain from the educational point of view. The study of the organisms that lie on the vegetable side of the imaginary line that divides the animal from the vegetable kingdom—the yeasts, the bacteria, the fungi and the lower algae—is so intimately connected with the more advanced studies in cellular and chemical pathology that it forms an almost essential part of the medical curriculum. Vegetable cytology and the evolution of the sexual phenomena of plants are invaluable to the student as illustrative of biological principles, and I would venture to say that the few lessons that are given on the structure of flowering plants and of seeds and fruits do not accomplish more than is required for the needs of any well educated man. But, as an introduction to the experimental methods of physiology, this part of biology provides, perhaps, the most useful assistance to medical education. Botany lends itself to this method more readily than zoology does, and there can be no doubt that the general preparation of the medical student for his second year studies would appreciably suffer if this part of his education were omitted.

The general sketch I have given in this address of the ideals we are endeavouring to attain in our course of biology indicates, I think, quite clearly that the six months, or in some cases a little more than six months, that is allotted to the preliminary science studies of the medical student cannot profitably be curtailed. I am aware of the perfectly justifiable demand that there is for more time to be devoted to the ever widening sciences of pathology and chemical physiology, for more time for clinical instruction in the wards, and for more time for special courses in medicine and surgery. The five years' study of a medical student is not enough to enable him to grasp all the branches of the tree of knowledge that it is desirable or even necessary for him to have in his hands as a qualified man. But if the period of study cannot be increased, and if the curriculum is to be reconstructed, I do most urgently plead that the scientific basis of the whole structure be not narrowed or constricted. The more the medical man has to learn, the wider his outlook becomes, the greater the burden of knowledge and experience he has to bear, the more reliant will he be on both the spirit and the substance which he has acquired in his scientific training during the first year.

II.—ANATOMY.

BY

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Conservator of Museum and Hunterian Professor, Royal College of Surgeons of England.

Is there really anything radically wrong—something which cries out for instant amendment in our modern system of medical education? If there is anything seriously amiss, is it not a strange fact that no complaint comes from the individuals most concerned—medical students, newly fledged graduates who are facing the difficulties of practice for the first time, nor even from the great public? It is from the teachers, not from the taught, that the cry for reformation emanates. The fifteen specialists who make up a teaching medical staff complain because a young brain cannot absorb in five years the extent of knowledge and ripeness of judgement which they have mastered in a collective period of three hundred years. The physician, the surgeon, the obstetrician, the eye surgeon, the ear surgeon, the skin physician, the neurologist, the orthopaedic surgeon, the pathologist, the bacteriologist, the pharmacologist, the teacher of hygiene, the physiologist, the biochemist, and the anatomist, match their several repertories of knowledge with that of the candidate for qualification and hold up their hands aghast at the result of the comparison. My sympathies are entirely with the single head which is expected to hold so much. The problem we have to face in this year of grace 1920 is not how to improve the education of the medical student but how we are to educate and reform his teachers.

You may say: get rid of specialization; pick your professors from the best equipped general practitioners. You cannot do that without arresting the progress of medicine; every profitable step forwards we have ever been able to take we owe to men who have specialized in some department of knowledge. Without specialization there can be no progress. No man is fit to profess or teach any branch of knowledge unless he has a first-hand experience of his special branch, and is not only capable of adding to its stock of knowledge, but of showing his pupils how improvements can be wrought. The medical teacher must be a specialist, and no measure that we can take will prevent the increase of specialism as time goes on. The specialist teacher we must have, but we must also have the general practitioner. I cannot foresee a time when less than ninety out of every hundred of medical men must be able to recognize and treat every one of the bodily ailments which afflict mankind. The real problem we have to solve is how a staff of specialist teachers is to produce an army of effective medical practitioners.

Is it too much to expect every medical teacher to keep his professional knowledge in such a state that, if called upon, he could resume or assume the rôle of general practitioner? I do not think it is. That is and can be the only guide a teacher has as to what he must expect his pupils to know. Whether it has been my fortune or misfortune I will not attempt to decide, but I have always been so situated that it might have been necessary for me to take up general practice as a means of livelihood; there was no financial sacrifice in that condition, for, like most of my teaching colleagues, I stood to gain rather than to lose by an exchange. I believe I have gained in every way in keeping up my knowledge of general medicine, and I care not who he may be—the teacher who does not keep himself in touch with his profession handicaps himself as well as those entrusted to him as pupils. With a reformation in the medical teacher of this kind we should probably hear less of that failing of the distinguished specialist whose vision is limited to his own speciality—be it physiology or surgery. In short, I hold that no man is fit to teach medical students unless he himself is a qualified practitioner and maintains his knowledge in a state which would permit him to ply his real vocation. If there is to be a compulsory training for the medical practitioner why not also a compulsory training for the medical teacher? Is it too much to expect that he should be able to scrape a bare pass in the examination papers which his colleagues set for students? At great medical schools every teaching anatomist and physiologist should have to hold occasional clinical appointments up to their 35th year.

There is another matter which lies close to the core of all our difficulties concerning medical education. It is this: Every teacher is, or at least should be, a researcher. He wishes to devote his energies in all his years, but particularly his earlier ones, to his chosen subject. His legitimate ambition is to raise a school of research students. His department is run for the increase and improvement of his own particular branch of knowledge. And yet I think most teachers will agree that in a class of 100 students there may be one—not likely more than one—promising recruit, and yet it is for the needs of the one and not of the ninety-nine that the department is run. This is a narrow, and I think mistaken, outlook on the part of many of our most distinguished teachers. If the teacher applies himself to meet the needs of the ninety-nine who are to practise medicine generally or some special department, he will not fail to waken the latent qualities of the promising research student. For the qualities which make a student an instrument of research cannot be bred in him if they have not been born in him. Here, again, I say the need of reform lies with the teacher.

One other matter which needs reform is the scope of our textbooks. There was a time when a student's textbook could be a complete repository of all the known facts relating to any particular subject. It was an encyclopaedia to which teachers and taught referred if they desired to ascertain the extent of knowledge on any particular subject. Our standard textbooks still strive to serve as works of reference for the research as well as for the pass student. The time has come when a clear distinction must be drawn between the student's textbook and the work of reference. As time goes on the difference between them must become greater and greater. The greatest sinners in this respect are the anatomists and physiologists; their textbooks could be reduced by half, with an improvement in the education of the man who is to practise general medicine.

What, then, are the essentials which must be mastered by the student before he passes into practice? No one can answer this question who has not watched a general practitioner make his diagnosis, apply his treatment, and watch the result in a hundred consecutive cases. I will not ask how far the practitioner does draw on the stock of knowledge learned while studying zoology, botany, physics, and inorganic chemistry as subjects preliminary to medicine. He probably puts into practice not a single idea or fact gained in his preliminary studies. Would I, then, exclude these subjects as unfit and improper for medical students? By no means! For the man who is to become a master workman in medicine, or for one who is to advance medicine in any way they are all of them necessary and invaluable, but they are not essential for the training of a highly qualified medical practitioner. They are for him matters of general education. The proper place of all these subjects is in the science, not in the medical, faculty of a university. How much of anatomy and physiology does the practitioner use? Let me speak of anatomy only. In seven cases out of ten he cannot make a diagnosis unless he knows the exact situation and action of the multitude of parts which make up the human body. But when we turn to our textbooks of anatomy we find that less than half of their pages is devoted to a study of the action and uses of parts. It was not so in our earlier textbooks; they were keys to the living body. Now textbooks are masses of description. Our examination papers are a wearisome repetition of "describe" this and "describe" that, as if a student could apply pure description in practice, or obtain any assistance from it in the diagnosis, treatment, or prevention of disease. Here again the reform must lie with the teachers. Anatomy could be made a living practical part of medicine if only the teacher would ask himself: Could this fact help me in diagnosis and treatment? If not, let that fact repose in the comfortable storage of his works of reference until it has proved its right to enter the currency of applied or applicable knowledge.

III.—PHYSICS.

BY

Professor Sir E. Rutherford, D.Sc., F.R.S.

I think all will agree that it is in the best interests of the medical profession that as large a proportion as possible of medical students should receive a sound training of honours standard in pure science before or during their more professional studies. Such a training in pure science seems to me to be indispensable for men who are to become the researchers and teachers of the future; for without a firm grasp of the essential principles which underlie the applications of science to medicine it will prove increasingly difficult to make progress in investigation, and to uphold the prestige of our country as a centre of medical research.

In several of the Universities, and notably in Oxford and Cambridge, the abler students are advised to take a degree in pure science before or during their professional studies, and there can be no doubt of the great advantage to the profession to have a regular supply of able men whose training in science has been sufficiently broad and deep to take full advantage of the subsequent teaching. In the future there will be an increasing demand for such men, both for medical teaching and research, and it is of the highest importance that the Universities should offer every facility to the medical student to obtain such a pure science training with a minimum waste of time and energy.

Such a preliminary training adds at least a year to the length of the course for the final professional degree, and this is a serious question in many cases from the financial as well as the time point of view. The importance of encouraging young men of ability to take their degree in pure science seems to me so great that it would be well to consider the possibility of assisting them financially in cases where this is a pressing need. In my opinion, the attention of all Universities should be drawn to the need of encouraging and assisting young men and women of talent to take a university degree in Science before their professional course. I am confident that the medical service and the State would gain a rich return for the additional work and expense involved.

The above remarks are meant to apply mainly to a relatively small group of able men and women who may be expected to be leaders in their profession, but it is not feasible for various reasons to expect the great majority of medical students to follow such a course. In the remarks that follow I shall deal mainly with the pressing question of the scientific education of the *average* medical student leading up to the first M.B. It is, I think, the general opinion among those who have to do with the teaching of medical students in our Universities for the first M.B. that the existing state of affairs is highly unsatisfactory and calls for drastic changes. A large fraction of the students entering the medical course to-day have received little or no scientific training in the schools, and in the course of two or three short terms in the University cannot hope to acquire more than a mere smattering of the elements of Physics, Chemistry, and Biology. In addition, there is the tendency of the student to regard their pure science work as of relatively little importance compared with their professional studies. As a consequence a large fraction of the students just manage to scrape through the very elementary qualifying examination, and it is on this foundation of sand that the edifice of medical instruction has to be reared. If Medicine is to be regarded as a scientific profession, it seems to me imperative that the student should acquire a much broader and clearer knowledge of the fundamental methods and principles of science than he gains to-day. This is at a time, too, when some of the medical profession, in order to gain room for the more professional subjects, seek to reduce the time, if not to reduce the standard, for the first M.B.

The best method of dealing with the present unsatisfactory situation seems to me to require a preliminary knowledge of science, and particularly of Physics and Chemistry, before admission as a medical student. This preliminary training can best be given in our Schools, where, instead of being concentrated in a brief course, two years or so may be devoted to gaining a sound knowledge of some branches of Physics and Chemistry. The element of time is, to my mind, of great importance in gaining a grasp of scientific principles, and for this the present University training is much too concentrated.

I do not think it desirable that the Schools should attempt to prepare students directly for the first M.B. examination, for in such a case the present state of affairs is likely to grow worse instead of better. There will be an inevitable tendency in many schools to cram the boys to ensure their success in the examination, and we cannot be sure that the necessary broad training in the fundamental principles will be given. The time of the schools could be fully occupied in giving sound instruction in the elements of Mechanics, Heat, Sound, and Light, with possibly a beginning in Electricity and Magnetism. In particular it is highly important that the elements of mechanics should be properly taught both in the classroom and in the laboratory.

On admission of the student to the University he would have had a sufficient preliminary training to take full advantage of the university instruction. This teaching should preferably be given by a man of high scientific standing with some knowledge of, and interest in, the application of Physics to Medicine. The course should not be a repetition of the subjects taught at school but devoted mainly to a consideration of the properties of Matter, Electricity and Magnetism, and possibly a consideration of the theory and use of optical instruments employed in the medical profession. Under properties of matter, special attention should be directed to subjects like surface tension, diffusion, osmosis, etc., which are of special importance in physiological processes. A sound knowledge of the elements of Electricity seems to me essential, for not only is it of direct practical importance in several branches of the profession, but electrical ideas tend to become of increasing importance in the explanation of underlying phenomena. The aims of this course would be not to require a knowledge of a multitude of facts but to give the student a clear understanding of the fundamental ideas of the subject and of their application in Medicine.

It is of importance that a course of this kind should be given by a teacher of standing; the lectures should be illustrated as fully as possible by experiments and every endeavour made to excite the interest if not the enthusiasm of the student in the subjects that are treated. By a combination of the Schools and the Universities along the general lines that have been indicated I think it would be possible to ensure that the average medical student gains a clear idea of the essential principles of science. If a similar course were followed in Chemistry, I am confident that we would soon see a substantial improvement in the standard of the student for the first M.B.

This would at once help to improve the efficiency of the medical teaching—for example, in Physiology—and in this way we may hope to turn out a better qualified and more scientific product than is the case at present.

What I have said above refers particularly to Physics and Chemistry. The case of Biology is somewhat different, for it presupposes a reasonable knowledge of Physics and Chemistry. It is not likely that our schools would be capable for some time to come to provide good instruction in all these subjects. It may be desirable for these reasons that the Biology for the first M.B. should be taught by the Universities as at present.

As regards Physics, it may ultimately prove desirable to give in addition a short course of Medical Physics at a later period of the medical curriculum—for example, in the third year. At this stage, the student is in a better position to realize the importance of Physics in his more professional studies, and is likely to regard the subject more seriously than in his first year. Such a course would be analogous in some respects to the course of Biochemistry which is given to medical students in Cambridge in their third year.

In the suggestions outlined in this paper, it may appear to some that I have been unduly insistent on the necessity of a sound training in the fundamentals of science. I am sure, however, that all those who have reflected on this subject and have the interests of their profession at heart will agree that this is a prime necessity if we hope to raise the standard of the profession. Much can be done if the medical teaching is reared on a sound basis of scientific principle, but without it the energy and enthusiasm of the medical teacher is largely wasted.

IV.—THE RELATION OF THE PRELIMINARY SCIENCE TEACHING TO PATHOLOGY IN THE MEDICAL CURRICULUM.

BY

J. LORRAIN SMITH, M.A., M.D.Edin., F.R.S.,

Professor of Pathology, University of Edinburgh.

THE relation of the training in preliminary science to that required in pathology in the medical curriculum is of interest because pathology is in many respects a bridge between the earlier and the later stages.

Pathology is anatomical and physiological: it deals with structure and function: in its purview the whole field of abnormalities is included. Without physics and chemistry the development of pathology would be practically impossible. To them the pathologist must resort when he would obtain conceptions and methods for the accurate measurement of living processes. To measure chemical or physical change in the organism is the first step towards a scientific interpretation of the living process.

The student who would become trained in pathology must therefore have a complete knowledge of the elementary principles of physics and chemistry. These sciences serve as an introduction to the whole curriculum, and the courses in these subjects should familiarize the student with fundamental laws and principles on which the whole structure of experimental science is built. The subjects which are taken up during the preliminary period are the foundation for all the later work. It is hopeless to escape from empiricism in medical teaching and practice if we do not take the precaution of beginning the course by a study of physics and chemistry. In the demand for a clear and sufficient introduction to fundamental scientific ideas pathology merely emphasizes the claim which is made by all other branches of medicine.

The courses in chemistry and physics may well be overtaken to some extent at school, and therefore prior to the medical curriculum. But however we may deal with the general elementary introduction to science, there must remain in the curriculum the chemistry and physics which have direct relation to medicine. This form of chemistry and physics cannot be described as preliminary science. It is the detailed and special study of chemical and physical changes in the substances which are found in relation to metabolism. Physiology, pathology, pharmacology, medicine—each and all constantly require on the part of the student detailed knowledge of the intimate chemistry of metabolism.

Hitherto it has been the practice of the medical schools to include in the courses of physiology, pathology, etc., the chemical instruction required by the particular subject. Recently, however, the plan has been introduced in various schools of giving courses in biochemistry which deal with these problems from the point of view of the chemist. Such courses are valued especially because they give instruction in these metabolic processes in their relation to general chemistry. This the biochemist can teach with a freedom and impressiveness which are of great value in conveying knowledge to the student, and the task of giving instruction of this type is handed over to the biochemist by his grateful colleagues. It is true that it is not the chemical process in itself that is the chief interest to the student of medicine, but the chemical process in relation to the activity of the organ concerned in its production. To take an example: the relation to each other of the various substances which appear in the breaking down of molecules of fat is at the same time a chemical problem and a problem in the physiology of nutrition. Chemical knowledge of the process is the basis on which the study of the process of nutrition rests. It is therefore a natural and appropriate subject for the chemical course, and yet it is doubtful if it can be successfully taught in the preliminary period of the curriculum. It is better that the problems of physiological and pathological chemistry should be taught in relation to the courses of physiology and pathology. It is difficult for the student to realize the bearing of the chemical teaching until he has become familiar with the process in the body, for the understanding of which such knowledge is required. To study the process and its chemistry together is the ideal which we should attempt to reach. Hence we should continue the study of chemistry throughout the curriculum. It should at the beginning have place as a preliminary science; but it should continue to be studied in the later years in its application to the interpretation of normal and abnormal organic processes.

How much chemistry should be taught is a question naturally raised at this point. The end to be kept in view is defined by what I have already said. The chemistry of the introductory period, inorganic and organic, must be continuous with and preparatory to all that is required later to understand the teaching of the biochemist when he deals with the chemical changes in metabolism. It would, indeed, seem natural therefore that the direction of the whole teaching should be in the hands of the biochemist. He should begin in the first year by supplementing, if necessary, the general chemical teaching which the students have received at school, and he should extend the work into the sections of organic chemistry and biochemistry which deal with the physiology and pathology of metabolism. It will be necessary for a chemist with such wide responsibility to continue his teaching through several, and possibly through all, the five years of the curriculum. By the unity and continuity of chemical study which would be secured by such an arrangement the student would acquire at each stage the capacity to apply chemical methods of study and interpretation.

A similar arrangement would form an equally appropriate method in the instruction to be given in physics. The argument need not be repeated in detail. An introduction to general elementary physics should be given, and this may be obtained wholly or partly in school before entry on the medical curriculum. As the curriculum proceeds in physiology, pathology, general surgery, the special surgery of the eye, the ear, the application of physical methods in medicine, there arises the necessity for special teaching in light, sound, electricity, heat, *x* rays, radio-activity, etc. As in the case of chemistry, the teaching of physics in relation to the organism is of interest to the student of medicine primarily because of the organic process with which the physical change is associated; but just as we do not propose to leave the teaching of biochemistry to the physiologist, pathologist, physician, and surgeon, so we should commit the teaching of physics to a biophysicist. Unity and continuity is required as in chemistry. In neither case should there be by this arrangement any additional burden placed on the student. The greatest burden which is put upon him by the present curriculum is that of useless knowledge. Time is wasted if spent on studies the interest of which is allowed to lapse at the end of a particular course or after passing a particular examination.

The extended teaching which I have proposed would go far to prevent the neglect of the fundamental sciences which takes place under the more haphazard arrangements now in existence. The teachers responsible for the whole course would easily realize what is required at each stage of the curriculum.

The same argument applies, and with still more force, to the study of biology. Pathology, like other branches of medicine, is a form of applied biology. We are too apt to think of animal biology in a restricted sense, as the science of the normal organism. The science has developed its teaching chiefly in the form of morphological description of structure. It is the anatomical or morphological comparison of various types of animal structure that has constituted a large part of the teaching of animal biology. This forms the introduction to animal biology for the medical student. The normal human organism is studied in detail in the courses of human anatomy and physiology, and it is on a basis of the knowledge gathered in these three courses that the student begins his study of pathology.

In the study of disease the student has to learn the meaning of abnormal structure and function, and in this he has to work out conceptions which the study of the normal may not have brought into prominence. The development of the organism is studied in normal embryology; but in pathology this becomes the basis and the exposition of congenital disease and maldevelopment. To work out the meaning of maldevelopment we have to make use of the laws of heredity and the transmission of structural or functional characters from parent to offspring, and behind the history of the organism and the history of its structural and functional inheritance lies the problem of growth—the nature of growth and the regulation of it as it is seen in cell growth, organ growth, the growth of the body as a whole. In pathological processes in the body growth is disturbed. Sometimes it is diminished, at other times it is excessive; often the growth which results from pathological conditions is partly beneficial and partly harmful. We have to deal with growth associated with pathological irritants—growth associated with hypertrophy in gland or muscle where there is call for increased work; growth which is of the nature of tumour and which assumes a variety of uncontrolled forms partaking of malignancy and revealing absence of the ordinary regulative factors. Disease may be said in general to lead to destruction and disorganization of the tissues which it attacks. The disorganization may be followed by recovery, in the stages of which the disturbed structure is reorganized or restored more or less completely. To follow the process of destruction or recovery much important study must be directed to the nexus of the various organs with each other in the unity of life.

The margin of function and structure which each organ provides beyond that which is demanded by the bare necessity of bodily activity provides the field within which disease works. When this margin is cut down a point is reached at which the liver or the kidney or the lung or some other organ becomes inadequate for the continuance of life, even in the imperfect and limited forms which we may observe in the stages of chronic disease.

Enough has been said to show that the study of disease cannot be taken far without involving the application of biology and the demand for biological investigation. To interpret the functional value of diseased organs requires constant reference to the structural and functional development of the body. Pathological problems are, in a sense, highly specialized, but again we can escape from empiricism in dealing with them only when we give them shape by relating them to general biology and the general study of the development and organization of the body, and of the origin and correlation of the various organs of which the body is composed.

Pathology will be strengthened and simplified in its teaching if the biologist who gave the students their introduction to the general science also continues the teaching in relation to fundamental problems of pathology.

In general my plea is that the present curriculum is wasteful of the students' time because it gives what may be called a general introduction to the sciences but leaves it to the later teachers or the students themselves to apply the principles and methods of these sciences in the various branches of medicine. Whereas a continuity of teaching would concentrate intellectual effort and would thereby attain with much more certainty the standard of work which the curriculum is designed to reach. We must also remember that the student of medicine should be trained in criticism, and for this all-important part of his training the earlier sciences must assume a considerable part of the responsibility. To be a good practitioner of medicine requires that the doctor must possess not only technical knowledge and skill but also a broad, sympathetic, tolerant conception of life. To secure this nothing could be better than critical reflection on the fundamental conceptions by which the phenomena of life are interpreted.

V.—CHEMISTRY.

BY
ARTHUR SMITHELLS, C.M.G., F.R.S.,
Professor of Chemistry, University of Leeds.

It is natural for anyone who is seriously engaged in teaching chemistry to medical students to ask himself repeatedly what is really required of him by the interests, if not by the desires, of his pupils, and by the considered judgement of the leaders of the profession. If to-day we who are concerned with the physical sciences look round medicine and compare the state of things with that which the older among us can easily remember, we cannot fail to be struck by the greatly increased number and importance of the applications which are now being made of physics and chemistry to advance the art of healing. Modern physiology alone has been brought to such a condition that for its full comprehension a really sound and substantial knowledge of chemistry of university standard is quite indispensable. Much the same might be said of other branches of medical study. If all the apparent claims had to be satisfied a very strong case could be made out for increasing the time that a medical student should spend in a preliminary study of what we call the pure sciences.

But the matter must be viewed from another standpoint. There is the curriculum to consider, with its ever-increasing burdens and competing claims, and there is also the actual practice of the art. The scope of medicine is indeed so vast that there must always be at the end of a student's curriculum many things left unlearnt, which, had time and opportunity allowed of their acquisition, would have been all for his good. We must therefore agree upon a less allowance than we could desire, and the question really is not how much can you teach that will be useful, but what is the least that is indispensable.

Some chemistry, everyone agrees, is quite indispensable for the medical man. The crudest facts of the science, such as the difference between acids and alkalis, the general character, method of preparation and nomenclature of a variety of salts and of a few organic compounds, a little knowledge of chemical formulae, chemical testing, the bare outline of quantitative analysis—this sort of thing, which is as necessary to a medical student entering upon the territory of physiology, pathology and the pharmacopoeia, as a few phrases are to a traveller entering a foreign country, everyone agrees is indispensable. It can be picked up very quickly by anyone of moderate intelligence, just as the foreign phrases can; it is not of necessity a serious mental exercise or intellectual outfit, and it would seem to be a matter of little importance when or where it was acquired.

The teaching of chemistry conceived in this spirit is, I need hardly say, not very exhilarating either to teachers or students, but I am afraid it has largely prevailed. Some of us, perhaps most of us, have tried to do more—have tried to give something of the philosophy of our subject, to exhibit the power of scientific method, to instil some powers of chemical thinking. But we are apt to create alarm when we plead for more consideration for our subject.

I must confess, at the end of thirty-five years, that no part of my teaching seems in retrospect more unsatisfactory than that which has been spent upon medical students, though I have always taken the task seriously, have been greatly interested in medical studies, and have had the most amicable relations with medical students. The root cause of dissatisfaction is a feeling that I have been trying to convey knowledge for which, speaking generally, there has been no real heart either among the students or in the profession. There has seemed to be a prevailing opinion among them that the study of preliminary science was a penalty rather than a privilege, something to get done with, an obstacle to be passed before you could enter upon the highway of true professional study, not a foundation to be well and truly laid, to be retained and built upon, not something to be assimilated and incorporated with succeeding knowledge.

I cannot think that the mere phrase-book knowledge of chemistry will be deemed enough of chemical science even by the most strict censor of excess, and it is certainly far from satisfying the declared aspirations of those who ultimately control the whole of medical education. They lay stress upon a sound knowledge of the basic principles of science, a proper grasp of scientific method, and an attitude of mind which will disclose itself in a scientific spirit permeating all subsequent studies. I think it must be admitted that we who have been teaching science in universities have failed very decidedly to achieve this end, and that somehow or another we have gone wrong. The little regard that our work has earned is shown by the deliberate act of the profession in affirming that all that we have done can now be perfectly well done at school. This means, of course, that we have neither specialized our teaching effectively towards medicine nor given it any intellectual weight which makes it the sort of thing that can only be reasonably expected from a university. It will be said, of course, that I am mistaken; that the recent changes are due, not to the fact that our teaching has been so bad but that the school teaching of science is now so good. Personally I do not accept this consolation, and I am determined to confess that we have been at fault, yet equally determined to maintain that what we should do no school can be expected to do for the scientific training of the medical student.

No doubt those who have been trying to teach chemistry to medical students have been afflicted by the difficulties that are common to a great deal of teaching. They have been afflicted by an examination system in which teaching has often been divorced from examining. A certain tract and type of chemical knowledge has been marked out, and has acquired a character of orthodoxy. A conventional syllabus has been erected and the subject has been scheduled, with the inevitable results. The teacher is put in bonds, and one way or another, irrespective of his own views and methods, must prepare the student for the prescribed test as applied by any appointed outside person. The examination becomes the goal, the syllabus the beaten track, and the spirit of true study takes flight. The teacher may take infinite pains to be interesting, to exhibit the sway and power of scientific method, to whet the appetite by the great records of discovery, to show the junction of chemical science with physiology and hygiene and its participation in the progress of medicine, to instil some powers of scientific thinking; but no! here is the examination syllabus, last year's papers, and a little book by some examination expert, or here for the most desperate case is the crammer. Attend to these things, contrive not to disappoint the examiner of more than 50 or 60 per cent. of his professed expectations, and you will soon have done with science and can get to business. That, I think, is not an unfair view of the state of things which has largely prevailed.

I have sought again and again for a better way of engaging the interest of medical students in chemistry. I adhered for a long time to the belief that the conventional subject, if only properly presented, should secure their interest; but I think we professional teachers are very apt to go wrong by attributing to the average student the same sort of capacity for interest in abstract studies as we ourselves, by our very nature, possess. We are apt to suppose because we know how important are our wares, and how profoundly and enduringly our philosophy may benefit our students, that they will take what we offer on faith; whereas, as a matter of fact, the average student, with the career of a specialist in view, very naturally wants some very clear and direct evidence that what is claiming his time and attention is really to the point, and not merely something imposed by a sort of academic tradition.

Some years ago I decided to separate the medical students from others taking the elementary course of chemistry, with the object of altering the substance and form of the teaching as far as seemed legitimate towards bringing it into closer relation with matters of special concern to the student of medicine. The advantage was at once evident, but I have to confess to the great difficulty which I and my colleagues have experienced in detaching ourselves from the ancient conventions, in eliminating the really superfluous substance of the old established courses, both on the theoretical and practical sides, and in making time for a better study of the principles of chemistry in relation to topics of obvious interest and importance to this particular set of students. I think it remarkable that in those universities where the teachers are their own masters so far as examining is concerned, and where they are practically free to go their own way, so little has been done to introduce a directional element into the preliminary scientific studies of medical students. Happily there is now evidence of a considerable change. The simple truth is becoming more realized throughout all education that if you cannot interest you cannot teach; and another truth, not so simple and not so generally acknowledged, is being acted upon, namely, that it is both possible and legitimate to invest even elementary teaching with a topical character. I believe that it is by moving in this direction that we can make more of the chemistry in the medical curriculum, and I do not yet despair of seeing a course which will not appear to stand separated by a barrier from real professional studies, but will be welded to them in a way that will be sufficiently obvious to the student to engage more fully both his interest and his understanding. It is noteworthy that the University of Edinburgh has lately established a Chair of Chemistry in the interest of students of medicine. Professor Barger, who occupies the chair, has explained to me the general lines on which he is proceeding. If he is not here to speak for himself I shall read his letter, for it indicates, better than any words of mine could do, the kind of solution towards which I have been moving, and it gives promise of a development which I believe to be of the first importance.

Department of Medical Chemistry,
University of Edinburgh,
May 31st, 1920.

Dear Professor Smithells,

It is proposed that I should ultimately have under my control (directly or indirectly) the whole of the chemical teaching of medical students, including physiological and clinical chemistry, but for the present I am teaching only inorganic and organic chemistry to first year students and giving occasional more advanced lectures on special subjects. No previous knowledge of the subject is at present required from students entering my class, but in October, 1921, a new regulation comes into force which will demand from students coming to me an elementary knowledge of inorganic chemistry, at least up to the standard of the London Matriculation. This will enable me to raise the standard, in spite of the limited time given to the subject, and the provision of new laboratory accommodation will make possible a much needed reorganization of the practical work by substituting simple organic experiments for some of the qualitative analysis.

I lecture to first year students five days a week for forty-five minutes during twenty weeks from October to March. The students spend each week two periods of two hours in the laboratory, and hence devote 20 (5×2×2) = 180 hours to chemistry, with perhaps an average of one hour per day for private reading: total something like 300 hours. Most of their time during the winter is taken up by anatomy lectures and dissections, and they also do a *little* physics. Obviously it is not possible to do much in the time allotted to chemistry; at present I deal with oxygen, hydrogen, nitrogen, and carbon, and after about five weeks begin organic chemistry with three lectures per week, leaving two for inorganic. The total time given to organic chemistry is therefore nearly half. I have not found it possible to deal to any extent with physical chemistry, but in 1921 I hope to develop this by way of revising the inorganic chemistry taught in schools.

In my opinion it is most important to face realities and to have no illusions: before taking his degree the average medical student forgets most of the chemistry he learns in his first year. Of this I have convinced myself by (voluntary) oral examinations of fifth year students. The "half life period" of their chemical knowledge is perhaps one year. Hence I lay great stress on general principles, but mention little detail. In organic chemistry I insist very much on structural formulae, making the most of the quadrivalency of carbon, the trivalency of nitrogen, etc. I find they are sometimes inclined to think of acetic acid as $C_2H_4O_2$, but I insist that it is a methyl group joined to a carboxyl, methyl formic acid or carboxy methane, CH_3COOH, and hence $C_2H_4O_2$ only if they like to add up. A further circumstance compensating for the shortage of time is the fact that I lecture to medical students only. I can therefore [illegible] the metallurgy of copper, and can illustrate general principles by examples of medical importance. For instance, after showing the catalytic action of manganese dioxide in the preparation of oxygen, I at once [illegible] and later show [illegible] the decomposition [illegible] by means of finely divided silver and by [illegible] to make a base for [illegible], and [illegible] carbohydrates, and something of the proteins [illegible], but as little about benzene compounds [illegible] in reference to synthetic drugs [illegible] physiological chemistry. It [illegible] the best course of the few [illegible] that a [illegible] is the basis of [illegible] knowledge of the chemistry of the [illegible] than the preparation of ether or [illegible]. In [illegible] chemistry I teach only such simple quantitative estimations as the practitioner can do himself.

Now and then I make a slight departure from this very utilitarian programme by referring, for instance, to the carbon and nitrogen cycle in nature, the chemistry of photography, and a few other things of general interest. The interest of the students is at once aroused when they grasp that they are being taught with a view to their later professional studies, and they always respond to efforts to help them in this direction.

Yours very truly,
GEORGE BARGER.

It is certainly most desirable that medical students should be taught some chemistry at school. It is extremely difficult to do anything effective in a single year with students brought to the university at the age of 17 or 18 with not even a rudimentary knowledge of scientific facts and with their scientific faculty almost atrophied. In the space of a single academic year you really cannot retrieve and redress the neglect of the whole period of youth and adolescence. A purely classical boy usually remains for long completely bewildered on taking up scientific studies, though in time he might make up lost ground quickly.

Many medical students now coming to us have been taught chemistry at school, and in recent times the science teaching in schools has improved remarkably. I should be sorry indeed to do any injustice to it, but I think a great deal of misunderstanding exists as to the actual state of things. It is still the case, for example, that the vast majority of medical students coming to the University of Leeds do not possess anything like the knowledge and grasp of chemistry which, so far as I can understand, is avowedly desired as a minimum by those who lay down the laws of medical study. A sound knowledge of elementary facts and elementary principles, the capacity to carry out neatly and intelligently simple practical exercises, is expected from school teaching, but even this is yet only achieved in a minority of the students with whom I have to deal, and I think that with the most moderate estimate of what is desirable for the medical student it will long remain the case that a year of university study must be provided.

I look upon the intensive study of science in school years with great distrust, based upon the painful experience of having had to deal much with students who arrive at the university in that worst possible plight of having a large mass of undigested knowledge and a feeling (which so far as facts are concerned may be largely warranted) that all you have to tell them they have heard before. I am certain that I have made more mistakes by putting new students to work which was really beyond their capacity than by constraining some unwilling ones to take a course which they deemed beneath their powers. There is, moreover, another thing which must be considered, namely, that a year in a university atmosphere, and even a first year course, given by a man whose whole mind and experience have been devoted to his science, ought to do something towards producing a maturity of thought, a breadth of scientific outlook, and a general intellectual stimulus that cannot easily be impressed on school boys in the environment of school. I am one of those who believe that beginners require most of all the influence of the most experienced teachers. There may seem some arrogance in making this kind of claim, and I have heard it derided. But I am content to be in the same camp with Sir Ernest Rutherford, who has expressed himself in the same sense, and with other teachers of great experience with whom I have discussed the subject.

Whilst I hold these views, I freely admit that if students coming from school are placed in the hands of a young and inexperienced teacher, and are taken perfunctorily through the routine that has been so long customary—if that is all we do, no complaint can be made on our part should it be thought fit to relegate the whole of the preliminary science teaching to the schools, to be made there as good as is possible within the obvious limitations.

It may be that some grouping of medical students and differentiation in the scientific course will become necessary, and that for a section of them the basic sciences will have to be restricted to a good deal less than the ideal. At the same time, for others a more thorough study of those sciences may be prescribed, and, by their combination with physiology and possibly other of the more professional studies, a science degree course may become normally an accompaniment, partly preceding and partly including what are now marked off as the medical studies proper.

Whatever is done in relation to the quantity of chemical teaching of medical students I am convinced that its quality may be greatly improved. I do not think, judging from my intercourse with medical men, which I am glad to say has been extensive, that as a whole they would say that, apart from what I call the phrase-book knowledge, their chemistry had been much either of an inspiration or a tool. I do not think that they are often in possession of a live and available knowledge of even the fundamental principles of chemical science, and I know that many of them regret this in their inability to keep in satisfactory touch with the abundant and profoundly important discoveries now being made on the borderland of medicine and the exact sciences. So far as the discipline of science and the scientific attitude are concerned, it is of course admitted that these are not the monopoly of what are called the pure sciences. Teaching throughout the curriculum, imbued with a scientific spirit, must have a powerful formative influence on habits of mind. It is not on such general educational grounds that I would make any special or exclusive claim for chemistry. But I am confident that if within the time at our disposal we make the most of our opportunities, we can give the future medical man a better endowment of chemical knowledge and understanding that he will be glad to have and that he will be able to use to greater advantage—knowledge that will remain and be available for use with the same confidence at least as is felt in the case of a sound knowledge of grammar or arithmetic.

I feel that it is incumbent on us who are charged with the teaching to justify fully the retention of chemistry as an integral part of the university medical curriculum.

[Subsequent proceedings will be published in a later issue.]

SIR CLIFFORD ALLBUTT'S PORTRAIT.

PRESENTATION CEREMONY AT CAMBRIDGE.

AT the conclusion of the President's address the company adjourned to King's College, where a reception was held, and the portrait of the President was presented to him by Sir NORMAN MOORE, Bt., President of the Royal College of Physicians of London.

The portrait, by Sir William Orpen, R.A., was on view in King's College Hall.

Dr. J. A. MACDONALD, in calling upon Sir Norman Moore to present the portrait, said that it had been subscribed for by an immense number of members of the medical profession.

Sir NORMAN MOORE, in making the presentation, said it was his duty to present the very distinguished Regius Professor of Physic of Cambridge University with his own portrait. They had ascertained by direct observation how great was the man to whom they were going to give it. If they had not had the advantage of personal observation which they had enjoyed that day, and particularly in the Senate House that evening, they could ascertain that by comparing Sir Clifford with others who had been professors of physic at Cambridge, and see if he came up to the highest standard which they had attained. The professorship of physic in Cambridge University was founded about the year 1540, and the first man of great distinction to occupy the post was Ralph Winterton, a member of the College in which they were then assembled. The history of Ralph Winterton was interesting. He had been in the College for several years, and had tried many varieties of study—the Greek poets, theology (he translated into English Rexilius's *Eternity*), and so on, but in spite of that he fell into a deep melancholy. He consulted his friend, Dr. John Collins, who was then Regius Professor of Physic, and Dr. Collins told him he needed a change of occupation, and suggested the study of medicine. Ralph Winterton took that advice, and after a short time produced a book on medicine; it received a large amount of praise from competent critics. It indicated the change in taste which had taken place since that time when he said that Sir Clifford Allbutt had also published a book—his celebrated *System of Medicine*, in eleven volumes. His predecessor's—Ralph Winterton's—book was a translation of the aphorisms of Hippocrates into Greek verse. (Laughter.) That received the commendation, in Latin verse, of twenty Fellows of King's College. It received praise in Latin, Greek, and Hebrew. Sir Norman Moore went on to speak of Winterton's successor, Francis Glisson, who succeeded to the professorship in 1636, and was the author of the book on the anatomy of the liver which had caused Glisson's name to be known to every medical student and practitioner in all European countries. After describing these and other occupants of the Chair, Sir Norman Moore said that he had tried, with the greatest difficulty, to give them the opportunity of comparing Sir Clifford Allbutt with these earlier professors, and they would agree that Sir Clifford was deserving of a place in the very front rank, and side by side with the great ones of the past. He had been a devoted servant of the profession of medicine. In the midst of hard professional work he had not hesitated to turn aside to give such lectures as those he gave to the Royal College of Physicians on Greek and Roman medicine. He had never spared himself if he could add to the knowledge of medicine, or stimulate anybody else to add to that knowledge. Dr. Macdonald had explained how the portrait had been subscribed. It was not the product of a particular Association, however distinguished, or a particular College or set of men. It was the gift of the whole medical profession. Supposing Sir Clifford Allbutt had been living in the time of Rembrandt, Rembrandt would have been employed to paint him. Rembrandt had passed away, so far as any man could pass away who had left behind such records of his art. But, Rembrandt not being available, they got the best portrait painter of men who was to be found in our time. Sir William Orpen had executed the portrait with great skill, and he (Sir Norman Moore) had great pleasure in presenting it, in the name of the subscribers, to its subject.

Sir CLIFFORD ALLBUTT, in receiving the portrait, said that for some while past he had been wondering in his rather perplexed mind how he could put into any form of words the thankfulness that he felt for the kindness he had received that evening. They had just done him great honour in the Senate House, and now they were doing still more to set him upon what he might call the summit of a very long and happy life. When the Treasurer, Dr. Haslip, always his kind friend, got up in Council and proposed that his portrait should be presented to him by the profession in general—not merely by the Association—he was surprised and rather startled. But he was a little encouraged by the reception which was given to the idea in the Council itself, and afterwards he was overwhelmed by the way in which it was received by the profession outside. When he came to read the list of names of the subscribers, and saw in the list some of his devoted friends for many years, and also the names of a great many people whom he had never met in the world, he became more and more perplexed to accommodate his own reckoning to theirs. He was not going beyond his brief if he accepted this gift—which was given to them for their home—in his wife's name as well as in his own; and on the part of both Lady Allbutt and himself he wanted to thank them all.

British Medical Journal.

SATURDAY, JULY 3RD, 1920.

THE PRESIDENTIAL ADDRESS.

THE circumstances in which the British Medical Association resumes its annual meetings for scientific discussion could hardly be more fortunate. After an interval of six years necessitated by the war it meets in one of the two older universities in England—a home of learning and peace—and one that in the forty years since it last entertained the Association has exerted the greatest influence on the progress of medical science. Not only is the Association happy in its place, but exceptionally so in its President, who, though the doyen of British medicine, has the mental elasticity that comes of constant touch with the young and active. His experience as President of the Association is also unique, for he has held office since 1914, and gave the address at the Clinical Meeting of the Association in London last year.

As he annotates in his characteristically charming address the events of current medicine the President firmly impresses certain guiding principles, and points the way by imagination—that most desirable trait in a medical leader—to further fields of work. After rapidly sketching the origin of universities, he naturally, and with a graceful but hardly necessary apology for turning to his last, discusses the influence of university education on the professions, and especially on medicine. A university is not merely a technical college; it should first mould the student's character and give him a training in clear thinking, and then impart particular knowledge and experience. Just as some forty years ago the Regius Professor of Medicine at Oxford, Sir Henry Acland, threw out a wise warning against early specialization, so now, when the danger is more urgent, the Regius Professor at Cambridge denounces narrow specialization as a mark of narrow culture among primitive nations. Again like Sir Henry Acland, he is opposed, on the grounds of insufficient clinical material, to the establishment of a complete medical school at Cambridge, but points out that much good can be done by linking up the various parts of the curriculum; for example, normal can be usefully correlated with disordered function by showing patients, say, with dropsy or visceral disease, to students in the course of their physiological, biochemical, or pharmacological studies.

Much indeed as Medicine owes to other sciences, the debt is not all on one side, and this address shows how the needs of practical medicine have stimulated scientific research, and thus opened up paths of investigation which might otherwise have long remained unexplored. A high value is placed on the graduation thesis as a means of education, especially as a stimulus to independent thought and action; in fact to allow graduation to a candidate who has not prepared for it a work of original research is unworthy of a university. This may seem a hard saying, but it is at any rate the result of experience, which the young don also, if tradition be true, hailing from Cambridge, was pleased to call "that greatly overrated property."

The much worn and therefore difficult subject of research is treated with a light but sure touch, and the scope and applications of its two main branches—that of natural observation and that of artificial experiment—are picturesquely defined. In connexion with the observational method the Regius Professor first has a playful dig at his surgical colleagues of the past and then pays a generous tribute to Sir James Mackenzie's work both in the past and now at the St. Andrews Institute; incidentally he recalls to our minds the efforts of the Collective Investigation Committee, founded by the late Sir George Humphry, his predecessor in the presidential chair at the Cambridge meeting in 1880, and while referring to the reasons for its want of success shows a sympathetic knowledge of the difficulties inherent in this form of research. In making a vigorous appeal for the further recognition of comparative pathology he rather ruefully points to Sir James Paget's address on this subject forty years ago and to his own remarks in his address in medicine to the annual meeting (1888) in Glasgow, as the voices of those crying in the wilderness, and to their failure to attract the help, so obviously needed, for the establishment of an Institute of Comparative Pathology which at a relatively small initial cost might curtail or prevent the heavy yearly loss from the destruction wrought by insects in forestry and agriculture. In his address to the Section of Medical Education Sir George Newman (p. 11) makes the same plea, but from a slightly different point of view—that of the sounder training of the medical student in biology, of which, as he truly says, medicine is a part.

The President's rather stern comments on psychoanalysis and its practice recall his sane and satirical strictures on the vagaries of gynaecologists in his Goulstonian lectures of 1884 on the visceral neuroses; coming from one with a broad outlook that is ever on the alert to utilize the germ of good in any new form of treatment, they must arrest the attention of the medical profession.

His remarks on the doubtful future of general practice in this country and on the changes that he has watched during his professional lifetime will be read with interest. The scheme of "group-medicine" now springing up in the United States of America, which he describes with approval, is probably inspired largely by the phenomenal success of the Mayo clinic, but it is a logical outcome in an organized form of the widely recognized need for team work. It is probable that some similar method will eventually be tried in this country. The advantages are fairly obvious, but the method is attended by difficulties and pitfalls of its own. Its commercial aspects, and its effect on the financial interests of the profession at large, will require the most careful consideration.

In conclusion it is a matter for regret that the President should modestly have suppressed his remarks on the future of voluntary hospitals and that he has denied the profession any detailed criticism of the recent report of the Consultative Council.

ANIMAL AND PLANT PATHOLOGY.

IN his address the President recurred to a subject to which he had called the attention of the Association over thirty years ago. His appeal to pathologists to make their field of study as wide as possible, embracing not only animals other than man,[1] but plants, will be read at page 5, and opinion to-day is perhaps more ready to accept its force than when Sir James Paget delivered the address to the Pathological Section at the meeting of the British Medical Association at Cambridge in 1880.[2] That address was entitled "Elemental Pathology," and was marked by the width and depth of thought and the suavity of manner characteristic of him. He began by saying that every pathologist must have felt that the greatest difficulty in his study was in the manifold complexity of the body in which it is pursued. After dwelling on this a little he went on to say: "I have long and often felt that, in these difficulties, we might gain help from studying the consequences of injury and disease in the structure of plants. For although these, too, are complex, minute and hard to analyse, yet they are less so than are the structures of any but the very lowest animals," and, as he went on to show, much slower. Having described the physiology of the fall of the leaf, he passed on to consider the response to injury in plants and animals, and showed the fundamental similarity. He spoke of canker of trees and said much of galls, but the reader of the address to-day is struck by the relatively little reference he made to infection, for galls are to be reckoned rather as due to infestation. As Paget pointed out, the reaction to injury in animals is largely influenced by the presence of blood vessels and nerves, but in both animals and plants the injured cells are killed, while the uninjured undifferentiated cells of the part proliferate and form a callus, by which means the repair is effected. The blood vessels in the neighbourhood of the injury are stopped by thrombosis in animals, and the water-conducting vessels in trees are occluded by deposits of gum and resin and by the ingrowth of cells (tylosis), both processes being calculated to limit infection.

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[1] It is worthy of note that Sir Henry Acland, when addressing the Section of Public Health at the meeting of the Association in Cambridge in 1880, said that his conviction that the study of the pathology of domestic animals could not be separated from that of man had led him to advocate the foundation in the University of Oxford of a chair in general and comparative pathology.

The injury, whether in animals or plants, exposes the part to the invasion of saprophytic or lowly virulent organisms causing a localized lesion, or, if a more virulent type is admitted, a general poisoning leading to death by septicaemia in animals and to progressive rot in trees.

Repair is seldom a *restitutio ad integrum.* In animals and plants scars remain to testify to the skill of the surgeon or of the woodcutter. Wound-repair wood is not the same as normal wood. Soft spongy wood is produced with derangement of the elements or hard compressed wood, corresponding to rarefying or sclerosing osteitis. Progressive rot is caused by a fungus (polyporus), the ravages of which only become visible when the fruit bodies are produced; bracket-like projections from the trunk appear, and tell a tale of woe, sometimes confirmed by the fall of the branch or trunk owing to the complete destruction of wood that has taken place. Foreign or necrotic bodies are encysted in animals by connective tissue, in plants by cork cells, layers of which are formed to limit an infection or lock up dead matter.

Plants suffer also from spreading infectious diseases comparable to epidemics. Potato blight rivals influenza in the extent of the damage and destruction it produces. It caused the Irish famine of 1845. The existence of the fungus *Phytophthera infestans,* to which it is due, is ensured by means of carriers—that is to say, infected tubers from which the fungus grows up into the young shoots, its presence unsuspected, until black blotches covered with a whitish powder of spore-bearing hyphae or conidia appear on the leaves. These spores are spread by wind, animals, or insects, and give rise in the presence of moisture to biciliate zoospores, which gain entrance to the leaves of adjacent plants by the stomata; they send out hyphae between the cells of the host and push haustoria or sucking organs into the neighbouring cells in search of food. The potato tubers become infected by the falling spores which penetrate their substance through the lenticels or modified stomata. Exanthemata of plants is a term we would hardly like to use had it not been the title of a book published in 1833 by F. Unger of Vienna to draw attention to the many forms of leaf parasite described under the names of aecidium, puccinia, and uredo. The immediate interest of these parasites lies in the fact that they furnish an example of an infectious disease with an intermediate host comparable to malaria and sleeping sickness. The life-history is very complicated, including sexual phases indicated by fusion of nuclei which recall the story of the haematozoa of malaria. The history of "wheat rust" will serve as an example. The first appearance of the fungus is indicated in the summer by lines and streaks on the leaves from which a yellow powder is shed. From its apparently burning effect on the leaf this was called uredo and the yellow spores uredospores. As the summer advances the yellow patches become purple brown with spores of the same colour. These were called Puccinia, for the Italian Puccini first described them. They were supposed to be mildews, but it was found that they were resting spores (teleutospores) of the uredo. Now it had been surmised for some time that the barberry tree had an evil influence on wheat, and in 1760 it was made illegal in the State of Massachusetts to plant barberry trees near a wheatfield. The leaves of the barberry tree often bear a leaf parasite called aecidium which it was proved by experiment could be produced by an injection with the spores of puccinia, thus showing that conditions to which the terms uredo, puccinia, and aecidium had been applied were in fact cycles in the life of the same parasite.

A comparison of tumour formations in animals and plants is, at the present time, impossible from want of knowledge of the cause of animal tumours, apart from the infective granulomata; the pathology of the swellings of plants is, perhaps, better known than that of animals. Bacteria are responsible for many tumours, such as those of the olive and the root tumours of leguminosae, where they seem to be symbiotic, for they fix the nitrogen of the air for the ultimate benefit of their host. A fleshy growth in the stems of young fruit trees known as "crown gall" has been proved to be caused by a *Bacillus tumefaciens,* further study of which on the Paris daisy and other plants has disclosed metastatic growths and embryonic tissues, giving rise to aborted leaves and blossoms, to which the term "cancer in plants" has been applied. How far the term is justified future research only can tell, but the observations are of great interest.

Organisms allied to mycetozoa cause ulcerating tumours (finger-toes) on the roots of cruciferous plants, cabbage and others; and a similar parasite produces a lobulated swelling on the stems of bird's eye (*Veronica chaemydrys*). It originates from the infection of a young cell of the growing stem by a spore liberated from a globular case. As the plant cell divides portions of the amoebiform parasite is carried into the new cell, so that a mass of soft-celled tissue is produced consisting of infected and non-infected cells. The several centres of infection in the stem fuse into a lobulated swelling. The life of the parasite is passed in the enormously enlarged cells; maturity is reached when the spore case is complete; then the tumour dies and liberates the spore cases into the soil.

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[2] BRITISH MEDICAL JOURNAL, 1880, vol. i, p. 611: *Essays and Addresses,* London, 1902, p. 240.

These discursive remarks may afford some indication of the wide field awaiting the Institute of Comparative Pathology which Sir Clifford Allbutt hopes to see established in Cambridge. But such an institute must be liberally endowed; not only must it provide well-equipped laboratories and ample space for field experiments, but a career must be opened up for young men of proved capacity, that they may be induced to devote their lives to this subject, so important to medicine, to veterinary medicine, to agriculture, and to horticulture.

ANNUAL MEETING NOTES.

The Eighty-eighth Annual Meeting of the British Medical Association is in progress in Cambridge this week. The address given by Sir Clifford Allbutt, as President, on Tuesday evening, is published in full at page 1. As the Sections did not begin their work until Wednesday, it is not possible to give any account of their proceedings in this issue, save that it has been thought that members would be interested to read the address of Sir George Newman, President of the Section of Medical Education, and the opening papers in the discussion in that Section on "Preliminary Scientific Education in the Medical Curriculum." There are twelve Sections, of which five—Medicine, Surgery, Neurology and Psychiatry, Pathology and Bacteriology, and Physiology and Pharmacology—meet on three days, and the remainder on one day only. The Sections meet in the morning, and in the afternoon of each day a large number of demonstrations, including some cinematograph displays, have been arranged by Professors Sir G. S. Woodhead and W. E. Dixon, F.R.S.

The annual meeting of the Representative Body began on Friday, June 25th, and it has been found possible to publish reports of its proceedings on that day and on Saturday and Monday in the SUPPLEMENT for this week. Prefixed to them are some Current Notes on certain matters of particular interest discussed during the first two days.

1880—1920.

When the British Medical Association held its last meeting in Cambridge it had for its President Dr. Humphry, then Professor of Anatomy, afterwards Sir George Murray Humphry, and Professor of Surgery. The Association had met once before in Cambridge—its thirty-second Annual Meeting—when it had Dr. George Paget, Professor of Physic, for its President. At the forty-eighth meeting, in 1880, Sir George Paget was President of the Section of Medicine, and his brother James was President of the Section of Pathology.

With regard to the conduct of business in the scientific sections a sentence in the formal manner of forty years ago seems worthy to be quoted: "Good management on the part of the several Presidents, a rigid adherence to the rule of limitation of time allowed to readers of papers and to the speakers, and no small forbearance on all sides, as well as diligence and method in the conduct of the business by the Secretaries, will be requisite to make good use of the material at their disposal, and to prevent dissatisfaction at the omissions of parts of the programme, which must in some instances be made." We do not know how far these injunctions were carried out, but the files of the BRITISH MEDICAL JOURNAL of that date are proof that a great deal of important scientific business was transacted in the eight sections. In the Section of Surgery a discussion was opened on the treatment of wounds by Professor Lister, who opened also a discussion in the Section of Pathology on micro-organisms and their relation to disease. In the Section of Public Medicine there was a discussion on the general working of the public health administration in Great Britain and Ireland, introduced by its president, Sir Henry Acland; before the discussion terminated the Section adopted a resolution demanding a comprehensive inquiry into the working of the Public Health Act (1875). In the Section of Psychology the influence of alcohol on the causation of insanity was discussed. One of the secretaries of the Section of Physiology was the late Dr. W. H. Gaskell, whose son is one of the secretaries of the meeting this week. It is recorded that the preparations for the annual meeting were "taken up in good spirit by the university and the town, as well as by the medical profession, and the colleges opened their doors with their usual hospitality." Thus history repeats itself.

In the course of his eloquent presidential address Sir George Humphry traced through past centuries the causes of the long neglect of medicine at Cambridge, answering his own question how it came about that Cambridge "more than any university in the world, with perhaps one exception, banished medicine from its walls, and the men of medicine from its schools." Though amends could never be made for past shortcomings he looked forward to a great future, most potent for good in connexion with medicine at Cambridge. "The opportunity is open not simply to influence the few, but to leaven the large masses of the profession. The opportunity lies in a progressive advance and expansion of the teaching, among which I include examining . . . In proportion as Cambridge avails herself of this opportunity, and in that proportion only, will her influence on medicine be great and good." He insisted again and again that upon the high character, soundness, and thoroughness of her teaching the Cambridge of the future must stand. "Cambridge must give that kind of teaching which will engender the broader and clearer appreciation of principles which will render the study of medicine a medium for the cultivation of intellect as well as a means of passing into a profession and earning a livelihood. It must show the scientific to be the natural and necessary adjunct to the practical, and must weave the two together into the woof of a high educational system." In Sir George Humphry practice and precept went hand in hand, and he himself did much towards the realization of his ideal. How much has been done in the same direction under the inspiration of Sir Clifford Allbutt during his twenty-eight years' tenure of the Regius Professorship of Physic is known throughout the profession.

In 1880, as this year, the University of Cambridge granted the honorary degree of LL.D. to a number of distinguished members of the profession. The list in 1880 consisted of Dr. C. E. Brown-Séquard of Paris, who, according to Professor Gley, was the first to conceive the idea of internal secretions; Professor Donders, one of the three great men who founded the science of ophthalmology—the others were William Bowman, who also received the honorary degree at this time, and von Graefe, who had died in 1870; Dr. S. D. Gross, the eminent surgeon of Philadelphia; Sir William Jenner, Bt., F.R.S.; Sir W. Gull, Bt., F.R.S.; Sir George Burrows, Bt., F.R.S.; the Rev. Samuel Haughton, F.R.S., of Dublin; Mr. Joseph Lister, F.R.S.; Dr. Denis O'Connor, who had presided over the annual meeting at Cork in the previous year; Mr. (afterwards Sir) John Simon, F.R.S., the first medical officer to the Local Government Board; and Dr. Andrew Wood, F.R.S.

DR. J. A. MACDONALD.

Every member of the British Medical Association who knows anything of its political and administrative work during the last fifteen years will learn with regret that Dr. J. A. Macdonald has decided not to seek re-election as Chairman of its Council, an office he has held during the last ten years. The opportunity now afforded to members of the Association to give him some tangible evidence of the esteem they feel for his character and achievements will be welcome. The debt they owe to Dr. Macdonald is very great. And the debt is due not from members of the Association alone: he has given time and energy to its service without stint because he looked upon it as the great voluntary organization of the profession well fitted to maintain its status and [illegible] professional, to increase its efficiency and extend its influence. He was concerned in the movement which in 1902 led to the reorganization of the constitution by the [illegible] of units (Divisions) sending representatives to a body which determines the policy of the Association. He was a member of the Representative Body from the beginning, and became its Chairman in 1908; in 1910 the Council elected him its Chairman. During all these years he has exercised a great and always wise influence in the councils of the Association. While ever ready to encourage or suggest vigorous action when a subject has been thoroughly examined and discussed, he has been a restraining influence when enthusiasm exceeded the dictates of prudence or tended to forget the fundamental principles he held it essential to observe. His influence is due to perspicuity of thought and a clear instinct for essentials. All will be glad to know that his services will continue to be at the disposal of the Association, but to those who in any capacity have been associated with him in the administrative affairs of the Association his withdrawal from the conspicuous position he has so ably filled is a matter of acute regret. As the Chairman of the Representative Body, in making the announcement to the meeting at Cambridge, well said, Dr. Macdonald's personality has counted for much. Everyone brought into contact with him learnt not only to admire him as a debater, chairman, and administrator, but to like him as a man. Readers who refer to what Dr. Garstang said will see that the members of the Council have taken the initiative in subscribing to a fund to present him with a testimonial as some recognition for the great work he has done for the Association during a critical period of transition, rudely interrupted by the war which threatened to throw the machinery out of action. That the Association has come through with reputation enhanced and influence increased is largely due to his wise guidance and prudent counsels.

"A CONCISE GUIDE."

THE Executive in Cambridge has presented to every member attending the Annual Meeting a copy of J. W. Clark's famous *Concise Guide to the Town and University of Cambridge*. Its author was a son of William Clark, Professor of Anatomy in the University, and lived the seventy-seven years of his life in Cambridge. He was Superintendent of the Museums of Zoology and Comparative Anatomy, and did a great deal for them and for the School of Biology. Afterwards he was Registrary, a term the University rather strangely applies not to the place, that is, the Registry, but to the person by whom its registers are kept. His biographer, Sir A. E. Shipley (who at the end of 1914 described in this JOURNAL the minor horrors of war), says of him: "J., as he was called, was always willing to place his unrivalled knowledge of college buildings at the disposal of friends." In his *Concise Guide* he did as much for all who care to take its ten walks through the colleges and the town. For this special British Medical Association edition Sir Clifford Allbutt has written an introduction, giving a brief sketch of the history of the medical school of Cambridge, with some reflections on the lessons of the past, the attainments of the present, and the needs of the future.

ANNUAL EXHIBITION.

THE exhibition of surgical instruments, foods, and drugs, was opened in the Cambridge Corn Exchange on Tuesday morning, June 29th. SIR CLIFFORD ALLBUTT, K.C.B., President of the Association, who was greeted with applause, said that it was his pleasure to declare the Exhibition open, and he trusted that everyone concerned would have a very successful time. An account of the exhibits will appear in later issues.

THE DUKE OF CONNAUGHT, F.R.C.S.

THE Duke of Connaught was admitted an honorary Fellow of the Royal College of Surgeons of England on [illegible], when he visited the College accompanied by his Equerry, Major Murray, and Colonel Sir Edward Worthington, K.C.V.O. He was received at the College by the President, Sir George Makins; the Vice-Presidents, Sir Anthony Bowlby and Sir John Bland-Sutton; and the Secretary, Mr. Cowell. The ceremony took place in the Council Room, where the members of the Council were assembled, with Lieutenant-General Sir John Goodwin, D.G.A.M.S., and Lieutenant-General Sir George Macdonogh, Adjutant General. The President referred to the association of His Royal Highness with the medical profession as Colonel-in-Chief of the Royal Army Medical Corps, and mentioned that King Edward, when Prince of Wales, was the first to become an honorary Fellow of the College, and that King George had also become an honorary Fellow when Prince of Wales. The Duke of Connaught, in reply, expressed his pleasure at becoming an honorary Fellow, and signed the roll. A visit was afterwards paid to the museum, where the President and Professor Arthur Keith, F.R.S., showed some of the specimens from the War Office collection

COMPARATIVE ANATOMY OF THE TEETH.

THE Museum of the Royal College of Surgeons has been enriched by a gift of the utmost value to all who are investigating the microscopic structure and comparative anatomy of teeth. The gift has been made by Sir Charles Tomes, F.R.S., and contains not only preparations made by himself in the course of a lifelong research but also those made by his celebrated father—the founder of scientific dental anatomy—the late Sir John Tomes, F.R.S. Although a great many of the microscopic specimens thus presented to the College of Surgeons have been used in the preparation of various memoirs published in the *Philosophical Transactions* and in the *Transactions* of the Odontological Society by the donor and his father, there are others which have not been described. The "Tomes" collection contains representative specimens drawn from all parts of the vertebrate kingdom, and is particularly rich in preparations showing the structure of the teeth in modern and in fossil fishes. The microscopic anatomy of mammalian teeth is very fully illustrated. Altogether there are over 1,300 preparations.

LARYNGOLOGY.

THE second annual summer congress of the Section of Laryngology of the Royal Society of Medicine took place last week. At the dinner at the Café Royal on June 24th, when Mr. Mark Hovell was in the chair, there was a large company of members and guests. After the loyal toast had been honoured Sir George Makins, G.C.M.G., P.R.C.S., proposed prosperity to the Section of Laryngology and the science it upholds. He had, he said, witnessed the rise of this specialty. The invention of the laryngoscope by Garcia was the starting point of progress. In 1881 the International Medical Congress first recognized laryngology as a subsection, and since then [illegible] had been introduced and the [illegible] limitations broken down. It was astonishing to look back on the change of attitude towards, for instance, carcinoma of the larynx. Another great step forward was the perfection of direct methods of examination, and the treatment of the accessory sinuses. He ended with a reminder of the need for specialists to keep in contact with the general surgeon and physician. The toast was acknowledged by Sir James Dundas-Grant, who expressed everyone's appreciation of what Sir George Makins had said. [illegible] the history of the Section, Sir James spoke of the success attending the summer congress. The toast of the guests was proposed by Sir StClair Thomson, who expressed his pride in belonging to a hospitable section. He mentioned those who, though invited, were unable to be present, and read a complimentary message to the Section and its secretary, Dr. Irwin Moore, from Sir John MacAlister. Sir StClair Thomson, taking up the point made by Sir George Makins, maintained that the general surgeons should bear in mind the need for reciprocity, for they had something to learn from, as well as to teach to, the laryngologists. He deplored the neglect of laryngology in medical education. The toast was responded to by Dr. J. J. Killeen, Chicago; Dr. Van Den Wildenburg, Belgium; Dr. Lemaitre, one of the five official representatives of otology in Paris; and Dr. Rodriquez of Madrid. The Chairman's health was proposed by Dr. Jobson Horne, and Mr. Mark Hovell briefly replied. A feature of the evening was the song by Mr. Gustav Garcia, who, though 83 years old, showed he had lost nothing of his hereditary art. He is the son of Manoel Garcia, and his own son also was present.

PLEURAL REFLEX SYNCOPE.

It has long been taught that syncope and death may arise from irritation of the pleura, even from so gentle a stimulus as irrigation of an empyema cavity. The experiences of war have taught us that the chances of an untoward happening from such reflexes are in reality very small. We know that a thoracotomy may be performed, the ribs spread apart, the lung handled as if it were intestine, and rents in it explored and sutured, with surprisingly little shock to the patient. Further, we know that Carrel-Dakin tubes may be placed in empyema cavities and frequent instillations be made. Bismuth can be injected into such cavities for the purpose of determining their size, position, and shape, and provided that the cavities are not overfilled no harm is done. All these experiences have engendered a certain contempt for the old doctrine of the danger of reflex syncope through the stimulation of the rich subpleural nerve plexus which pours its impulses into the vagus. To a certain extent this contempt is well-founded, but, lest any should suppose the old warnings are no more than old wives' tales, alarming little accidents from time to time occur. They usually pass unrecorded, but two cases recently reported in the French literature have a bearing on this point. Montaz[1] describes the case of a soldier wounded by a shell fragment in the right chest. The man presented signs of shock out of all proportion to the extent of the anatomical injury. The usual resuscitatory methods were of no avail, and operation was undertaken. Very little damage was found inside the chest; the entrance wound was excised and closed. A small piece of shell was known to be lodged in the rib "grille" behind, but was not sought, as it was believed to be doing no immediate harm. A little later, twelve hours after he was wounded, the patient died. At necropsy a piece of shell with sharp edges was found projecting by 1.5 cm. into the pleural cavity at the level of the sixth rib. Montaz ascribes death to vagus reflex from the irritation of the pleura by the shell fragment. He compares his case with one previously published by Pierry.[2] Here a patient with a chest wound of apparently no great severity died suddenly during a radioscopic examination. *Post mortem*, a medium sized haemopneumothorax was found, but the fourth rib was badly broken and the sharp fragments presented like needles to the surface of the lung. These two experiences, whilst falling short of absolute proof, support the belief that the pleural reflex is an entity not altogether to be forgotten.

The presentation of the testimonial to Sir John MacAlister will take place at the annual meeting of the Royal Society of Medicine on Wednesday, July 7th, at 4.30 o'clock.

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[1] Montaz R.: Du rôle des irritations localisées de la plèvre, etc. *Lyon Chir.*, 1919, 16, 159.

[2] Pierry: Mort subite par accident nerveux d'origine pleurale. *Lyon Méd.*, April, 1917

Medical Notes in Parliament.

Financial Position of Voluntary Hospitals.—On June 23rd Dr. Addison said that the financial position of hospitals in London had been receiving anxious consideration for some time. The Council of King Edward's Fund had decided to make an immediate distribution of £250,000 to meet the pressing needs of the hospitals in London. The question of the extent to which it might be necessary to supplement this grant from other sources and the best method of giving such further assistance as was necessary without discouraging voluntary subscription was under review; but the whole question involved many complex issues, and he was not at present in a position to make a statement. In reply to another question on the same day as to whether if grants from public money were made to voluntary hospitals they would be conditional on the appointment of representatives of the public to the governing bodies, Dr. Addison said that in the event of any grants being made from public funds for the assistance of the voluntary hospitals, such conditions would be attached to the grant as were necessary to secure that they were properly expended, but he did not think that the hon. member's suggestion would be effective for this purpose.

Motor Spirit Duty Revenue.—Mr. Neal informed Sir W. Joynson-Hicks that the quantity of imported motor spirit upon which the estimate of a flat rate duty of 1s. a gallon necessary to provide the income for a full year was based was an annual importation of 146,000,000 gallons. This estimate was derived from returns relating to the number of licences issued during 1919–20, and the quantity of duty-paying motor spirit imported for the year ended October 31st, 1919. Allowance was made for the estimated increase in the number of motor vehicles and the consequent increased consumption of petrol. Allowance was also made for the estimated revenue from existing licence duties on private motor vehicles and public service vehicles and from horse carriage and drivers' licences. No allowance was made for any system of licence duties on steam and electric vehicles nor for any schedule of duties in respect of vehicles on which no tax is at present payable.

Part-time Pension Medical Officers.—In reply to Captain Elliot, on June 22nd, the Home Secretary said that the Treasury had sanctioned an increase of remuneration for part-time medical officers.

Pensions for the Blind.—The money resolution to enable pensions to be paid to the blind at 50 years of age equivalent to those given to old-age pensioners at 70 came before the House of Commons in committee on June 25th. The provision is needed if the Government bill introduced by Dr. Addison some weeks ago is to be effective. Dr. Addison said that the age of 50 had been chosen as persons below that age were more or less trainable. The intention was to make an Exchequer grant of 50 per cent. towards the expenditure of local authorities for training purposes, and it was hoped that in a large number of cases contributions would thus be afforded for existing institutions. In a discussion which followed it was strongly urged that local authorities should be compelled to provide the training facilities. Mr. Baldwin, the Financial Secretary to the Treasury, said he could not hold out any hope that more money would be forthcoming from the Treasury, and it was pointed out that if members rejected the resolution the bill would be jeopardized. In these circumstances the motion was carried.

Ex-Service Men in Asylums.—Major Tryon, in answer to Mr. Hurd on June 28th, said his attention had not been called to a resolution of the National Council of Evangelical Free Churches as to the incarceration of ex-service men in pauper asylums. Any ex-service man suffering from certifiable insanity, who was confined in a county or borough asylum, was by special arrangement treated, not as a pauper lunatic but as a service patient, if his condition was a result of war duty. Thus he was entitled to all the privileges of a private patient, the entire cost of his maintenance and treatment being borne by the Ministry of Pensions. The Minister was satisfied it would not be in the interests of the men themselves, nor of their relatives, that they should be treated in special establishments. He was, however, taking steps to assure himself that the present arrangements were in all cases working satisfactorily.

Indian Medical Service Pensions. Mr. Montagu informed Colonel Yates, on June 28th, that he had received from the Government of India a telegram on the subject of an increase in the pensions of the widows, children and dependants of deceased officers of the Indian Army, the Indian Medical Service, and the Royal Indian Marine; it was now having his consideration.

Financial Position of Voluntary Hospitals. Lieut.-Colonel N. Raw asked the Minister of Health, on June 28th, if, having regard to the serious position of the voluntary hospitals throughout the country and the consequent prejudicial effect on the national health, he would consider the desirability of appointing a Select Committee of the House to consider what steps, if any, could be taken by Parliament to relieve this serious situation until the new scheme for health services was considered. Dr. Addison replied that he did not consider the appointment of a Select Committee was desirable at this stage.

Answers in Brief.

In reply to a question as to the average alcoholic strength, measured in proof spirit, of beer 1044 specific gravity in Great Britain, and 1051° specific gravity in Ireland, and of other alcoholic drinks at the strength authorized by the Central Control Boards (Liquor Traffic), Mr. McCurdy stated that the strengths varied with the extent to which fermentation has been carried. The averages, however, are approximately as follows: Beer (Great Britain) 8 per cent., (Ireland) 9 per cent.; cider, 7 per cent.; claret, 18 per cent.; burgundy, 22 per cent.; sherry, one variety 29 per cent., another variety 35 per cent.; port, 36 per cent.; champagne (estimated, no record of any actual test), 18 per cent.; whisky, rum, and gin, 50 per cent. as a minimum to 70 per cent. as a maximum.

The considered policy of the Government is to inform hunger strikers that they must face the consequences of their action.

An increase of 30 per cent. on house rents (exclusive of rates) would raise the index figure relating to the cost of living by about 3½ points. The expression "tenant" in the Rent Restriction Bill means any person to whom a house or part of a house is let furnished or unfurnished, but it does not include a lodger who has a right only to the use of the premises but no right of exclusive occupation.

The number of births registered in England and Wales during the first quarter of the present year was 271,082, as compared with 154,920 last year and with 217,414 in 1914.

The cost of an artificial limb supplied to fit amputations above the knee, as distinct from other classes of leg amputation, varies from £15 10s. to £25. No separate record is kept by the Ministry of Pensions of the number of artificial legs of this kind supplied by the Department.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

LEFT-HAND DRIVE AND CHAR-À-BANC PROBLEMS.

As regards the actual use of motor vehicles on the highway the two topics uppermost at the moment, and which concern medical men more or less directly, are what is called "the left-hand drive" and the appearance on our highways and byways in ever-increasing numbers of excessively wide char à-bancs with great overhang beyond the back axle for the sole purpose of enabling such vehicles to accommodate the maximum number of passengers on a single as distinct from a double-deck principle.

The rule of the road in this country from time immemorial has been such as to make it practically universal to drive from the seat on the right hand of the vehicle. But as the British rule of the road differs from that in America or in France, it follows that cars manufactured in America, in particular, are furnished with the driving seat on the left. Until quite recently, vehicles made in the United States for the British market were always fitted with special right-hand drives. But now what is called a mass-production car, the Continental-built Citroen, for example, which is now beginning to be exported to this country, is fitted with a left-hand drive. Thus the problem no longer wholly concerns the trade in American motor cars. Moreover, in a few cases cars figuring as British products, or at least marketed as from British works, have the left-hand drive for the simple reason that the engine and gear set are supplied from America.

Provided that it could be guaranteed that every user of a motor vehicle drove with care and judgement, I doubt if there would be any current agitation against the left-hand drive. Unhappily, however, it is impossible, especially at this period, to guarantee careful driving. Anyone who has had road experience in Wales, for example, where the miners use their cars alike to take them to and from their work and for pleasure, will be well aware that, in general, they lack what is called the road sense. In other districts other classes quite new to mechanical road travel and who, possibly, will never have the aptitude for driving, are taking to owning and using motor vehicles. In the majority of cases such new owners are acquiring machines with left-hand drives, for the simple reason that they seek the cheaper varieties of cars, notably those made from American designs, if not actually manufactured in the United States. Their presence on the road concerns none more than medical men, who have to drive at all hours of the four-and-twenty.

WHY THE BRITISH SITUATION IS UNIQUE.

In regard to the international aspect, I know no law in the United States of America that prohibits the use on American roads of an English car with right-hand drive. Nor, for that matter, do I know that any country on the Continent prohibits our using such vehicles provided they are re-registered for service on the Continent. On the other hand, there is no gainsaying that the quantity of such vehicles in use in America is utterly negligible in relation to the whole motoring movement there; while on the Continent the right-hand drive common in this country is likewise common among vehicles manufactured there. Thus there is no question of changing the national methods of driving on the Continent as there is here.

Both American and Continental roads have features in common which are lacking to our thoroughfares. Abroad the majority of the main roads are scientifically graded and go as directly from point to point as possible. Neither are they characterized by those hedges and such-like features which render our roads more or less picturesque arteries of traffic of continually varying gradients perpetually swerving in direction. Therefore it is practically impossible usefully to compare highway traffic conditions in this country with those that obtain abroad.

Nor is this all. In this country the proportion of vehicles which have left-hand drives is already very great, and is increasing every month in measure as the cheaper cars are being issued. Why they should not be made specially for our market with the right-hand drive in conformity with our hitherto universal practice, as was general before the war, is no mystery. In America, as in France, it is cheaper for the manufacturers of cars with left-hand drive to make the British public acquire them with that drive than it is to make a special right hand drive for such vehicles of their building as are to be sold in this country. In short, we are merely dealing with the proposition of the pocket interest of foreigners who are sending into or erecting in this country, in our time of impoverishment, articles which we can manufacture entirely. In regard to the Ford vehicle, which is partly manufactured and partly assembled over here, and which may be wholly manufactured here, the reason the left-hand drive is being used is that the output of the factory in this country is to be distributed between the home and some other markets, among the latter some where the left-hand drive is in vogue. If public opinion is willing to have it in this country, of course it makes for extra profit not to deviate from standard.

THE DOCTOR'S CASE.

Where the matter concerns the medical man is that he chiefly wants the cheaper varieties of car. I have not yet encountered any doctor who wants a left-hand driven car for its own sake. He merely accepts it because it is a type that suits him, because it is marketed at the price nearest to what he wishes to pay, and because he finds he can drive it. As a class, doctors are characterized by the discretion with which they drive, but that cannot be applied to motorists in general in the post-war period.

Obviously it will be a matter of very serious concern to medical men who have locked up their capital in acquiring cars with left-hand drives if the result of the Government inquiry now proceeding were to cause the prohibition of this form of car control. They are chiefly concerned with the case of the Ford as distinct from that of the Citroen, which has scarcely begun to be delivered in appreciable quantities in this country. As far as the Ford is concerned, the firm standardized the right-hand drive in this country for years before the war, therefore it can do so again. Rather than lose the goodwill of the medical profession, there is no gainsaying that, if the law should prohibit the use of such vehicles, the firm could supply right-hand drives for quite a small sum of money. But it would be a hardship if medical men were asked to part with even that in face of the many burdens they bear.

It would appear possible to recommend a middle course. Undoubtedly we must deal with cars as used by the public in general, of which the medical profession is a section. One form of drive should be common throughout the country. The right-hand drive has been used successfully from time immemorial, and is employed in connexion with horse-drawn vehicles and so forth. Therefore it is better to adhere to that, since the only logical alternative is to make it obsolete and call on owners of cars with the right-hand drive to have them converted to left-hand drives.

But public opinion would not tolerate that. Nor need it be necessary to compel doctors to spend money on having their left-hand driven cars transformed to the right-hand drive. On the contrary, a regulation might be introduced to the effect that henceforth no cars may be imported into, assembled, produced, or placed on the market for service in this country with left-hand drives; but that those which are in private ownership at the time of such a regulation may continue to be used. The matter could be checked by registration with the local police, so that there would be no opportunity to smuggle extra cars. Were that done every season would witness an amelioration of a state of affairs that ought never to have arisen, and five years should see the last of such cars off the roads. It is right to save the medical profession from an additional burden in these times of many heavy burdens. But it were wrong to attempt to increase a motor trader's profits at the expense of adding another risk to highway usage by permitting a continual increase in the number of vehicles used with left-hand drives. No country can compare with ours in the sheer variety of makes of cars on the road, and the majority have right-hand drive. Let it be had in mind that probably far more women and men of no road sense than medical men are owning and running cars with left-hand drives to-day. The former create the danger. The fact that the doctors of the country owning left-hand driven cars are no more dangerous on the road than those who own right-hand ones does not affect the major point. But, once embarked, a doctor's capital should be ensured to him. Medical men have not even requested that they should be furnished with left-hand drives. All that rests entirely with the manufacturers or assemblers who seek to make bigger profits and to save themselves trouble by offering medical men left-hand models of given type or nothing. The medical men in question have had no option but to take such cars as they are marketed. In nearly every case they are the only machines within the purse range of the individual buyer.

(To be continued.)

England and Wales.

GRANT TO LONDON HOSPITALS FROM KING EDWARD'S HOSPITAL FUND.

At a special meeting of King Edward's Hospital Fund, held on June 22nd, it was resolved, on the motion of the chairman (Lord Donoughmore), that an emergency distribution of £250,000 should be made out of available general funds to assist the London hospitals in their present need. Lord Donoughmore stated that the problems of the present debt of the hospitals and of their future maintenance arose partly from the difficulties into which the hospitals got during the war and partly from the diminution since the war of the subscribing power of their friends. If the urgent problem of the present debt were not dealt with the burden under which the hospitals laboured might prove to be too great to be borne. The quarter of a million which it was proposed to distribute in this emergency would be taken from the capital funds, and its distribution would diminish the amount of income hitherto available for annual grants. At the same time it would not provide anything like a complete solution of the hospital problem, but would have to be supplemented by efforts of kindred organizations, and notably by further support on the part of the general public. It must be remembered that the voluntary hospital problem was one for the whole country, but the present grant concerned London alone. Lord Burnham referred to the necessity of adequate support being given by the working people of London; their present contributions towards the maintenance of their hospitals amounted to 10 per cent. only, as against 75 per cent. contributed to local institutions by working people in some of the provincial towns. A message was read from His Majesty the King, patron of the Fund, cordially approving of the resolution and expressing the hope that other societies and public bodies, as well as private individuals, would join in the effort to meet the present needs of the London hospitals and thus ensure the continuance of the voluntary system.

SOUTHAMPTON MEDICAL SALARIES.

A combined meeting of members of the Southampton Division of the British Medical Association, Medico Political Union, Southampton Medical Society, Public Medical Service, Local Medical and Panel Committees, was held at the Royal South Hants and Southampton Hospital on June 23rd, and there was a large attendance. The meeting was called for the purpose of discussing the remuneration paid to public medical officials in the borough. Strong comment was made at the totally inadequate salaries paid to the medical officers working for the Southampton Borough Council, and it was unanimously decided to send a letter to the borough council, to the individual members of the council, and to the press, asking that the salaries of these officers should be increased by at least 50 per cent. The grounds for this request are briefly as follows: (1) The great depreciation in the value of money and the increased cost of living; (2) the increasing importance and responsibility of these officers' work; (3) fees in other branches of medical work have been raised from 50 to 100 per cent.; (4) Southampton lags behind many other councils in this respect; (5) the remuneration of officials in other professions has been raised; (6) the officers have no pensions to look forward to. The letter added that, owing to the increase in the number of junior posts in the public health service, only a small percentage of men can hope to reach the position of Principal Medical Officer of Health.

CENTRAL MIDWIVES BOARD.

At a meeting of the Central Midwives Board for England and Wales held on June 23rd, Sir Francis Champneys presiding, three midwives were struck off the roll. A defended case from South Shields was not proceeded with, the Board deciding on this course of action until the local supervising authority should send its officials, which it had abstained from doing because the Board does not defray travelling expenses.

The principal business dealt with in the afternoon comprised the consideration of a letter from the Ministry of Health enclosing for the observation of the Board a copy of the revised scale of fees which the Ministry proposes to prescribe for payments by local supervising authorities to doctors called in by midwives under Section 14 of the Midwives Act, 1918, and also a copy of the suggested alterations in Rules E 20 to 23 in order that the Board's rules may be brought more into conformity with the above section.

Correspondence.

VACCINAL CONDITION OF SMALL-POX CARRIERS.

SIR,—I trust I am not doing Dr. Millard an injustice if I interpret his letter under the above heading in your issue of June 19th as a plea for the discontinuance of infantile vaccination because outbreaks of small-pox have been traced to unrecognized mild cases in vaccinated persons, his object apparently being to ensure, as far as possible, that all cases shall be of such a degree of severity as to be unmistakable to the inexperienced observer. Unfortunately the cultivation of a severe type of small-pox would not attain this object, since the severest type of confluent small-pox may, by its very severity, lose those characteristics on which an inexperienced observer is accustomed to rely for diagnosis, and such cases have been watched to their inevitable end without arousing suspicion as to their real nature until secondary cases have arisen. Similarly haemorrhagic cases have been certified as dying from measles or blood poisoning, subsequent events only betraying the real cause of death.

As regards the mild cases to which Dr. Millard particularly refers, it is not, I think, generally appreciated that such cases not infrequently occur in unvaccinated persons, and for this very reason are liable to be mistaken for chicken pox. Thus, of 1,793 discrete cases in unvaccinated persons of which I have records 415 were of the very mildest type, and of these 192 were under ten years of age. The great majority of these occurred in epidemic periods—a fact which probably contributed materially to their recognition, and it is at least probable that a fair proportion would have passed unrecognized had they cropped up unexpectedly in a non-epidemic period.

Whilst unrecognized cases, mild or severe, have repeatedly given rise to outbreaks of small-pox in an imperfectly vaccinated community such as exists in this country, I have little doubt that similar cases occur without ill effects, and, though the proof of the occurrence of such cases is necessarily wanting, the possibility of their occurrence must be taken into consideration in estimating the advantages to the community of the present system of vaccination.

When Dr. Millard's ideal of an unprotected population is realized—which it may be in the not very distant future—I am afraid he will still find himself confronted with the unrecognized case, mild, moderate, or severe; and, since even in the best administered district circumstances must arise in which valuable time is lost before all contacts are traced and vaccinated, I trust he may never have cause to regret having assisted in casting aside the partial protection now afforded by the present imperfect system.—I am, etc.,

Gravesend, June 22nd. ARCHIBALD KIDD.

THE ARMY MEDICAL SERVICES IN THE WAR.

SIR,—After the well-deserved panegyrics bestowed by a past and the present Secretaries of State for War, at the dinner held on June 8th, upon the wonderful work of the Army Medical Services during the war, why were not the names of the three Director-Generals A.M.S., namely, Sir Alfred Keogh, Sir Arthur Sloggett and Sir John Goodwin, included amongst the recipients of peerages, baronetages, and pecuniary grants from the State so justly bestowed upon celebrated combatant officers? It cannot be urged in extenuation of this omission that these officers did not deserve these honours and emoluments, as the chronicle of their wonderful achievements as crystallized in your report of June 19th entirely negatives that. Is it that in peace the old evil spirit of indifference to the Medical Service is not completely exorcized, and that this, as many former concessions which have been obtained, can only be wrung from the War Lords at the "point of the bayonet"?

I have now completed fifty years in the Medical Services of the Volunteers, Militia, Territorials, and Regulars, and entirely agree that the War Lords most sympathetic to the medicals were Mr. Brodrick and Mr. Haldane.

Great discontent still exists amongst the Territorial medical officers anent their position during the recent war. In 1903 the Volunteer Senior Medical Officers' Association (of which I was chairman) obtained a number of concessions from Mr. Brodrick, and more in 1908 from Mr. Haldane. But one thing—namely, that we should have one of our own medical officers as our head at the War Office—was in each instance refused.

Recently I read in the BRITISH MEDICAL JOURNAL that this request made by a deputation to the present D.G.A.M.S. was again refused on the grounds of expense.

Finally, at the Trooping of the Colours and similar functions, why is no medical representative on the Staff present?—I am, etc.,

P. BROOME GILES,
Bletchley, Bucks, June 27th. Colonel A.M.S.(T.F.).

A BLIND ALLEY.

SIR,—The question of salary in regard to the work of assistant medical officers of health is a most important one, and for the vigorous support which the Association is giving to the demand for more adequate recognition in this direction most hearty gratitude is due. There are, however, other grievances, or at least disabilities, under which assistant medical officers labour, more especially those concerned mainly in school inspection work. These disabilities arise from the fact that all such posts are apparently still considered as merely stepping stones to others higher in the service, and therefore to require no higher status than that generally accorded to a young and inexperienced practitioner, who expects to be purely subordinate and to have little responsibility or opportunity of developing the work along his own lines. It must be recognized, however, that, as things are at present, a majority of those who take up school inspection work have little prospect of attaining any of the higher administrative posts, and if the work is to be performed adequately and with benefit to the community, sufficient attractions must be held out to induce capable men and women to take these posts and to hold them over a considerable period. Some appointments naturally must remain subordinate ones; it is only argued that all need not so continue.

At present tuberculosis officers, infant welfare officers (in some cases), and school dentists are given considerable independence in, and control over, their own department, but an assistant engaged mainly or entirely in school work is very frequently an utterly subordinate official lacking any opportunity of presenting or carrying through schemes for the better administration or development of his work, not permitted to attend the meetings of committees concerned, and unable to make any reports in his own name, or without the editing of the medical officer of health. The latter, as a rule a very busy man, with probably little practical experience of school work, does not take much interest in this branch; the one requirement is that the obligations entailed by the Ministry of Health shall be fulfilled with the minimum of expense. This generally entails for the assistant concerned unending drudgery at routine work with no time to pursue any branch of research, and very little for variation by work in other branches of public health work, even when the terms of the appointment promise such variations.

Were the inspectors of the Ministry of Health to make a point of interviewing the officer actually engaged in the practical carrying out of the work they come to inspect, they would receive much information of value to the efficiency of the service without in the least encouraging disloyalty to the chief administrative officer. Many of us feel that there is work of considerable interest and importance to be done in the school medical service. In rural districts the stationary nature of the population makes it possible to keep track of such cases as mild forms of congenital heart disease for years after they leave school, and the exceedingly interesting problems which even a moderate use of "intelligence tests" suggest form another fruitful field of research. At present, however, the handicaps are so great that there is little prospect of much useful work being done, and school inspection will continue to be very much a matter of the collection of unreliable statistics by people of mediocre abilities—the only type who can possibly be content to remain in such positions.

I enclose my card, but for obvious reasons sign myself merely

June 25th. "ONE OF THEM."

FUTURE PROVISION OF MEDICAL SERVICES.

SIR,—Dr. Dewar says that he has waited at least a fortnight to see what doctors are writing concerning the Report of the Medical Consultative Council. Surely one obvious reason for the silence of the profession is that they have been "broken to harness," and are now running under the whip of the Government with "the panel bit and bridle" in their mouths! Some occasionally try to kick over the traces, but most are content to go quietly as long as the quarterly cheque is paid fairly promptly; others quite enjoy the new experience, and have no desire to run wild again.

Now that a much larger scheme is in sight they know that it is useless to rebel, and therefore in course of time groups of doctors will willingly submit to Government team work.

It would be a waste of time to discuss the working of the panel system, for most intelligent people know that it has some advantages; but the disadvantages far exceed the advantages, especially with regard to the treatment received.

If the new scheme puts an end to the callous manner and lack of examination of the chest, throat, heart, and very often indeed the pulse, etc., then I would welcome a system which will make the work both interesting and encouraging to the doctor and satisfactory to the patient.

It is common knowledge that to try and get well from a serious illness through the channel of the Insurance Act has proved a failure, and this explains why so many panel patients prefer to pay "a proper doctor"!—I am, etc.,

Willesden Green, N.W., June [illegible]th. C. L. TRAVERS.

IN Vienna the death rate still considerably exceeds the birth rate. During the last week of April there were [illegible] births, excluding 68 infants born dead, and [illegible] deaths. During the last week of March Berlin had 1,062 deaths and 1,002 births, and London 2,701 births and 1,438 deaths.

Obituary.

WE have to record the death of another Crimean and Mutiny veteran, Assistant Surgeon ROBERT GRAVES BURTON, R.A.M.C. (retired), who died at Ealing on June 17th, aged 89. He was born in Eastern Canada on May 24th, 1831, his father being the Rev. Edmund Burton, rector of Cloyne, and his two grandfathers the Right Rev. Edward Burton, Bishop of Killala, and the Right Rev. Bishop Graves of Limerick. Sir Richard Burton, the famous Orientalist, traveller and translator, was his first cousin. He was educated at McGill College, Montreal, and at Edinburgh, where he graduated M.D. in 1853, and took the L.R.C.S. Edin. in the same year. He entered the army as assistant surgeon on February 24th, 1854, resigning on December 4th, 1863. He served with the 77th Foot, the East Middlesex regiment, now the 2nd battalion of the Middlesex regiment, the "Diehards," throughout the Crimean war. He was present at the Alma, Inkerman, and the siege of Sebastopol, and received the Crimean medal with three clasps, the Turkish and Sardinian medals, and the 5th class of the Medjidie. In April, 1857, he was transferred to the staff, and went to India, where he served in the Mutiny, and took part in the siege and final capture of Lucknow, receiving the medal and clasp. In July, 1858, he joined the 6th Inniskilling Dragoons, and in September, 1860, was transferred again to the staff, and posted as assistant surgeon to the Royal Arsenal at Woolwich. After he had quitted the service on account of ill health, he went into practice at Plumstead, Kent, and a few years later removed to Hanwell, where he was for many years medical officer of health. He retired from practice many years ago.

WE regret to record the death, on May 13th, 1920, of Dr. JAMES LINDSAY H. H. PORTEOUS, of Yonkers, New York. He was born in Ayrshire, Scotland, in 1847, was the son of a Scottish clergyman, and as a boy attended the Ayr Academy and Edinburgh High School. He graduated M.D. at St. Andrews University, and was a Fellow of the Royal College of Surgeons of Edinburgh. After holding house appointments in Edinburgh and Liverpool, he acted for some years as emigration surgeon on American and Canadian steamships. In 1885 he began practice in Yonkers, and was a member of the honorary staff of St. John's and St. Joseph's Hospitals there. Dr. Porteous, who was for many years a member of the British Medical Association, was the author of numerous papers on zymotic diseases and their treatment.

Medico-Legal.

A DOCTOR'S LIBEL ACTION.

At the Leicester Assizes, on June 12th, before Mr. Justice Horridge and a special jury, Dr. John Thomas Horron Davies, J.P., of Leicester, brought an action against Lady Rolleston of Glen Parva Grange, Leicester. The plaintiff claimed damages for an alleged libel in a letter dated May 17th, 1919, and addressed to Dr. Slight. The defendant admitted authorship of the letter, but pleaded that it was a privileged communication. Mr. Hollis Walker, K.C., and Mr. Marriott, instructed by Messrs. Hempsons (on behalf of the Medical Defence Union), appeared for the plaintiff, and Mr. Hugo Young, K.C., Sir Hugh Fraser, and Mr. Stimson, instructed by Mr. Ernest Bridgman, Leicester, for the defendant. Full reports of the case appeared in the *Leicester Daily Post* and the *Leicester Mail* of June 14th, 1920. The letter containing the alleged libel referred to an injection of morphine given shortly before Sir John Rolleston's death, which had occurred on April 9th, 1919; it included the passage: "I consider that Dr. Davies murdered him, and all my friends agree with me. You can tell Dr. Davies or show him my letter. I don't care what you do in the matter." In the circumstances, said plaintiff's counsel, Dr. Davies had no option but to vindicate his personal honour and his professional reputation. Lady Rolleston was communicated with, and invited to withdraw the imputations and apologize. This she had declined to do on the ground that she believed herself to be privileged to express her opinion to Dr. Slight in the way she did. During the course of Dr. Davies's evidence, counsel was proceeding to question him with regard to his treatment of Sir John Rolleston, when the judge interposed, saying: "There is no allegation here that the patient was wrongly treated. There is no plea of justification." Mr. Hugo Young, on behalf of the defendant, claimed that there was no reason for the suggestion of malice on the part of Lady Rolleston; what was said was said in her own circle. There was no allegation that the doctor was unskilful or negligent, or that he did anything wrong and his client did not attempt to escape the consequences of her words on that ground. At the conclusion of defendant's evidence, Mr. Young submitted that the occasions were all privileged. The judge said he should hold that they were privileged; the exaggeration was great, but that did not take away the privilege. His lordship, in summing up, ruled that all three occasions in this case were privileged by reason of the special circumstances. The question for the jury was whether the defendant was actuated by any malice. There had been no suggestion throughout the case that Dr. Davies was in any way incompetent. After retiring for about an hour the jury asked if the verdict would carry costs, and his lordship replied that the jury had nothing to do with costs. The foreman then said the verdict was for the plaintiff, with £100 damages and costs. Judgement was entered accordingly for Dr. Horron Davies for that amount with costs.

We congratulate Dr. Horron Davies on the result. The medical profession is always prepared to make allowances for the feelings of relatives at moments of acute grief, but Dr. Davies was compelled to vindicate his position. In this case the charge was made in a letter written some five weeks after the death, and the verdict of the jury shows that they considered the defendant's conduct unjustifiable.

A PANEL DOCTOR'S SLANDER SUIT.

AT the Devon Assizes at Exeter the action of Gaitskill *v.* Thornycroft and Wife came before Mr. Justice Bray.

Mr. G. D. Roberts, for the plaintiff, explained that the action arose out of certain slanders made by the defendant and his wife concerning the plaintiff, who was a panel doctor attending the employees on the defendants' estate. The allegation was that plaintiff had consistently neglected his panel patients, the innuendo being that he was attending to more lucrative work. These statements would have the worst possible effect on the plaintiff's reputation and standing. Defendants were given an opportunity to apologize. They had now agreed to do so, to pay the costs and other expenses the plaintiff had been put to, and also to pay the sum of a hundred guineas. Plaintiff brought the action in no way to reap a financial advantage, but merely to re-establish his reputation.

Mr. Marks, on behalf of the defendants, said he desired, in the most handsome way, to withdraw the allegation and to apologize. The matters complained of did not affect the defendants personally; they thought the employees on their estate were not receiving the attention from Dr. Gaitskill which they should receive, and they said so. They now admitted that they did not make sufficient allowances, admitted they were wrong, and withdrew the allegations.

The record was accordingly withdrawn. Mr. Roberts stated that the damages and costs had already been paid.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on June 24th the following medical degrees were conferred:

D.M.—J. G. Priestley, M.C.
B.M.—G. H. Rossdale.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 22nd the following medical degrees were conferred:

M.D.—A. J. W. Cunningham (by proxy).
M.B., B.CH.—H. A. Bell, H. A. Williams.
M.B.—H. G. Wiltshire.
B.CH.—A. G. Williams.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., B.S.—*Group I:* J. S. Alexander, C. C. Beatty, J. V. C. Braithwaite, F. H. L. Cunningham, M. Erfan, R. E. Ford, J. G. Jones, E. R. Lovell, G. W. R. Rudkin, R. G. Simpson, S. A. T. Ware, E. R. Webb. *Group II:* Ellinor M. Burnett, P. C. P. Cloake, R. C. Cooke, J. J. P. de Chaumont, R. K. Foulkes, R. B. Hawes, E. A. Holmes, V. J. F. Lack, D. M. MacManus, C. T. Maitland, Ruth M. Scutt, K. T. K. Wallington, R. W. Warrick.

UNIVERSITY OF MANCHESTER.

THE following have been approved for the degree of Doctor of Medicine (by dissertation):

J. G. Bennett, R. B. Berry, Mary G. Cardwell, J. W. Crawshaw, *Jacob Holker, R. C. Hutchinson, †E. A. Linell, †A. H. Macklin, R. A. Needham, †F. C. Ormerod.

* Gold Medal. † Commended.

UNIVERSITY OF GLASGOW.

AT a special commemoration and honorary graduation ceremony, held on June 24th, to commemorate the institution of the University in 1451, and to mark the jubilee of the present buildings, the honorary degree of LL.D. was conferred upon Sir R. W. Philip, P.R.C.P.Edin., and Dr. J. Macintyre.

UNIVERSITY OF BELFAST.

THE Senate of the University of Belfast has resolved to confer the honorary degree of D.Sc. on Sir William Whitla, M.P., M.D., in recognition of his eminent services to the University and to medical science.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following have been admitted as Licentiates and Members: R. Marshall, C. P. Basu.

Medical News.

THE annual Oxford Ophthalmological Congress will be opened in the Department of Human Anatomy in the University Museum on July 15th by the Master. Mr. Sydney Stephenson. Afterwards a discussion will be held on perimetric methods. The Doyne Memorial Lecture will be delivered on Friday morning, July 16th, by Mr. F. Richardson Cross, who has chosen for his subject "The nerve paths and centres concerned with sight." Full particulars can be obtained from the Honorary Secretary, Mr. Bernard Cridland, Salisbury House, Chapel Ash, Wolverhampton.

DR. ALLEN DALEY, medical officer of health for Bootle, who has been appointed to the corresponding office at Blackburn, was presented on June 23rd by the medical practitioners of Bootle with a silver tea and coffee set, and a signed expression of esteem and goodwill. In acknowledging the presentation Dr. Daley alluded to the very cordial relations which had existed in Bootle between the officers of the health department and the local practitioners.

A COMMEMORATION day, the first for five years, was held at Livingstone College, Leyton, on June 25th. Among those present were the Bishop of Chelmsford (chairman), the Chaplain-General of the Forces, and Dr. and Mrs. C. F. Harford (founders of the college). A number of former students told of many lives which had been saved through the use of knowledge gained at Livingstone College, and emphasized the necessity of all missionaries receiving, before being sent abroad, such elementary training as the College provided.

THE annual general meeting of the Medico-Legal Society will be held at the house of the Medical Society of London, Chandos Street, W.1, on Tuesday next, at 8.30 p.m. Lord Justice Atkin will be proposed for election as president. After the general meeting Dr. Josiah Oldfield will read a paper on the suicide idea and capital punishment.

MR. LAWRIE MCGAVIN begs to thank all those friends who made kind inquiries during his recent long illness. He has now returned to work.

DR. D. N. HARDCASTLE, recently demobilized, has been appointed junior neurologist to the John Leigh Memorial Hospital, Woodbourne, Brooklands, Cheshire.

Dr. Rayner Batten. Dr. E. T. Burke, Sir Bryan Donkin, Sir Frederick Mott, Sir Humphry Rolleston, and Dr. J. H. Sequeira have with regret resigned their membership of the National Council for Combating Venereal Disease. They recognize the national importance of this society and the great value of much of its work, but they have resigned from it "as a protest against its attitude towards the prevention of venereal disease and its failure to make any scientific inquiry into the results obtained by others or by original research and its consistent bias against the subject, as shown by (1) the failure of the Royal Commission to take evidence on the subject: (2) the failure of the medical committee (of the National Council for Combating Venereal Disease) to collect evidence or to report independently on the subject" apart from the non-medical members of the Council. The members who have resigned think it desirable that the National Council should institute a public inquiry into the evidence for or against immediate self-disinfection as a preventive of venereal disease.

THE Professional Classes War Relief Council will continue certain of its activities until next year, at its new offices, 251, Brompton Road, S.W.3. The report presented at the recent annual meeting showed that the amount spent on education during 1919 was over £6,000. Many new applications were dealt with in the General Assistance Department, and the total sum disbursed in all departments was nearly £15,000.

THE council of the London and Counties Medical Protection Society, in view of the increases in charges incidental to litigation, has resolved that a corresponding increase in the amount of the indemnity should be granted to its members. The indemnity is to be fixed at an aggregate sum of £3,000 in any one year, or such other sum as the council may from time to time determine. The cost of providing the increased amount by insurance or reinsurance is to be charged against the Society's special insurance fund.

Mr. S. J. PEACHEY, lecturer in chemistry at the Manchester College of Technology, has worked out in the laboratory there a new method of vulcanizing rubber which is likely to have wide applications. The process hitherto chiefly used has been to incorporate sulphur with rubber by heating to a temperature of about 140° C. Mr. Peachey has proved that by exposing rubber alternately to the action of the two gases, sulphur dioxide and hydrogen sulphide, it becomes rapidly and completely vulcanized at ordinary temperatures. The action is rapid and is a true sulphur vulcanization. During the process leather or shoddy waste can be incorporated with it and the colour of dyes is not affected.

THE students of the Royal Free Hospital are arranging for a fair to be held there on July 10th in aid of the Hospital Appeal Fund. Offers of help will be received by Miss Longbottom, Royal Free Hospital, Gray's Inn Road, W.C.1.

DR. R. W. JAMESON, of Lincoln's Inn, and Major C. J. Marsh, R.A.M.C., of the Middle Temple, were called to the Bar on June 16th.

THE Decimal Association, undeterred by the unfavourable report of the Royal Commission on Decimal Coinage, pursues its propaganda for the use in this country of the decimal system for all purposes. It issues a quarterly publication, the *Decimal Educator*, in which the progress of the movement in various countries is related.

A FATAL case of plague has occurred at Liverpool. The patient was a girl, aged 15, employed in a warehouse in which damaged grain was stored. She became ill on June 14th, and was removed to hospital on the following day. On June 22nd plague was suspected, and she died on June 23rd. The diagnosis has been confirmed by the Ministry of Health bacteriologist.

THE Minister of Pensions having considered the recommendations of the Inter-departmental Committee on Tuberculosis (Sanatoriums for Soldiers and Sailors) 1919, has decided that men suffering from pulmonary tuberculosis, which is admitted to be attributable to or aggravated by service, and who on the conclusion of treatment in a sanatorium undergo a prescribed course of extended treatment combined with training in a training colony, shall be granted pension at the 100 per cent. rate for six months from the date of leaving the colony, and thereafter at the rate corresponding to the degree of his disablement, but not less than 50 per cent. throughout the subsequent period of two years. This award will be subject to the condition that the pensioner presents himself when required, in order that the Ministry may be advised as to his condition from time to time, and as to the need for further treatment. The arrangement will apply also to the pensioner who is not recommended for a further course in a training colony, the 100 per cent. pension in his case commencing as from the date of his discharge from the sanatorium.

THE Ministry of Pensions states, for the information of ex-service men who have suffered the loss of an eye on war service, that Local War Pensions Committees supply artificial eyes, and the arrangements made by the Optical Appliances Dépôt, Clifford's Inn, London, E.C.4, are such that no delay ought to be experienced. It possesses an immense stock of artificial eyes, probably equal to the rest of the world's supply, and an elaborate matching system enables requirements to be met at very short notice. Applications should, in the first instance, be made to the Local War Pensions Committee. In most cases the necessary directions have to be given by local surgeons or hospital authorities, to whom a selection of eyes is dispatched from the dépôt, but in exceptional or abnormal cases arrangements are usually made for the man to visit the dépôt, where he may be fitted within a few hours.

AT a meeting of the West London Medico-Chirurgical Society, held (at the invitation of Dr. A. J. Rice-Oxley, C.B.E., the mayor) in the Kensington Town Hall on June 25th, the president, Dr. Herbert Chambers, being in the chair, the Society's companion triennial gold medal was presented to Colonel T. R. Elliott, C.B.E., D.S.O., F.R.S., for his contribution to the treatment of thoracic injuries during the great war. Professor C. S. Sherrington, F.R.S., delivered to the Society the Cavendish lecture on "Posture." A conversazione and exhibition of medical and surgical appliances and books followed the lecture, and Miss Kimpton's quintet party gave enjoyable music.

PROFESSOR MAX FÜRBRINGER, the well known anatomist of Heidelberg, who was the pupil and successor of Karl Gegenbauer, died recently. His principal work was on the morphology of birds. Since Cuvier no one had made such remarkable contributions to comparative anatomy.

THE production of synthetic rubber in Germany is said to have been abandoned on account of the great advance in the prices of raw material, which renders it impossible for the artificial product to compete with the natural commodity.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

H. B. inquires as to the position of a married woman holding an appointment in England while her husband is in employment in India.

*** It is assumed that the husband makes no remittances to this country from property or investments abroad. H. B. is apparently entitled to be assessed as if she were a *femme sole*, and to the allowance for her own insurance premium and for the child. The assessment, according to the terms of the Finance Bill now before Parliament, would work out as follows:

		£	s.	d.
Earned income less 10 per cent.		398	5	0
Deduct—Allowance	£135			
Child	£36—	171	0	0
		227	5	0
Tax on £225 at 3s....		33	15	0
Tax on £2 5s. at 6s.		0	13	6
		34	8	6
Less £16 10s. life assurance at 3s....		2	9	6
		31	19	0

A. A. M. inquires as to the liability to income tax of a person coming here from Australia.

*** Income arising in this country is assessable to income tax however short the residence here. But a person coming for a temporary purpose and in fact not staying in the country for six months in any one financial year is not liable to tax in respect of income *arising abroad*, whether remitted here or not. Assuming that these conditions do not apply to A. A. M.'s residence here, then his liability would be:

	£
For 1919-20:	
On (*a*) Earnings, $\frac{4}{12}$ £600 *plus* $\frac{1}{12}$ £800	267
(*b*) Private income from Australia $\frac{6}{12}$ of £500 ...	250
	517

less abatement £100 and wife allowance £50.

For 1920-21:
On earnings £800, and Australian income £500.

It is assumed that our correspondent's private income arises in Australia; if it comes from sources in the British Isles it is no doubt already taxed before it reaches him.

LETTERS, NOTES, ETC.

CIRCUMCISION.

DR. S. J. ROSS (Honorary Surgeon, Bedford County Hospital) writes: I notice in the JOURNAL of June 5th, p. 768, a report of a discussion on circumcision. If circumcision be an unjustifiable operation my position is most unenviable, because I have recommended and performed the operation I shall not say how many times, and for the reasons adduced by Dr. Spencer Sheill, Dr. Solomons, and the Master of the Rotunda. I only disagree with Dr. Sheill upon one point. I operate upon cases occurring in my private practice as soon as the child is born, and without an anaesthetic, and no untoward event has followed. Dr. Tweedy mentions that often alarming haemorrhage occurs. Again I must thankfully acknowledge that in twenty-six years' experience no alarming case of haemorrhage has occurred. I am encouraged by the statement that Dr. Tweedy has only experienced one anaesthetic fatality. With his vast experience of these cases I am certain that he will regard this as a decidedly small fatality, but, of course, we have no details of this case. My experience in the Liverpool Lock Hospital was that it was the uncircumcised who sought treatment for venereal disease. I wonder whether Dr. Tweedy in his evolutionary researches has discovered a use for the vagabond appendix—the abdominal tonsil. I know from experience that the faucial tonsil is more trouble than it is worth. Some time ago I wrote an article on "The rôle played by the tonsils in organismal diseases," and the opinions there expressed have been more than justified by practical experience.

CONGENITAL DIAPHRAGMATIC HERNIA.

MAJOR D. G. CARMICHAEL, R.A.M.C. (in charge Military Families Hospital, Tidworth) sends the following notes of a case in which at birth abdominal viscera had entered the left side of the thorax owing to diaphragmatic defect:

Mrs. S., a primipara, aged 34 years, was confined of a male child, normal labour, full time, at 12.40 a.m. on May 4th, 1920, by a midwife. The infant is said to have cried for some time after birth. The cord was not severed until after all pulsation had ceased. It is doubtful whether the child lived after this—that is, if it ever had an independent existence—but the mother states it lived for several hours. The midwife washed, dressed, and handed the baby to the mother, remarking that it was "a little chesty." The mother took the child into bed with her "to keep it warm," and then fell asleep. When she awoke she thought something was wrong, as the child was so limp and she could not make out if it was breathing properly.

At 9.30 the same morning I was sent for, as they were not sure if the child was dead or alive. I found that rigor mortis had already set in and was present in all the limbs; the body was warm, well nourished, and weighed 6 lb. From external appearances and examination there was no obvious cause for death, so permission was obtained to make a *post-mortem* examination, and the following conditions were found:

The left thorax was filled with the stomach, the whole of the small intestine, most of the large intestine, and the spleen; the left lung had not expanded at all; the right thorax contained the heart and a partially expanded lung. The diaphragm was congenitally deficient on the left side posteriorly, allowing the abdominal viscera to pass through it into the thoracic cavity.

TAENIA VOIDED BY THE MOUTH.

DR. B. W. NANKIVELL (Bournemouth) writes: J. N., aged 34, a demobilized soldier, had been under my care on several occasions for malaria contracted in India, where he had suffered also from tapeworm in 1915; he was then three weeks in hospital. Some months ago he came to me complaining of passing segments of a worm. He looked seedy, was anaemic, had a troublesome cough and night sweats. Examination of the chest proved negative. I dieted and starved him, and after an aperient gave him four capsules, each containing ♏xv of extract of male fern, to be followed by a purge. This caused a good deal of gastric pain and discomfort and brought away large masses of worm, but not the head. Some weeks later the treatment was repeated, using pelletierin instead of male fern. The result was again unsatisfactory. At the third attempt I gave extract of male fern ʒj, with chloroform and mucilage of acacia. The patient took castor oil, but, being unable to get the bowels open, followed this up with a saline, and later on repeated the dose. He then had an attack of nausea and retching, and brought up a *Taenia saginata* (*mediocanellata*) about 3½ yards in length, including the head. Later on he passed some ninety segments by the bowel. I have had cases of round worm voided by the mouth but never before a tapeworm, nor have I come across mention of such in the textbooks.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 40, 41, 42, 43, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 38, 39, and 40.

THE following appointments of certifying factory surgeons are vacant: Okehampton (Devon), Penygroes (Carnarvon), Wymondham (Norfolk).

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EIGHTY-EIGHTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Cambridge on June 30th and July 1st and 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICAL SOCIOLOGY.

GEORGE E. HASLIP, M.D., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

THE President, Dr. G. E. Haslip, in introducing the readers of the opening papers, said that he did not think any excuse was needed from the officers of the Section for arranging such a discussion. The question of the State and the future of medical practice was ever before them. Although the State had long required the services of medicine, it was only within the last few years that the fact had been recognized by the majority of the profession. And this fact would be further recognized as the State continued to assume more and more responsibility for communal health. He felt that he must mention that when this subject was first chosen for discussion in the Section of Sociology the late Sir Robert Morant had consented to open it. The medical profession, more almost than any other, recognized how great was the loss to the country occasioned by his death. It was a matter for congratulation that Sir George Newman had accepted the invitation to take his place that morning, for he was the one person who could explain to the public the future requirements of the State so far as the medical profession was concerned. Knowing the different points of view from which this subject could be considered, the officers of the Section thought it well to select openers who should represent the various interests concerned. Any question with regard to the health of the nation affected the whole community, and therefore it was essential that they should have the opinions of lay persons, whom that Section of the Association possessed the right of inviting to its discussions; and a lay voice, representative of labour, would also be heard that morning. If the State was really going to build up any organization for a medical service to the community, all of them had much to learn. The State had to learn from the medical profession, and the profession had to learn from the State; and both the profession and the department of the State concerned must receive the confidence of the public quite independently of political manœuvring and party policy. It was only by such improvement that they could further the health and welfare of the nation.

DISCUSSION ON THE FUTURE OF MEDICAL PRACTICE.

OPENING PAPERS.

I.—THE STATE AND THE FUTURE OF MEDICAL PRACTICE.

BY

SIR GEORGE NEWMAN, K.C.B., M.D., F.R.C.P.

THE CLAIMS OF THE STATE ON THE DOCTOR.

FROM the earliest times the doctor has served the State, but in this country the direct official inter-relationship is not yet a century old. In 1830 the only direct medical interest of the State, as represented in the Government of the day, was quarantine and vaccination. But in 1831 the Government became anxious about the spread of cholera, then moving towards us from Russia, and an advisory Board of Health was formed, cholera dispensaries established, and inquiries instituted. One of the results was a measure of defence against cholera, but, far more important, interest was awakened in the insanitary conditions amid which the mass of the people lived—an interest which was confirmed by the inquiries of the Poor Law Commissioners appointed under the Poor Law Amendment Act of 1834. No statute before that of 1834 had definitely provided for the State medical treatment of the pauper, though from 1536 the sick poor had been differentiated from the able-bodied. The famous Poor Law of Queen Elizabeth in 1601 had required the "necessary relief" of the disabled pauper, and under that enactment a wide and rather indiscriminate practice of medical treatment had in fact arisen. Thus it came about that between 1834 and 1838 the Poor Law medical service emerged as the forerunner of the public health service; in 1839 Farr began his work on medical statistics; in 1847 the first medical officer of health was appointed; and in 1855 a central medical department was established in Whitehall—first, under the Board of Health (1855–58), then under the Privy Council (1858–71), then under the Local Government Board (1871–1919), and, lastly, under the Ministry of Health (1919). These four historical steps in development from the Poor Law origin laid the foundation of the present position of State medicine for the civil community—the Poor Law medical service under 636 Poor Law unions and upwards of 4,000 medical men, the public health service under 1,800 sanitary authorities and 318 local education authorities, with a composite staff of another 3,000 medical officers, the Registrar-General's Department, and the Ministry of Health.

Alongside this entrance of medical men into direct State service there was constantly proceeding a further imposition of statutory duties upon the medical practitioner. Apart from the fact that he may be called upon to undertake official duties in the public service he is liable *under statute* in the following respects:

1. He must certify births and deaths (Births and Deaths Registration Act, 1874), and notify all births within thirty-six hours (Notification of Births Acts, 1907–15); he must notify cases of infectious disease (Infectious Diseases Notification Acts, 1889 and 1899, and special notification regulations as issued), of industrial poisoning (Factory and Workshop Act, 1901), and of verminous children (Children Act, 1908). He must also be ready to vaccinate (Vaccination Acts, 1871–1907), and to certify the removal of infectious cases to hospital (Public Health Act, 1875).
2. He may be called upon to inspect and certify for house disinfection (Public Health Act, 1875, and Infectious Disease Prevention Act, 1890), and be prepared to issue certificates for the removal and burial of dead bodies (Ibid).
3. He may be required to inspect and condemn in regard to nuisances and insanitary house property (Public Health Act, 1875, or Amendment Act, 1907); or inquire into unhealthy or insanitary areas (Housing of the Working Classes Act, 1890).
4. He must know something of the ill effect upon health of dangerous or offensive trades (Public Health Act, 1875), and of unsound food (Public Health (Unsound Food) Regulations, 1908).
5. He must be competent to diagnose all forms of mental disease (Mental Deficiency Act, 1913).
6. He must be available to respond to the requirements of the local sanitary authority for the provision of medical assistance and treatment for the poorer inhabitants of the district in which he lives (Public Health Act, 1875, s. 133).
7. He is liable for a series of duties in regard to workmen's compensation (Workmen's Compensation Act, 1906, s. 8), superannuation, and pension claims (Ministry of Pensions Act).
8. He may be called in by a midwife to assist in cases of emergency (Midwives Act, 1918, Section 25).
9. The Local Education Authority may avail themselves of his services in connexion with the treatment of children and young persons (Education Act, 1918, Section 25).

Lastly, the State has in recent years organized in behalf of the community certain branches of ordinary and special clinical work. The National Insurance Act of 1911 brought 12,000,000 insured persons into medical benefit, at present provided by 12,000 doctors and 10,000 chemists; systematic provision has been initiated for tuberculosis, venereal disease, and maternity and infant welfare; the organized treatment of early mental disease, ophthalmology and tropical disease, and the large questions of orthopaedics and the treatment of industrial diseases are now under discussion; and an ever-widening field of public dispensaries, clinics, and hospitals, has opened before the profession.

CONSEQUENT NEW RELATION BETWEEN STATE AND DOCTOR.

These are profound changes. They divert, in a handful of years, the whole course of applied medicine from its century old pathway. They do not abolish the private medical practitioner, but they bring him into a different relation to the State. Their present and future relation must be confirmed and made good on both sides, for, on the one hand, the profession is conscious of new obligations, both those imposed by law and those imposed by a sense of what is demanded by the civilization in which they live; and, on the other, the State is conscious, as never before, of the community's need of the profession, and the value of the profession's help if sought on the right terms and given in the right spirit. The greatest need on both sides is understanding. Value is the result of the application of mind to matter. The new problem is for State and profession to come to a realization of the principles which should govern their inter-relation. It is an association peculiarly difficult. For historical reasons the State (which means for the present purpose all authorities, local as well as central, concerned with health) has seen prima facie in the profession a body insistent upon the privacy and individuality of its work, the sanctity of its traditions, the freedom of its engagements. Correlatively the profession has seen in the State an organization apparently devoted to the infringement of these traditions and incapable of putting anything worthy in their place. It has been suspicious and mistrustful of what it considers to be unnecessary intervention. It has feared the imposition of some cast-iron system, some form of so-called "nationalization," the institution of a whole-time civil service, which might in practice make the practitioner of medicine servile, dependent, and fettered.

What can improve this relation? The answer to this question seems to be—a larger measure of understanding by the doctor of the business of central and local government as representing the whole community, and by the State and its officers and representatives, high and low, of the history, development, and genius of professional character. The doctor should know something of the respective functions of Parliament, of the Cabinet, of the Treasury, of the dozen departments dealing with health problems as subordinate to their main functions, of the Ministry of Health (medical and lay), and its Medical Consultative Council. Further, he should know the meaning of the English system of local government; how it has evolved; why the country is subdivided into shires, boroughs, urban and rural districts and parishes, and what the main purposes are of the respective bodies providing for Health, Pensions, Poor Law, Education, and Insurance. For it is only by such knowledge, inspired by the historical spirit, that the doctor can obtain a grasp of the machinery by which and through which he can render his communal service to the State. He will discover, incidentally, the working of some of the great principles of representative government and the guarantees of its freedom.* The layman, what Anthony Trollope, following ancient custom, called "the clerk," besides specialized knowledge of the law and practice with which he is primarily concerned, should learn as much as he can of professional tradition and sentiment, of the scope and opportunity of voluntary work (from the great hospitals downwards) which touches the profession, of professional organizations, and of their history and relation to each other.

Such knowledge on both sides has a direct bearing on the effective working out of the extended relations between the profession and the State which it is now recognized are inevitable. It would enable doctors to understand those necessary and, at first sight, rather remarkable, limitations of Government action, which at present he deems to be merely stupidity. For instance, in official work regard must be paid to uniformity, to a "national minimum," to what is practicable rather than what is desirable, to the restrictions of the law, and to public economy. The layman in his turn will learn why doctors are jealous of their *private* practice, of the system of hospital appointments, of the restrictions of whole-time work under public authorities, of the whole personal nature of their relations with their patients, and of professional honour, integrity, and etiquette. These matters are not mere expressions of idiosyncrasy, prejudice, or narrowness of mind. They have behind them a long history, sound reason, and something of a philosophy. Some of them may be vestigial remains of a dead past, others have come to us, living, virile, and purposive, across 2,500 years from the days of Hippocrates.

The general effect of this suggested change of outlook would be that the doctor became more political in the true Greek sense, and not with any partisan or meretricious meaning, but rather in the sense in which man was described as a political being, conscious and considerate of the community in which he lives; and Whitehall and the local authorities would realize how far short they are of full understanding of the profession, with whom they must work, and of its growing cohesiveness, its quest of truth, and its undying spirit of "love of humanity associated with love of craft."

FIVE PROBLEMS AWAITING CO-OPERATION OF STATE AND DOCTOR.

Partly by way of illustration of the application of these general principles, and partly by way of demonstration of their necessity, I propose to mention briefly five outstanding problems which now face the medical profession in its relation to the State. It will be understood that my purpose is to open a discussion and not close one, and that I am speaking wholly in an unofficial capacity.

1. *The Unit of Health Government.*

The present position of local health government in England is like an Egyptian palimpsest, composed of several layers of design lying one upon the other. At the bottom there are the Poor Law Unions, next above them and three times more numerous are the Local Sanitary Authorities, superimposed upon which come the Local Education Authorities (318), then the Insurance Committees numbering 145, and at the top the latest addition, the Local War Pensions Committees. Thus the whole country is mapped out five times over, but the charting has been done by different hands, at different times and for different purposes, and hence arises duplication, overlapping and confusion. There is confusion in areas and authorities, but there is no less confusion in the family. There are five local authorities concerned with maternity and infancy; three with children of school age; six authorities deal with persons of unsound mind or mental deficiency; four authorities are concerned with "sick persons"; three with the aged poor; and five with the able-bodied poor. It is all anomalous, extravagant and redundant, with a result which is ineffective and wasteful. What we seem to need in the abstract is, first, a single unit of health government with necessary subcommittees for particular purposes. The principles which should guide us in devising such a local authority are (*a*) the concentration, as far as practicable, in one authority in each area, of the responsibility for all administration of health services from local rates, with or without Exchequer grant in aid; (*b*) the absorption of the work of the Poor Law and Insurance in a public health service and the use by that service for the whole community of Poor Law medical institutions; and (*c*) the unification in appropriate committees of the local authority of all public medical provision for the sick and infirm of all ages. Clearly, there would be advantage in thus having one authority for all health purposes—for a Poor Law medical service, sanitation, education, insurance, and pensions—and towards unification of this nature many are looking. But the question is large and complex, and there are many considerations to which regard must be paid in prescribing a unit of sanitary government, including its history, size, population, urbanization, character of industry and society, intercommunication, rating, relation to local and central government, and so forth. If a large local unit be contemplated it would be necessary to provide for the encouragement of a consciousness of community of interest and aim in the smaller contributory or constituent divisions, with appropriate delegation of powers or functions in accordance with services to be rendered. The large autonomous body might in that way delegate some of the actual detail work to the more local bodies. If, on the other hand, a small local unit be contemplated, many analogous questions would arise. All I desire to do here is to name the general principle of unification as one to which attention must be given. There is a second, somewhat similar, common-sense requirement, namely, *uniformity of administration*, in all comparable areas. All through the country, and in all departments of State Medicine, there is need for introduction of accepted standards and a larger measure of equalization and uniformity of central and local action. There remains a third principle which the profession must not allow itself to forget, namely, that the local unit of health government must be *representative* of the will of the people as a whole. It cannot be wholly medical in personnel or in purpose. It must be comprehensive and disinterested. "Our trade our politics" is never sound statecraft.

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* I may perhaps venture to commend a perusal of Lawrence Lowell's *Government of England* (2 vols.) or the little volume on *The English Constitution* by Walter Bagehot (in Nelson's Series), and the three new admirable pamphlets on *The Business of Government* (Ministry of Reconstruction, 2d.).

Now, in devising this reform the medical profession must, in the interest of the State not less than the profession, take their share, exchanging with the layman their views on many points—the nature of the authority, its membership, the question of the co-option of experts, finance, medical participation, the respective functioning of the different local committees, the use and adaptation of existing institutions and their economical arrangement, and the place and character of the domiciliary medical services.

2. *The Extension and Co-ordination of Medical Provision.*

Here again is a pressing problem calling partly for unification and simplification and partly for systematic organization. At present there is inadequacy, unequal provision, and piecemeal effort. We shall never get an ordered scheme in that way. We need a national policy—a programme, so to speak—dealing seriatim with the medical problems of maternity, infancy, children, adolescence, adult life, and old age; with environment of home and workshop; with the prevention and cure of non-infectious diseases as well as infectious; and with the education of the public in hygiene. Here to deal with infancy, and there to neglect it; here to have a "stunt" in venereal disease, and there to provide nothing; here to organize a public medical service, and there to leave all things to chance—is not the way either of science or common sense. Then we require, in much greater degree, to bring together in proper relation the provision of medical treatment in the home, at the clinic, in the hospital, and in the convalescent institution, not for the pauper class only, but for the whole of society. All this means that the profession should help in the consideration of these matters, for, while they constitute only a section of the community of ratepayers, and therefore have only a share in the decision, their knowledge and experience, and the fact that they must in large degree undertake the actual working of any scheme, entitles them to a voice in the form of the scheme. For what sections of the population should provision be made? For what forms of treatment? Under what principles as to availability, adequacy, and payment? What is to be the part or lot of the private practitioner in the undertaking? And, lastly, what does the medical profession say to the concurrent operation of three incomplete and independent public medical services (Poor Law, insurance, and public health), and is it possible to unify their divergent claims? and, if so, what should be the basis of payment and its relative burden on the State, on the local authority, and on the income of the patient?

3. *The Future of the Hospital System.*

A third example of problems awaiting us is that of the hospital position. The number of hospitals in England and Wales in 1915 was reported to be as follows:

	No.	Beds.
General hospitals	594 ...	31,329
Special hospitals	222 ...	13,654
Fever hospitals	755 ...	31,149
Small-pox hospitals	363 ...	7,972
Poor Law infirmaries ...	700 ...	94,000

This gives us approximately 2,600 hospitals with 178,000 beds, of which 700 institutions and 94,000 beds belong to the Poor Law. In regard to this Poor Law accommodation three things must be said here: First, it is provided out of the poor rate and for persons in receipt of poor relief; secondly, of the 636 Poor Law unions only 54 possess separate infirmaries (of which 26 are in metropolitan unions), 331 unions have "sick" beds in the curtilage of the workhouse, and the remaining 251 unions have no special in-patient accommodation; and thirdly, a large proportion, perhaps even one-third, of the in-patient accommodation in all the Poor Law institutions is empty. These points are important when considering the practicability of transfer of Poor Law beds to the general community. No doubt from the medical point of view the community stands in urgent need of more hospital accommodation—we have overcrowded hospitals and long waiting lists on the one hand, and on the other inability to build new hospitals and yet many empty Poor Law beds. But the solution is not as simple as it looks, and the situation is complicated by many other hospital problems too often overlooked. Let me name some of them. Is the principle of voluntary financial support to continue in our hospital system, or is the profession in favour of Government aid and some measure of Government control? Ought the hospital accommodation of the community to be allocated by the State in respect of area or type of clinical work undertaken, or ought it to continue to be provided in haphazard fashion? Is the medical and surgical staff to remain honorary? Is it to be a special professional class, or composed in part, at least, of general practitioners? What is to be the relation of hospitals to each other and to contributory clinics, and to the insurance system? How are we to bring about the substantial reform of the out-patient departments which is so greatly needed? Ought we to make provision for paying patients, and, if so, on what basis? Can we fairly provide for the insured and the pauper whilst neglecting to provide for the remaining majority? And, lastly, what can be done to reorganize after-care and the proper convalescent treatment of the patient? These are some typical issues which arise, and they are but illustrations; for their right answers they require medical as well as lay judgement and experience.

4. *Medical Education.*

A fourth subject, and perhaps the most important of all, is an adequate method of medical education which shall equip the undergraduate and the practitioner. The new services of the doctor to the State call for a reconsideration of the whole business of education and equipment. A different kind of doctor is needed in these new times. It is clear he must have no less of the learning and skill of former days, whilst he must also be furnished with an improved training in new subjects, in preventive medicine and in the political science of communal responsibility. We are all convinced that the pivot of the profession is the general practitioner. If he is properly equipped the future is safe. Some specialization of practice there must be, for no man, be his powers what they may, can be master of all branches of medicine. Nevertheless, it is incumbent upon us to recognize that such diseases as tuberculosis and venereal and heart disease, will never come under control until and unless the general practitioner is in a position to deal with them. Much of the special provision which has been made by the State in recent years has been necessary, first, because of the need for institutional accommodation to effect cure, and secondly, because adequate treatment by the private practitioner was unavailable. In my view the State should never take out of the hands of the general practitioner—whether in contractual practice or otherwise—the patient whom he is willing and competent to handle on reasonable terms. The difficulty has been that the practitioner has not been in a position to render the medical service required by the State. It is evident that the solution is dependent partly upon reform in the medical schools—a reform which, happily, is proceeding rapidly—and partly upon adequate arrangements for graduate education for the practitioner, and, may I add, willingness on his part to avail himself of the facilities which are provided. There is much remaining to be done in both directions, but before substantial progress can be achieved there is first considerable apathy to be overcome and a fuller apprehension of the needs of the situation, and, secondly, the further education of the practitioner must include an adequate professoriate, hospital and laboratory accommodation, and proper organization.

5. *The Advancement of Humanism.*

As this Section is concerned with "Medical Sociology," I venture to suggest one other sphere in which the medical man of this new age may put in his oar. It is not only an intellectual or medical advance of which our country stands in need. Closely akin to it there is a social need. Men are great in proportion as they absorb the best life of the world in which they live—its ideas, knowledge, hope, fears, aspiration—and quicken these anew in the minds of other men. As Sophocles said:

> Much is there passing strange,
> Nothing surpassing mankind.

No medical man who is in a right sense a man of the world can have failed to ponder often on the near relationship which obtains between the practice of medicine and the social life of the people. It has often been said our patients are not "cases," but men, women, and children, each with a separate personality, environment, heredity, and variation, with individual habits, training, temperament, and psychology. We cannot be wise healers of the patient or the community without a large sympathy and a liberal humanism—that fuller humanity with which the Oxford reformers inspired the Renaissance.

We are the witnesses of a strange and rapid transition in the life of the people as a whole, an enlarging franchise and new social complexes. Higher wages, shorter hours of work, increased leisure, high prices and democratic aspirations are not remote from the national health and well-being. The doctor must be the missionary of hygiene—the chief educator of the people in the way of health. In being that, he cannot escape his share of responsibility in the study and handling of many of the medico-sociological questions which surround us—education, recreation, housing, the conditions of industry, sobriety, cleanness of living, the prevalence of venereal disease, prostitution, the penal laws, the causes of certain crimes, the integrity of family life—all such questions concern us, and to fulfil our vows we must be concerned with them. The cultivation of international science, co-operation and amity, should also I think be added. It is essential that we should remember that whilst these issues belong to the warp and woof of medical polity the decisive factor is not medical, and movements in favour of their determination on medical grounds only are doomed to failure. Let me remind you of a famous passage in Huxley's Lecture at Oxford in 1893 on "Evolution and Ethics." He had been speaking of the cosmic process of Nature and he said (p. 33):

> Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process, the end of which is not the survival of those who may happen to be the fittest in respect of the whole of the conditions which exist, but of those who are ethically the best. The practice of that which is ethically best involves a course of conduct which in all respects is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self-restraint; in place of thrusting aside or treading down all competitors it requires that the individual shall not merely respect but shall help his fellows; its influence is directed not so much to the survival of the fittest as to the fitting of as many as possible to survive. It repudiates the gladiatorial theory of existence. It demands that each man who enters into the enjoyment of the advantages of a polity shall be mindful of his debt to those who have laboriously constructed it; and shall take heed that no act of his weakens the fabric in which he has been permitted to live.

These words are even more timely to-day than they were when they were spoken. He added:

> Most men are agreed that the proportion of good and evil in life may be very sensibly affected by human action. . . . So far as we possess a power of bettering things it is our paramount duty to use it and to train all our intellect and energy to this supreme service of our kind.

The claims of the State on the profession have greatly increased owing to the advance of medicine and its manifold applications. A new and closer relationship between them is inevitable. It can be profitable in the public interest only by good understanding. There is something due from each to the other. The profession is responsible for its own contribution a contribution which consists partly in a correct diagnosis of its own disabilities and the conflicting and prejudicial tendencies within its own body, partly in a fuller understanding of the needs of the State, and partly in readiness to make itself thoroughly well equipped and competent to render the remarkable public service which in this generation has fallen to its lot.

II. THE CONSULTANT.

BY

SIR WILMOT HERRINGHAM, M.D., K.C.M.G., C.B.

I REMEMBER a lawsuit many years ago in which was involved the definition of a consultant. It was found to be difficult, and one eminent member of our profession declared that he attached no meaning to the term consulting physician but that of a physician who was open to consultation. Still, though it may not be exact, it usually has the meaning of a physician or surgeon who has by study of a special class of cases at hospitals made himself peculiarly skilled therein. Formerly medicine and surgery formed the only two divisions, but in medicine, neurology, the diseases of children, the diseases of the skin, and of the upper air passages, have all been differentiated within my lifetime. In surgery many similar distinctions have been made, and each now forms the practice of special consultants. The consultant has also usually given a large amount of time to the study of his subject, has by his writings advanced our knowledge of them, and has often held a teaching post in some medical school.

There has always, however, been another method of obtaining the position to a greater or less degree. Everywhere in the country some doctors by their skill and care in general practice have so far obtained the confidence of their fellows and of the public that their opinion is sought on difficult cases. Some such men have worked at hospitals as well as in general practice, others have not. Some of them have eventually given up general practice and become consultants only. Indeed, it was in connexion with such a position that the lawsuit I spoke of arose.

Recently the Government has instituted another class of salaried public consultants whose duties will lie with insurance patients and will be partly practical, advising on treatment, and partly administrative, drafting the patient to the institution best adapted to his case. And I gather, further, that the staffs of general hospitals, as they at present exist, may be incorporated into the insurance system and perform on fixed terms the functions which their members now fulfil in private practice.

The first class of men will form a body different from the present consulting class, but if the latter measure is carried out many consultants will be working on fixed terms for the Government, and at the same time on what we may call the arbitrary, or voluntary terms of the present system among their private patients. This may be important because it may gradually introduce us and accustom us to a change in practice which I shall indicate later.

I cannot estimate what effect the Government proposals will have upon the amount of the consulting practice of the present system. I am told that the high rate of wages now obtaining has led to a great increase of consultations among the artisans of the northern manufacturing towns. The artisan may take to the public consultants, and if so private consultations will diminish, but it is just as likely that he will prefer the private system so long as he can pay for it.

In some form or other I think that consultants will not only persist but increase, though I have sometimes heard it said that general practice is now so good that there is less need than there was for a second opinion. The premiss is certainly true, but the consequence does not follow. The general level of practice is so much raised, thanks to the improvement of medical education, that the ordinary man now treats a pneumonia with as much skill as did a hospital physician in former times. There is no doubt whatever that the public is on the whole extremely well attended. But on the one hand, since the advance of special knowledge always keeps well ahead of the general advance, so long as the thrusters go ahead, the line will always be anxious to have their fresh reports, and on the other hand there will always be the sage reflection that two heads are better than one, and the desire to satisfy the anxieties of the patient and his friends.

In fact, the line of skirmishers advancing into the No Man's Land of fresh knowledge is always radiating outwards, and breaking up into smaller groups.

First there is a continual invention of fresh instruments of precise observation or treatment and a continual increase of manipulative skill required to use them. The ophthalmoscope and the laryngoscope both led to the formation of a special body of consultants, and it seems likely that the ureteral catheter may do the same. Wherever, in fact, an instrument is employed which requires that a man shall not only learn its use, but keep himself thoroughly skilled in practice with it, while at the same time it is only needed in a limited number of cases, there you have the conditions for the creation of a class of special consultants. We do not gather grapes of thorns; nor do we seek the opinion of any but a laryngologist in a case of laryngeal disease.

Secondly, there is another class of inventions which call rather for scientific knowledge than skill of hand, but otherwise, like the last, are designed to increase precise observation. I am thinking of such things as *x* rays and the electro-cardiograph.

Some physicians and some surgeons have an *x*-ray plant of their own, and make their own observations. But as a rule such examination is carried out by men who make it their special work and have become a special class. They are truly a subdivision of the consulting class, but they exemplify the weakness as well as the advantage of such a subdivision. They can show us ocular proof of a diagnosis that without them must remain only probable. Such is the case with stone in the kidney and with some tumours. They can exhibit the form and function of the intestines in a far clearer way than we can reach by other examinations. But in some cases, such as certain diseases of the lungs, they are not able sufficiently to verify the real condition to invest their interpretation of the picture with great weight. In such cases they are still a useful addition to our means, but reach a far lower degree of proof, though not always of assertion.

Mackenzie, who while in general practice founded by his unaided observation the modern school of cardiac study, gave us the polygraph, and others, later, invented the electro-cardiograph. Together they give us a most remarkable record of the events of the cardiac beat, and have added and will add greatly to our knowledge both of its physiology and its pathology. The polygraph has now passed into common use, though when I first possessed one I was greatly puffed up. But the electro-cardiograph is still served by a small circle of priests who deal out to the rest of the world their explanation of its mysterious messages. The whole of cardiac study is a growing point of clinical knowledge by many other means as well, and where such growing points exist a special class of consultants is usually found.

The whole of pathology might almost be cited as an instance of this. Since my day, when it was confined to morbid anatomy, it has added bacteriology with immunity and chemical pathology to its field of work, and now is beginning in problems connected with the circulation and with the nervous system to need the help of physics. A study of the viscosity of the blood and its effect upon the general circulation, is practically a purely physical problem.

In all these branches men are consulted every day by doctors for their special skill, and some of them even deal directly with patients. Judging from my own experience, I should say that is sometimes dangerous to the patient, but every one needs their assistance over cases, and, if not perhaps what is ordinarily meant by a consultant, they form a part of the consulting class by reason of their special study and their special skill. Their position has not been carved out of that of the physician or surgeon, for the physician and surgeon of my day did not know that side of pathology. The increase of a special knowledge first created their class, and now, though the knowledge of bacteriology is widely spread among clinical men, the time needed for the operations of the laboratory oblige the physician and surgeon to turn over the practical work to special pathologists, and the pathologists will always be needed by the physician and surgeon on account of the wider knowledge which their special study gives.

Though, however, subdivision is thus the natural and the necessary process, it is occasionally liable to exaggeration. At one of the clearing stations we received an officer who described himself as an internist. We did not quite know what it meant, but we detailed him to the pneumonia ward in confidence that he must be an expert in that disease. We discovered, however, that he had never dealt with anything but various forms of indigestion, and that his examinations had been confined to test meals.

But, besides the existence of all these different classes, we have to recognize also that in any given case quite a number of different opinions may be required. A case of gastric disease beside the "internist" to examine the contents of his stomach chemically may need an *x*-ray operator and a bacteriologist, and so with many other cases. In fact, the patient no longer can be content with the unaided judgement of one physician or surgeon, however eminent. That gentleman has to ask the help of many others before he can make up his mind.

I am, however, firmly persuaded that important though this additional help is—and my pathological colleagues at St. Bartholomew's will not accuse me of underrating it—the dominating judgement ought to be and always must be that of the clinical physician. No doubt I shall be thought to be prejudiced. But the reason for my convictions is that the reaction of patients to one and the same infection is so different, that we shall never be able to treat the infection alone, and must always consider largely, if not chiefly, the nature of the patient, which is the physician's task. And another reason is that the physician's must always be the final judgement on the action of remedies. He, indeed, occupies the first and the last position. He first observes the phenomena, he calls in the pathologist who carries out a special examination and perhaps even prepares a remedy, but in the end the physician must judge whether that is successful or no.

The point, however, is that the clinical consultant now requires the aid of several other persons, and when we discuss his relation to the patient we shall have to consider how this help can be best provided.

The relation between the general practitioner and the consultant has been only so far altered by this multiplication of offices that he now, like the physician, has many fresh people to consult. He can take his patient straight to someone with *x*-ray apparatus, or he sends a specimen to some pathologist, or even in simple cases to the laboratory of an association, and can if he likes form his own opinion as he did before. Or he can, as before, choose someone whose opinion he trusts, or the patient trusts, and take his patient there. No real change has been introduced in the relative position of the two, and I suppose each side will still occasionally complain of the other, as they always have.

But the complexity of the present state of the consulting class, in which I include all the various persons whom the physician consults, as well as the physician himself, make the relation to the patient something very different from what it was.

At the present time there are two classes who obtain the best treatment that is to be found in the country. They are the very rich and the very poor. The former can afford to pay large sums, and to have not only every requisite but every comfort during illness. The latter are treated in hospitals and are probably the better served of the two. But the middle class, the people of our own level of income, come very badly off. Their means do not really admit of their paying large fees, and yet are too large to allow them to be objects of charity. They are not taken into the hospitals, and yet they cannot afford the charges of a nursing home, of an operation, and of the innumerable accessory observations, analyses, and cultures that both physicians and surgeons require.

Nor is it only a question of money. A relation of mine was lately the subject of a fatal and very painful illness, for the diagnosis of which an *x*-ray examination was needed. He suffered great torture in the transit from the nursing home to the house of the *x*-ray specialist and back again. He was a man of great physical courage, and the effect upon him was the more noticeable.

It cannot be denied that our present system or want of system wastes the patient's money, and puts him to the utmost inconvenience, and sometimes to great distress.

It also wastes everyone's time. Every special test that has to be made, every special examination, every special opinion that has to be asked, means that if the patient is up and about he has to trot round to a different door, and sit about in a different waiting-room, or else send various emanations from his person to another laboratory. Or if the patient is in bed each of these various authorities has to come to him and carry out the necessary details under the worst possible conditions.

The only sound remedy, as far as I can see, is to extend to private patients the benefit and convenience of treatment at a hospital. Paying hospitals are one of the greatest needs of the time. They already exist in various different forms.

In one form, which the fame of some American surgeons has rendered well known, such a hospital is the property of the clinical chiefs, and the numerous staff of clinical and pathological specialists are their assistants, and are paid by them. I only know the Rochester Hospital by reputation, but I believe I am representing its organization correctly. On a smaller scale this system has long existed in Germany.

In London there has long been, in Fitzroy Square, a paying hospital financed by laymen, which the patients use as they would use a nursing home, and where they are attended by the physician or surgeon of their choice, and make their own arrangements about fees. At St. Thomas's the paying wards are much on the same system.

At Cologne I saw a very good instance of a hospital on what I suppose was the Fitzroy Square system. It was not in connexion with any other hospital, and it was partly founded by benefactors whose names were recorded in the entrance hall. It had three different classes of patients who paid different fees. The first or most expensive class had each two rooms, the second class had one room, and the third were in wards holding six or eight beds. There was a common kitchen and laundry and common operating theatres and accessories. There was accommodation for several resident medical officers and a chaplain, besides of course for the matron and nurses. There was no one who could tell me how the fees were arranged. The building was rather new, and was very convenient.

At King's College Hospital there are paying wards where the patients are only admitted on the recommendation of members of the staff, and are only attended by them. At Harvard the Professor of Surgery is allowed a ward for his private patients in order that he may spend the whole of his time in the hospital. I think that within certain limits his private practice as well as his public is utilized for teaching.

The difficulty with all these places is the expense—both the initial expense of building and equipment, and the current cost. I have not been into any figures, but I imagine that it should not be difficult to provide for the latter,. but that if, in addition, interest on capital and a sinking fund have to be provided, the burden is too great. In any case, I think the scale of fees ought not to be a flat rate charged to all persons alike. The rich should be made to pay more and the poor less. The system has such advantages that when once known there should be no difficulty about filling the beds.

If by a great stretch of imagination I could conceive myself founding a hospital I should unhesitatingly adopt the last plan. I should build my general hospital with all its appurtenances, its pathological laboratories, its *x*-ray and similar diagnostic apparatus, and its special treatment departments by baths, electricity, various forms of light, radium, and what not. A part of the general hospital should be the paying block, where the patients would be treated only by my staff. They should be entitled to use the treatment provided for the hospital, and the pathological work should be done in the hospital laboratories. It might be desirable that special laboratories and special pathologists should be detailed for them, so that the public work should not be neglected.

But I should go much further. I should provide offices for my clinical staff in which they should conduct all their private practice. They should come down in the morning to their work just as a barrister goes to chambers, and their whole business day would be spent within the place. I should not charge each patient according to his actual cost, but starting with a differentiation by income I should first make the rich pay partly for the poor, and then pool the fees to make the easier cases pay for the more difficult. I should further divide the fees so that a regular proportion obtained between the wards and the laboratory.

Perhaps in another and a better world I may be able to put this plan into practice. I hardly think I shall see it in this.

III. THE FUTURE OF MEDICAL PRACTICE FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

BY

Alfred Linnell, M.R.C.S.

The outlook of a general practitioner on the future of medical practice must of necessity be limited, and he must confine himself to those parts of practice with which he is familiar. There is a feeling of doubt and uncertainty in the minds of many doctors with reference to the future of general practice in this country. The increasing inroads of State control in the region of curative medicine are viewed with apprehension and distrust. While it is generally accepted that preventive medicine is a matter which must be dealt with by the State, curative medicine has, until recently, and with few exceptions, been a personal matter between doctor and patient. The interposition of a third party—namely, the State — profoundly alters the position, and it is essential that any developments in this direction should be very closely watched by the profession. However, some extension of State control appears to be inevitable, and it is for the profession to carefully consider how it can mould that control so as to retain for the doctor that independence of action and personal and confidential relationship to his patient which are so essential. A large majority of the profession are unquestionably opposed to the establishment of a whole-time salaried State medical service, while on the other hand, powerful lay influences are at work in favour of it. A public service of the kind indicated would tend to diminish the sense of personal responsibility, and anything which does this is certainly harmful. The experience of the war showed how too rigid an organization can diminish the sense of responsibility. The problem of the future of general practice consists in a proper dovetailing of a State controlled service into the general scheme of practice. An experiment in this direction has been made in the National Health Insurance Service, and although there are many critics, the panel system holds the field at present and probably will be further developed. In attempting to make any forecast of the future of general practice it will be advantageous to consider the results of the impact of State control on medical practice in the past and to give some consideration to those changing social conditions which must materially affect the general scheme.

In the sphere of preventive medicine the employment of whole-time officers of special training is inevitable, but a closer co-operation between the work of those officers and that of the general practitioner is highly desirable. The administration of the various Public Health Acts has not only failed to attract the cordial and sympathetic co-operation of the general practitioner, but has tended to divorce his interest in the work. This means a deplorable waste of material, and a wiser administration would ensure the fullest use of the services of the general practitioner in the interests both of the public and of the profession. The opportunities to do good preventive work come almost daily to the general practitioner, and he probably does more work of this kind than is recognized either by himself or by the public. If the position of the general practitioner is to develop along proper lines, and the best is to be got out of him in the interests of the public, he must be given a definite place in preventive medicine. Every opportunity should be given him to equip himself in those branches of preventive work which require special training, and he should be employed to do, and be properly remunerated for, any preventive work which he is competent to undertake.

In pre-natal work the general practitioner should play an all-important part, and it is hoped that much greater interest will be taken in this branch of work. The general practitioner has always done a good deal of unrecognized work in this direction among his patients, but not on organized lines; with the advent of organization his knowledge and experience should be invaluable and should be utilized to the fullest extent.

In infancy and up to school age the State supervision is through the agency of the local health authority, who exercise their powers by means of infant welfare centres and health visitors. The family doctor is not brought into any direct relationship with the scheme. The doctor attending the centre and the health visitor refer cases which they think require treatment to the family doctor, but there the matter ends. It is now decided to improve the training and status of health visitors. A definition of their position and functions is certainly overdue. The family doctor should be brought into the scheme of infant welfare and officially recognized. The health visitor reports should be made available to the doctor. In this way a valuable medical history could be compiled to form the commencement of a continuous record.

The position during school age is somewhat different. The local education authority is responsible during this period for children attending elementary schools, and acts by means of school medical officers and nurses. These officers make periodical inspections and report to the authority. In some areas some forms of treatment are undertaken as well. Recommendations are made to the parents that medical advice should be sought, and the nurses have to follow the cases and report as to results. In some areas the school doctors are general practitioners working on a rota, and this works fairly well except for the risk of men being unavoidably detained and missing their appointments. The whole-time man is more satisfactory from the point of view of administration, but it is hoped that the employment of general practitioners will increase, and no doubt with more experience such a system could be made to work quite smoothly.

From school age to sixteen, or during the period of adolescence, there is no State provision of medical supervision at all. The parents are alone responsible for the provision of medical attendance and supervision. Under the Fisher Act, however, the school age is raised, and presumably the young persons will come under the same supervision as those of the previous school age. Under the Act a very salutary provision is made for physical training. This branch of practice has been much neglected in the past, and it is hoped that an increasing number of doctors will equip themselves in this important part of our work.

After the age of 16 a very large and important section of the community come under the care of the State through the National Insurance Acts and enter the period of free choice. Here the State invades the domain of curative medicine in a very decided manner. There has recently been a reconstruction of the conditions of service and a settlement as regards the remuneration, and although there is room for improvement in certain directions it would be wise to give the reformed system a thorough trial.

That the whole scheme of National Health Insurance has not borne out the extravagant claims made for it at its inception is obvious, but that it has had some good influence on the health of the community is, I think, equally obvious. It has had good results in other directions. It has prevented the exploitation of the profession by lay organization. It has conclusively proved that the old club rates of remuneration were hopelessly inadequate for the work expected, and it has resulted in a greatly increased interest in medical politics on the part of large numbers of doctors and a demand on their part for better opportunities of doing better work. Criticism has come from outside the profession and from responsible quarters. Dr. Addison is reported as saying, on the second reading of the National Health Insurance Bill, 1920: "The medical men, with whom I have had many meetings, have recognized that in many respects, in certain places anyhow, the practice for insured persons has not been so satisfactory as it ought to be, and I hope that under the improved Medical Benefit Regulations, coupled with the assistance which the medical consultants must necessarily give, we shall steadily improve the quality of the service." This is a fair if somewhat crude statement. Other complaints in the same debate appear to be due to an exaggerated and unfortunate sensitiveness on the part of certain persons. The Association of Approved Societies, at their annual conference this year, passed a resolution condemning the panel system as inadequate, and asking for the substitution of a "comprehensive State Medical Service securing to the whole population at the national expense the most efficient and complete service that medical, surgical, and dental science can offer." This is a serious indictment of a system which is admittedly incomplete and does not take into consideration those improvements in the service to which Dr. Addison refers. The motion proposes to revolutionize absolutely the entire system of medical attendance in this country. That the whole population is entitled to a complete medical, surgical, and dental service is undeniable, but the majority of the profession would strenuously resist any system which would disturb the existing relationship between doctor and patient. An improved and extended panel system, with the addition of a specialist and consultant service, and institutional accommodation available to all, could be organized without any undue disturbance of existing conditions and with equal or greater benefit to all concerned. But are not all these criticisms of the panel system somewhat ungenerous? The system was only inaugurated in 1913 and five years out of the seven years of its working were war years, and the profession worked during those years under extremely difficult conditions. The depletion of their ranks by enlistments for service, the extra duties imposed by war conditions, and the extraordinarily serious epidemics of 1918 and 1919, placed a strain on doctors of a most severe kind. We cannot help feeling that the panel system has not been given a fair trial and that judgement should be suspended until the promised improvements are in working order. To this extent the future of general practice is in our hands. We should work the panel system honestly and well and give it a fair trial.

The medical care of the poor under a State system is of much longer standing, and of late has been subjected to severe criticism. It has had to share much of the opprobrium which attaches to the whole of the Poor Law system. It is difficult for those of us who have been Poor Law medical officers for many years, and who have habitually given the same standard of attendance to the paupers as to our other patients, to understand the reasons for this opprobrium. The medical service is, generally, a part-time salaried one. The appointments are for life; the standard demanded by the regulations high. The responsibility of the medical officer is absolute and the service is administered by freely elected bodies; yet all parties seem to unite in condemning the system. Probably in the future some "panel system" will be evolved which will give "free choice of doctor," and in which the local authorities will stand in the relationship of employer.

Of recent years the State has been taking great interest in the question of midwifery. This interest has chiefly centred round the provision of a service of well-trained midwives, and it is the business of the Local Health Authority to supervise the service and see that it is efficient and sufficient. Grants are given where necessary to attain these ends. The only medical service provided is through the Poor Law and by the payment of fees to medical men who are called in by midwives to attend in the statutory "emergencies." "Maternity benefit" by means of a money grant is also given under the National Insurance Acts. The relation of the general practitioner to midwifery is rapidly changing. The provision of well-trained midwives largely subsidized by the State and in many instances by voluntary associations has resulted in a considerable transfer of normal midwifery from doctors to midwives. The time seems to be rapidly approaching when there will not be sufficient normal midwifery material available to enable the younger men to acquire that experience which, in the absence of a more prolonged and thorough undergraduate training, can alone give the necessary facility for coping with the abnormalities which he may have to deal with when summoned by the midwife in the exercise of her statutory obligations. The student's curriculum is already overloaded, and it would seem wiser that the extra training required should be post-graduate. If matters are allowed to drift, it seems certain that the practice of midwifery will become a special branch and be lost to the general practitioner. From a professional point of view there can be no doubt that the provision of maternity homes is an urgent necessity. Every one of us has felt from time to time the necessity of an institution of the kind—one in which we could attend our own patients under the best possible conditions. Social conditions are also tending to emphasize the demand on the part of the public. In the populous centres large maternity hospitals could be made available for the necessary post-graduate training. The ideal to be arrived at in a domiciliary service is the association of doctor and midwife in every case, and the younger men should be encouraged in every way to undertake normal midwifery. The usual form of post-graduate training in the past has been through assistantship with an experienced practitioner who was available in emergencies, and under whose supervision the operations of midwifery could be undertaken and the necessary facility acquired. It would be a great pity if this system were allowed to lapse.

Experience has shown that a great increase in the incidence of venereal diseases is a common result of war conditions. The State, realizing this, has assumed responsibility for the treatment of all classes. Clinics have been established and specially equipped officers have been placed in charge. The rather complicated technique of modern methods of treatment has warranted this development, but with increasing equipment of the general practitioner in this respect the necessity for the employment of special officers will probably cease.

With the return of normal conditions and the improved methods at his disposal the general practitioner should certainly be able to cope with these diseases, and possibly to eradicate them.

The State has inaugurated a vigorous campaign against tuberculosis and assumed very definite responsibilities with reference to treatment. It is an open question whether the attack has been along right lines, and whether the time is not ripe for a complete review. The cordial co-operation of the practising doctor has not been elicited, and in many quarters a feeling of irritation has been engendered. This is unfortunate and could have been avoided. In assuming responsibility for treatment nothing should be done to diminish the sense of responsibility of the doctor towards his patient. The attack should be conducted by his agency. The appointment of tuberculosis officers was probably wise and necessary. They have important consultative and administrative duties to perform. It is on the question of treatment that the difficulty arises. Sometimes a doctor is at a loss to know whether he is responsible for treatment or not. He is possibly responsible for certification, but not for treatment. He is not kept fully informed of the progress of the case during periodical absences in sanatorium. All this could be easily avoided. The consultative function of the tuberculosis officer should be emphasized, particularly on appointment. The "dispensaries" should be "clinics" for consultative purposes, and at every stage the doctor in attendance should be kept fully informed and made in every way responsible. The treatment of tuberculosis by general practitioners in the past was certainly not bad, probably very good considering the means available. In no sphere has the disadvantage of the absence of medical representation on administrative bodies been more apparent than in that of tuberculosis.

The State has assumed responsibility for the institutional treatment of tuberculosis, and in a minor degree for venereal diseases, but it is evident that the demand for a much more general provision of institutional treatment for all diseases is increasing, and this provision will have to be seriously entertained. This demand arises from both professional and social causes. The increasing complexity of diagnosis and treatment renders it imperative that greater facilities and better equipment shall be available to the doctor in his battle with disease, while the increasing expense renders some form of organization imperative. The equipment necessary can be most advantageously provided by the provision of institutions available to all, and in which medical men could attend their own patients. Social factors, such as the difficulty of procuring adequate domestic service in emergencies, also tend to create a demand on the part of the public for institutional facilities. The existing hospitals have done admirable work, but are encountering great difficulties on account of the increase of working expenses, and many can hardly continue their work without some State subsidy. These hospitals are not sufficiently used for teaching purposes. There is plenty of material available in them now being wasted, and they offer a splendid field for post-graduate training. This question of post-graduate teaching is a very important one to the profession. Many attempts have been made to grapple with it, and with varying success. There is urgent need of a State-organized system.

The science and practice of medicine have reached a stage at which it is impossible for the student during his five years' already overcrowded curriculum to equip himself thoroughly for the varied duties he will have to perform in general practice. "Study leave" during the early years of practice is urgently necessary, and financial aid should be given to render this possible. The system of assistantship should be further extended, and a period of assistantship under an approved principal should be a recognized part of a post graduate scheme. This would be preferable to systematic teaching in the schools by general practitioners as has been suggested, and would give men an insight into the art of medical practice.

Probably no factor will have greater influence in the future on general practice and on the general health of the community than the new form of local health authority which will have to be established. At present health matters are administered by a variety of public bodies. With the assumption of increased responsibilities as regards curative medicine, it will be necessary to reorganize the administration and co-ordinate the work of the various branches. When we consider that existing administrative areas are in many cases quite unsuitable for complete schemes of curative and preventive medicine, we are at once face to face with a very complicated problem. Shall questions of public health be subordinated to the convenience of administration of existing areas, or shall the opportunity be taken of making a clean cut and forming new administrative bodies to undertake new functions in new areas? In other words, shall the new health authority be a committee of an existing body or a new and independent body elected *ad hoc?* There is much to be said on both sides. Existing health authorities are well established and enjoy considerable prestige. They have had experience in some branches of public health work. They would probably greatly resent the establishment of other bodies which would usurp some of their authority. The carving out of new areas with all its complicated financial and other adjustments would be a lengthy and expensive business, but would it not be worth while? There is already considerable difficulty in getting suitable men to interest themselves in council work, mainly on account of the burden of its many and varied interests. The addition of curative medicine with its personal interest would tap a fresh source of supply and probably produce a good supply of willing and interested administrators. Areas should be mapped out of a sufficient size to include a complete service of both curative and preventive medicine, each with its own health authority. In some instances these areas would be coterminous with existing administrative areas; in many this would be impossible. It is hoped that public opinion will prevent future health administrations being hidden away in a corner cupboard of an existing council. In any event the profession should be prepared to take a much larger share in local administration than it has done in the past. The formation of local medical consultative councils with functions analogous in their relation to the local health authority with that of the consultative councils to the Ministry of Health should be strongly urged, and there should be direct representation of the profession in adequate numbers on administrative bodies connected with public health.

The future to which we look forward is one in which the profession will be free to carry out its work with some State supervision but with far greater advantages than at present enjoyed. State interference in curative medicine necessarily means not only the provision of medical attendance for certain sections of the population, with the requisite supervision and control, but the supply of that organization of special services, institutional treatment, and post-graduate training for doctors which is at present lacking and can only be provided by the State. That organization, wisely directed, should have an important bearing on the future of medical practice and provide those opportunities for doing better work which are at present lacking.

IV.—THE FUTURE OF MEDICAL PRACTICE FROM THE POINT OF VIEW OF MEDICAL RESEARCH.

BY

Professor GOWLAND HOPKINS, F.R.S., D.Sc., F.R.C.P.

IT requires less courage now to make large claims for the Laboratory as a factor in medical practice than would have been called for had one been addressing practitioners of the last generation. Even thirty or forty years ago there was, it is true, respect enough for experimental laboratory studies as contributing to medical progress. The scepticism, in this regard, of the first half of the last century had disappeared. Pasteur's influence and all that happened in the remarkable seventh decade of that century had accomplished a revolution in thought. When the Association was last at Cambridge, in 1880, recognition of the importance of Scientific Research was in the air, as will be seen by all who read the address which Professor Bradbury then delivered and the discussions which followed upon it. A member of the House of Commons had apparently just then delivered himself of the opinion that there is nothing scientific in Medicine. The dissent called forth by this public utterance was at least as whole-hearted then as under similar circumstances it would be to-day.

THE LABORATORY IN MEDICAL PRACTICE.

But in those days the laboratory worker, if he were suspected of posing as an active member of the profession entitled to a personal interest in the progress of a case (rather than an exotic product to be carefully kept in its place), was viewed with suspicion. Above all, it was thought dangerous to allow him too near an approach to the patient. I fancy, indeed, that it still requires some courage to traverse that particular view, though to traverse it is almost my chief aim. Of Medical Research in the narrower, if more important, sense of the term it would be almost impertinent to speak here as an advocate. I shall refer to it later. But there is need, in my opinion, even to-day, to urge that the laboratory should function much more than it has hitherto done in actual practice, and to claim that the practitioner should look upon the medically qualified laboratory worker not as one belonging to a different calling but as a colleague. I would make the claim that a widely extending organization of laboratories, so distributed as to secure much more personal contact than now exists between the practitioner and the scientific worker, should form an essential element in the future efficient medical services which we all hope to see provided for this country. While I shall not make claims in this regard which go beyond my own honest beliefs, many may think that I go too far. Certain of my contentions may even meet with the hearty disapproval of some; but in opening a discussion it is one's business to be provocative.

It would be idle to deny that a wide desire for laboratory help in practice exists in the profession, and has existed for years. Twenty-five years ago I had an inside view of the process of starting one of the earliest of the laboratory associations intended to help the practitioner in diagnosis. The immediate success of this venture made its promoters almost giddy, and its activity during a quarter of a century has been, I believe, uninterrupted. The many other laboratories which now exist as private ventures, as well as those supplied by municipal or other public enterprise, are all fully occupied with investigations bearing on diagnosis, and so too are many university departments which ought, perhaps, to be otherwise engaged. The existing service is in fact wholly insufficient, while geographically the laboratories are badly distributed. What, in my opinion, is the most important consequence of this state of affairs is that the relation of the laboratory to the practitioner is wrong. Communications between them are too much dependent upon the post and telegraph offices. Questions are, as it were, dropped into a slot, whereupon a machine goes through certain motions, and a mechanical answer is returned. This system undoubtedly suffices in certain cases, but is wholly inadequate in others.

Some, I think, are too prone to picture the future of laboratory service as developing only upon the lines of its present activities, which so largely consist of the provision of a dogmatic "yes" or "no" to questions asked in relation with cases of zymotic or venereal disease, or involve the making of histological preparations and the like.

THE POSSIBILITIES ILLUSTRATED.

I could spend much time in illustration of what I myself believe to be the large potentialities inherent in the laboratory as an aid to practice, but I will refer only to a certain narrow aspect of things on the chemical side. The possibilities on this side are less generally appreciated perhaps than those of bacteriology and other more developed branches of pathology. If it be true that chemical studies have hitherto played a relatively small part in assisting diagnosis it is only because in this region the laboratory worker and the clinician have to an exceptional degree worked and thought apart. It is remarkable, indeed, how largely, in general practice at any rate, the use of chemical methods in diagnosis has been confined to mere tests for albumin and sugar in urine. Much earlier information, one may say in passing, and more discriminating knowledge concerning renal failure, can even now be obtained say by simultaneous analyses of blood and urine, and on the same lines a better realization of the significance of this or that case of glycosuria. So, also, to take but one other example out of many, estimations of alveolar carbon-dioxide tension made simultaneously with determinations of the hydrogen-ion concentration, or the alkali reserve, of the blood are giving fresh precision to knowledge in other kinds of case. These are mere illustrations, but it is important to realize that the so-called micro-methods of analysis can be made really accurate, and that many constituents of the blood can now be estimated without inconvenience to the patient. Much wider applications of such methods will inevitably arise. There is no pathological condition in which metabolism remains normal, and the great majority of such departures from normality are reflected in some alteration, qualitative or quantitative, of the blood and urine. There is indeed a mass of chemical information already available which has never yet been applied as it might be to the needs of diagnosis, but when the number of laboratory workers (which is absurdly small) is increased, and when the stimulus, hitherto lacking, of real contact with clinical material is provided, knowledge and technique available for these particular needs will develop indefinitely.

To keep the same narrow line of illustration (the chemical possibilities are really much wider), I may refer to recent work on renal secretion and nephritis, such as that of Cushny or Ambard, with which many here will be familar. Professor Ambard, like most specialists, may and, I think, does claim too much for his views, but the conception of "thresholds" which he has developed in connexion with renal secretion is probably a sound one, the facts having been confirmed by many workers. The classification of excretives into those with and those without a threshold also has bearings of importance. I refer to this matter here because I believe that a change in the thresholds of excretion, or in the velocity with which this or that substance is excreted, may really long precede the more extreme renal disturbance which leads to albuminuria, and the facts illustrate the importance of simultaneous analyses of blood and urine.

But the importance of blood analyses does not stop here: in the future it will extend to accurate determinations not only of metabolites at present known but to others yet unknown, and knowledge of their significance will accrue. Think how recently we have learnt that disturbance of the parathyroid function involves an increase of guanadin in the blood. Specific events of this sort can already be visualized in connexion with the disturbance of other functions though so little systematic work has been done on such matters.

Chemical methods have the advantage that they can always be quantitative and are largely independent of the personal equation. They can, if necessary, be pushed to refinement. For this reason I am convinced that they will come to play an important part in demonstrating relatively small departures from health. It is indeed in connexion with the development of methods for early diagnosis, a desideratum now much in the minds of the profession, that in my opinion the laboratory is destined to play its greatest part. The smaller the departure from the normal the more refined must be the methods for its detection. Medicine, "preventive" in the sense of knowledge acquired, and treatment applied before a disturbance has grossly asserted itself, will be built up mainly, I believe, on quantitative laboratory methods of diagnosis.

How in connexion with such preventive medicine the individual is to be caught for examination before he recognizes himself as a sufferer it is doubtless hard (and not for me) to say. I notice that when the Association was last here the late Dr. W. T. Gairdner, of Glasgow, speaking at one of the general meetings, admitted that "it might be a long time before the ideal was reached when the public would, without reference to severe or startling illness, consult and duly remunerate the medical profession for such advice as would form a security against the occurrence of serious disease," but went on to speak of the analogy of precautionary visits to the dentist (which, to judge from the speaker's words, were then confined to ladies!), and suggested it might be applied by an educated public to conditions of general health. It will, perhaps, be less unthinkable twenty years hence than it would seem to be now for the middle-aged to pay precautionary visits on behalf of their kidneys as in earlier life they paid similar visits on behalf of their teeth. Refined laboratory methods will certainly then give earlier indications of mischief than are got by merely boiling the urine!

Let me here admit that there may be, has been, and is quackery in the laboratory as well as outside it. One has seen, especially on the Continent, printed forms with blank spaces ready to be filled up in the laboratory, filled up with various figures for this or that urinary constituent and this or that "coefficient"—figures to be obtained by an analyst often ignorant of their significance, and got from material of imperfectly controlled origin. At the end of such documents there may even be a space for "diagnosis"! A physician who could shift his responsibility in such a way is a worse empiric than he who makes no diagnosis at all.

But the laboratory specialist can be used by the practitioner in a very different way, and without more shifting of responsibility than occurs when any other consultant is called in. One thing is certain—the more personal contact allowed, the more productive the association between the two. A result obtained and discussed may yield suggestions to both. A question asked and answered through the post may end in sterility.

A feeling, once prominent, that in trusting to scientific methods of diagnosis the physician loses his Art is surely unjustified. Logically the position of complete self-reliance was resigned when the senses were first aided by the stethoscope or any other simple instrument. The electro-cardiogram has merely extended, in a perfectly logical way, the use of the stethoscope in heart disease, and all laboratory methods, including even those which are chemical, similarly merely extend the more limited indications of classical physical signs. There is no logic in supposing that the technique of diagnosis should be confined to the use of apparatus which the physician can carry about with him, nor any justification for stopping short of whatever elaboration may yield the greatest degree of certainty in the result.

It may be argued that, as knowledge bearing on diagnosis increases, a more important matter than the multiplication of laboratories is improved education of the practitioner. But as technique becomes more elaborate division of labour becomes more necessary. The healing art with all the additional factors comprised in it, above and beyond technical knowledge, must of course always remain in the hands of the doctor as we now know him. The laboratory worker can have only the most indirect concern with treatment. He can only be a consultant, but he needs the personal contact allowed to other consultants, and perhaps even a little more. With that privilege he may bring a new stimulus to the profession as a whole; without it he is, and will remain, relatively sterile. He himself needs the stimulus of reality, and like other workers needs touch with the problems towards the solution of which his labours are directed.

You will see that I am picturing an individual rather different from the investigator who is working for the future. I conceive of a calling essentially new; almost a new profession, though one still part of the medical profession. It will comprise scientific experimentalists, but experimentalists who are concerned, from a special standpoint, with the progress of an Art—the art of diagnosis. After all, if one comes to think, the radiologist already forms a prototype of such a calling. He was primarily a scientific worker, but his art has from its nature won for him a consultative position and touch with the patient.

My remarks, I suspect, will by this time have evoked that strong dissent on the part of many which I have all along anticipated. I shall be asked, for example, whether I seriously imagine that the functions in diagnosis of the consultant as now recognized—functions exercised because of the possession of great clinical experience—are to be replaced by the activities of individuals who, even if they receive the privileges I have asked for on their behalf, must in the main be out of touch with the human factors involved in every problem of diagnosis. I am not so foolish. The services of the Clinical Consultant are about to become more important than ever.

But I believe in three propositions. (1) The new Medicine if it is to cope with the big problems before it will call for a large expansion in means and methods, an expansion which will involve some shifting of centres of gravity. (2) Medical diagnosis, when it does not deal with the obvious, is one of the most difficult of arts; so difficult that, even now, treatment is applied to large sections of the public without any serious preliminary use of the art. (3) The laboratory holds undeveloped possibilities as an aid to diagnosis if its activities are stimulated by contact with the problems.

I would here express the hope that those who follow me in this discussion will not view the future through the spectacles of the present.

A Scheme for Laboratory Services.

If you feel that all this time I have been in a futile way turning your thoughts away from practical issues, that I have forgotten, for instance, the factor of leisure in private practice, I would ask you to consider all that I have said in relation with the Interim Report of the Consultative Council of the Ministry of Health. The scheme there outlined for laboratory services, though perhaps more moderate than my dreams, and representing, even in itself, an ideal not immediately attainable, will remove from me the reproach of being merely a visionary.

The Report pictures a distribution of laboratories much more satisfactory than that which exists at present, bringing the scientific services much nearer to the door of the practitioner. The scheme offers to the properly qualified scientific worker more or less of that consultative position which, as I have argued, will make him infinitely more useful and much more productive than he could ever be as a detached and isolated individual. The organization of the service suggested provides a definite career and will tempt young men to qualify for that new profession which I have asked you to believe in.

The scheme outlined in the Report is such that it may call for substantial aid from the State, but a consideration may be applied to such expenditure which is more often thought of in connexion with private than with national finance. The expenditure would represent a high-class investment.

I imagine that within such a Laboratory Service as the Report foreshadows a good deal of research would be done, but, as I have urged, it would in the main be research directed towards special practical ends. Before closing my remarks it is proper that I should refer, if only very briefly, to Medical Research in the higher and more generally accepted sense of the term—research directed to the increase of medical knowledge as a whole. It needs, as I have said, no advocacy here, but you may like to discuss its future in this country.

Although for so long it was starved among us, with the passing of the National Insurance Act the State came to its aid with a generosity that was even startling. I think that the work of the Medical Research Committee has justified that generosity. The Medical Research Council, which has just taken its place, is so fortunate in its Charter, its Constitution, and its Secretary, that proper support for research is secured for some years to come. Not everyone has yet recognized how exceptional is the status of the Research Council. Its policy in all essentials is directed by experts with knowledge of and sympathy for research, and though dealing with State funds the Council is remarkably free, and under its charter will always remain free, from the inhibitions of bureaucratic control.

A point of great interest arises in the possible relations between the Medical Research Council and the Scientific Service which is pictured in the Consultative Council's report. Although I think that service would, in the main, have the preoccupations that I have tried to define, it is sure that the great organization of laboratories, suggested in the Report, would form a connecting link between academic research and the activities of practice. Of this the Universities on the one hand, and the Medical Research Council as an organizing body on the other hand, should take full advantage. If only the vast amount of material, statistical and other, which lies dormant in general practice could be tapped for Science the progress of Medicine would be greatly accelerated. How best this desirable consummation can be brought about is a question eminently suitable for discussion.

V.—THE HOSPITALS.

BY

E. W. Morris, C.B.E.

It will be conceded that, in any scheme which has for its object the health of the country, the hospitals must take an important place.

Their importance is not only that they are establishments for the treatment of sick people, but that they are institutions for the study of the causes of sickness, and that they are the training schools for those who in later life are to be the officers of the great army whose duty it is to destroy sickness and to prevent ill health in all men, women, and children.

In speaking of the position of the hospitals to-day and in order to appreciate the magnificent work they have done it is necessary to look back for a moment to their past history. They were not established to do exactly the kind of work they are now doing, neither were they founded to treat the class of patient they now treat. They were established to give any medical relief possible to such of the community as were described as "miserable objects"—at least, that is how the patients are described in the old minutes of my own hospital. It is not now their aim simply to give immediate medical relief; they must do much more than that. Neither can the patients be grouped into that lowest class, the "miserable objects" of our minutes.

Most of our hospitals, both in London and the provinces, were founded in the eighteenth century. In London there was Westminster in 1720, Guy's in 1724, St. George's in 1733, the London in 1740, Middlesex in 1745; in the provinces there was Addenbrooke's in 1740, Liverpool Royal in 1745, Birmingham General in 1766, Leeds Infirmary 1767, Radcliffe at Oxford in 1770. At that period the scientific equipment for the diagnosis of disease consisted of little more than the stethoscope; the physician entered the ward alone.

Those days are past. He now enters the ward as one of a team, or, at any rate, with a sheaf of papers in his hand—the radiographer's report, the bacteriologist's report, the clinical pathologist's report, the electro-therapeutist's report, the cardiographer's report, and perhaps others. Treatment in those far-off days consisted of little more than rest, shelter from the weather, warmth, and food, *plus* various decoctions and concoctions from the apothecary. Now treatment is as varied and as complex as diagnosis. The patient may be transferred to one or more of many departments, each of which specializes in some small group of diseases; there is the ophthalmic department and the aural department, the venereal, the electrical and the massage, the gynaecological, the dermatological, the cardiac, the neurological; there is hydrotherapy and electrotherapy and phototherapy and radiotherapy and psychotherapy.

Now this increasing complexity of diagnosis and of treatment has had a certain effect upon the hospitals themselves, upon the public, upon the medical students, and upon the honorary medical and surgical staff of the hospitals.

As to the effect, first, upon the hospitals themselves; it has very nearly ruined them. They are suffering from collapse after the overstrain of a period of extraordinary effort. There is a catchword in hospital jargon—"cost per bed." In the old stethoscope days the cost per bed at the London Hospital was £60 per annum. It has crept up from this figure to about £140 in 1913, and was over £200 last year. I see that, once upon a time, it was as low as £24, but that was in 1820, a hundred years ago.

Now, what has the hospital to show for this increased expenditure in the way of benefit to the public? In these days, when every hospital is on its knees crying "What must I do to be saved?" it must be prepared to answer that question.

In looking through my minutes, I find that fifty years ago, when the "cost per bed" was £60 per annum, 10.2 patients were passed through each of the beds; or, to put it another way, each patient was resident for 35.7 days. He is now resident on an average for 17 days, and 21 patients pass through each bed yearly. Can the hospital show any other measure of its usefulness than this doubled number of patients per bed? For instance, are patients who are treated, treated more efficiently? Do they afterwards make better citizens than they did fifty years ago? Does the percentage death rate tell us anything?

The last question can be answered at once. The percentage death rate tells us little or nothing. It certainly has fallen—from 10.7 to 7.7 per cent. of patients admitted in the fifty years. The reason that it tells us nothing is this: that to-day we admit cases for cure that we should not have dreamed of admitting fifty years ago because they were incurable cases then. But now the fighting line has been extended. I see in to-day's list of operations—just arrived as I write—that there are twenty-seven major operations this afternoon, of which eight are extensive abdominal operations. If such a list had been attempted fifty years ago what would have been the mortality? Fifty per cent. at least. Yet such a list is a matter of daily routine.

This brings us to the root of the matter. The modern work of a hospital is not to be measured by figures alone and not by a reduced death rate alone. What then? It is to be measured by the permanently useful and happy lives of those who leave it, and by the useful and happy lives of those who, by the hospital's work, never have and never will have to enter it or any hospital. So we come to this, that our "cost per bed" is up because every bed is a battle area; every forward movement, every new department opened and which becomes a permanently increased charge to the hospital, is another new weapon forged to help in the great fight. Samson fought his enemies with the jawbone of an ass. David slew the Man of Gath with a sling and five smooth stones from a brook. But this simple armament is useless now. Only one giant was ever slain so easily. The giants of disease and the squalor and misery that accompany it must be fought by more costly equipment and by more mighty effort. It is this changed outlook on disease, this determination to fight it and end it, not to suffer it, but to destroy it—this has been the ruin of the hospitals and their glory. The hospitals have given themselves for their country. It is to the eternal honour of the voluntary system that it was the hospitals, voluntarily supported and voluntarily staffed, who first stood firm, refusing to fly, resolving to fight. It is not our full beds, but our empty ones that should be our pride, as the empty beds, not the full ones, in the small-pox hospitals are the crown of Jenner's work, and as the empty beds in our fever hospitals are the proof of the efficiency of our medical officers of health—their greatest testimonial. To-day the hospitals which have been for so long and so often on "full duty" now nervously plead for help themselves; the hospitals who have helped so many through dark days when their names were on the "dangerous list" now see their own names posted up there.

Considering the enormously increased cost of running the voluntary hospitals, I think the time has come when patients should as a matter of duty contribute to the cost of their treatment. For the reasons just given the cost has doubled, and more. Hospitals which could just secure enough voluntary help in the past now find that help insufficient. Hospitals—those fortunate ones which, on account of their substantial endowments, have hitherto abstained from public appeal—now find their endowments all too little, and have to "cry aloud" like the rest of us. But if the public has benefited, as it has, by the efforts of the hospitals, that part of the public which has benefited most directly of all—the patients—should contribute something. We are charging all patients at the London Hospital one quarter of their cost as a "contribution towards maintenance"—that is, one guinea a week. It is not at all regarded as a donation. It is a definite charge, not for the services of physician, surgeon, or nurse, but for coal and food, washing and light. And I cannot help feeling that the Ministry of Health has a moral obligation, although no legal one, to refund to the hospital part of the cost of treating insured patients. Such a method of helping the hospitals at this critical time would afford a means of rendering substantial assistance without endangering the voluntary system, which I hope will continue. I think, too, that beds should be provided in all hospitals for patients who wish to benefit by the advantages of institutional treatment, and who are willing to pay the total cost of such treatment, either personally or by some insurance scheme with private companies.

What is the effect of this increasing complexity of diagnosis and treatment on the medical student? I am not interested in and am not speaking of the medical student who simply enters the hospital to get qualified as quickly as possible with a view to earning money as soon as possible. If the hospital can give him no higher ideal than that, the hospital has missed its duty, and he his vocation. I am speaking of the man who enters medicine with some vision; the man who regards disease as his lifelong enemy, to be studied and afterwards fought anywhere and anywhen; who troubles to learn to use the weapons his predecessors have forged, and to use them skilfully and with the whole object of destroying the destroyer; a soldier, a gentleman of the Guards, not a medical profiteer. What is the effect of this growing complexity on such a man? While at the hospital it is one of exhilaration; he is proud, and rightly proud, of the increasing fighting power; each new weapon delights him; as gaps in knowledge are filled up, as causes of disease rather than later symptoms are discovered, his enthusiasm for his great profession grows more intense. Then comes the day when he leaves his beloved hospital, starts private practice in a city suburb or a country town. Then comes a terrible surprise. He has been trained to use all the weapons which are to be found in a great hospital. But he is sent into battle with none of them. The friendly bacteriologist is not at hand; the radiographer with his test meals is no nearer than the county town; the clinical pathologist will reply to his question by post—yes or no—but he would like to talk the case over with him, hear suggestions, and learn from his ripe experience.

How is this great defect to be put right? It would seem that at the very time that the hospitals are in despair as to how they can carry on any longer, there is urgent need of multiplication of institutions in all parts of the country, so that the advantages which were at hand when he was a student may be equally available now that he is a doctor—beds in which cases may be watched, laboratories in which research can be carried out, and above all, men, experts in the various branches, with whom he can talk. He wants nothing better than that he should remain a student all his life. And so the difficulty that meets us is not simply to keep the hospitals going, but to found and staff a great many more.

And, finally, what is the effect upon the honorary medical and surgical staff? I have left the most difficult part of the subject to the last, and, as a layman, I refer to it before a body of medical men with very great diffidence. My views are my own personal ones, and in no sense am I speaking in an official capacity.

I will take the plunge. I believe firmly that the day of staffing voluntary hospitals by an honorary medical and staff is passed. I am speaking of the teaching hospitals. Clearly, in the old days the conditions of treating sickness were quite different. The consultant, in his visits to his wards, twice or perhaps three times a week, saw and treated his patients from his own personal experience; he entered his wards, as I have said, alone. Now that has changed. He does not fight disease alone. The fight is carried on by officers of all arms—many new arms. Think for a minute of the steps that led up to his appointment to the hospital staff. He was a student. He qualified. He held the usual house appointments—clinical assistant to out-patients, house-physician, house-surgeon, resident accoucheur, and the rest. Then he begins to get anxious as to his future. He looks up the probable dates of retirement of the hospital honorary staff—which is not very likely to be increased however much the work may increase. He thinks he has a chance, and he has enough money to hang on. He becomes a registrar, and is paid by the hospital a perfectly scandalous wage—lower than the unskilled porter. He is really paid by a promissory note. He finishes his registrarship and still hangs on; becomes a demonstrator in some department—anatomy, physiology, what not. At the long last he is appointed to the hospital staff, an appointment he will hold for twenty or thirty years—for the rest of his working life.

Now, is that a sound system? I say, No. The wonder to me is that such splendid men have been turned out by such a system of selection. There can be no doubt that the honorary staffs of our hospitals are men of the finest character in the world. They made the hospitals. It is a privilege and an honour to know them. But I am talking of a system, not of men at all. And the system is wrong, in my own opinion, for two reasons.

First, that the appointment of a staff for life, and, moreover, a staff rigidly restricted in numbers, ensures only to the few, instead of to the many, the tremendous advantage of being on a hospital staff. And secondly, that the complexity of the study of disease, the multiplicity of departments in combating it, demands more time to be spent in clinical work at the bedside than can be demanded of an honorary staff. Is the walk of a couple of hours twice a week through forty or fifty beds the ideal way of fighting the diseases represented in those beds? Is any disease to be studied and destroyed in that way? Can the bacteriologist, the biochemist, the clinical pathologist carry out researches of any value in that way?

A physician once said to me that two hours was ample to go round his forty beds, as half of them were filled with rheumatism, for which nothing could be done. Of course nothing could be done by that sort of work in investigating the first causes of rheumatism. Sir Robert Morant said to me, not long before he died, that the day of two hours for a round were over; it was two hours per bed we needed nowadays. The centre of gravity of the hospital physician must be in the hospital, not in private practice.

To remedy these things, which I think are evils, the time has come for the provision of a properly remunerated whole-time clinical staff for our teaching hospitals, instead of an honorary staff which only visits the hospital. I am all for upholding the voluntary hospital system, but I cannot see that the payment of the clinician will make them less voluntarily supported and voluntarily managed institutions than they are now, when the bacteriologist, the radiologist, the chemist, the nurse, the house governor are paid.

I would divide the beds into groups, and over each group I would appoint a whole-time—or, at any rate, strictly scheduled time—medical or surgical officer, who should have under him properly paid scheduled time assistants, experts in each branch of the work. I would appoint such a head for five years, renewable by mutual consent. The assistants I would appoint for one year, also renewable; all should be considered "on the staff."

At my own hospital, for instance, we have inaugurated such units experimentally—a medical and a surgical. The medical unit is under the control of a whole-time physician at £2,000 per annum. His first assistant will receive £1,000 a year; his second, £800; his third, £365. Part of the salaries of the first and second are paid by the Medical Research Council. Two resident house-physicians are appointed and a special secretary to the unit, expert at card index registration, useful in the follow-through department, and proper laboratory help will be provided. Out-patients will be seen on two afternoons a week. Proper accommodation in the way of sitting-rooms for chief and assistants are also provided. As, without doubt, medical education will benefit by the presence of a whole-time staff, we hope to receive a grant-in-aid from the Treasury, but it is not primarily an academic unit, and will be paid for from hospital funds, even should such a grant not be forthcoming.

The governors, with the co-operation of the staff, inaugurated these units as an experiment, believing that thereby the study of disease, as to its causes, its treatment, and its prevention, would be benefited. The surgical unit is similar to the medical. It has its own operating theatre, its splint department, and a workshop for making all sorts of appliances. Each unit has about seventy beds. A gynaecological unit is about to be formed.

I think that departments such as these at our teaching hospitals will be the centres from which are to be drawn the staffs of the hospitals to be put up in various parts of the country; and the gain to a general practitioner to have spent a year or more in such a place will surely be great. It will teach him to observe accurately and to record accurately. I would like to see posts found in these units for the doctor in actual practice, paid posts, so that he may leave his practice for a month or more and learn all that is new in any department he is interested in and from a staff which is present at the hospital the whole day long and every day. It is certain that the unit would gain by the information he could bring concerning early stages of disease.

There are those who advocate the running of a voluntary staff side by side with a paid staff. I entirely disagree, and am no believer in what has been called the parallel system. I disagree because I do not recognize the unit as, primarily, an academic unit. I regard it as a group of beds in charge of a whole-time salaried staff, and I believe that the time is coming when all the beds at our teaching hospitals will be under the charge of paid clinicians, and I think this will be better for the patients, better for the students, and ultimately better for the public.

Finance is, of course, the trouble. We hope for some help from the Ministry of Health, but help so provided that it does not fetter strong and full growth, but will leave the great voluntary hospitals free to continue the splendid work which they have carried out for so long—

> To undo the heavy burdens and to let the oppressed go free.

DISCUSSION.

The Labour Party's Standpoint.

MR. D. T. **JENKINS** (Secretary to the Labour Party Health Committee) said that he wanted to consider the future of the medical profession from the point of view of the worker. He himself had been an industrial worker for twenty-five years, and knew something of the difficulties of the worker in obtaining adequate medical attendance and treatment. Until the passing of the Insurance Act it was extremely difficult for the average manual labourer to obtain any kind of medical attendance at all. To-day the average wage of industrial workers was less than £4 a week, or 32s. in pre-war value, and the average family in this country numbered five persons. How could the wage-earner secure for himself and family the things necessary for physical and mental efficiency? He believed that the average age at death of workers in the boot and shoe industry was under 40; in the iron and steel industry just before the war it was under 50. The passing of the Insurance Act had improved matters to some extent, but only in so far as the insured industrial workers were concerned; their womenfolk and children were in the same position to-day as they were before the Insurance Act came into operation. Panel practice, moreover, was not what it ought to be, and institutional treatment of tuberculosis was a dismal failure. He wanted to say on behalf of the Labour party that those who thought with him wanted more preventive medicine rather than more curative; they wanted medical advice made available before breakdown, and not only after breakdown. The Labour party did not want the medical profession to spoon-feed the workers, but to educate them in precautionary and hygienic measures. The profession must give more study to the conditions of the workers' life. Many doctors went into practice in the great industrial centres without any knowledge of the conditions under which workers had to live or of the preventable diseases to which they were subject. Why could not the same research be instituted into other industrial diseases in time of peace as had had such remarkable results in the case of T.N.T. poisoning in the war? The solution he preferred was a full-time State medical service, but the workers did not ask the medical profession to accept such a proposal without the profession having a measure of interest in it and control over it. They did not ask doctors to become civil servants in the usual sense. It had been stated that morning that the very poor could obtain in hospital the very best treatment. But there was not sufficient accommodation available for this to be true. The existing hospital accommodation would have to be multiplied by six. This could not be done by voluntary effort. One alternative was to have paying patients, but that would mean the denial of the poor. The other alternative was State aid, and he for one was anxious that the State should not only come to the aid of existing hospitals, but should provide enough accommodation for every need in all parts of the country. People who were able to pay must not be allowed to occupy free beds. The remedy for the existing position was to have the whole nation insured, and the whole nation bearing its fair and proportionate share of the cost. The medical profession must be fully mobilized in peace as in war to resist disease, the greatest enemy of all.

An American View.

Dr. T. R. **BROWNE**, of Johns Hopkins University, U.S.A., said that it was unseemly, perhaps, for an American to talk to a British audience on health matters. The conditions in America were in a way very similar to British conditions, although the average wage of the labouring man in the States was very much greater, and perhaps the business men in the States had shown rather more interest in an individual capacity in the subject of industrial hygiene. In the American hospital systems the fact was early recognized that not only were there the two extremes—the free patient, on the one hand, and the occupier of a private room on the other—but various intervening stages. Therefore patients were admitted into the public wards who paid a certain sum, which was practically the cost of their maintenance. Even smaller sums than these were taken, because it was recognized that the self-respect of the patient must be preserved, and that to pay even two dollars a week was better than to be a free patient. There was also a growing tendency to devote part rooms to the use of patients who were not sufficiently well-to-do to take a private room. Many of the American hospitals had State aid, and State aid meant a certain number of automatically free beds at the service of the State. This had worked out well in some hospitals, though in teaching hospitals it did to a certain extent hamper the freedom of the staff. Another development in American hospitalization was a system of group diagnosis, the grouping of half a dozen men, interested in different lines of medical and surgical endeavour, who occupied as many adjoining rooms, and had a common room, and perhaps a single secretary, by whom successively the patient could be seen without loss of time. The private rooms in the hospitals were subject to the same routine as the public wards, and the same organization was used. He felt, however, that none of these things would solve the problems of the future. The increasing complexity of medical diagnosis and practice made more radical readjustment necessary. First, there must be greater facilities for studying the beginning of disease. This meant a fuller appreciation of the out-patient department of a polyclinic. The patient who came to a bed in a ward was a "finished product." It was by getting at the beginning of the disease that the greatest good could be done. The same principle applied to the general practitioner. The laboratory had been a great aid to diagnosis, but, while the laboratory had given, it had also taken away. It had taken away because it had induced in practitioners the feeling that they could lean upon a laboratory instead of upon their own observation and judgement. The general practitioner, if he used the powers he possessed, would be able to recognize disease in its beginnings. Lastly, Dr. Browne urged that the future of medicine lay, not in treatment, but in prevention. The public must be prepared for the reception of scientific ideas in regard to public health and preventive medicine. The object of a physician, after all, should be, not to treat the late stages of disease, but to teach the individual and the nation how to prevent disease, and how to save itself from the economic and physical loss attendant upon the lack of preventive measures.

The General Practitioner.

Dr. **ADAM FULTON** (Nottingham) said that the success of the general practitioner depended on three things: his capacity, his equipment, and last, and above all, his conscience. The State could help the equipment of the general practitioner by the provision of clinics, instruments of precision, and the advice of consultants. But the State would never be giving all it could give to the general practitioner until it helped him to improve his capacity by means of educational facilities. It was not enough for the State to place machinery at the disposal of general practitioners; what mattered more was the spirit in which it did so. In the Ministry of Health there seemed to be a growing disposition to take the general practitioner by the hand and lead him and help him in his daily work.

Dr. F. J. **BLACKLEY** (Bristol) spoke from the knowledge and experience gained as a general practitioner among an industrial population in a large city. General practitioners could only become what they should be by having, in the first place, more time; crowded surgeries and urgent calls distracted them so much that sometimes they had to postpone diagnosis, and consequently treatment. More help was also needed. Thanks to his partner the speaker had been able to take a post-graduate course, and his partner and himself, by harmoniously working together, had been able to adopt recent methods in their practice. Finally, the practitioner must have more opportunities for study, so as to acquire the practice of better and more advanced methods.

Mr. E. B. **TURNER** said that a great deal of modern practice did not reach the level that it should because it had to be carried on in the practitioner's own surgery. The practitioner should be encouraged to visit the patient whenever possible, more especially in tuberculosis. The speaker contended stoutly that the family practitioner who had continually looked after the same persons and families year after year had really done an enormous amount of preventive work.

Dr. H. B. **BRACKENBURY** said they were just beginning to see in dim outline what the State organization was going to be for the medical services of the future. The details were of vast importance, and could not at present be filled in. But the essential position in the whole map was occupied by the general practitioner. There ought to be a general practitioner—a family practitioner—for everybody. The consultant and the laboratory were there to help the general practitioner. As soon as the idea began to hold sway that the consultant and the laboratory were there in direct and uncontrolled relationship with the patient, the plan went awry. If the general practitioner were abolished the humanizing element was eliminated. The general practitioner, moreover, worked along the lines of prevention. Through his advice and suggestion, personal and domestic hygiene were established. He was a preventive agent in another sense: he prevented the need for all those big institutions by getting at diseases early. If only the general practitioner could be educated to know more about incipient disease and its progress, he, at the very beginning, in the houses of his patients, could exercise his scientific skill in the preventive direction in a manner beyond what was possible to anyone else.

Dr. NOY SCOTT (Plymouth) said it was obvious that the more the State paid the more would the State control, and "the State" meant ultimately the taxpayer and the ratepayer, and what the control of the taxpayer and the ratepayer meant, those who knew the personnel of insurance and other local committees could realize. The profession must beware how far it gave up its liberty. A representative of Labour had told them that the workers desired preventive medicine. But in factories to-day was it not true that workers sustained accidents and contracted diseases simply because they would not use the means of prevention provided, and that much of the common negligence was due to familiarity? If the Labour party would consent to such control as was exercised over the working classes during the war, disease might be prevented.

Sir KENNETH GOADBY, as one who during the war was liaison officer between the surgeon on the one hand and the laboratory on the other, said that his feeling was that the surgeon and physician rather scorned the laboratory and only asked its aid when the patient, perhaps, was past help. By bringing these together team work had resulted between surgeon and physician and radiologist and laboratory worker which had been of the greatest value. It would be a great advantage if laboratories could be instituted in various parts of the country to which the general practitioner could not only send material for examination, but could himself go in order to do a certain amount of work and gain some insight into laboratory methods. It was only by close association between the man in charge of the case and the laboratory that true research could be carried out. Otherwise there was a tendency for the laboratory to go off on a side issue. The researchers were doing their best to aid in the prevention of disease, and if the Labour party would assist them in disciplining its members, if it would persuade its members that the collection of facts was an advantage to them and should not be impeded, it would be helping powerfully towards that end. The laboratory should be a place where the general practitioner could not merely ask for one examination, but could again take the specimen and ask a supplementary question, the answer to which might prove even more illuminating than the first.

The St. Andrews Institute.

Dr. GIRDWOOD described the institute at St. Andrews established by Sir James Mackenzie for research into the early stages of disease. Sir James Mackenzie's own experience in general practice supported, what a return from the local general practitioners of St. Andrews showed, that about 90 per cent. of the cases they attended in their daily practice were undiagnosable. In part this was due to the early stage at which disease was seen, and in part to the slightness or seeming triviality of many of the cases. A great proportion of those early cases presented no physical signs detectible by present means. The only evidences of ill health in most cases were purely subjective; thus a very common solitary symptom was the feeling of unfitness, tiredness, and exhaustion. The study of early disease resolved itself, therefore, into the study of the patient's sensations of ill health, and the study of the mechanism of production of these sensations was all important for throwing light on the diseases of which they were the earliest evidence. Since these early cases of ill health were seen by the general practitioner (and he alone was in constant touch with them), it followed that the general practitioner must undertake this research. To this end Sir James Mackenzie established his institute at St. Andrews and appointed several general practitioners to the clinical staff. As special investigations were necessary for such work, a bacteriologist, a chemist, and a radiologist were appointed, and laboratory accommodation was provided. Three panel practitioners were on the staff, and used their rooms as their panel consulting rooms. They had the use of the special departments for their panel cases. They kept brief notes on a card index of all their patients, and these in time would form complete health histories of each individual. The general practitioners each devoted two hours a day to research work. On three days a week each practitioner saw one new research case and any other cases for revision or further observation. Each practitioner selected the cases suitable from his own practice for this special examination, which he conducted himself. The special investigations required were carried out by the special departments. Each member of the staff selected and made himself familiar with some special branch of clinical medicine. Any member could consult any other. All research cases taken during the week were read and discussed by the entire staff on Friday afternoons. A provisional diagnosis was arrived at, suggestions for further investigation of the cases were made and noted, and a line of treatment suggested. The cases were then indexed under provisional diagnosis. In order to overhaul methods and digest the material gathered, one afternoon a week was devoted to a discussion, the subject of which was selected beforehand and illustrated from the cases recorded. This compelled members to make repeated analyses and careful comparisons of their cases.

The Essentials of a Medical Service.

Dr. P. MACDONALD (York) believed this discussion to be one of the most valuable ever instituted by any medical body. Sir George Newman had not been very definite in his proposals, and this was probably deliberate and perhaps wise. Reading between the lines of the papers, one found a plea for the assumption of responsibility by the State for the medical services of the community. He was enthusiastically in sympathy with this plea, but he wanted to give a word of warning. Although it was desirable that the State should assume responsibility for medical services, it should do so only on conditions which would allow of the efficient accomplishment of the end sought. If this was not well and efficiently done, then any further incursion by the State into medicine should be strongly resisted. There were three essentials for an efficient medical service: The first was that any medical service should be established and complete; not every section of it would spring into completeness at once, but there must be a general co-ordination from the beginning. The second was that the medical profession should be given the maximum possible control of the service; he would not say the whole control, but the utmost possible. The third was that the provision of medical services must be adequate. Judging by the estimate he had tried to work out for his own city (York), the cost to the State of an efficient medical service would be an increase on present costs of 40 millions a year. Would this be forthcoming from the present Ministry of Health? He believed that not only was the day of honorary staffs in voluntary hospitals at an end, but the day of the voluntary hospital also.

Reply.

Sir WILMOT HERRINGHAM, in replying, wished to endorse the desirability for personal intercourse between the laboratory worker and the doctor in charge of the case. The question of a general State service had scarcely been brought up in that discussion. Mr. Jenkins was its only advocate, though Dr. Peter Macdonald had alluded to it. It was understood, as Dr. Brackenbury had so well pointed out, that the whole profession must be extremely well paid. He thought they were all apt to exaggerate a little what medicine, whether preventive or curative, could do. As for the vast sums which would have to be expended if the medical profession was to be properly paid, it was quite evident that the Labour party was willing to provide the money! And as that generally meant that other people should provide it, there was nothing more to be said.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

ARRANGEMENTS have been made to publish full reports of the discussions in the Sections of the Annual Meeting at Cambridge during the next two or three months. Meanwhile the brief notes which follow will enable those who were not present to gain a general view of the proceedings. Any errors to which attention may be drawn will be corrected in the full report.

SECTION OF MEDICINE.

NERVOUS DISORDERS OF STOMACH AND INTESTINES.

ON the first day (June 30th) Dr. A. F. Hurst, after a few introductory remarks by Sir Humphry Rolleston, the President, read his paper on nervous disorders of the stomach and intestines, arguing that most of them had a hysterical rather than an organic basis. Dr. T. I. Bennett (London) described his work on the digestions of normal students by the fractional test-meal method, illustrated by lantern slides. Dr. T. R. Brown (Baltimore) described the difficulties in standardizing digestive processes and the secretion of hydrochloric acid, and deprecated over-attention to gastro-intestinal symptoms. Dr. W. Langdon Brown (London) illustrated the difficulty of discriminating between organic and functional disease in gastric disorders, correlating the sensitiveness of the nervous system; he also deplored the undue prescription of rigid dietaries. Dr. J. A. Nixon (Bristol) enlarged upon the importance of recognizing the variability in the normals of digestion, and of the frequency with which organic disease is overlooked when the diagnosis of a psychoneurosis is made. Mr. H. Tyrrell Gray (London) discussed the neurological basis of nervous disorders of the stomach and intestines, laying particular stress on the activity of the sympathetic; he thought it essential that the importance of surgical treatment in these cases should not be overlooked. Professor R. J. Buchanan (Liverpool) spoke of the importance of co-operation between physicians, surgeons, and others in the diagnosis and treatment of these disorders; the "psychical" explanation should not be pushed too far, lest organic disease be overlooked. Dr. R. G. Gordon (Bath) deprecated the neglect of the psychical factors in cases of indigestion, for often they were not obtruded by the patients and often were very vague. Dr. W. J. Tyson (Folkestone) dwelt on the practical difficulties of diagnosis in the patients as seen in daily work. Dr. E. Hobhouse (Brighton) endeavoured to clear up the exact meaning of the many terms used, particularly hysteria, psychasthenia, and neurasthenia. Dr. E. Libman (New York) described the importance of sigmoid spasm, as shown by an area of cutaneous hyperalgesia, in gastro-intestinal disorders of functional type, and the importance of abnormal metabolic processes. Dr. Craven Moore (Manchester) emphasized the instability of the nervous system underlying these conditions, at the same time pointing out the desirability of doing everything possible to exclude organic disease of all sorts in them. Dr. R. C. Parsons (Dublin) advocated breadth of view in the diagnosis and treatment of these cases, quoting an illustrative case. Lord Dawson dwelt on the advantages of weakness in the gastro-intestinal tract, *quoad vitam;* and on the ease with which organic disease might be missed in its early stages. Personal psycho-analysis was always to be avoided. Dr. A. F. Hurst cleared away several misunderstandings that had arisen in the course of the discussion, laying stress on the importance of thorough physical examination of all sorts before making a diagnosis, and deprecating undue readiness in recourse to surgical interference. The Section was attended by over 200 members and visitors.

VITAMINES IN CLINICAL MEDICINE.

On Thursday, July 1st, with Professor Bradbury in the chair, Professor F. G. Hopkins (Cambridge) read his paper on the present position of vitamines in clinical medicine. Sir James Barr (Liverpool) threw doubt on the actuality of vitamines, referring to Sidney Ringer's work on the importance of salts, particularly those of calcium, in the metabolic processes of health; and adduced various reasons for his disbelief in vitamines. Dr. Harriette Chick (London) laid down eight requisites for an adequate diet in childhood, basing her remarks on experiences recently gained in Vienna; the connexion between various diseases of childhood or adult life and deficiency in one or other of several of these eight qualities could be traced in very various degrees only with great difficulty and by the exercise of great clinical acumen in many cases. Laboratory work, particularly ideas of quantity, proved of the greatest service in the investigations. Thus, 10 grams of neutralized lemon juice were found to be of more value than 60 grams of apple juice. Reference to the great increase of rickets in Vienna was made, and attributed to food failure. Dr. Elsie Dalyell (London) said that at the age of 4 months 50 per cent. of the children were rickety though breast-fed; at 9 months all children were rickety in Vienna at the present time. Slides were exhibited showing the improvement in health and weight produced by giving cod-liver oil, but without increasing the calorie value of the diet; this proved sufficient to avert rickets. Very few cases of keratomalacia were seen in Vienna; one illustrative case was quoted, of rapid onset with rapid cure by fat and cod-liver oil. Lieut.-Colonel R. McCarrison, I.M.S., referred to the frequency of keratomalacia in Madras, curable by cod-liver oil. He showed a series of slides exhibiting the gastro-intestinal changes and intussusception common in monkeys fed on a diet poor in vitamines; changes in the ganglions of Auerbach were common. Amoebic dysentery occurred in monkeys fed on deficient diets, but not in monkeys kept in the same conditions and with the infective amoebae in their stools while receiving adequate diets. Dr. Hess (New York) dwelt on the details of chemical procedure that might bring about the destruction of vitamines, particularly those in milk. Old samples of dried milk might still contain plenty of vitamines, and so bring about the cure of scurvy in infants. Beading of the ribs he regarded as evidence of scurvy rather than of rickets. Dr. G. F. Still (London) pointed out the difficulty of analysing the dietetic origins of rickets; scorbutic diets, in the same way, did not always produce scurvy in children. Possibly different children required different amounts of different vitamines to keep them in health; or the vitamine content of standard foods might be variable. Dr. Leonard Williams (London) discussed disease in general from the point of view of the dietetic deficiencies to which the community is exposed, mainly as the result of cooking. He recommended intensive vitamine treatment in many conditions such as chronic arthritis; the maximum amount of uncooked food should be taken. Dr. J. C. Drummond (London) detailed the influence of deficiency in the diet of the mother on her progeny; in feeding experiments slight inadequacy of diets produced often a great tendency to attacks of intercurrent disease. Restrictions of diet did not influence the growth of experimental cancer in animals, practically speaking. Dr. Corry Mann (London) detailed some of the difficulties experienced by makers of sweetened condensed milk, and described some of the conditions promoting rickets in the daily life of families about the docks. He recognized a rickety diathesis in 8 per cent. of the cases he had investigated. Dr. W. H. Willcox (London) described the evidence connecting scurvy and beri-beri with dietetic deficiencies in the East among British and Indian troops during the recent war. Dr. Eric Pritchard (London) lauded the efforts of the biochemists in the study of vitamines, but deprecated the idea that rickets could be banished by doles of cod-liver oil; he regarded rickets as a highly complex disease based on malnutrition, and connected with a great demand for calcium by the tissues—a disease of want of metabolic balance. Dr. S. M. Copeman (London) gave an account of the connexion between defective diet and malignant disease, showing that some such thing probably exists. Dr. R. L. Mackenzie Wallis (London) dealt with the importance of providing an adequate diet for the patients in asylums for the insane. Biscuits made of monkey nuts were admirable in beri-beri. Dr. C. Muthu (Wells) gave a general account of deficiency diseases in this and other countries, and the connexion between life and electricity. Dr. J. Brown (Blackpool) put in a plea for a diet of living foods containing electrical energy and aromatic paraffins. The meeting was attended by over 300 members, and the debate was followed with the closest interest and appreciation.

Subacute Bacterial Endocarditis.

On the last morning (Friday, July 2nd), after a few preliminary remarks by the Chairman, Dr. Thomas Lewis, Sir Thomas Horder read his opening paper on the clinical significance and course of subacute bacterial endocarditis, a term coined by Dr. Libman. He was followed by Dr. Libman (New York), who characterized the various types of endocarditis occurring, distinguishing rheumatic heart disease from other types of endocarditis, and particularly from that under discussion. These were due in 90 per cent. of cases to the non-haemolytic streptococcus, the great majority of the remainder being due to the bacillus of influenza. Most often the heart valves showed old and long previous lesions; attention was drawn to the renal lesion—a glomerulo-nephritis with partial involvement of the individual glomeruli. A description was given of the so-called "bacterium-free" stage often seen in these patients, and occurring in something like a quarter of them. Renal deficiency, anaemia, and embolism were the three commonest causes of death; marked browning of the face was not very rare. The prognosis was bad but not hopeless. Dr. Wardrop Griffith (Leeds) discussed the difficulties of diagnosis, from both the clinical and bacteriological sides, between infective endocarditis and the ordinary simple endocarditis. Similarly, acute and subacute infective endocarditis were often indistinguishable, and further definition was wanted. Dr. F. J. Poynton (London) argued that it was necessary to include rheumatic endocarditis in the discussion, on the ground that the blood was not bacterium-free in the early stages. In general he would hold that a rheumatic heart later developing subacute bacterial endocarditis (or progressive rheumatic endocarditis, as he would prefer to call it) had never been free from infection, and that the second disease was a recrudescence of the first. Lantern slides illustrating his points were exhibited. Dr. Carey Coombs (Bristol) described the condition as one of valvular disease, rather than one of carditis as in rheumatic heart disease. He was unable to discriminate between ulcerative endocarditis and the subacute bacterial endocarditis, but agreed that old endocardial lesions were common in these cases. The portal of entry of infection could not be specified; at any rate an effort to lessen rheumatic infections should be made. Dr. A. G. Gibson (Oxford) pointed out the difficulty of identifying small cutaneous haemorrhages individually; search should be made for haematuria from day to day. He also touched on a variety of the clinical signs that might occur in the condition, asking what might be the importance of arrhythmia in these patients. The Chairman defined the diagnosis of petechial haemorrhages, the form being a ring rather than a spot, the location often round the clavicle. He laid stress on clubbing of the fingers as a sign of subacute bacterial endocarditis. Dr. J. Hay (Liverpool) referred to the frequency of the condition nowadays, and its almost invariably fatal outcome. As an early sign he mentioned rapidity of the heart's action; extrasystoles he was inclined to disregard; he also referred to early clubbing of the finger-tips. The diagnosis should and could be made independently of the bacteriologist and biochemist. Particular care should be given to the prophylaxis of the rheumatic infections, which lay with the general practitioner. Dr. A. E. Gow (London) gave a general account of the symptomatology of subacute bacterial endocarditis, and his recent experience was that the bacteria could be recovered from the blood in less than half the cases. He recommended puncture of the spleen when blood cultures proved negative. Leucopenia was not rare; illustrative cases were quoted. Dr. H. J. Starling (Norwich) gave an account of thirty-eight of his own cases, all occurring in the course of military service, from the clinical point of view. The fever he was inclined to attribute to the occurrence of embolism; rheumatism occurred in the history of only a quarter of the patients. Details of the *post mortem* appearances were given. Dr. J. M. Cowan (Glasgow) sent a communication, which was read; it was pointed out that the rhythm of the heart was not necessarily disturbed. Dr. G. D. Laing (Oxted) dwelt on the difficulties of diagnosis from the point of view of the general practitioner, asking for further indicative symptoms. Dr. Buchanan (Liverpool) asked a number of questions as to the physical signs, and discussed the significance of the morning temperature in these cases and of the interlunar rise in women. Dr. Poulton (London) spoke, and Sir Thomas Horder replied to a number of the points raised. Over 120 members attended the discussion.

SECTION OF SURGERY.

Surgical Treatment of Gastric Ulcer.

Sir George Makins presided over a very large audience assembled in the anatomical lecture room on Wednesday, June 30th, and in a few words welcomed the Section to Cambridge. The discussion on the surgical treatment of gastric ulcer was introduced by Sir Berkeley Moynihan. In his view the disease was a comparatively rare one, and was essentially a secondary disorder. The first efforts of the surgeon were to be directed towards discovering the primary source, which most probably lay within the abdomen or in the buccal cavity; after septic infections of teeth, maxillary antrum, appendix, had been dealt with they were to go on to the essential surgical treatment of the ulcer. Medical treatment had to be much more rigid and spread over a longer time than formerly, and he advocated rest in bed, large quantities of fluid with alkaline drugs rather than starving. When medical treatment thus extensively tried had failed, surgery must step in. Gastro-enterostomy had come to be the favourite operation, and it had given him excellent results where the ulcer was small and situated in the lesser curvature, poor results where the ulcer was large and adherent to the pancreas, and bad results where carcinoma had developed in the base of the ulcer. He had abandoned gastro-enterostomy in the treatment of gastric ulcer because, to his mind, the results were not good enough for modern surgery. It was now really only the second-best method. Excision of the ulcer along with gastro-enterostomy was a good method. But he now believed that partial gastrectomy was the operation likely to give the best results provided the ulcer was one suitable for operation at all. He briefly described the technique of the operation, and gave his statistics to show that the ultimate results amply justified this radical procedure. Dr. Charles H. Mayo narrated the experience of the Mayo clinic. In 95 per cent. of the cases the *x*-ray picture could distinguish between gastric and duodenal ulcer. There was a lowering of the free acids, and an increase of the combined acids. Gastric ulcer was potentially malignant. He discussed the operative technique, and was of opinion that destruction of the ulcer along with gastro-enterostomy was the surgical treatment. The discussion was carried on by Mr. Herbert Paterson (London), who urged his well-known views on the question as to whether gastro-enterostomy was physiological or mechanical in its effects; Mr. Burgess (Manchester), whose choice of operation was combined excision of the ulcer with gastro-enterostomy; Mr. Charles Ryall; Dr. Finney (Baltimore), who put in a plea for his own favourite child pyloroplasty, on the ground that through the large stomach opening its inner surface could be thoroughly examined; Mr. Billington; Mr. Rowlands; and a few words were added by the President of the Section. Sir Berkeley Moynihan, in his reply, twitted Mr. Paterson for his devotion to the goddess Hyperchlorhydria. Mr Kidd's paper on the treatment of stone in the pelvic portion of the ureter indicated how frequently such stones could be got rid of by operative cystoscopy, as by slitting the ureteral meatus for three-quarters of an inch and injecting oily or anaesthetic substances they could frequently be coaxed into the bladder. He urged that stones might thus be left for six to twelve months and if they did not find their own way out of the ureter, then the open operation could be performed. In regard to the latter he preferred a small muscle-splitting incision in the lateral aspect of the lower abdomen, pursuing the stone extraperitoneally. Mr. Jolly maintained that the number of stones removable by the method recommended by Mr. Kidd was not large. He had had excellent results from the open operation by the middle-line incision, having had twenty-three cases without a death. Mr. Grey Turner, Mr. Rowlands, Sir Hamilton Ballance, and Dr. Charles Mayo also contributed to the discussion.

In the afternoon demonstrations were given by Mr. Gillies and Mr. Cole on the plastic surgery of the face, illustrated by military cases brought from the Queen's Hospital at Sidcup and by cases showing the results of plastic surgery in lupus and syphilitic destruction of the nose and palate. Mr. Gillies also showed a patient suffering from extensive cleft palate who had reached the age of 16 without operation, in whom he had repaired the soft palate only by a new method, leaving the gap in the hard palate to be closed by an obturator. Another demonstration was that by Major Sinclair of his methods of treatment of fractures. A large hut was fitted as a hospital ward, and all the now well-known apparatus—the frame bed with net, modified Thomas splints, Balkan frames with pulley and weight arrangements, the "skate" footpiece, and arm splints—were shown on patients precisely as in actual cases. The demonstration was exceedingly well carried through, and followed by a large and intensely interested company. It was generally remarked that the first day's work in the Section of Surgery was the best and the greatest in scientific and practical interest of any in recent years.

Cancer of the Rectum.

The surgical treatment of cancer of the rectum attracted a large attendance at the Section of Surgery on Thursday, July 1st. Sir Cuthbert Wallace presided during the greater part of the meeting after the President, Sir George Makins, had introduced the first speakers. Mr. Ernest Miles dealt with the various modes of spread of the disease, and showed how local increase in size was of less importance than the glandular infection, which was generally recognized as developing in three ascending zones, and it was this metastasis which constituted the difficulty in operating. It was as important to remove glands discoverable near the common iliac vessels as it was in the analogous case of cancer of the breast to clear the axilla and its contents. He showed by a series of diagrams thrown on the screen how, as the glandular geography came to be known, the scope of the operation came to be widened, and how he was forced to regard the abdomino-perineal operation as the only radical one. Mr. Grey Turner (Newcastle) pointed out that the treatment of rectal cancer could never be considered satisfactory as long as the disease was so far advanced as to necessitate operations which left an incontinent anus. Improvement could only come through much earlier diagnosis and surgical operation following upon it. He regarded the thorough removal of the growth and surrounding tissues, with $2\frac{1}{2}$ in. of uninvolved bowel above and below, as more important than removal of the upward invasion path. In his view the best operation was exploratory laparotomy with colostomy followed by sacral excision. The discussion which followed proved to be lively and of interest, exhibiting some divergence of view as to the extent of the radical removal of the rectum. In the opinion of some surgeons the operation advocated by Mr. Miles was upheld, others maintained that some less extensive procedure gave ultimately as good results; one school urged that an inguinal artificial anus was essential, another held that every effort should be made to preserve the anus with sphincteric control in its proper situation. Mr. Lockhart Mummery (London), Mr. Burgess (Manchester), Mr. Ryall (London), Dr. Brown (Ipswich), Sir Hamilton Ballance (Norwich), Dr. C. H. Mayo (Rochester, Minnesota), Sir C. Gordon Watson (London), Mr. Jocelyn Swan (London), Mr. D. P. D. Wilkie (Edinburgh), and Mr. Hamilton Drummond (Newcastle) contributed to the discussion and the openers replied. A short paper on glaucoma was afterwards read by Lieut.-Colonel Elliot, I.M.S.(ret.). He dealt with the ophthalmoscopic evidence of increase in intraocular pressure, the uses of mechanical tonometry, the examination of the light sense and the importance of accurate measurement of the corneal diameter. In the discussion some difference of opinion was expressed as to the dangers of employment of the tonometer. Dr. Wallace Henry, Mr. Wherry, Vice-President of the Section, and Dr. Antill Pockley (Sydney) contributed to the discussion of this subject. In the afternoon Major Sinclair's very able demonstration on the treatment of fractures was repeated, and Colonel Elliot followed up his paper on the diagnosis of glaucoma by a demonstration on the same subject given in the Anatomical Theatre.

Demonstrations.

Endoscopy of the Lower Air Passages and Oesophagus.

Mr. Herbert Tilley, in the course of his demonstration on Friday afternoon, July 2nd, gave a brief summary of the history of the direct examination of the lower air passages and oesophagus as compared with indirect examination by means of light reflected from a laryngeal mirror or laryngoscope. He demonstrated Brüning's endoscope, which, he said, was a great improvement on Killian's original instrument in that it provided 50 per cent. more illumination and a larger field for the manipulation of instruments. In both of these instruments the electric lamp and its carrier are near the proximal end of the tube which is passed into the lower air passages or into the gullet. He then showed a number of tubes devised by Chevalier Jackson in which the small electric bulb is at the distal end of the tube, and the advantages of this over proximal illumination were demonstrated. Mr. Tilley showed a number of foreign bodies he had removed from the lower air passages and gullet by means of the direct method, and warned his hearers of the dangers of blind probing, bougieing, and the use of "coin catchers." The direct method had, he said, revolutionized the treatment of foreign bodies in the gullet and air passages, and it was now being employed frequently as a method of examination, diagnosis, and treatment in pathological conditions of those regions. The indications and contraindications for the employment of the direct method, the preparation and the position of the patient, and the question of local or general anaesthesia were also touched upon. Finally, Mr. Tilley passed a tube into the trachea of a patient under the care of Mr. Arthur Cooke of Cambridge, and some thirty of the audience were able to inspect this region and look into each main bronchus. In a second case—a patient with malignant disease of the larynx—the clinical aspects were almost as readily visible as if it had been on the tongue or lip.

On the same afternoon, in connexion also with the Section of Surgery, Mr. Arthur Cooke and Dr. J. W. McNee gave an interesting and instructive demonstration of the technique of blood transfusion, in the experimental room of the Pharmacological Department. Mr. Arthur Cooke showed the direct method with Kingston's tube, and the citrated method with Robertson's bottle; Dr. McNee demonstrated the selection of donors for blood transfusion whereby they are classified into the four groups of Moss. Major Sinclair, in the large shed which had been fitted up as a ward hut in the grounds of the medical schools, again demonstrated his treatment of fractures, and completed this with a lantern exhibition showing the results obtained by his methods.

SECTION OF NEUROLOGY AND PSYCHIATRY.

Early Signs of Nervous Disease.

The opening meeting of the Section of Neurology and Psychiatry, held on Wednesday, June 30th, with Dr. Lewis E. Shore in the chair, was well attended by members, and the excellent discussion on the opening paper by the President of the Section (Dr. Henry Head, F.R.S.) showed the widespread interest taken at the present time in nervous disease. In his paper on early signs and symptoms of nervous disease and their interpretation Dr. Head considered the subject under three headings: (1) history, (2) nature of early signs, and (3) interpretation and diagnosis. The fact that in hospital practice inquiry into the history of the development of nervous disorders is left, as a rule, to inexperienced clinical clerks is greatly to be regretted, for this part of the investigation is of fundamental importance, especially in dealing with the early stages of disease. Early symptoms are often unobtrusive and transitory, and may have impressed themselves so little on the mind of the patient that they are remembered only when a precise and detailed account from the patient is insisted upon. Many of the early signs of nervous disorder manifest themselves in mental spheres only. For example, there may be changes in personality and conduct, memory defects, such as amnesias, disturbances of sleep, and headache. Certain forms of headache can be clearly distinguished, and are of great importance in diagnosis. Dr. Head was insistent on the fact that diagnosis was a threefold process: First, there is the determination of the disturbance of function; secondly, the translation of such disturbance in terms of the locality of the structural lesion; and thirdly, the nature of the underlying pathological process. All such names as "tabes dorsalis" and "general paralysis" should be avoided. They do not denote diseases in the strict sense of the word, but are merely "shorthand titles for groups of signs and symptoms evoked by the action of the *Spirochaeta pallida* on different structures of the central nervous system." Dr. James Collier, Dr. Gordon Holmes, Dr. F. M. W. Walshe, Dr. Theodore Thompson, Sir Frederick Mott, Dr. Hildred Carlill, Dr. Williams (Washington, U.S.A.), Dr. Clark, Dr. Devine, Dr. Grainger Stewart, Dr. Farquhar Buzzard, Dr. Lowson, Dr. Percival, Dr. Helen Boyle, Dr. Bedford Pierce, and Dr. Goodman took part in the discussion. Dr. Head replied. In the afternoon Dr. J. G. Greenfield demonstrated sections of peripheral nerves at different stages of regeneration, Dr. Prideaux psycho-galvanic reflex reactions, and Dr. Scripture speech registration in nervous diseases.

Dementia Praecox.

At the meeting of the Section of Neurology and Psychiatry on Thursday, July 1st (Dr. Henry Head, the President, in the chair), Dr. Bernard Hart opened the discussion on dementia praecox and its relation to other disorders. "Dementia praecox," he said, "constitutes without doubt one of the most important problems in public health with which modern medicine is confronted." The nature and causation of the condition had still to be made known, and even the question as to whether or not it was a definite entity had not been adequately solved. Until the mystery surrounding the etiology and character of the disorder was cleared up prophylaxis and curative treatment would be impossible. To Kraepelin we owed the first clear formulation of dementia praecox as a definite disease. He noted that there was a group of adolescent patients suffering from mental disorder which tended to run a more or less clearly defined course, ending in mental enfeeblement. The clinical pictures presented in the earlier stages varied considerably, but nevertheless there were certain features common to all. These were a "weakening of the emotional activities" and "loss of inner unity of the activities of intellect, emotion, and volition." Kraepelin's conception had been much disputed, but it was now generally recognized that it was adequate, in so far as it marked off a group of cases with notable similarities in their symptomatology, course, and outcome, although the group could not be accurately delineated. As to the nature of the essential morbid process in dementia praecox, three principal views were held at the present time: (1) Physiogenic theories, maintaining that the pathology was essentially physical; (2) psychogenic theories; and (3) theories attempting to combine both these view-points. Physical alterations occurred, especially in the advanced stages of the disorder, and were found chiefly in the reproductive glands (Mott) and the cells of the central nervous system. On the other hand, the researches of Freud and Jung showed that psychogenic factors were of the greatest importance. Freud regarded the symptoms as the result of psychological mechanisms similar in kind to those he had found to exist in hysteria, and the compulsion neuroses. Jung looked on dementia praecox as due to a failure of adaptation to the actual environment, and a consequent depression of the psychic energy to more primitive modes of adaptation. In conclusion, Dr. Hart expressed his own belief that any adequate formulation of the problem must combine both physiogenic and psychogenic aspects, and this could best result from a consideration of the disorder of dementia praecox from the point of view of biological reaction. Sir Frederick Mott, Dr. Devine, Dr. Archdale, Dr. Stanford Read, and others took part in the discussion. In the afternoon at 2.30 Sir Frederick Mott discussed the pathological changes in cells of the central nervous system, and in the reproductive glands in dementia praecox. Dr. Henry Head and Dr. George Riddoch demonstrated sensory alterations in the hand from cortical injuries, and Dr. Buzzard and Dr. Greenfield the pathological changes in the nervous system in encephalitis lethargica.

Psychotherapy.

On Friday, July 2nd, a discussion on psychotherapy was opened by Dr. T. A. Ross, who approached the question under three headings: (1) The method of persuasion and explanation, (2) psycho-analysis proper, and (3) methods in which both are employed under different conditions. Much of the animosity evident at the present time in the medical profession in regard to the treatment of functional nervous disease was, he said, the direct result of limited experience. Difference of opinion was healthy, but bitterness and the imputation of unworthy motives succeeded only in clogging progress. For one group of workers psycho-analysis was the only rational method of treating all psychoneurotics, while for another this practice was not only useless but actually so dangerous that it should never be employed. But if the problems concerned with the treatment of functional nervous disease were approached in a non-partisan spirit it became evident that for certain groups of cases mental analysis formed the only method by which the essential cause of the trouble could be revealed and dealt with, and for other groups simpler methods, such as persuasion, were all that was required to bring about successful results. It must be remembered, however, that in the past persuasionists had been too easily satisfied with their results, and had tended to think that when others cured a manifestation *they* cured the whole disorder. Analysis, Dr. Ross continued, was not synonymous with anamnesis, for it always implied the bringing of a repressed and unconscious constellation of ideas into consciousness. The main difference of opinion between the middle school and the rigid analysts was based on the extent of the procedure which was necessary in the majority of neurotic subjects. The followers of Freud invariably delved deeply into the unconscious because they attributed any early improvement that might occur to unstable conditions such as transference of affect from patient to physician. They were led to a scepticism of this kind by their belief that psychic energy was always kinetic. Dr. Ross considered such a hypothesis fallacious. Psychic energy might be potential or latent, as physical energy was known to be. From this premiss he argued that analysis need not necessarily be complete in order to help the patient to a mental readjustment to ordinary affairs of life. Indeed, attempts at complete analysis might increase the maladjustment and so do harm. Dr. Aldren Turner, Dr. A. F. Hurst, Dr. Bernard Hart, Dr. Crichton Miller, Dr. Thom, Dr. Williams, Dr. Maurice Nicoll, and others took part in the discussion that followed.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Atrophy of the Liver.

At the opening session on Wednesday, June 30th, the President, Professor Lorrain Smith, outlined the scope of the discussions. Pathology was, he said, becoming more and more divided into special branches, and one person was not able to devote himself to every branch. At the same time the subject was essentially one. Morbid anatomy, bacteriology and experimental pathology supplemented each other, and each problem had to be attacked from every point of view. Complete solution was not possible by investigation along one line alone. Laboratories were too often equipped only to assist the clinician. When a diagnosis had been established the matter was dropped, and no study was made of the fundamental conditions which produced the disease. The pathologist should be in a position to make a complete investigation of disease, and reconstruction of pathological departments should be attempted along these lines. Dr. Miller and Dr. Rutherford (in the absence of Dr. Stuart McDonald) said that from a study of 15 unpublished cases three types of acute yellow atrophy of the liver could be distinguished: (1) The acute type characterized by more or less complete destruction of liver cells. (2) The subacute, in which there was well-marked vascular and inflammatory cell reaction. (3) A type in which regeneration was the predominant feature, and the end picture resembled that of cirrhosis. Multiple nodular hyperplasia was the term by which it was proposed to speak of this type. Cases were then described and sections shown to demonstrate the nature and distribution of the lesions in the liver. From the etiological standpoint the most striking feature was the variety of conditions which precede the yellow atrophy. The chief were tuberculosis, syphilis, typhoid and influenza. Many cases presented a number of possible causes. In one instance a patient had suffered from scarlet fever, acute rheumatism, syphilis, tubercle, and influenza. It would seem that in some cases a single factor was responsible, in others multiple factors. Dr. Spilsbury said that there were many acute processes in which, though a patient recovered from the immediate effects, he might succumb to atrophy of an organ due to pressure of scar tissue. Such conditions in the liver were cirrhosis, chronic perihepatitis, and congenital syphilis. In acute yellow atrophy the essential lesion was a destruction of liver cells, and it was seldom the patient survived to reach the cirrhotic stage. Poisons such as T.N.T. and tetrachlorethane produced both acute yellow atrophy and cirrhosis, but more usually the patient succumbed in the acute stage. In the latter case there was widespread necrosis of liver cells. In the less acute forms liver regeneration was interfered with and prevented by the formation of scar tissue, which also brought about further atrophy of liver cells by its contraction. Dr. Foulerton spoke on fatty changes in the liver caused by various poisons. He considered acute yellow atrophy an unsuitable term, as it only represented a stage in the morbid process. The fat was in the liver and was due to accumulation of unchanged fat in the food, and not derived from the liver cells. The investigations were based on a series of cases of poisons affecting the human liver and on animal experiments. In experiments the kidney as well as the liver was engorged with fat and nephritis was produced. The poisons which affected the liver were all soluble in fat or were fat solvents, with the exception of arsenic, antimony, and mercury. Poison was fixed in the circulating food fat, which was carried to the liver in order to be metabolized. The liver therefore received an accumulation of the poison, which rendered it unable to deal with the fat. The fat then passed on to be excreted by the kidney, which became poisoned in turn. As regards arsenic, the latest work seemed to show that it had some affinity for fat in the body. It was stored in the tissues for long periods, and analysis showed that the fatty organs contained the greater part of it. Colonel William Hunter, C.B., spoke of acute yellow atrophy in the course of epidemic jaundice and in salvarsan poisoning and delayed chloroform poisoning. What had struck him was the frequently sudden onset and complete simultaneous necrobiosis of the liver cells, accompanied by fatty changes in the kidney and heart. He considered the fatty change to be due to cell degeneration and the appearance of fat which was previously present in a soluble form. The poison affected every cell in the body simultaneously. If portal blood passed unchanged through the liver, toxic symptoms supervened. In his view the phenomenon of acute yellow atrophy could be explained by the reduced activity of the liver, which allowed its proteolytic ferments to digest its own cells. Dr. Matthew Stewart confined his attention to etiology and morbid anatomy. In his series some cases were idiopathic, others were due to T.N.T. and galyl. In T.N.T. poisoning only a limited number of cases got toxic jaundice. It might be due to the ease with which some people absorb T.N.T. through the skin, but this did not account for all cases. Probably personal idiosyncrasy was responsible. As regards morbid anatomy, the lesions were similar, however the condition might have been brought about. The changes in the acute and chronic cases were described. An account was also given of patients which had recovered. Their subsequent histories showed that recovery might be complete. Dr. McNee spoke of spirochaetal jaundice, and described the various changes met with in the liver, which included cell destruction and regeneration. There was no evidence of any fatty change in the liver, nor in the kidney, although acute nephritis accompanied the disease. Further research on the function and structure of the normal liver was required. Dissociated functional derangement of the liver had been described by Brulé and his school, and investigation on those lines was needed. Dr. Rutherford, in reply, said that he had not met with the intense fatty infiltration described by Dr. Foulerton. He was interested in Professor Stewart's remarks on etiology, and in his note on the recovered cases. A bacteriological study of bowel contents would be useful, especially in cases where repeated attacks of jaundice had been noted.

CANCER RESEARCH TO-DAY.

In opening a discussion, on Thursday, July 1st, on the present position of cancer research, Dr. J. A. Murray touched on some of the difficulties besetting cancer research—difficulties which, owing to a want of comprehension, are regarded by the lay and even by the medical public with bored impatience. There is a universal conviction among laymen that, knowing how to spell the word, they know what cancer is. In reality clinical and microscopical data must be very carefully scrutinized before the malignant nature of a neoplasm can be established, and where a "cure" is claimed for any specific remedy the examination must, in the interests of future patients, be as stringent as possible. In animal experiments the proof required is successful transplantation of the tumour to normal animals. An important step in experimental cancer research was Jensen's discovery that resistance or immunity to grafted cancer could be produced in animals by an unsuccessful inoculation. Unfortunately spontaneous growths are not affected by this line of treatment. Much work has been expended on the subject, but the nature of the immune state is still unexplained. It only lasts a short time after inoculation, and is accompanied by failure of the fibroblastic and angioblastic reaction to implanted carcinoma, and also by the presence of plasma cells in the connective tissues throughout the body. Increase in the circulating lymphocytes, whether produced by *x* rays or exposure to a hot dry atmosphere, appears to prevent the development of implanted growths. The essential nature of cancer cells, said Dr. Murray, is still unknown to us, and our ignorance of the fundamental processes of cell life is the greatest difficulty in the way of cancer research. The cancer cell must somehow differ fundamentally from the tissue from which it springs, but as yet our biological and chemical investigations have failed to establish the nature of the difference. The method of culture of tissues outside the body which is being pursued at present may, when the technical difficulties are overcome, be productive of fruitful results. Dr. Campbell suggested, as a possible explanation of the etiology of cancer, that it was an attempt on the part of the organism to reproduce itself by budding. In lower forms parthenogenesis took place under certain conditions. In the human subject growth occurred at the sites where regressive changes were taking place. The ample blood supply stimulated growth and the cells tended to revert to a germinal type. If, in addition, there were chronic irritation and a hereditary predisposition, cancer was likely to supervene. Dr. Leitch spoke of the great service of inoculation experiments in clearing the ground and defining the extent of our knowledge. No one, however, could deduce a theory of cancer from them. There was often difficulty in distinguishing between innocent and malignant tumours. In animals the biological test could be performed, though it was not absolutely conclusive. Artificial resistance after unsuccessful inoculation was not a true biological immunity. There were no serological differences in normal or resistant mice. No serum reaction had yet been discovered in the human being which was of any value in the diagnosis of cancer. He hoped that biochemical research would reveal the difference between normal and cancerous cells. In his experience no cure had ever been effected by radium in cancer. Dr. Russ referred to his experiments on the effect of *x* rays on cancer in animals with a view of applying the results to *x*-ray therapy in man. A lymphocytosis was observed and lymphocytic activity occurred around grafts in immune animals. Nevertheless the circulating lymphocytes might be increased by *x* rays without producing immunity, so that some intermediate reaction was probably required. The degree of resistance to cancer implantation varied greatly in different animals, but all developed it to some extent. Dr. Mottram took a more hopeful view as to the possibility of producing immunization against cancer than Dr. Murray and Dr. Leitch. He remarked on the very different degrees of virulence exhibited by cancerous tumours. Predisposition in the individual was an important factor and appeared to be hereditary. Resistance to artificial growths might be increased in various ways, but our methods of protection were too feeble to have effect against spontaneous cancer. Dr. Simon Flexner spoke of Dr. Murphy's work at the Rockefeller

Institute, and insisted on the relation between lymphocytosis and the refractory period in animals. It was premature to think of cancer in terms of immunology, but it was conceivable that different states of immunity existed in different parts of the body. If this were true a tumour might regress in one situation and continue to grow in others. Professor Adami put forward the theory of cell growth originally enunciated by Ribbert. Experiments *in vitro* showed that cells might be induced to grow and multiply by appropriate stimulants. Such stimulation might be present in cancer and induce the cells to take on the habit of growth.

Bacteriology of Cerebro-spinal Meningitis.

On Friday, July 2nd, Dr. J. A. Arkwright opened a discussion on the bacteriology of cerebro-spinal meningitis. He said that among the many points of importance in the mass of work which had been done during the war the greatest interest centred round the classification of the meningococcus. This classification was made by morphological and cultural means and by agglutination. Workers were agreed that two main groups could be distinguished, but the relation of these groups to each other and the number and distinctness of the various subgroups were still a matter for discussion. Agglutination tests, though a satisfactory means of identification in the case of certain organisms—as, for instance, *B. typhosus*—were far from being so when applied to other groups. For this reason the method of "absorption of agglutinins" had been evolved, but it had the disadvantage that by its means a large and indefinite number of subgroups were separated, some containing strains that appeared to be closely allied on other grounds. Among these subgroups Gordon's Types III and IV had a special prominence, but whether this were due to the specially selected strains for the diagnostic serums or to greater definiteness of these two subgroups was not quite clear. The isolation of carriers in the present state of our knowledge was impracticable. As regards therapeutic serum its manufacture still needed much research and observation. The reference numbers on phials should be noted by medical men who administered it and the results reported to the manufacturer. In this way progress could be made. Dr. M. H. Gordon summarized the results which had been obtained at the Central Military Laboratory for the study of cerebro-spinal fever during the war. The pathogenic components of the meningococcus were investigated. Among the intracellular constituents were found a powerful reducing enzyme, a haemolytic substance, and the endotoxin peculiar to the organisms. The latter is a very stable substance, and plays the principal part in producing the lesions of cerebro-spinal fever. No extracellular toxins were detected. Four main serological types of the organism were isolated. Of these, Types I and II were present in 80 per cent. of the cases. No case and no carrier, as a rule, harboured more than one type of meningococcus. As regards treatment, the potency of any given serum depended on the amount of anti-endotoxin it contained. The application of serum rich in anti-endotoxin to a batch of clinical cases at once reduced the mortality. The efficient preparation and standardization of the serum was a matter of some difficulty, and investigations as to the best method of doing so were now being carried out. Dr. Hine analysed reports recording the results of treatment in cases of cerebro-spinal meningitis from all over the country. The mortality was definitely reduced in cases treated with serum containing anti-endotoxin specific for the type of organism in each case. Serum treatment must be instituted early and in adequate doses. A pooled serum could be used until the type of coccus was identified, when the suitable monovalent serum should be used. Dr. Ponder agreed with Dr. Arkwright as to the uselessness of isolating carriers, and thought that an official opinion should be expressed on this point. He had examined the bacteriology of the nasopharynx of non-contacts among the civil population. The meningococcus was found in 41 per cent., and of these 38 per cent. gave sugar and agglutination reactions, and 26 per cent. were positive to absorption tests. These results were higher than those obtained by other workers among contacts. He thought that the presence of the meningococcus in the nasal passages was comparable to that of the pneumococcus, and that it would be as reasonable to isolate pneumococcus carriers as it was to isolate persons harbouring the meningococcus. Dr. Gardner Robb agreed with Dr. Arkwright that polyvalent serums were of more general use than monovalent serums, and in his experience the results with polyvalent serums were equally good. Fallacies arose in statistics if factors such as age-periods and time when treatment is commenced were not taken into account. Making allowance for the higher death rate in infants, he found that at Belfast the civilian and military mortality were equal. Dr. Glover showed a series of charts illustrating the observations made on the carrier rate before and during epidemics. He showed that the numbers of carriers harbouring a virulent type of the meningococcus rose in proportion to the overcrowding. When the rate rose above 20 per cent. cases of cerebro-spinal meningitis began to occur. After overcrowding was stopped the carrier and case rate immediately fell. Dr. Ledingham said that in the East detention and isolation of contacts was impracticable, but good results were obtained by the avoidance of overcrowding and by general hygienic measures. The relation of pathogenic bacteria to their homologues needed study. He did not think that the use of monovalent serums was practicable. Dr. Carnegie Dickson discussed the paths by which meningococci reached the meninges. He attached importance to the fact that infection in the ventricles may be earlier and more extreme than on the meninges. Dr. Tulloch answered some of the criticisms made on the work of the central laboratories. He thought that too much stress had been laid on exceptions in discussing agglutination tests. The use of a standard technique was essential, both in culture and agglutination experiments. Dr. Gray said that in his experience the mortality in cerebro-spinal fever depended on the efficiency of the serum used. Early treatment was essential. The first three days of treatment really settled the issue and for this polyvalent serum must be used. He had had no success with monovalent serum when polyvalent serum had failed. Dr. Graham Forbes described a case of meningitis caused by *Diplococcus crassus* and gave an account of the characteristics of the organism. Dr. Scott agreed with Dr. Arkwright that there was no magic number of types. Under conditions of overcrowding the coccus passed rapidly from one individual to another and its virulence was thereby enhanced. Dr. Arkwright and Dr. Gordon replied.

SECTION OF PHYSIOLOGY AND PHARMACOLOGY.

Acidosis in Disease.

A discussion on acidosis in disease was opened on Wednesday morning by the President, Professor F. G. Hopkins, F.R.S. After reference to the need for a more precise nomenclature for distinguishing between the various types of condition in which the normal acid-base equilibrium of the body was disturbed, he pointed out that the physico-chemical composition of the blood was such that it constituted a coarse mechanism for the regulation of the reaction of the tissues, the fine adjustment being provided by the respiratory centre and the kidneys. Mention was then made of the alterations of acid-base equilibrium following on exposure to anoxaemic conditions, as investigated by Haldane and his co-workers, and the appropriateness of the term "alkalosis" was briefly discussed. The President's address was concluded by references to the still unsolved problem as to why the acetone bodies should appear in the organism whenever the carbohydrate metabolism was disturbed or arrested. Professor Bayliss, speaking second, thought that there was but little use for the word "acidosis" to express an actual increase in the hydrogen-ion concentration of the body fluids, as such a condition occurred but rarely; the effects of reduced alkali reserve were not necessarily due to hydrogen ions at all. Experiments were quoted which made it doubtful whether the plasma proteins played any part in the regulation of the reaction of the circulating fluid. Dr. H. H. Dale endorsed the President's plea for a precise definition and amplification of the nomenclature, and ascribed the unsatisfactory position of the questions under discussion to the lack of clearness on this point. Professor Milroy pointed out that owing to the fact that the products of disordered metabolism were strong acids they were serious competitors with carbonic acid for the available bases of the blood and tissues. Dr. Poulton supported the view that proteins played a considerable part in the regulation of the acid base equilibrium, and, having pointed out the need for caution in interpreting the results of determinations of the alkali reserve of the plasma by Van Slyke's method, concluded with reference to several pathological conditions in which the reaction of the blood had been studied in detail. Mr. Parsons briefly referred to the reaction-regulating mechanism of the normal blood. In the ensuing discussion Dr. Cammidge described experiments which suggested that the liver played an important part in the metabolism of the acetone bodies. The importance of the renal function in the regulation of the normal reaction of the blood was emphasized by Dr. Mackenzie Wallis; while Dr. Wilkins pointed out that a large proportion of cases of acute mental disease showed the presence of acetone bodies in the urine. Dr. Grace Sherwood observed that acetonuria was common also in children suffering from infective disorders. Interesting observations on post-operative acidosis were made by Mr. Cole, and Dr. Martin suggested that the toxins of acute bacterial diseases might produce disturbances of carbohydrate metabolism. Further discussion centred round the question of nomenclature and the function of the blood proteins in the regulation of the reaction of the circulating fluid. In his reply Professor Hopkins pointed out the value of careful records of cases in which ketosis occurred, for the elucidation of the problem presented by this fundamental error of metabolism.

Denervated Muscle.

On Thursday, July 1st, Professor J. N. Langley, Sc.D., F.R.S., opened the discussion on the physiology and treatment of denervated muscle with an account of observations he had made on the leg muscles of rabbits after experimental section of the sciatic nerve. His results, he said, gave no certain evidence that either massage or passive movements or regular electrical stimulation of the denervated muscles with currents sufficiently strong to produce powerful contractions had any appreciable effect in delaying the degeneration of the muscle itself. These observations had been confined to the first three weeks after nerve section, but later experiments by Hartman, Blatz, and Kilborn had shown that the same result was obtained if the treatment were continued for much longer periods. The beneficial effects of electrical treatment and massage in clinical practice might be due, to a great extent, to the accompanying general well-being and hopeful psychological condition of the patient. The commonly accepted theory that the degeneration of the denervated muscle was due to disuse was untenable, for otherwise electrically induced contractions should be able to prevent the degeneration. Dr. E. P. Cumberbatch said that the conclusion that the use of electricity was of little value in the treatment of paralysis was opposed to the experience of those who had had long experience with the method. He mentioned a case of infantile paralysis successfully treated by means of the sinusoidal alternating current, which does not produce active muscular contractions, but acts on the central ends of the severed neurones through sensory fibres from the skin. Dr. Cumberbatch added that an important factor in favouring the regeneration of nerve and muscle was the maintenance of a suitable temperature, for cold retarded the process. Dr. Turrell pointed out that electrical treatment of cases of nerve injury usually did not begin until at least three weeks after the wound, so that the clinical experience was derived from stages later than those observed by Professor Langley. Electrical treatment was clearly contraindicated as long as nerve irritation remained; this form of treatment was claimed to be of direct benefit after the establishment of complete nerve degeneration. Under some conditions the warmth produced by the passage of the current might in itself be helpful. Dr. Hernaman-Johnson emphasized the need for delaying the production of electrically-induced contractions until regeneration of the motor nerve was in part re-established. The faradic current was more adapted for this purpose than single condenser shocks. Dr. Adrian proposed that if the value of electricity as a curative agent was merely suggestive, it might be replaced by simpler and more effective deceptions. In cases where the current acted by stimulation of skin areas, similar effects might be produced by other forms of sensory stimulation. Electrical treatment was, however, directly beneficial when it caused contractions of the muscle fibres themselves, as it removed adhesions produced by hypertrophy of connective tissue and so kept the muscle in good mechanical condition. Dr. Burke was surprised that the electrical treatment of recently denervated muscles, as in Professor Langley's experiments, should not have done positive harm. Non-contracting currents should be used in the earlier stages, and only when voluntary power began to return should active contractions be induced. Dr. Roberts pointed out the harmful effects of stretching on denervated muscles, and ascribed the smallness of the beneficial effects observed in some cases to neglect of this factor. In concluding the discussion Professor Langley mentioned that the degenerative processes set up in the muscle were continuous, and did not undergo an abrupt change at the end of about three weeks or so. When connexion between nerve and muscle was re-established, then undoubtedly contraction benefited the muscle provided that the activity were not carried to the point of fatigue.

Pharmacology and Therapeutics of Quinine.

A discussion on quinine and its related alkaloids in pharmacology and therapeutics was opened on Friday, July 2nd, by Professor W. E. Dixon, F.R.S. Having referred briefly to the chemistry of quinine, Professor Dixon proceeded to show the relationship between the mother substance itself and its newly studied derivatives. The pharmacological action of these substances, he explained, was not specific to any single tissue or group of tissues, but consisted of a general depression of metabolism. In producing this effect the quinine derivatives were in many cases more potent agents than the parent alkaloid. This was illustrated by their toxicity to protozoa and to bacteria, and by their paralysing influence on sensory nerve endings. Professor Ramsden gave an account of experiments showing that when quinine was added to the blood it existed in greater concentration in the plasma than in the corpuscles; he referred also to the capability of the kidney for secreting enormous quantities of quinine without showing any sign of damage. Major Acton summarized his experience in the treatment of malaria with cinchona alkaloids other than quinine; promising results had been obtained with both cinchonidine and quinidine. Sir Archibald Garrod regarded quinine as a contributing factor in the onset of blackwater fever in certain cases. Dr. F. S. Hele mentioned experiments showing that the rate of excretion of quinine in cases of blackwater fever was similar to that observed in the healthy subject. He made a comparison between the reaction of the organism to quinine and the protective synthesis and excretion observed in the case of other poisonous ring compounds. Lieut.-Colonel Sir Leonard Rogers gave an account of his researches on the administration of alkaloids, and recommended the intravenous injection of acid hydrobromide of quinine in severe and dangerous infections, and intramuscular injections of cinchonine in less severe cases. Dr. Nierenstein discussed the relation between quinine, haemoquinic acid, and blackwater fever. Dr. McWalter regarded quinine as useless as a prophylactic against malaria, and Dr. Wenyon pointed out the value of experiments on plasmodial infection in birds. Replying to Dr. McWalter, Sir Leonard Rogers quoted historical evidence that quinine prophylaxis was of real value. Professor Gunn referred to promising results he had obtained with two new alkaloids—harmaline and harmine—particularly in cases of relapsing malaria. Dr. Dale quoted an instance in which a course of emetine brought about a complete cure of dysentery in a human subject, but was without effect on the same strain of *Entamoeba histolytica* transferred to a kitten. The effect of a drug on a parasite was sometimes determined to a great extent by the host. Dr. Dale further pointed out the important possibility of using other cinchona alkaloids in place of quinine, and its relation to commercial policy concerning cinchona planting. Colonel McCarrison recommended the use of adrenalin for the prevention of a dangerous fall of blood pressure during injection of quinine. Dr. Bodman suggested that quinine injections might be more effective if accompanied by the administration of plain saline to increase the fluidity of the blood. Dr. Wenyon, also in reply to Dr. McWalter, spoke in favour of quinine prophylaxis. In concluding the discussion Professor Dixon referred to the harmful effects of strong solutions of quinine salts on muscular tissue; the discussion had been useful and interesting, though it had left many of the points he had raised untouched.

NAVAL AND MILITARY SECTION.

The Army Medical Service and the Training of the Newly Qualified.

A discussion on the Army Medical Service and its relation to the education and training of newly qualified medical men was held on Wednesday, June 30th, with Surgeon Rear Admiral A. Gascoigne Wildey, C.B., R.N., in the chair. Colonel Joseph Griffiths, C.M.G., the President, introduced the subject by pointing out the absence of organized education and training during the first few years of a professional career in civil life and the advantages of such training as that which took place in the Army Medical Service, where the young officer was taken in hand, trained, and educated in the special work of the Service, as well as in administration. He then pointed out that after a certain period many had to leave the Service, not because they could not do any more work, but because there was no room for them in the higher ranks. During the process of weeding the officer who was versed in special professional work and had not paid much attention to the administrative side was apt to be placed at a disadvantage; if possible, such a disadvantage should be removed even to a greater extent than it had been since the end of the war; officers still fit for work should be helped to posts under the State, or in some civil institutions—posts which they could fill with credit. Colonel Griffiths advocated an extension of the present scope of the Army Medical Service in order that it might train and educate more officers than it actually requires and provide from its establishment experienced men for service in other departments of State. By so doing the Service could pick the best men for retention in the Service. But no scheme could be a success unless facilities were given for leaving the Service earlier than at present. For a satisfactory outlet to the surplus personnel it was suggested that a liaison department would be necessary, and that once established would be found of great service in bringing the medical services of all the departments of State into closer touch with one another. Major-General Sir W. Macpherson stated that the adoption of such a scheme depended ultimately upon State finance. He personally would have welcomed such a scheme on his leaving the army. He thought it would prove equally advantageous to the officer and the State, and indeed it was now to some extent being put into practice. Colonel Johnstone thought the scheme an ideal one; he strongly recommended the Services to all medical men. Colonel Elliot said England was cursed by precedents, and the President's address broke away from such. He was strongly of opinion that the public medical services should not be the preserve of the army or any other service. He feared the scheme would tend to cut out the general practitioner from such appointments, and this he deprecated. He pointed out that as the R.A.M.C. had to deal mainly with healthy men their study was absolutely necessary. Dr. Buttar admitted that the scheme was ideal, but thought it should be discussed, and in addition he would advocate a wider liaison—possibly voluntary—between the services of the Crown and the members of the civil profession in order to avoid any possible friction and misunderstanding which under the present conditions were liable to arise. General Fell considered that complete collaboration between the Services and the civil side of the medical profession was essential to the success of any such scheme. Colonel MacMunn was of opinion that in the consideration of any new proposal efficiency in the army stood first. He pointed out that officers on the retired list within certain age limits remained liable to be called up for further service in case of national emergency. Colonel Lelean gave a most interesting account of the work done at the Royal Army Medical College during the war to combat the effects of poison gases used by the Germans. After receipt of the news of the first gas attack the work had to be put in hand without delay, and it was carried out with the utmost celerity in spite of many serious difficulties that necessarily arose in connexion with such a new problem. He graphically told the story of how officers and men gave themselves up to be experimented on so that the soldier might be protected at the fighting line whatever gas emanated from the German armies; our means became so effective that three weeks after the first gas attack the German gas offensive was truly countered and the enemy never regained the ascendancy from the advantage of being the first to make use of this dastardly method of warfare. After detailing the many and different experiments devised to sift the various suggestions put forward in order to render the gases sent over by the enemy into our lines ineffective, he gave in brief the very remarkable story of the evolution of the "helmet" which was ultimately perfected to such a degree that the "gas attacks" did but little harm to the fighting men although exposed in it from five to six hours consecutively. The President expressed the feelings of the meeting when, in proposing the thanks of all present, he said that this was one of the most remarkable incidents in the history of war. Major Helliwell read an instructive paper on the teeth in the recruit, in which he traced the gradual introduction of the dentist for the performance of a portion of the work of the Army Medical Service. He said that amongst British troops in India before the war 75 per cent. of men required dental treatment, the average of decayed teeth per man was 6, 3 or 4 of these being so far decayed as to necessitate extraction. During the latter part of the war it was interesting to note that of Class A 68 per cent., B 70 per cent., and C 78 per cent. suffered from decayed teeth. In the army, just as in civil life, decay in teeth was preventable by early attention and by the daily care of the teeth, and it was expected that as soon as the good effects of dental treatment amongst school children had been going on long enough pronounced improvement would be observed in the condition of the teeth in the recruits. The actual relation between sound dentures and physical health or disease had not yet been worked out, and not until statistics were available would any very reliable information be forthcoming. The President referred to decay in teeth as a most important factor in the cause of illness, not only in the soldier but also amongst the civilians, and expressed the hope that in the forces of the Crown a new development would take place to ensure that each sailor and soldier and airman possessed a sound and effective denture to give good mastication and effective buccal digestion. When the state of the health was as it should be, the soldiers would require but little if any active dental treatment, and with the improvement in physique after entrance to the army it was not likely that dental disease to any material extent would arise.

Demonstrations and Exhibits.

During the afternoon a large and varied exhibit was on view. Colonel Lelean displayed a remarkable collection of miniature models of all the means adopted in effective sanitation in the field, all being designed to maintain the health of the troops and to prevent the occurrence of disease. As a teaching collection it was unique, and doubtless of the greatest value to obtain practical knowledge. Major Rigby was in charge of the *x*-ray exhibit, which had the day before been rapidly put together and placed in working order. Major Sinclair, who was demonstrating his method of dealing with fractures elsewhere, exhibited a selection of the varied collection of splints and apparatus such as were available in the Army Medical Service. Colonel Martin Flack, Royal Air Force, had a most interesting exhibition of the newest test methods for the detection of physical defects in candidates presenting themselves for the Air Service. Especially interesting was the vision test for measuring the accuracy of the judgement in estimating the niceties of distance such as were necessary when landing in an aeroplane.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Puerperal Sepsis.

In opening the session on Wednesday morning, June 30th, Dr. Herbert Williamson, the President, pointed out the very great importance to the State as well as to the individual of the subject chosen for discussion—namely, puerperal sepsis. Obstetrics, he said, was essentially a branch of preventive medicine, and the State was now awakening to the fact that in the past it had neglected the safety and welfare of the mothers of the nation. From the experience of war surgery a far clearer conception had emerged of the principles of wound infection, and this knowledge could now be used in the treatment of a septic muscle like the uterus. Mr. Victor Bonney, in his opening paper, stated that in nearly all cases of severe puerperal sepsis the streptococcus, either alone or in conjunction with *Bacillus coli communis*, was the predominant organism. He was strongly of opinion that the original source of the organism in the majority of cases was autogenous and not heterogenous, the zone of skin with the anus as a centre being the breeding ground of the organisms. He advocated the practical sterilization and shutting off of this part during labour. The next question he asked was how the organisms get into the uterus. The most obvious means was by the hands and instruments of the attendant, but at the same time Mr. Bond's experiments proved the possibility of inanimate particles passing in the reverse direction of the main stream up into the uterus, and into the peritoneal cavity. He pointed out that the ovarian plexus of veins draining from the placental site was the commonest and most important route of infection, the phlebitis being accompanied by lymphangitis. In speaking of treatment he reviewed all the recent methods, and came to the conclusion that at present there was no surety of defeating the causative organisms by surgery or by direct application of antiseptics. He thought, however, that the resistance of the body could be raised by vaccines, and an attempt could be made to prevent organisms and their toxins reaching the general circulation by means of ligaturing or excising the ovarian plexus of veins and lymphatics, which he had done with success on several occasions. Mr. Beckwith Whitehouse advocated the treatment of the infected uterus by the Carrel-Dakin method of irrigation. In carrying out this method it was better to curette the uterus first, but owing to the dangers and difficulty of the operation it could only be a treatment for the hands of experts under institutional conditions. He also considered intravenous medication by flavine in normal saline a beneficial treatment. Dr. A. E. Gow advocated protein therapy in addition to sensitized vaccines. He then gave in detail the technique. In regard to autogenous vaccines he suggested that the causal organism could generally be isolated more quickly from an intrauterine swab than from the blood cultures. Dr. Leith Murray, in a paper dealing with serums and vaccines, mentioned the importance of early treatment and the necessity of taking blood cultures during the acute stage, preferably during a rigor. In the interval, during the preparation of vaccines, he advised large quantities—for example, 50 c.cm. of antistreptococcal serum. He spoke highly of autogenous vaccines, and in his concluding remarks advised treatment by an obstetrical officer rather than by the public health authorities. Dr. Lewis Graham gave his experience in the treatment of 800 cases of puerperal sepsis admitted after notification to the public health authorities to a maternity hospital in Birmingham. He considered general treatment of primary importance; injury to the uterus during treatment or curetting was definitely harmful. He, too, strongly advocated treatment in women's hospitals and not ordinary fever hospitals. Dr. Eardley Holland dealt chiefly with the question of prevention, and rejoiced that Mr. Bonney had brought forward the question of autogenous injection. He advocated very strongly rectal examination, and stated that during ten years he had never done a vaginal examination in normal cases of labour. Dr. Amand Routh had not been converted to the view of autogenous infection. Most cases of infection could be prevented by douching the uterine cavity, in suspect cases, with strong iodine solution, which he also advocated in various strengths if there was subsequent fever. As a general treatment he considered liquor ferri perchlor. of great use. Dr. Ivens advocated preparation as for operation, in every case of normal labour, and as treatment the early injection of polyvalent serums, which she had found beneficial during her experience of war surgery. Dr. Hedley did not think it justifiable to teach the theory of autogenous infection. Treatment, he considered, should be on general lines, but he did not advise curettage; he was optimistic about the Carrel-Dakin method. Dr. Lapthorn Smith advocated the sitting up of a patient as a help to drainage, and the abolition of all bed-pans. Dr. R. C. Buist insisted that there were two problems: preventive and therapeutic, and two things must be remembered: first, that there was a natural history of puerperal sepsis with a natural response by the patient to the attack; secondly, a very long series of cases was needed in order to get rid of the element of chance under any particular method of treatment. Dr. R. W. Johnstone said that before any rational system of prophylaxis or of treatment could be adopted a clear conception of the pathology of puerperal sepsis must be in the mind of the clinician. He thought too much emphasis had been laid on the condition of the uterus. In the majority of cases the lower part of vagina, perineum, cervix, and lymphatics of broad ligaments showed clinical signs of inflammation, whilst the body of uterus was relatively free. He agreed with the autogenous derivation of this inflammation, and as an antiseptic for the perineum he preferred a saturated solution of picric acid in alcohol. Where sepsis was established his attitude was not so much pessimistic as timorous, and he felt that any surgical procedure was fraught with danger to a patient whose powers of resistance to organisms was already low. He relied mainly on promotion of drainage by posture, douches, etc., and on keeping up the general strength by good nursing. Dr. Deighton agreed with some of the former speakers that prevention by means of strict aseptic precautions, as for an operation, was the solution of the problem. Dr. R. J. Rowlette relied on vaccines for treatment of this condition, with serums as a help. He suggested that small doses of stock vaccines should be given whilst an autogenous vaccine was being prepared. Dr. F. Edge considered that the organisms were autogenous and in most cases conveyed to the interior of the uterus by the hand or instruments of the attendant. He advocated thorough examination under anaesthetic in every case and natural drainage by posture. Dr. Parry said that it was the duty of the teachers of obstetrics to emphasize the necessity of shaving the vulva and taking other aseptic precautions. He protested against the teaching of an autogenous mode of infection, as leading to carelessness in the conduct of labour. Dr. Pechère said that the mortality in all districts of Belgium from puerperal sepsis was remarkably low. He described the Belgian method of treatment as an early intravenous injection of protein, combined with a stock polyvalent streptococcal vaccine, whilst an autogenous vaccine was being prepared. The President then lucidly summed up the lessons brought out by the discussion. In the afternoon a demonstration was given by Dr. Mackenzie Wallis on the "Diastase activity in pregnancy toxaemia."

SECTION OF TROPICAL MEDICINE.

PROFESSOR G. H. F. NUTTALL, the president of the section, opened the proceedings on Wednesday, June 20th. He expressed his pleasure in seeing so many present and regretted the absence of Sir Patrick Manson. Professors Stephens and Yorke were called upon to read a paper entitled the problem of filariasis. This valuable contribution showed that the published figures from various regions brought out a marked discrepancy between the incidence of microfilaria in the blood and the sequelae of that disease. Further researches were obviously necessary. Drs. Low and Manson-Bahr followed with a paper entitled the rôle of *F. bancrofti* in the production of lymphatic obstruction and a consideration of elephantiasis from the pathological standpoint. Both these papers were debated together, and Major Black, Surgeon Captain Bassett-Smith, Dr. Anderson, Surgeon-General Hehir, Drs. Law and Spearman took part in the discussion. Dr. Manson-Bahr then read a paper on recent experiences in the treatment of kala-azar and trypanosomiasis by injection of acetyl-P-aminophenyl stibiate of sodium. He pointed out that he had received encouraging results in the treatment of these diseases with large doses of the inorganic compound of antimony, and issued a plea for its more extended use on an experimental basis. Professor Nuttall, Drs. Wenyon, Low, Anderson, and Balfour, Colonels Cummins and Kennedy took part in the discussion. Lieut.-Colonel R. McCarrison, I.M.S., then read a most interesting paper on dietetic deficiency and endocrine activity, with special reference to deficiency oedemas. This paper gave the results of various diets in the suprarenals, and was discussed by Drs. Anderson, Waugh Scott, Low, and Manson-Bahr, Surgeon-General Hehir, and Surgeon Captain Bassett-Smith.

In the afternoon practical demonstrations with beautiful specimens were given by Professor Leiper on parasitic worms, Professor Newstead on tsetse flies, Dr. Manson-Bahr on lymphatic obstruction by *F. bancrofti*, and Sir Leonard Rogers on the treatment of leprosy. Dr. W. Hunter gave an illustrated lecture on Serbia under typhus in 1915, which was much appreciated. In the quadrangle Colonel S. P. James demonstrated the use of the mobile malaria laboratory used by the Ministry of Health. This laboratory is of special service in travelling from village to village seeking out endemic foci of infection and taking immediate measures to prevent spread from carriers which are found. Since August, 1917, 426 cases of locally contracted malaria have been discovered in England. Colonel James also demonstrated a new method of staining mosquitos in order to investigate flight problems.

DEMONSTRATIONS.

Value of Antimony Tartrate in Bilharzia Disease.

On Thursday, July 1st, Dr. J. B. Christopherson, C.B.E., gave a demonstration on the value of antimony in the treatment of bilharziosis. He prefaced his remarks by saying that the schools, hospitals and houses of Egypt were full of bilharzia disease, which more than anything else was accountable for the indolence of spirit, want of character, and the backward condition of development of the Egyptian fellah; as the fellaheen formed 90 per cent. of the population the same might be said of the Egyptian nation. The treatment of bilharzia disease by the intravenous injection of antimony tartrate had abundantly established itself. About 160 cases had already been reported by various writers. Dr. Christopherson emphasized two points: (1) That antimony tartrate kills the adult bilharzia worms and the ova also; they were fixed and stopped where deposited, and hence disappeared from the urine. (2) That the method was capable of wide application, for it could be used for out-patients; to illustrate the latter point, he injected a patient at the demonstration who came from London and returned home to London by the ordinary means of transport on that day. The man was given 2½ grains of antimony potassium tartrate, and had received altogether 20 grains in ten injections in 20 days. Dr. Christopherson said that now that a cure for the disease had been found it behoved the Egyptian Government to apply it nationally. The intravenous injection of antimony should be carried out in a scientific manner by men accustomed to work with care and to be guided by the results of their work. If carried out through the agency of mobile laboratories, in co-ordination with the prophylactic measures suggested by Leiper for the destruction of the intermediate hosts—the molluscs—the plan would probably result in the annihilation of the disease in a few years. It was not possible for English doctors to undertake the work at the present time, as the motive might be misconstrued by the fellaheen in their present condition of unrest, but there were now many Egyptian doctors who by their character and their training at the Kasr-el-Aini Hospital, Cairo, and subsequently in England, were qualified to undertake this important work. It would be a proper and a graceful act of appreciation by the Egyptian Government if it enabled them to carry out the great work of ridding their country of what Professor Madden rightly termed "Egypt's most dangerous modern plague."

Afterwards Dr. J. F. Gaskell demonstrated interesting specimens of malignant tertian malaria from Salonica, and Lieut.-Colonel F. H. Stewart, I.M.S., gave an instructive and highly original demonstration illustrating the life-history of *Ascaris lumbricoides*.

SECTION OF MEDICAL EDUCATION.

PRELIMINARY SCIENCE IN THE CURRICULUM.

SIR GEORGE NEWMAN, in opening the proceedings on Thursday, July 1st, remarked that Cambridge of all the medical schools was the one most intimately and historically connected with the subject they had to discuss. The Section was fortunate in its time as well as in its place of meeting, for not only was the very admirable Edinburgh Report before them, but the General Medical Council had decided only a few days previously to have the whole question of the curriculum dealt with fully and forthwith. Sir George Newman proceeded to read the introductory address on the place of preliminary science in the medical curriculum, which appeared in the BRITISH MEDICAL JOURNAL, July 3rd, p. 8; then followed the opening papers, also printed in that number, with special reference to chemistry, physics, biology, anatomy, and pathology, by Professors Arthur Smithells, Sir Ernest Rutherford, Sydney J. Hickson, Arthur Keith, and Lorrain Smith respectively. Dr. Simon Flexner (New York) pointed out certain respects in which research work was peculiarly stimulating to the student, and also urged that there should be no standardization of medical education—only a minimum of conformity, sufficient to provide for qualification. Professor Giacosa (Turin) suggested the promotion of an international agreement in order that a common standard of medical practice in all civilized nations might be attained. Each country ought to conserve its own traditions and curriculums, but the latter should be so arranged as to bring about the same results in different countries. Sir George Newman said that Dr. Giacosa's suggestion practically meant a free republic of medicine all over the world. The great difficulty, of course, was the varying standards of medical education and training in different schools and countries. Following upon these two speakers from abroad came a large number of teachers to take part in the discussion, so that the later speakers had to compress their remarks within three minutes. Dr. J. C. McWalter (Dublin) urged the raising of the standard of the preliminary examination. Dr. R. C. Buist (Dundee) pointed out certain limitations of the specialist teacher, and also said that the essential reform of medical education should begin in the elementary school. Professor H. S. Raper felt strongly that there was something in the presentation of the subjects of chemistry and physics at the university that could not be given in the school, partly owing to the immaturity of the lad at school and partly to the freedom of the university atmosphere. Professor Ritchie (Edinburgh) also emphasized the essential distinction between the school attitude and the university attitude towards knowledge—the one receptive and dependent, the other original and independent. Dr. A. G. Tansley dealt with the teaching of elementary biology to medical students, and Professor F. O. Bower urged that sciences of comparison and opinion such as zoology and botany were beyond the boy of 16, and did not come properly in the school period, though sciences of exact statement and measurement, like physics and chemistry, did. Dr. H. B. Brackenbury deprecated the idea which seemed to run through some of the speeches that general practitioners belonged to an inferior race of medical men. The general practitioner needed to be at least as good a scientific man as the specialist or the professor. The remaining speakers were Professor J. A. Lindsay, Professor Wardrop Griffith, Dr. Carey Coombs, and Professor Boycott. Certain motions were handed up to the President, but were not put formally to the Section. The members present, however, concurred in the President's suggestion that he should transmit them, along with the text of the discussion, to the University Grants Committee and to the Education Committee of the General Medical Council. They were as follows:

1. That the lowest age of registration for the medical student should be 17 years.
2. That in the forthcoming revision of curriculum promised by the General Medical Council the lightening of professional studies would be facilitated if chemistry and physics were made school subjects, biology remaining a professional subject.
3. That with a view to securing adequate training in physics, chemistry, and biology as applied to medicine by courses of these subjects within the professional curriculum, it is desirable to exact a knowledge of physics and chemistry of matriculation standard of all medical students before they are registered.

SECTION OF VENEREAL DISEASES.

VENEREAL DISEASE IN WOMEN AND CHILDREN.

THE Section of Venereal Diseases met on Thursday, July 1st, with Mr. E. B. Turner, F.R.C.S., president, in the chair. The Section is a new one, and whatever doubts the organizers may have felt before the meeting, these must have been dispelled when they saw how large was the audience that had assembled to listen to the opening papers and how keen the interest taken in the subsequent discussion. The subject under consideration was venereal disease in women and children. Dr. Morna Rawlins introduced the subject of venereal disease in women, and Dr. Leonard Findlay that of venereal disease in children, an interval for discussion being allowed between the two papers. Amongst other points debated was the question of compulsory notification. Dr. Leonard Findlay, after laying stress on the appalling waste of child life for which syphilis was directly responsible, put forward a plea for the notification of all cases of stillbirth and miscarriage. These cases could then be carefully investigated, and, if due to syphilis, prophylactic measures adopted. Ophthalmia neonatorum was already a notifiable disease, and in Dr. Findlay's opinion the difficulties usually considered to be associated with notification were by no means insuperable. Other speakers subsequently spoke for and against compulsory notification, the trend of feeling being generally in favour of a measure of this description. The question of treatment was equally well debated. It was generally agreed that the modern treatment of syphilis was extremely satisfactory, but that the treatment of gonorrhoea, especially in the female, was still in its experimental stage. The problem was a problem of drainage, but the complexity of the cavity to to be drained rendered it an extremely difficult one. The key to the difficulty might very well lie in raising the antigenic index of the blood, but in the meantime vaccines had only met with very limited success in this direction. Amongst others who took part in the discussion were Dr. Amand Routh, Sir James Galloway, Colonel L. W. Harrison, Dr. Sellers, Dr. Marian Mackenzie, Professor Pechère (Brussels), Dr. Masterman, Dr. Butcher, and Mr. Kenneth Walker.

In the afternoon various demonstrations were given. Dr. Barnard (President of the Microscopical Society) gave an excellent demonstration of the dark-ground illumination work in the detection of *Spirochaeta pallida*. Colonel Harrison discussed the question of the treatment of gonorrhoea in the male, and Dr. Morna Rawlins gave a demonstration of instruments and methods used in the treatment of the same disease in the female. All the demonstrations were well attended.

SECTION OF ELECTRO-THERAPEUTICS.

PARALYSIS DUE TO NERVE INJURY.

THE proceedings in this Section on Friday, July 2nd, were opened by some introductory remarks from the President, Dr. A. E. Barclay, who referred to the recent establishment of a diploma in medical radiology and electrology by the University of Cambridge. In the new era opened up by the granting of this diploma every appointment would be held by men and women who had had greater advantages than those to whom he was speaking, and a higher standard than had been possible in the past would be expected and demanded of them. The chief discussion of the morning was on the diagnosis and treatment of paralysis caused by nerve injury. It was opened by Mr. H. S. Souttar, C.B.E., whose attention had been addressed to this subject as a result of his experiences in the large Physical Treatment Department at the British Red Cross Hospital, Netley. He reviewed the various electrical modalities from the point of view of this special treatment, not confining himself to the currents which were capable of producing contractions in paralysed muscles, but also touching on the currents which had not that power and yet might be beneficial indirectly. In his opinion the faradic current had its place in the treatment of a paralysed limb, both by exercising the normal muscles and by a stimulating action on the circulation. In the subsequent discussion, Dr. James Turrell thought that the opener had not paid sufficient attention to electrical methods for diagnosis. Dr. Hernaman-Johnson could not agree that it was desirable to make a muscle contract *en masse* until some degree of regeneration had occurred. Once any nerve-ends had reached the muscle, however, cautious stimulation of the muscle as a whole became of the utmost value. Dr. Noel Burke spoke on the value of the electrical testing of nerves at operation; he had been able to test rather carefully the electrical conditions in a series of about 80 cases during the earlier days of the war, and he drew certain general conclusions. Dr. Worster-Drought dwelt upon the value of testing by means of condensers, and gave his experiences of 2,000 cases of injury to the nerves of the upper and lower limbs which he had seen while acting as a military radiologist. Dr. Howard Humphris put in a word for the static wave current, which, he thought, ought not to be omitted from a discussion on the subject of paralysed muscles. Mr. Souttar, in reply, said that at operation it was his custom repeatedly to test the nerve he was exploring, and he could not lay too great stress upon the value of the results obtained. A paper by Dr. Robert Knox on radiography of tumours of the chest was then read, in Dr. Knox's absence through illness, by Dr. Shillington Scales. This was a comprehensive paper, in which the author dealt in detail with the tumours most frequently found in the thorax, and then passed on to a more technical description of the *x*-ray appearances and the differential diagnosis. Dr. Ironside Bruce, Dr. Hope Fowler, Dr. Florence Stoney, and others discussed the paper. Dr. Gilbert Scott read a paper on the diagnostic value of the renal outlines, first of all in the case of the normal kidney, then in the case of kidneys abnormal in size, and finally in cases in which there were abnormal shadows, and he indicated a method of determining the relation of such shadows to the kidney itself. Before the Section closed its proceedings, two papers were read on therapeutics. One of them was by Dr. Goodwin Tomkinson, of Glasgow, who brought forward some interesting notes of cases in which *x* rays had been applied to the treatment of "Oriental sore." His conclusion was that there was something to be said in favour of this treatment, especially where the patient objected to intravenous injection involved in treatment by antimony tartrate, or to the pain and discomfort attendant upon treatment with solid carbon dioxide. The other paper was by Dr. Howard Humphris, who described the use of the melted paraffin wax bath, and indicated its employment in stiffness of muscles and joints due to certain causes, and also in other conditions, such as chilblains or neuritis.

SECTION OF MEDICAL SOCIOLOGY.

THE FUTURE OF MEDICAL PRACTICE.

THE Section of Medical Sociology met on Friday, July 2nd, with Dr. George E. Haslip, president, in the chair, and devoted its single session to a discussion on the future of medical practice. The opening papers by Sir George Newman, Sir Wilmot Herringham, Dr. Alfred Linnell, Professor Gowland Hopkins, and Mr. E. W. Morris, C.B.E., which are printed in this number, were then read by their authors. Sir George Newman, before reading his paper, said he wished to make it clear that his paper was written before the publication of the Report of the English Consultative Council. Even had it been written subsequently he would have been debarred, as a State servant, from making any comments, since any advice he could tender on the subject must first be given along other channels. But he trusted that no one would interpret the absence of reference to Lord Dawson's report as being discourteous or negligent on his part.

THE PATHOLOGICAL SOCIETY MEETINGS.

THE Section of Pathology and Bacteriology devoted its afternoons to taking part in the proceedings of the Pathological Society of Great Britain and Ireland, which met each day at 2.30 in the Pathological Department, to hold discussions and witness demonstrations. Dr. Shearer showed the calorimetric method of heat estimation during the growth of bacteria, and Gamgee's method of recording, photographically, changes of body temperature. Dr. Constant W. Ponder showed photographic records of acid formation due to growth of *Bacillus coli communis*; Dr. Strangeways, cell division in cultures of animal tissue *in vitro*; Dr. Louis Cobbett, tuberculous lesions in animals; Sir G. Sims Woodhead, the interaction of hypochlorous acid and organic matter; and Dr. W. H. Harvey demonstrated three technical methods. Cinematograph demonstrations were arranged by Professors Woodhead and Dixon. The wards, museum, and laboratory of the Cambridge Research Hospital, in Hills Road, were on view during the meeting, and the director, Dr. Strangeways, demonstrated cases of chronic arthritis.

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THE CAMBRIDGE MEETING.

THE extraordinary success of the meeting of the British Medical Association at Cambridge last week was due to the keenness and to the spirit of good fellowship with which both those who prepared for it and those who took part in it were imbued. There has been so much random talk about reconstruction that the term has been rather blown upon as though it were a mere political catchword. No one who followed the work of the meeting at Cambridge could doubt that it had a real meaning for the medical profession, which is ready to meet new conditions with courage and foresight. Foresight in the two respects needed: the scientific and clinical on the one hand, and on the other the social, including so much of politics as may be necessary to ensure that medical opinion shall have its proper weight with the legislature and the Government.

Of the spirit and purpose which we have ventured to say were characteristic of the meeting the President was the exemplar and in no small measure the cause; he seemed ubiquitous, his interest in all that happened was a continual inspiration. He was indefatigable also, and on Friday evening, when he was thanking his helpers in Cambridge, he could speak with the same freshness and grace as when he delivered his Presidential Address four days earlier. It is evidence of the commanding position Sir Clifford Allbutt has attained as a representative of medicine in public life that the King has graciously taken this occasion to direct that Sir Clifford Allbutt shall be sworn a member of the Privy Council.

That the work of the Sections should have been of an order to merit his praise is their highest commendation and his best reward. We publish elsewhere a running account of the proceedings, which will afford some indication of the interesting character of the scientific and clinical discussions. Special arrangements have been made to publish at an early date full reports of all. On each of the three days on which the Sections met there were demonstrations in the afternoon, beginning at 2.30. So much of medicine, surgery, and pathology is objective that the opportunity of seeing experts at their own jobs was highly appreciated. We heard nothing but approval of the plan, which followed the precedent set at the Special Meeting in London in April, 1919. The extensive buildings of the Cambridge medical schools, all occupying adjacent sites, made it easy for the large number of members who wished to witness the demonstrations to visit several each afternoon, and at 4.30, when they came to an end, the relaxation of a visit to some place of interest in the neighbourhood of Cambridge had been well earned by a day's work full of interest and variety.

The Representative Body of the Association, under the urbane chairmanship of Dr. Garstang, transacted a great volume of medico-political business during the four full days set apart for its deliberations. The report of the first three days' proceedings appeared in last week's SUPPLEMENT, and the fourth day is reported in the same detail this week. Several burning topics were debated at great length, and it is much to the credit of the Representative Body as a whole, and of its chairman in particular, that the programme of its annual meeting was carried through to the end within the appointed time, that rancour and ill feeling were absent from the discussions, and that decisions were taken on all important questions. We may be allowed to congratulate Dr. Garstang on the success that attended his courteous and considerate handling of the reins throughout the four days' arduous journey.

On the social side the eighty-eighth Annual Meeting of the Association will stand out in the memory of all who took part in it. True to their traditions, the University and Colleges, the municipality, the medical profession of Cambridge and district, and many residents not connected in any way with medicine, all combined to dispense delightful hospitality. The corps of willing workers, who for months past had laboured to perfect the local arrangements, must now feel that it was well worth while. Where so many spent themselves royally in the entertainment of their guests it seems invidious to apportion praise, but a few outstanding names must be mentioned. Dr. J. F. Gaskell and Dr. G. S. Haynes, the Secretaries of the General and Executive Committees, were the two pillars on which the whole fabric of the meeting rested. Prominent among their fellow workers were Professor W. E. Dixon, Chairman, and Mr. Arthur Cooke, Secretary, of the Demonstrations Committee; Dr. W. W. Wingate, Chairman of the Local Entertainments Committee; Dr. L. E. Shore, Chairman of the Hotel and Lodgings Committee; Colonel Apthorpe Webb, Chairman of the Dinner and Luncheon Committee; Dr. O. Inchley, Secretary of the Excursions Committee; and Dr. W. R. Grove, President of the Cambridge and Huntingdon Branch, which in 1914 had invited the Association to meet in Cambridge in 1915 and has been able only this year to carry out its intention. In thanking these and many other officers, as well as the indefatigable members of the several Ladies' Committees and Subcommittees, for all they did to make the meeting a triumphant success, we know we express the feeling of every member of the Association who visited Cambridge last week. Grateful reference must also be made to the hospitality shown by Alderman W. L. Huddleston, D.L., at Sawston Hall; by the Bishop, Dean, and Canons at Ely Cathedral; by Sir Douglas Newton at Croxton Park, by the Earl of Sandwich at Hinchingbrooke, and by Colonel T. W. Harding at Madingley Hall. In another column we give short notes on the receptions and other entertainments provided so lavishly in Cambridge by various individuals and bodies. To Dr. Peter Giles, Vice-Chancellor of the University and Master of Emmanuel College, and to the Mayor of Cambridge, the Association owes a great debt for personal hospitality and hearty support in many directions. The last day of the meeting was brought to a fitting close with a reception given by the Master and Fellows of Trinity in the lovely grounds and buildings of their great foundation.

We will end this too brief acknowledgement by placing on record the thanks of the British Medical Association to the Master and Fellows of St. John's for entertaining more than 200 members of the Association at dinner in the College Hall. This Hall, with its hammer-beam roof and oak-panelled walls, and the Combination Room adjoining, have been aptly described by Dr. F. J. Allen in our columns as the finest mediaeval interiors in Cambridge. The speeches made after this memorable dinner are reported in the SUPPLEMENT at page 3[illegible].

PROFESSIONAL SECRECY.

THE principle that the information obtained by a doctor in the course of medical practice should be regarded as secret dates from ancient times: it has always been regarded by the medical profession as of a most binding character and the bedrock of the relations between patient and doctor. This rule has not been imposed by law upon the profession, but was set forth by the profession for its own guidance; it is the natural outcome of the essential nature of the relationship. The doctor finds it necessary to seek the confidence of the patient in matters of a very intimate kind if he is to be in a position to give the best advice, and the reciprocal duty of not disclosing the information so received immediately follows. In order that all may know the condition on which such confidences are received and given the medical profession binds all its members to secrecy. So generally recognized has the validity of this rule become that for breaches of it damages have been awarded by the courts to those aggrieved thereby. In cases, however, in which the State has found that the interests it protects come in conflict with the principle of professional secrecy it has insisted that the public interest should prevail and override the claim that the information obtained by the doctor is confidential.

The profession has recognized the validity of this claim in general so far that when requested to give information of a confidential nature in a court of law the custom is for the medical practitioner to point out to the court the confidential nature of the information required and to ask for the ruling of the court. If the court orders him to give the information, he is regarded as in general absolved from the duty of secrecy. This applies not only to the High Court but to a coroner's court or a bench of magistrates. It sometimes happens, however, that even when ordered by the court to divulge the information in his possession, the doctor feels that he would not be justified in so doing, and refuses. In such a case he may be committed for contempt of court, and he must be prepared to face the consequences of his action; but the court would take into consideration the grounds on which he had taken up such a position, and in certain cases the court has not taken any action against the doctor. Similarly an exception to the rule of secrecy has been made where information obtained in the course of professional duties has to be given under the provisions of an Act of Parliament, as in the notification of certain diseases and of births. At first the profession was disposed to resist the introduction of this principle, but it has come to recognize the justification for it in the interests of public health, and loyally carries out the law. The public furthermore has recognized that the objections to such measures on private grounds are outweighed by the general advantage in which every one from time to time shares, and has accordingly acquiesced in and approved of such measures as have been adopted hitherto.

We have thus two well-defined classes of case in which the medical profession has in practice recognized the necessity for departing from its strict rule at the demand of the public good. There are, however, other cases less well defined in which the doctor's duty as a citizen may override his professional obligations, as, for example, when the disclosure of information obtained in the exercise of his profession may be necessary to prevent the commission of a crime, or to prevent grave danger to another person, or to safeguard the interests of the patient himself, as happens, for instance, in dealing with persons suffering from mental disorder. In these cases it is extremely difficult to find a form of words to define the exact conditions which will justify departure from the rule; it must be left to the individual doctor to decide whether there is such compelling force in his duty as a citizen as to make him break his confidence, and he must be prepared to justify such departure from rule by showing that no other measure would suffice to prevent a grave evil. Among other precautions, he would be expected to take counsel with another medical practitioner and to bring the strongest possible influence to bear upon the patient to induce him to consent to the disclosure. This course will often prove successful, especially when the reasons in support of such a course are fully and forcibly put before the patient; but when every other method has failed the doctor may in such cases feel bound to divulge the information in his possession, and his action in such circumstances would not be condemned by his professional brethren.

The question has been brought to the front recently by the problem arising out of the prevention of venereal diseases. It so happens that recently, for the first time, the principle of professional secrecy has received official sanction by its adoption in the regulations under the Act dealing with venereal diseases. On the other hand, there has recently arisen in some quarters a demand for legislation making compulsory the notification of venereal disease. At present public opinion seems to be hostile to such a proposal, and perhaps wisely so, because it is perceived that such a measure would tend to defeat its own ends, and to wither the growing tendency to seek advice and treatment in the early stages of the disease. In such a matter until public opinion is ripe for the change it would be short-sighted policy to introduce a law of this kind, and that is the attitude towards the proposal that has been taken up by the National Council for Combating Venereal Diseases. The question remains: Is there in the problem of the prevention of venereal disease any ground for relaxing the rule of professional secrecy which has prevailed hitherto? We have seen that the foundation stone on which the whole structure of the relations between patient and doctor has been built, and to which we largely owe our present power of dealing effectively with the evil, is the confidence of the public built upon this rule of secrecy. It is admitted that exceptions have to be made in the public interest and have been made in the past, but it is so difficult to define these exceptions in terms which would not open the door to a too great laxity of interpretation, that at the recent Representative Meeting it was thought best for the profession to maintain the rule in the form that the medical practitioner should not, without the patient's consent, voluntarily disclose information which he has obtained from such patient in the exercise of his professional duties. It is clear that the word "voluntarily" exonerates him if he discloses information under the compulsion of a court of law or at the behest of an Act of Parliament. It does not clearly exonerate him in the other cases, and the onus of justification is thrown on him. The guiding principles must be the gravity and extreme probability of the impending evil to another person and the impossibility of preventing it by any less drastic step.

The wording of the rule in the past has been slightly more stringent than this, but even so it has served as a good guide, and no doctor would be harshly judged who, knowing professionally that a man deliberately intended to marry when liable to convey the infection of syphilis—with imminent risk to the woman and her possible children—should, after exhausting every other means of preventing such a thing, find himself driven to take the step of disclosing the danger to those who could prevent it happening. Just as a doctor must sometimes defy authority urging him to disclose his knowledge, so in certain very special cases he may be justified in departing from the rule of the profession binding him to secrecy; but in either case he must make sure that he can justify his course of action in the particular circumstances of the case.

ANNUAL MEETING NOTES.

HONORARY DEGREES.

The honorary degree of Doctor of Laws was conferred by the University of Cambridge, at a congregation in the Senate House on June 29th, upon the following distinguished members of the profession attending the meeting of the British Medical Association. The recipients were presented by the deputy Public Orator (the Rev. C. E. Raven, B.D., Dean of Emmanuel College) in the following Latin speeches, to which we have ventured to append translations.

SIR THOMAS CLIFFORD ALLBUTT, K.C.B., M.D.,

Regius Professor of Physic in the University of Cambridge; President of the British Medical Association.

Multis abhinc annis studiis medicis apud nos praefectum, gaudemus equitem nostrum adhuc praesentem amplissimis decorare honoribus. Si medici suum vindicant qui in medicina plurima perspexerit, qui mirabiliter scripserit, qui juniores ardore eodem accenderit, non omnem illum concedemus, qui totius Universitatis sit pr prius, qui alumnos nostros noluerit a litteris abhorrere humanioribus et arte scribendi carere, qui ipse praecipue Graecis et Latinis gavisus sit. Cum talem virum elegerint Medici Britannici ut conciliis suis praesideat, auguramur conjunctionem illam, quae semper exstiterit inter artes altiores, duraturam esse.

[We are glad to crown with our highest honour our Knight here present, who for many years has been at the head of our Medical School. Though medical men may claim him as their own, since he has looked deeply into many aspects of medicine, has written admirably about them, and has fired young men with his own keenness, yet we do not altogether give him up to Medicine; in truth he belongs to the whole University; he would not wish our alumni to be ignorant of polite literature or wanting in the art of writing, and is himself one to whom Greek and Latin afford a peculiar joy. When the British Medical Association chose such a man to preside over its deliberations, it was safe to prophesy that the alliance which has always existed between the nobler arts would continue.]

DR. JULES BORDET,

Professor of Bacteriology, Parasitology, and Epidemiology in the University of Brussels.

Linguam novam sibi finxerunt medici, Graeca derivatam, Latina temperatam, barbarismo decoratam. Inter toxica et antitoxica, inter haemolysin et bacteriolysin, titubat Latinitas, verba quae, ut ad poetam nostrum refugiam Cantabrigiensem, obtutu anhelantem defigerent Quintilianum. Quid ergo dicam fecisse hospitem nostrum qui inter res ipsas versatus est verbis mirabiliores? Post medium aevum morbus quidam inter exercitus non sine Baccho bacchatus est, contagiis communicatus. Diagnosin noster festinavit, sanationem maturavit, tabem refrenavit. Si plura requiratis, adest; ipsum rogitate!

[Medical men have fashioned for themselves a new language derived from Greek, tempered by Latin, decorated with barbarisms. Their Latinity staggers between toxic and antitoxic, between haemolysin and bacteriolysin, words which, to have recourse to our Cambridge poet, would have made Quintilian stare and gasp. What, then, can I say of our guest, who has busied himself with things even more remarkable than the words? After the Middle Ages a certain disease, not without the help of Bacchus, raged among armies and was communicated by contagion. Our guest made the diagnosis more rapid, hastened the cure and checked the plague. If you want to know more he is present; ask him.]

DR. SIMON FLEXNER,

Director of the Rockefeller Institute for Medical Research.

Mos est Americanorum qui divitias congesserunt, non minimam partem doctrinae dedicare. Johannes Rockefeller ergo scholam instituit, in qua morbos et pestilentias investigarent medici et quibus causis orirentur et quibus remediis aptissime expellantur, determinarent. Huic primum institutae praefectus est ante annos septendecim medicus, urbe illa natus quam ad cataractas fluvii Ohio inter silvas Indosque fundavit Georgius Rogers Clark. Sed haec prius fuere; multis in rebus rem publicam bene gesserunt Kentuckyenses, nec minime in medicina.

[It is the custom of Americans who have amassed wealth to dedicate no small part thereof to learning. Thus John Rockefeller founded a school for medical men in which they could investigate diseases and pestilences and determine from what causes they arise and by what remedies they may best be got rid of. He who has been from the first, for seventeen years, the Medical Director of this Institute was born in the city (Louisville, Kentucky) founded by George Rogers Clark, in a then wild country near the falls of the Ohio River. But this was a long time ago, and the people of Kentucky have done much for the public weal, not least for medicine.]

DR. PIERO GIACOSA,

Professor of Experimental Pharmacology in the University of Turin.

Senator adest Romanus, hos quadraginta annos Medicinae deditus, nec Anglis ignotus, ut qui inter Universitates multum vagatus sit alienorum, quo Medicinae scholas Italicas in melius promoveret, et debiti antiqui quasi fenus reposceret. Scit enim quantum Italis debeamus qui Magistros Salernitanos ediderit. Nec debitum nostrum augere recusat qui multum inter nives moratus Alpinas accuratius investigaverit quomodo et hominum et animalium corpora frigore magno afficiantur.

[A Roman Senator devoted for forty years to medicine is here: he is not unknown to the English; he has visited many foreign universities so as to improve the Italian medical schools and thus, as it were, to claim the payment of the interest on an old debt. He knows indeed how much we owe to the Italians who gave us the Masters of Salerno. Nor has he hesitated to make our debt greater by dwelling long among the Alpine snows to investigate with more accuracy the effect of great cold on men and animals.]

SIR GEORGE MAKINS, G.C.M.G.,

President of the Royal College of Surgeons of England.

Chirurgorum Collegii Regalis Praeses multos per annos Anatomiae studiis intentus, Hospitalis Sancto Thomae dedicati minister, adest, qui Britanniae suae duobus in bellis maxime scientia sua subvenit, multos injuriis vulneribus dolore liberavit, multos spe vitae inspiravit nova. Olim in montibus delectationem strenuam quaesivit, interdum inter rivos otiosam, semper in hortis suis voluptatum purissimam. Aegrotis, collegis, discipulis carus, festinare omittit, aequo animo aegit, semper par laboribus exstitit, multum scientiam provexit.

[The President of the Royal College of Surgeons, for many years devoted to the study of anatomy, who has long served St. Thomas's Hospital, who has greatly helped his country by his science in two wars, who has freed many from injuries, wounds, and pain, and has inspired many with a new hope of life, is here. In times past he sought a strenuous pleasure among the mountains, at other times a more leisurely happiness by the river bank, and always found delight in his garden, that purest of pleasures. Beloved by his patients, his colleagues, and his pupils, he never hurries, but works with equanimity; he has always been equal to his task, and has greatly advanced science.]

SIR NORMAN MOORE, BT.,

President of the Royal College of Physicians of London.

Exstat apud Regimen Sanitatis Salerni regula antiqua et optima:

Si tibi deficiant Medici, Medici tibi fiant
Haec tria; mens hilaris, requies, moderata dieta.

Dietam moderatam inter hanc pretiorum immanitatem nemo frustra requiret. Dum quidquid lucri feceris spoliat aerarii cancellarius, quiescendum est melius. Mentem tibi hilarem praestabunt hospitis nostri historiae, in quibus narratur ut apud Anglos post Raheri hospitale Sancto Bartholomaeo consecratum per haec septem secula floruerit medicina. Qui opera confecerit tanta humanitate, talibus facetiis, tanta doctrina, libenter hodie honoramus.

[There is in the *Regimen Sanitatis Salerni* an ancient and excellent rule: "If doctors fail you there are these three doctors—a cheerful mind, rest, and moderation in diet." No one will have any difficulty in obtaining a moderate diet in these days of high prices. At a time when the Chancellor of the Exchequer will deprive you of your gains, it is better to repose. You will win cheerfulness of mind by reading the history our guest has written in which he has told how medicine has flourished among the English during the seven centuries since Rahere's hospital was consecrated to St. Bartholomew. To-day we gladly honour the man who has accomplished this work with such good taste, wit, and learning.]

THE RECEPTIONS AT CAMBRIDGE.

A very full programme of receptions, entertainments, excursions, and other forms of recreation, had been arranged by the various local committees in charge of this part of the meeting. On Saturday, June 26th, the members of the Representative Body were soothed with good music at a smoking concert in the Hall of Gonville and Caius College, and on Sunday afternoon they were most pleasantly entertained in Downing College at a garden party given by the Master and Mrs. Seward, and had an opportunity to meet members of the local Branch of the Association. The rain, which fell heavily at night, came just too late to prevent the visitors from airing themselves in the college grounds. On Monday the Representatives settled down again to serious business, and no distractions were provided. Tuesday was a "scarlet day," to use the Cambridge term, for in the afternoon there was a Congregation for honorary degrees in the Senate House; academic dress was again worn at the President's Address and presentation of foreign guests and oversea delegates in the Senate House, and at the reception given in King's College by the Cambridge and Huntingdon Branch. The evening was fine, and the grounds and buildings of Henry VI's college, dominated by his glorious chapel, formed a perfect setting for an occasion of this kind. The guests were received on the lawn by Dr. W. R. Grove, President of the Branch, and Sir Clifford Allbutt's portrait was presented to him in the College Hall by Sir Norman Moore, P.R.C.P., on behalf of the medical profession, as recorded in our last issue. The reception in Emmanuel College on Wednesday evening by the Vice-Chancellor of the University (Dr. Giles) was an overwhelming success. The grounds of King's slope towards the river, the Emmanuel grounds are set off by a lake; thus each college has its individual charm and lends the quiet beauty of grey buildings, green lawns, trees and water, as a foil to the kaleidoscopic colours of doctors' robes and evening frocks. On Thursday afternoon the Mayor and Mayoress of Cambridge, Mr. and Mrs. G. P. Hawkins, gave a reception in the grounds of Christ's College, lent by the Master and Fellows. This agreeable garden party was attended by more than 2,000 guests, and, as happened on the evening before, the rain held off long enough not to spoil the affair. Very many visitors were glad to have the chance to visit the college of Milton and Darwin, and to walk through the grounds to the famous mulberry tree and the bathing pool, with its classic ornaments and overhanging trees. On Friday evening, under a clear sky, the grounds of Trinity College were opened for a reception by the Master and Fellows. Entering through the Great Gate and passing through the Great Court, which has no rival anywhere, the guests made their bow in the Hall to the Master, Sir J. J. Thomson, O.M., P.R.S., and then wandered at their sweet will through the courts and cloisters, or across Trinity Bridge to the gardens beyond. Each of these receptions in college grounds will be accounted a red letter event in the recollection of all who attended.

THE CHURCH SERVICES.

On Tuesday afternoon a special service for members of the British Medical Association was held in Great St. Mary's, the University Church. The service was attended in state by the Mayor of Cambridge and the other civic authorities, and there was a large congregation of medical men and women. The lesson was read by Professor Sir Clifford Allbutt, President of the Association, and the sermon was preached by the Right Rev. F. H. Chase, D.D., Bishop of Ely. The Bishop took his text from the Epistle to the Romans, viii, 29. Doctors especially, of all people, he said, plumbed the depths of human suffering; they came in contact with all sides and degrees of humanity, and saw man racked and tortured by pain, both mental and physical, and to those who saw humanity at its lowest ebb, in the grip of terrible pain, the question must present itself: "How can we reconcile suffering with the love of God?" The explanation lay in the love of God, for that love sprang from suffering and the knowledge thereof. God's infinite pity and compassion was the outcome of suffering, for in the person of Christ he had known the lowest, most awful depths of suffering that man could experience. When the service was over the Mayor and members of the Corporation returned in procession to the Guildhall.

By arrangement with the Guild of St. Luke, St. Cosmas, and St. Damian, a special Mass for the Roman Catholic members of the Association was celebrated at 9 o'clock on Wednesday morning in the Church of Our Lady and the English Martyrs. Those present included Lieut.-Colonel Apthorpe Webb, representing the President of the Association. The preacher was the Rev. Father Flynn, M.A., Professor at St. Edmund's College, Ware, who took as his text 1 Cor. xv, 19. He said that Catholic doctors had an apostolate to carry out; they were to save souls through bodies and to use their influence to see that the profession worked to a Christian standard. Quoting a well-known couplet from Robert Browning, he remarked that if doctors neglected their singular opportunities for good, they were liable to lose their own souls. They should ever plead, in the name of sound science, for Christian ideals in the practice of medicine. He believed that the trend of medical opinion, if carefully observed, would show that the most advanced opinion was tending to an ever close alignment with the teachings of the Church. When defeated as doctors—as sooner or later in every case they must be—let them not forget that they still could snatch from death his spoils.

On Wednesday, June 30th, at 5 o'clock, a special Free Church service was held in Emmanuel Congregational Church, Trumpington Street. The preacher was the Rev. M. E. Aubrey, M.A. There was a large congregation of members of the Association and other visitors; many were in academic dress. On Wednesday, Thursday, and Friday evenings organ recitals were given in King's College Chapel; this opportunity of hearing music in "the crowning glory of English art" was deeply appreciated by large numbers of visitors.

ROOMS IN COLLEGE.

To many members of the Association an enjoyable feature of the Annual Meeting last week was the fact that they were able to lodge in one or other of the colleges. The authorities of each college very kindly placed at the disposal of the local committee a large number of sets of undergraduates' rooms, and these were assigned to members unaccompanied by ladies. They were thus able to live in college and take their meals at the high table in the college hall. To old Cambridge men it was very pleasant to lead again something of the student life in the picturesque college buildings; and many other visitors who had never stayed in Cambridge before were able to see the colleges from within under most agreeable conditions. The hospitality of the college authorities was highly appreciated on all sides. The local committee had conceived the happy idea of grouping within a particular college members interested in the work of the same scientific section. Thus Trinity held many of the Neurological Section, Sidney entertained a number of obstetricians, and Caius housed a group of specialists in tropical disease. In this way men who had known each other hitherto only in print or in public debates were able to meet and discuss their work informally in their rooms or in the college Combination Room hospitably placed at their disposal by the Fellows. A few of the colleges even went so far as to admit to meals in Hall the ladies accompanying members, somewhat to the dismay of old college servants brought up in the ancient monastic traditions of college life.

THE TEMPERANCE BREAKFAST.

On Thursday morning, July 1st, members of the Association attending the meeting were entertained to breakfast by the National Temperance League in the rooms of the Cambridge University Union Society. This, the fiftieth conference of the kind, was presided over by the Rev. T. C. Fitzpatrick, D.D., President of Queens' College. The after-breakfast speakers were Sir G. Sims Woodhead, K.B.E., Professor of Pathology in the University, and Mr. W. McAdam Eccles, both Vice-Presidents of the League; Dr. T. N. Kelynack, Honorary Secretary of the Society for the Study of Inebriety; and the Rev. C. C. Weeks, M.R.C.S. The President of Queens', in a few opening words, remarked that he himself had been a teetotaler all his life; he urged the advocates of temperance to be temperate in all things, even when addressing their fellow men. Professor Woodhead said that the League was a strong though not a numerous association; almost all its recruits came from hard-working, earnest young students at the hospitals holding prominent positions in the athletic world—men of strong character, who were able to lead those with whom they associated. Mr. Eccles indicated the bearings of war and prohibition on the medical aspects of the alcohol question. The public, he said, looked to the medical profession for no uncertain judgement as to the value of alcohol, and it behoved every doctor to study the matter from the national, economic, and physiological standpoints. Dr. Kelynack said that the executive committee of the League believed it to be still necessary to bring to bear on the alcohol problem the two great forces of education and research. It was incumbent upon the profession to encourage and take part in the investigations which would still further elucidate this question. Mr. Weeks, referring to the vast amount of defective health among the young men of the nation, said that, while not claiming that this was all the result of alcohol, the League was unfalteringly convinced that behind it there was the great influence of alcohol. Sir Clifford Allbutt, proposing a vote of thanks to the Union Society for lending its room and to the chairman and other speakers, said that during the twenty hardest years of his life, when he practised at Leeds, he touched no alcohol, and knew he was much the better for so doing.

THE IRISH GRADUATES' LUNCHEON.

The Irish Medical Schools' and Graduates' Association gave a lunch at the Lion Hotel, Cambridge, on July 1st, when Dr. W. Douglas presided. The loyal toast having been duly honoured, Dr. Douglas said that they had not assembled for speech making but to meet old friends, and in the name of the Association he greeted those present with a hearty welcome. He said it was now six years since they had their last formal luncheon at Aberdeen. Six years of war and trouble had intervened, and they had now to make the best of a revolutionary world. The summer general meeting of the Irish Medical Schools' and Graduates' Association was held on the same afternoon, when it was announced that the Council had elected a committee to bring the association to the notice of those alumni of the Irish schools of medicine who had not yet been enrolled. It was reported that these efforts had already borne good fruit, and that there was every reason to hope that quite a thousand names would be on the roll before the next annual meeting, to be held in London on St. Patrick's Day, 1921.

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ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

The Anatomical Society held its summer meeting in the Anatomical Department of the University of Cambridge on July 2nd and 3rd, in conjunction with the meeting of the British Medical Association. The president of the society, Professor Arthur Keith, occupied the chair, and there was a large attendance of members. Many of the papers read were of direct interest to medical men. One of the most striking communications was made by Dr. Sansom, who showed that in the ovary of one of the commoner voles ova were found which had undergone an abortive parthenogenetic division. This discovery is of great interest in relation to the observations of a similar kind which Professor Arthur Thomson has made on human ovaries and published in the *Journal of Anatomy*. A series of papers contributed by Dr. R. A. Dart, Colonel J. Shellshear, D.S.O., and Dr. T. Woolard extended the observations which Professor Elliot Smith has made concerning the evolution of the corpus striatum and its relation to the olfactory lobe. Mr. W. E. Le Gros Clark gave an account of the development and evolution of Pacchionian bodies, his results confirming the part played by these bodies in the absorption of cerebro-spinal fluid. Professor Douglas Derry described a method of measuring the essential difference between male and female pelves in the region of the sacro-sciatic notch. Professor J. E. Frazer showed that Wharton's duct is developed by the inclusion of a groove or fold which appears on the floor of the mouth of the human embryo. Mr. Ralph Thompson exhibited photographs and x rays of a case of epispadias where he had re-made the bladder and introduced an acting muscular sphincter by transplanting part of the rectus abdominis. Dr. D. M. S. Watson gave an account of the earliest land vertebrates, the material on which his conclusions were based being derived from coal measures in the North of England. Through the kindness of the Master and Fellows of Jesus College, the members of the society were able to hold their annual dinner in the Hall where Malthus and Coleridge had been students.

THE AMERICAN HOSPITAL IN LONDON.

The Board of Governors of the American Hospital in London entertained Dr. Charles H. Mayo at dinner at Claridge's Hotel on July 6th. The Earl of Reading presided over a company numbering about one hundred, including a number of Americans resident in London and many members of the medical profession. The Chairman, in proposing the health of the guest, said that he was quite sure that Dr. Charles Mayo would not like his name to be severed from that of his brother, with whom he had always been so closely associated. The name of the Mayo brothers was a household word wherever medical education and research were honoured. The Mayo Foundation was a very great achievement, and this institution with its endowment and equipment was transferred by the brothers two or three years ago to the University of Minnesota, so that the students of the university had the enormous advantage of access to its resources. Lord Reading went on to refer to the constant interchange of men and ideas between the two great English-speaking countries. A man who achieved fame on one side of the Atlantic achieved it on the other. The wonderful Rockefeller gift to University College Hospital and University College further tended to narrow the ocean which separated but could not divide, and he believed that the institution of the American Hospital in London would be another small link in the chain which bound the two countries together. Dr. Charles Mayo, in responding to the toast, referred to the heredity of Americans, which was mainly British, even as English was the dominant language in the States. The bond of friendship which existed between the two peoples could now never be broken. He went on to speak of the great services which medicine had rendered in the war. The thing about the war which would be longest remembered and upon which men would be most agreed was the humanitarian achievements of medicine and surgery. In the development of the American Hospital in London he saw another proof of Anglo-American unity. He concluded his brief and modest speech with a tribute to the late General Gorgas. Mr. A. J. Balfour, in proposing the toast of the American Hospital in London, said that science in general was coming more and more into touch with human interests, economic and other, but of all the sciences the group related to medicine touched humanity most nearly. The institution whose prosperity he proposed would be a scientific link between the two great English-speaking peoples. It would give them a common stock of medical ideas and practice. This could not be brought about by reading alone, but necessitated personal intercourse, and this the hospital would provide. While in Paris he had learned that, although only eight hours' journey separated the medical schools of Paris from those of London, the schools of either capital had much still to learn from those of the other. This was still more the case over the greater distance of the Atlantic. Mr. Balfour went on to speak of the advances which had taken place in medicine in his time, and said that the number of collateral sciences now brought into medicine must mean that the next or the succeeding generation would see an advance upon our present knowledge of which we could at the moment form not the slightest conception. The American Ambassador, responding to the toast, said that he only wished he were responding for a hospital of brick and mortar, with its corridors filled with nurses and its dispensary with drugs; but, although it was not yet a tangible and visible structure, all of them looked forward to its ultimate erection. The hospital would be a home in London for American medical inquirers; it would help to relieve the crying need for more hospital accommodation in the metropolis, and it would be an open and public memorial of the fact that not only were the governmental relations between the two countries harmonious, but that their peoples were sensible of each other's ills. Mr. Davis paid a tribute to General Gorgas, who had left behind him a lasting and inextinguishable claim upon the gratitude of mankind. Few men left the world with the world so deeply in their debt. The people of America would find a solemn consolation in the memorial service which the British Government has spontaneously arranged in St. Paul's Cathedral. Sir W. Arbuthnot Lane also responded to the toast, and prophesied great gain to science from the American Hospital in London. The committee on the other side of the Atlantic included some of the most energetic spirits in the United States, and there were no greater names in American medicine and surgery than those who constituted the medical subcommittee of five. The health of the Chairman was proposed by Mr. Newton Crane and briefly acknowledged by Lord Reading.

THE NEW INSURANCE ACT.

THE National Health Insurance Act, 1920, came generally into force on July 5th. It raises the weekly contribution in Great Britain from 7d. to 10d. in the case of men, and from 6d. to 9d. in the case of women, 2d. of the increase being in each case borne by the employer and 1d. by the worker. The normal rate of sickness benefit is increased from 10s. to 15s. a week in the case of men, and from 7s. 6d. to 12s. in the case of women. The rate of disablement benefit is increased from 5s. to 7s. 6d. for men and women, and the amount of maternity benefit from 30s. to 40s. The income limit is raised from £160 to £250. The specific provisions with regard to sanatorium benefit are discontinued except as regards Ireland. Treatment and attendance in respect of tuberculosis is included in ordinary medical treatment and attendance. The contribution from insurance funds towards the cost of medical benefit is increased to 9s. 6d. a year for each insured person, to include drugs as well as attendance, and a further sum for this purpose will be provided by a special grant out of public funds.

THE OSLER MEMORIAL.

THE committee which desires to erect an Osler Institute of General Pathology and Preventive Medicine in Oxford to commemorate the distinguished services of Sir William Osler in Canada, in the United States, and in this country, is about to issue an appeal for funds. The general committee contains representatives of the Universities of Aberdeen, Birmingham, Bristol, Cambridge, Durham, Edinburgh, Glasgow, Leeds, Liverpool, London, Oxford, Sheffield, and Wales, and also of the Royal Colleges of Surgeons and Physicians, of the Faraday Society, of the British Association, and of the British Academy. Dr. William Collier, ex-President of the British Medical Association, and Sir Walter Fletcher, Secretary of the Medical Research Council, are also members. We hope to recur to the matter in an early issue.

WE regret to announce the death of Dr. Montagu Handfield-Jones, consulting obstetric surgeon to St. Mary's Hospital.

THE Cameron prize of the University of Edinburgh has been awarded to Sir Robert Jones in recognition of the highly important advances he has made in orthopaedics and his many valuable contributions to the literature of the subject during the past five years. One of the conditions attached to the prize is that the recipient shall give a lecture or course of lectures in the university. The prize was founded in 1878 by the late Dr. A. R. Cameron, of Richmond, New South Wales. It is of the value of about £150, and may be awarded annually to a person who within the previous five years, has made important and valuable additions to practical therapeutics. The first recipient was Pasteur, the second Lister. The prize has not been awarded since 1915, when it was given to the late Sir Lauder Brunton.

Medical Notes in Parliament.

Medical Examination of Women Claimants for Pensions.—Dr. Murray, on July 1st, asked whether cases had occurred in which women, on applying for pensions on the ground that they had been deprived of the support of a male relative killed in the war, had been called upon to undergo medical examination in order that their fitness to go to work might be tested. Mr. Macpherson said that Dr. Murray probably had in mind those pensions to dependants which were, under the Royal Warrant, conditional upon incapacity of self-support through infirmity or age. Where the evidence on this point was open to doubt, it was the practice to ask for a medical certificate, which was ordinarily given by the applicant's usual medical attendant. He did not consider that this procedure entailed hardship. Dr. Murray asked whether, in the case of a mother whose son contributed to the family exchequer and had been killed, it was the policy to see that the woman was medically examined as to her fitness or otherwise for work. Mr. Macpherson said that in a case where a woman was able to do work, it was right the Department should ask whether she was fit or not. Dr. Murray inquired if the grant of a pension was prejudiced by capacity to work. Mr. Macpherson answered that if the woman was dependent on the man who was killed she got the grant irrespectively. There was no question of forcing a woman to work. In the case of a young woman it was no hardship to ask her to do work and to give a pension which was appropriate. If she were quite unable to work, the Department was anxious to get a certificate from her own medical officer.

The Medical Use of Spirits.—In Committee on the Finance Bill, on July 5th, Mr. Leonard Lyle moved an addition to Clause 4 with the object of obtaining a reduction of duty in respect of spirits used in hospitals. The clause as it stands provides for a reduction of duty on spirits only when used in medical preparations or for scientific purposes. Colonel Burn seconded the amendment, remarking that everyone knew how serious was the position of hospitals at the present time. Mr. Kiley, supporting the amendment, called the attention of Mr. Chamberlain to the existing arrangements. If the spirit was mixed with drugs and was bought from a drug dealer, then the duty was partially remitted; but if the spirit was mixed with water instead of with drugs the duty had to be paid. He felt sure it was not the intention of the Chancellor to penalize the hospitals nor to induce them to mix the spirit with other substances to evade the duty. Mr. Baldwin, Financial Secretary of the Treasury, said in the case of duties such as those on spirits and on wine, which had now reached so high a point, the Treasury had to take the greatest possible care not to leave open any possible means of evasion. The case of hospitals had been met to a considerable degree in past finance bills, and the relief had been continued by allowing them spirits at a pre-war rate where spirits were used in medicinal preparations. Statutory grants were given by the Ministry of Health to certain hospitals in relief of the duty on alcohol used in connexion with certain medicinal preparations, but it had always been ruled administratively that this relief was not to be given in the case of potable spirits. Exactly the same administrative difficulty arose in regard to wine. Dr. Murray regretted the decision, and thought there was not much force in the objections raised by Mr. Baldwin. In all well-regulated hospitals the quantity of spirit which a patient got was registered in a book. It would not add much to the expense of the Excise Department if these books were occasionally examined. Any leakage could thus easily be detected, and a hospital found guilty could be punished. Mr. Preston, as representative of the constituency containing the largest hospital in London, also deplored the Treasury refusal to meet the appeal. On a division, 61 members voted for the amendment, and 195 against

Small-pox in Glasgow.—Mr. R. Young asked, on July 1st, whether any other measures had been taken in Glasgow besides the removal of cases to hospital, isolation of contacts, and free vaccination, to deal with the small-pox outbreak. Mr. Munro replied that the main additional measures taken by the public health authorities were: House-to-house visitation in infected areas, daily visitation of contacts during the incubation period, attention to general sanitation and public cleanliness, disinfection of houses, clothing, and bedding of cases and contact, and daily disinfection of tramcars. In addition every effort had been made to trace sources of infection in every known case.

Registration of Births in Scotland.—In reply to Dr. Murray, on July 5th, the Solicitor-General for Scotland said that the powers of town councils to make rules and regulations for registrars of births were contained in the Registration of Births, Deaths, and Marriages (Scotland) Acts, 1854 and 1856. These Acts provided for the election of registrars by town councils, regulated the tenure of office (the registrar being removable by the sheriff moved thereto by the town council or by the Registrar-General), and provided for remuneration of registrars. Registrars acted under the direction of the Registrar-General, and were under the general control and superintendence of the sheriff.

Officers' Dependants' Allowance.—Mr. Macpherson stated, on July 1st, that the Government has decided not to give a flat rate allowance for wives of disabled officers, but that allowances should be granted in case of need by the Special Grants Committee, both for wives and children. The increased maximum rates for children and the maximum allowance for wives recommended by the Select Committee had been approved, and were now being administered by the Special Grants Committee.

Answers in Brief.

It was agreed, on July 2nd, that the Viscountess Astor, Sir Thomas Bramsdon, Dr. A. C. Farquharson, Mr. Maddocks, Colonel Parry, and Mr. Wignall be nominated House of Commons representative members on the joint Committee of Lords and Commons to consider the Criminal Law Amendment Bill, the Criminal Law Amendment (No. 2) Bill, and the Sexual Offences Bill.

In the absence of further outbreaks of rabies or unforeseen complications, the Wallingford area may towards the end of next month be freed from muzzling restrictions, and the areas in Glamorgan and Kent may be freed at the beginning of August and September. The position in Surrey and round Colchester is more difficult owing to a recurrence of disease in February and April last respectively. But it is hoped to make further, if not complete, relaxations in the early autumn.

The 20 per cent. allowance on army officers' pensions to meet the increased cost of living ceased on April 1st, 1920, but the rates of retired pay contained in the new warrant to take effect from the same date will afford equivalent benefit. The Paymaster-General has accordingly been authorized to continue the payments on the same basis for the quarter ending June 30th—that is, until the new warrant is expected to come into force.

The arrangements for the new local organization which is taking the place of the Food Control Committees will, it is expected, bring about a reduction of staff of about 3,400.

Correspondence.

THE FUTURE OF CONSULTANTS.

SIR,—Readers of the debates at the Representative Meeting as reported in the SUPPLEMENT will have noticed a remark by Dr. C. O. Hawthorne that "Dr. Brackenbury, with the aid of the Ministry of Health, was looking forward to the prompt extinction of consultants." To those who know Dr. Hawthorne this will be recognized as an example of his effectively genial way of putting things, but for the sake of those who may not recognize this I should be glad if you would allow me, in a sentence, to disclaim any such malign wish or aim, and to explain my conception of the essential place of the consultant in the medical scheme of things entire.

I regard the consultant as one who properly should see patients only in association with a general practitioner, and who should be primarily a help to the competent rather than a refuge for the incompetent. I am happy to believe that large numbers of consultants approve of this position.—I am, etc.,

London, W., July 4th. HENRY B. BRACKENBURY.

A BLIND ALLEY.

SIR,—I am somewhat puzzled by the letter of "One of Them" in your issue of July 3rd, p. 29. He acknowledges himself to be a person of mediocre ability collecting unreliable statistics, but why does he not speak for himself alone, especially as he finds obvious reasons for concealing his identity?

I find difficulty in understanding the relation between a mediocre ability and the alleged unreliable statistics. Does "One of Them" think a man of mediocre ability (by which I take it he means ability neither above nor below the average) is incapable of collecting reliable statistics? If so, I think he will find few to agree with him. Personally I find no reason to think the statistics are unreliable.

There is abundance of material awaiting investigation. What is required is a closer association between all school medical officers, and I am sure the result would be an important increase in the value of our work.—I am, etc.,

W. DUNCAN LAWRIE, M.D., F.R.C.S.Ed.,
Assistant School Medical Officer,
Stoke-on-Trent.
July 3rd.

"THE MEDICAL DIRECTORY," 1921.

SIR,—The annual inquiry form has been posted to every member of the medical profession whose address is known to us. If the form has failed to reach any practitioner, a duplicate copy will be forwarded upon application.—We are, etc.,

THE EDITORS OF "THE MEDICAL DIRECTORY,"
July 5th. 7, Great Marlborough Street, London, W.1.

Obituary.

WILLIAM CRAWFORD GORGAS, K.C.M.G., M.D., D.Sc., LL.D.,

Surgeon-General, United States Army; President of the American Medical Association.

WE have to record with great regret the death of Surgeon-General William C. Gorgas, of the United States Army, which took place in the nursing home for senior officers at the Queen Alexandra Military Hospital, Millbank, in the small hours of Sunday morning, July 4th. He was taken ill some weeks ago while passing through this country on his way to the west coast of Africa to investigate the prevalence there of yellow fever, a disease with which his name will always be associated. During a visit to the Hospital on June 8th, the King called on General Gorgas and invested him with the insignia of K.C.M.G. in recognition of his services to the British Empire and to the commercial world, especially for the work he did as Chief Health Officer during the construction of the Panama Canal. After abolishing yellow fever from Havana, General Gorgas made his name famous throughout the world by eliminating yellow fever and malaria from the Panama Canal zone, and thus rendering possible the construction of the Canal.

William Crawford Gorgas was born at Mobile, Alabama, on October 3rd, 1854. He was the son of Brigadier-General Josiah Gorgas, Chief of Ordnance of the Confederate Army; on both sides he came of old Southern stock. He received his medical education at Bellevue Medical College, New York, and the Southern University in Tennessee. Having graduated M.D., he entered the Medical Corps of the United States Army, at the age of 28, with the rank of assistant surgeon. He served in various parts of the country, and during his period of duty in Western Texas he first approached the problem of yellow fever, then rife in that district, and was himself infected with the disease. When the war with Spain broke out he served with the army in Cuba, and was later made Chief Sanitary Officer of Havana, at that time a hotbed of yellow fever. During his tenure of this office, Gorgas, carrying out the recommendations of the American Yellow Fever Commission of 1900, evolved methods for suppressing the mosquito (*Stegomyia fasciata*), and thus in less than a year freed Havana from yellow fever for the first time in history. In recognition of this work a special Act of Congress was passed promoting him to the rank of Colonel, and appointing him Assistant Surgeon-General of the United States Army.

In 1904 the United States undertook to complete the construction of the Panama Canal which had baffled the French. Gorgas was sent to the isthmus to report on the sanitary condition of the Canal zone, and was made Chief Health Officer of the area, which for 400 years had had the reputation of being one of the unhealthiest regions in the world. He was given a free hand and full responsibility. By the bold and energetic methods he adopted for draining the land and oiling the mosquito breeding-places of this plague-spot, Gorgas stamped out yellow fever in two years and enormously reduced the mortality and sickness rate from malaria. This, the greatest labour of his life, earned for him the cognomen "a Hercules of modern hygiene," for he cleansed places compared with which the Augean stables were sweet and wholesome.

Gorgas's great work, based on the labours of Manson and Ross, received full and immediate recognition in this country. Among other honours the Royal Society awarded him the Buchanan Medal in 1912, for his sanitary administration of the Panama Canal works; the University of Oxford conferred upon him its honorary D.Sc. degree; and the Liverpool School of Tropical Medicine its Mary Kingsley Medal. In 1914, the year in which he was promoted Major-General and appointed Surgeon-General of the United States Army, he was entertained in London at a complimentary dinner, presided over by Sir Thomas Barlow, then President of the Royal College of Physicians, and attended by many leaders of the medical profession in London and by officers of the military medical services. Only three weeks ago we announced that in connexion with the Annual Meeting of the British Medical Association, the University of Cambridge proposed to confer upon General Gorgas the degree of LL.D. *honoris causa*; and he was one of the distinguished foreign guests whom the Association invited to take part in the scientific proceedings and be received by the President on June 29th in the Senate House.

On the completion of the great inter-oceanic canal, Gorgas was made Director of the International Health Board of the Rockefeller Institute, with his head quarters at Washington, and visited many tropical countries preaching the gospel of hygiene. When war was declared between the United States and Germany he undertook the organization of the medical service. In September, 1918, he went on a short tour of inspection in France, but retired under the age rule in the following month.

The funeral service is to be held this day, Friday, July 9th, at noon, in St. Paul's Cathedral, with full military honours. The body will afterwards be taken in an American warship to the United States, and the interment will probably take place at Arlington, near Washington, the national cemetery of the United States Navy and Army. ◆

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

A MEETING of Fellows of the College was held at the College on July 2nd, Sir George Makins, the President, being in the chair, for the purpose of electing three Members of Council. The total number of votes was 791; only 6 Fellows voted in person. The following was the result of the poll:

	Votes.	Plumpers.
SIR ANTHONY A. BOWLBY	473	9
SIR D'ARCY POWER	383	3
F. J. STEWARD	329	58
W. Thelwall Thomas	240	22
Victor Bonney	190	17
J. Herbert Fisher	180	28
H. S. Pendlebury	164	11

The President declared that Sir Anthony Bowlby and Sir D'Arcy Power had been re-elected and that Mr. F. J. Steward had been elected Members of the Council. Mr. H. J. Price and Mr. Willmott Evans acted as scrutineers.

UNIVERSITY OF EDINBURGH.

THE following have been approved at the examination indicated:

M.B., CH.B.—H. Alexander, R. L. Baikie, P. Barlow, G. S. Barnett, C. F. Beyers, S. Borochowitz, F. G. H. Brown, K. S. Brown, H. W. Burne, R. M'D. Cairns, Grace S. Calver, A. Campbell, Helen Campbell, H. Cohen, Dorothy Court, J. R. Crolius, M. Danziger, J. Davidson, J. H. Dick, Margaret L. Dobbie, H. J. C. Durward, J. H. Fairweather, O. Fitzpatrick, Elizabeth S. Forbes, Dora W. Gerrard, G. M'K. Gibbon, Mary L. Gilchrist, J. A. Gillison, M. S. Goldberg, Jessie Gordon, *Janet Grant, A. W. P. Haine, J. E. Haine, A. J. C. Hamilton, C. M. Hawick, J. P. Hope, J. P. Immelman, W. Isbister, W. Kantor, Eleanor H. Kelly, D. J. A. Kerr, Ba Kin, S. Levey, J. A. L. Loudon, D. I. O. Macaulay, J. F. M'Conchie, A. G. MacGillivray, Agnes M. Macgown, Agnes R. Macgregor, H. Mackay, Florence E. M'Kenzie, J. R. Maclean, J. M'Leman, Jane MacLennan, Annie S. MacLeod, J. S. B. M'Neil, P. B. Malherbe, V. G. Massie, R. M'K. van der Merwe, C. E. F. Millar, Christine G. Mitcheson, D. J. Morrison, Emily M. Mure, A. R. Murray, D. J. T. Oswald, W. P. Petrie, K. M. Purves, J. C. Rabie, C. B. Reekie, Ruth J. D. Ritchie, Hera Ross, Annie M. Roxburgh, C. W. Rubidge, Louie A. Rubidge, Helen M. Russell, H. J. E. Schultz, T. Scott, C. Shapiro, G. A. Sinclair, W. A. Sinclair, P. B. Smale, Alice B. S. Smith, Dorothy M. Smith, T. Sprunt, I. M'L. Thompson, H. Thomson, Mabel Thomson, Marjorie Thomson, D. L. M'R. Tod, J. C. Truter, T. C. Wakefield, Grace Walker, Edith G. Wilkes, A. A. Wilson, J. MacL. Young, W. L. Zeeman.

* Passed with distinction

UNIVERSITY OF DURHAM.

THE following have been approved at the examination indicated:

THIRD M.B. (*Materia Medica, Pharmacology, and Pharmacy; Public Health, Medical Jurisprudence, Pathology and Elementary Bacteriology*).—Una M. Mulvany, Sarah B. Allan, A. Angus, S. Annecke, F. H. Bates, H. M. S. Blair, C. C. Carr, Evangeline Carse, J. F. Coltman, R. N. Craig, W. N. Crowe, R. L. Dagger, R. A. McK. Dickson, E. R. Dingle, H. B. L. Dixon, G. A. M. Hall, G. A. Haydock, R. Hickley, E. V. Howard, L. Hunter, Ella Keidan, Elizabeth Killian, Mona Kirkhouse, Hilda Lodge, Ettie O. McCulloch, Mary J. McManus, A. J. [illegible], P. Murphy, P. J. O'Connell, L. N. K. O'Neill, F. W. M. Pratt, J. V. Reuben, Adéle C. Robson, Jessie E. Sheret, G. W. Spark, Gladys Stableforth, T. S. Storey, W. P. T. Watts, J. Whillis, G. Wilson, H. A. Wilson.

* With second class honours.

Medical News.

THE British Orthopaedic Association has unanimously elected King Manuel an honorary member in acknowledgement of his great services to the wounded soldier during the war, especially in the establishment of curative workshops in the special military surgical centres.

DR. W. D. COOLIDGE will give an address to a special meeting of the Röntgen Society, to be held on Thursday next, July 15th, at 9 p.m., at University College, Gower Street, W.C.1. Members of medical and scientific societies are invited to attend.

A COURSE of twelve lectures on neurology will be given on Tuesdays and Wednesdays, at 2 p.m., at the London Hospital Medical Unit, commencing on July 13th, by Dr. Theodore Thompson and Dr. George Riddoch. The lectures are open to students and graduates of the London Hospital and other schools.

A SPECIAL post-graduate course will be held at the North-East London Post-Graduate College, Prince of Wales's General Hospital, Tottenham, from July 19th to 31st. The fee for the course to non-members of the Fellowship of Medicine is £3 3s. or £2 2s. for either week. Further particulars can be obtained from the Dean at the hospital, or the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE emergency grant of £250,000 made by King Edward's Hospital Fund to assist the London hospitals in their pressing need has been distributed among 105 hospitals. The largest amount is £35,000 to the London Hospital. King's College receives £17,500, St. Thomas's Hospital and the Great Northern Central Hospital £12,000 each, the Metropolitan Hospital £11,000, the Middlesex Hospital and University College Hospital £10,000 each, the Westminster Hospital and the West London Hospital £9,500 each, St. George's Hospital £8,500, the National Hospital for the Paralysed and Epileptic and the Hospital for Sick Children £8,000 each, Guy's Hospital £7,000; smaller amounts are granted to other hospitals.

THE EARL OF ARRAN, treasurer of the Children's Country Holidays Fund, makes an appeal for contributions to increase the number of London children who can be given a fortnight in a country village or seaside home. The cost for the board of each child has increased since last year from 9s. to 12s. a week, and the railway companies have raised the fares.

H.R.H. PRINCESS MARY paid an informal visit, lasting about an hour and a half, to the London (Royal Free Hospital) School of Medicine for Women (University of London) on July 1st. She was received by the dean of the school (Miss Aldrich-Blake, M.D., M.S.), the honorary secretary (Dr. May Thorne), and the warden and secretary (Miss L. M. Brooks), and made a complete tour of the building, going into the laboratories where students were at work. The number of students attending the school and the hospitals connected with it this term is about 480.

THE Minister of Health has appointed a Committee to consider and report on the legislative and administrative measures necessary to secure adequate protection for the health of the people in connexion with the slaughter of animals and distribution of meat for human consumption in England and Wales. The members of the Committee are: Sir H. C. Monro, K.C.B. (Chairman), Mr. W. G. R. Boys, O.B.E., Mr. R. B. Cross, O.B.E., Mr. J. Edwards, Dr. W. J. Howarth, C.B.E., Dr. A. W. J. MacFadden, C.B., Councillor T. Masheter, J.P., Mr. A. W. Monro, C.B., Mr. T. Parker, F.R.C.V.S., Mr. R. J. Robinson, and Mr. P. Taylor. Mr. F. H. O. Jerram, M.B.E., of the Ministry of Health, has been appointed Secretary of the Committee, and communications for the Committee should be addressed to him at the Ministry of Health, Whitehall, S.W.1.

THE Medical Research Council has now arranged with the firm of Evans, Sons, Lescher and Webb to place on the market sterilized solutions of gum acacia like those extensively used in military hospitals during the war in the treatment of haemorrhage and shock. It is believed that the experience of the war will have created a demand for these solutions for the purposes of civil surgery, but that many hospitals have been unable to undertake the manufacture of them in their own laboratories. The solutions are made according to the method employed during the war at the Base Hygiene Laboratory, B.E.F., as described in the Medical Research Council's Special Report No. 25. They are made up in special stoppered bottles containing 500 c.cm., and are sold at the price of 1s. 6d. a bottle, *plus* a charge for transport; 6d. is also charged for each bottle not returned when empty. All inquiries should be addressed to Messrs. Evans, Sons, Lescher and Webb, Ltd., at the Bacteriological Research Laboratories, Runcorn.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

M. A. W. asks for suggestions for treatment of excessive dryness of the mouth in a man of 70 the salivary glands seem to have ceased to secrete.

INCOME TAX.

A. J. T. bought a car for £250 and spent £75 3s. 11d. on overhauling, painting, and improving the lighting, etc. Can he deduct the second sum as a professional expense? The local inspector of taxes says it cannot be allowed.

* The inspector's view appears to be that A. J. T. has laid out £325 3s. 11d. in the purchase of a car, and that it is immaterial that the car was first purchased and then renovated. So far as our correspondent's personal position is concerned we are inclined to agree, but a broader view of the facts suggests a different conclusion. If "A" who sold it to A. J. T. had expended the sum of £75 3s. 11d. and *then* sold it for £325 3s. 11d., undoubtedly A. J. T. could not have deducted any portion of it, but "A" could have deducted £75 3s. 11d. as spent on his own car. The result of the inspector's refusal is that the Revenue as a whole gains the tax on the cost of renovating the car as against "A" and A. J. T. combined. We suggest that A. J. T. might bring this point to the inspector's notice, but probably the real hardship is borne by the vendor of the car who gets no allowance for the repairs, etc., due at the date of sale. In any case the expenditure on improvement is not allowable—for instance, in connexion with the electric lighting—and further, any unfair result as regards A. J. T. must be temporary, as it would be rectified when the car in question is replaced.

J. F. B. inquires as to the tax payable on a house owned and let by him, on which he has recently had to expend a considerable sum in respect of his portion of the cost of repairs.

** As a portion of the repairing cost falls on the tenant the gross rental value on the basis that J. F. B. bore the *whole* of that cost must exceed the rent, and on the facts the valuation of £66 compares not unreasonably with the actual rent of £60. But there seems to be no sufficient reason why the usual deduction of one-sixth should not be made from the gross value, leaving our correspondent in the position of paying tax on £55, whereas it is understood that tax is claimed from him on £66. We suggest that he inquires of the local authority the reason why the one-sixth allowance is being withheld.

LETTERS, NOTES, ETC.

VALUE OF LEGUMES IN BERI-BERI.

DR. B. G. EDGE (Singapore, S.S.) writes: May I offer a few personal observations as corroboration of the conclusions of Dr. Wills as to beri-beri in your issue of June 12th, p. 816? As surgeon on one of the Eastern Extension Telegraph Company's cable ships I had, on two occasions, to deal with an outbreak of subacute beri-beri among the crew (Malay and Chinese). The symptoms in these cases were very slight, being mainly confined to weakness and anasarca of the lower limbs. Indeed, they were so slight that at first the men disdained to notice them, saying they were merely "kechil" (little) beri-beri. Owing to the rice shortage at the time, their diet was mainly highly polished rice. The only treatment that was found necessary was the stopping of the polished and the substitution of unpolished rice—the addition of a free supply of native-grown kachang hijau (a mixture of green peas and beans in the husk)—and an insistence on their living in the open on deck. Within seven days the whole of the symptoms had disappeared, and the men were all on duty. An interesting feature in the district in this connexion is the consumption by the Malays of quantities of kachang goring, procured from native vendors. These are merely ground ("monkey") nuts fried in animal fat. On inquiry I found they were taken largely as a guard against beri-beri.

LEFT-HAND DRIVES.

LIEUT.-COLONEL F. P. MAYNARD, I.M.S. (ret.) (Crewe), writes: Mr. Massac Buist's suggestion that "henceforth no cars may be imported into, assembled, produced, or placed upon the market for service in this country with left-hand drives, but that those which are in private ownership (or already imported, it should be added) at the time of such a regulation may continue to be used" is commendable, and would meet the situation. It has already been adopted in Calcutta, where the police refuse to license any left-hand driven car. Some cars imported before the issue of the order are still allowed to be used. An order of this kind does away with injustice to present owners and importers.

RATS AND PLAGUE.

DR. J. GRAY DUNCANSON (Hove) writes: In reference to the letters of Lieut.-Colonel Cobb and Sir John Tweedy, it may be of interest to record that in 1905, at Jaffa, I was allowed to see the collection of antiquities belonging to a German, Baron von Bunsen. In his private museum, situated in a small building at the back of the principal hotel, he showed me a votive offering, the design of which completely mystified him till I suggested that it would appear in its time to have pointed to some mysterious relation between the rat and plague. It was of bronze, about 10 in. long; when looked at from above it represented very clearly the back of a rat, but both sides revealed human faces in profile with enormous glandular swellings.

FEES OF COUNTY COUNCIL LECTURERS.

"A MEMBER" writes: Having been asked by the London County Council if I am free to accept engagements to lecture and examine for them as before, I intend to reply that I am willing to do so if the fee of £1 1s. is raised to £1 11s. 6d., and would ask other members to do the same. The L.C.C. have raised the fees all round, to their dentists and anaesthetists, as well as for all their teachers, and I think it is not unreasonable for lecturers and examiners to expect an advance, as the work takes up a considerable amount of time.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 34 and 35.

THE following appointments of certifying factory surgeons are vacant: Shefford (Bedford), Sleaford (Lincoln), Wombwell (York).

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THE SCOPE AND EQUIPMENT OF AN ANATOMICAL INSTITUTE:

THE PROPOSED INSTITUTE OF ANATOMY AT UNIVERSITY COLLEGE, LONDON.

BY G. ELLIOT SMITH, M.D., F.R.S.,
PROFESSOR OF ANATOMY IN THE COLLEGE.

I CAN best explain the aims of the new Institute of Anatomy which it is proposed to build at University College by referring to certain phases of the history of anatomy during the last eighty years or so.

The impression seems to have got abroad that the unprecedented gift of the Rockefeller Foundation to University College Hospital Medical School and to University College was a matter of pure chance. But it was the result of a deliberate choice made by a body of trustees which, from the nature of its activities, has a fuller and more intimate acquaintance with the state of medical education and research throughout the world than any other single authority. It is necessary to emphasize this in order to appreciate how and why this great gift came to be made and the programme of reform it was intended to help.

The Rockefeller Foundation was eager to give some striking expression of American friendship to the British Empire; it was also anxious to enlist the help of British medical men in its great world-wide schemes of stamping out such diseases as ankylostomiasis, for efforts restricted to a few localities are not likely to effect any radical purpose in preventive medicine; it also realized that unless the standard of medical education was raised throughout the world and the true spirit of research more fully developed, its great programme was foredoomed to failure.

At the end of last year two representatives of the Rockefeller Foundation, Dr. Wickliff Rose (General Director of the International Health Board) and Dr. Richard M. Pearce (Adviser in Medical Education to the Foundation), were in London on their way to Belgium to report on some educational problems in that country. They visited University College, and were informed by Professor Bayliss of the new developments in medical education which had taken place in London, and that several of the hospitals had started the system of clinical units. The fact that some of the London hospitals had adopted this plan excited the lively interest of the two representatives, as the Rockefeller Foundation had played a large part in the encouragement and endowment of this system of medical education in America.

The Rockefeller Foundation, founded by Mr. Rockefeller, has for its object "the promotion of the well-being of mankind throughout the world." Its interests are truly world-wide, and at the present time it is engaged, among other enterprises, in work in a campaign against tuberculosis in France; the control of malaria in the Southern States of America; the control of hookworm disease in twenty-one foreign states and countries, and in twelve states of America; in the improvement of public health organizations in Brazil and Australia, and in the setting up and equipment of a large medical centre in Peking. It is also playing a very large and important part in the promotion of medical education, and more especially of medical research, in the United States.

The two representatives of the Foundation visited the various schools in London which had set up the unit system, and came to the conclusion, after a critical review of the situation, that of these hospital schools the one that had adopted the whole-time system in the most wholehearted way was University College Hospital. At the same time they recognized fully our difficulties, and appreciated very clearly that if the units were to make good, it was necessary that they should be supplied with a larger number of beds for the use of the Directors, larger and well equipped laboratories in the hospital for clinical and research work, and more liberal financial support. They felt that the whole scheme was one which would appeal to the Rockefeller Board of Trustees, and one to which they might well recommend the Foundation to give its financial assistance so that the unit system of clinical teaching might receive every possible chance of attaining the fullest success. Their hope was that assistance from the Rockefeller Foundation might relieve the units from all embarrassments, and secure for this school a completely equipped staff of whole-time teachers in all subjects from the earliest to the final years.

University College is the training ground in pre-clinical subjects for the majority of the students who later enter the hospital school, and it was therefore necessary to ensure that any improvements needed by the medical faculty of the College should be realized coincidentally with the changes in the school of the hospital. In pursuance of this policy the Rockefeller representatives visited University College and investigated the facilities available there for the training of medical students in the preliminary and intermediate studies. With the former they were well satisfied, with the latter they found little wanting in the institutes of physiology and pharmacology, but they found an entire absence of any adequate provision for the work in anatomy. The need for a new Institute of Anatomy worthy of the College had long been recognized by the College Committee, who realized that they must, in the near future, provide a properly equipped institute for real teaching and research work, and indeed, they had already set aside a site for the building, but so far had not raised any of the funds.

Apart from the fact that Dr. T. R. Elliott's scheme for the reform of clinical education in the medical school, and Professor Starling's great achievement in building up the Institute of Physiology in the College were the solid reasons for the choice made by the Rockefeller Foundation, it is singularly appropriate that the attempt to institute radical reforms in the teaching of anatomy and in the provision of the facilities for real research should be made in University College. For, paradoxical though it may appear, the reforming zeal of Sharpey seventy years ago had as one of its ultimate results the crippling of anatomical effort in this country, and it is proper that the College which created a physiology so vigorous as to seize the more vital and progressive parts of anatomy should be the institution to right this ancient wrong by restoring to anatomy the opportunities for teaching and research in histology and practical embryology, and for the experimental study of the factors that influence growth and development.

It is important to remember that Sharpey succeeded Jones Quain, the author of *Quain's Anatomy*, in the chair of anatomy and physiology at a time when physiology was a mere appendage of anatomy. He developed the practical teaching of physiology, and was the first in this country to give really comprehensive courses of instruction in physiology and minute anatomy. The fact that he was Professor of Anatomy afforded him the opportunity of devoting his attention to the really interesting parts of anatomy, leaving Richard Quain only the dead corpse of macroscopic anatomy. And when Sharpey's disciples, Michael Foster and Burdon Sanderson, went from University College as physiologists to spread the new gospel in Cambridge and Oxford, they followed their master's example and annexed to physiology the most vital and progressive branches of anatomy. As England did not produce any anatomists of the calibre of Sharpey, Foster, Sanderson, and their brilliant followers to resist this unnatural divorce of microscopic from macroscopic anatomy, this arrangement, which has worked such grievous harm to anatomy, became stereotyped and expressed in bricks and mortar, so that the anatomist has had no laboratories in which to teach histology even if he had the wish to do so.

The great advances that have been made in anatomy during the last thirty years have been effected mainly by the use of the microscope. Yet microscopic anatomy, without which macroscopic structure is not really intelligible, has been taught by the physiologist; and in many departments of anatomy there is no provision of any sort even for demonstrating microscopic preparations, much less for the study of minute structure by the students. Although in every department of anatomy some pretence is made of teaching embryology, in no school is adequate provision—in most there is none at all—made for practical instruction.

It is a fundamental vice of any system of education in science merely to give the student the *results* of other people's work and not to give him the opportunity of observing the facts himself by studying the material upon which our knowledge is based. It is essential that adequate facilities should be provided in every department of anatomy for the student to study the minute structure of the body and the facts of development, and that rooms and equipment should be set apart for research in these subjects. It is important to emphasize the fact that it is not a question of depriving the physiologist of anything he has or wants to keep. At University College the reform has been facilitated by Professor Starling's offer to give up to the anatomist the subject of microscopic anatomy. But every teacher should be free to teach his subject—or, as I should prefer to express it, to provide his students with the facilities for studying—in the way that he thinks fit. Histology is vitally important in the real study of anatomy; but if the physiologist wants to use a microscope to demonstrate physiological facts there is surely no reason why he should not continue to do so when the anatomist comes into his own and recovers the lost members of his subject.

The structure of the nervous system, gross and fine, its developmental history and the connexions displayed by degeneration and experiment, are all subjects which should be studied as one connected whole in the department of anatomy; and if the complexities of the nervous system are to have any meaning or make any intelligent impression upon the student, the functional significance of the arrangements must be discussed and the effects of damage to the nervous system must be used, not to pretend to teach the student clinical medicine, but to give him some satisfying explanation of a complex and otherwise unintelligible mechanism. It is necessary, then, in any properly equipped institute of anatomy, to provide a neurological department fully equipped with sets of slides of adult human and embryonic material and of the brains of other vertebrates, and with laboratories for the experimental study of the results of degeneration.

In making these claims I am not setting up an extravagant demand, but am simply stating what is done in properly equipped medical schools in other countries and what I have been striving to do in this country and elsewhere for a number of years.

In most of the progressive medical schools of America great activity is being displayed (in the anatomical departments) in experimental investigations of the factors which influence growth and development and of the causation of anomalies and monstrosities. Such researches have led to results of enormous importance from the insight they afford into the underlying principles of development as well as in explaining the causation of pathological conditions. The equipment of laboratories for such experimental work is an essential part of the scheme for the new Institute.

It is gradually being realized how great and important is the knowledge of the structure of the living body that can be acquired by the use of the x rays. At present a student is called upon to interpret radiograms long after he has left the department of anatomy, and when his practical familiarity with the arrangement of the structures he is endeavouring to disentangle has grown dim. Obviously the proper time to acquire an understanding of x-ray appearances is when the student is actually studying the things of which the x rays cast shadows. But such studies also teach him his anatomy, and are a valuable means of instruction. Moreover, the equipment of a department of radiology in the Institute opens up a most promising field of anatomical research, which is bound to become increasingly fruitful year by year as the technique of radiography is improved.

The vast importance and urgency of such reforms as I have outlined are revealed most strikingly if one compares the history of British and American achievement in anatomy during the last thirty years. On the one side inertia and retrogression on the other an unprecedented development of teaching and research, a broad outlook and tremendous vitality. The great reform of anatomy in America began in the Johns Hopkins medical school in 1893, when the late Professor Franklin Mall set up a department of anatomy which, in defiance of recent British and American tradition, aimed at educating the student and teaching him to observe, rather than providing him, in innumerable lectures and demonstrations, with the conventions that examiners may expect him to reproduce. Mall's influence in rescuing anatomy from the scholastic method soon spread to other subjects of the medical curriculum and to other medical schools in America; and the vast reform of medical education and research in America is in large measure the result of his pioneer work in the anatomy department at Baltimore from 1893 onward. It has been the great incentive of the Rockefeller Foundation's schemes of medical work from which we are now about to benefit.

Realizing where and how this great movement began, the appropriateness of the selection of University College for the Rockefeller Gift is suggested by the circumstance that it was a former student of University College who played a not inconsiderable part in preparing the ground and in developing the proper atmosphere at the Johns Hopkins University for the great developments to which I have referred. From 1876 until the coming of Franklin Mall in 1893 Henry Newell Martin, who had been a student of University College with Michael Foster and afterwards his right-hand man at Cambridge, filled the Chair of Biology at Baltimore and exerted so significant an influence that when Dr. William Welch and Dr. William Osler were brought to the Johns Hopkins University, twelve years after Martin had begun to create a school of biology and physiology there, they found the conditions ripe for the building up of the great medical school which will always be associated with their names. Thus University College can regard the Rockefeller Gift as the repayment, no doubt with considerable interest, of the debt biological and medical education in America owes to Newell Martin and University College.

If the facilities for research and education which the erection of the new Institute will afford result in even a fraction of the effects produced by a similar development in America twenty-seven years ago, it will amply justify the expenditure of labour and time which these new developments will entail. For the fuller understanding of the meaning of the body and the factors that influence its growth and development must be the foundation of the newer science of medicine of the future—the prevention of disease. If America has had a start of a quarter of a century in instituting these vital reforms, which affect not anatomy only but the whole of medical education, we can profit from her experience both by adopting many ideas that have been tested and found good and rejecting others that have failed or are not suited to our circumstances. It is hoped to build up here an Institute that will afford students and investigators the means to obtain a broad outlook on the problems and a thoroughly practical knowledge and understanding of human structure, and be a powerful instrument for the advancement of knowledge.

For the opportunity of attempting this great reform it is difficult adequately to express our gratitude to the Rockefeller Foundation for its enlightened generosity.

AN OPERATION FOR THE RADICAL CURE OF INGUINAL AND FEMORAL HERNIA.

BY

SIR G. LENTHAL CHEATLE, K.C.B., F.R.C.S.,
SURGEON TO KING'S COLLEGE HOSPITAL, LONDON.

FROM the experience gained in operating recently upon eight cases for the radical cure of inguinal hernia at King's College Hospital the following operation has been evolved.

The patient is placed in the Trendelenburg position, an incision is made to one side of the middle line, the rectus abdominis is split longitudinally, and the abdominal wall is retracted to the side of the operation. The peritoneum is smoothed away by a dry swab from the parietes. The operation is conducted without opening the peritoneum. The sac between the internal ring and the surface of the peritoneum is delimited by insinuating the forefinger between it and the external iliac artery and vein. The sac is ligatured at the peritoneal surface. The part of the sac that extends into the inguinal canal is pulled up into the subperitoneal space as far as it will come, tied as low down as possible and then it is allowed to slip back (or is replaced) into the inguinal canal; so that it cannot act as a guide for a recurrent hernia.

The delimitation of the sac in the subperitoneal space is simplified by packing back the peritoneum with gauze in a direction upward and away from the seat of operation. The muscle fibres and their sheath are separately sutured. There is nothing to stop a surgeon occluding the internal ring by suture should he desire. The deep epigastric artery and vein could be retracted inwards to allow occlusion of the ring. The younger the patient the greater is the simplicity of the operation. The abdominal wall in young people is so easily retracted to the side of the operation.

In one patient the top of the urinary bladder entered the canal and was firmly incorporated with the neck of the sac. This is a complication not uncommonly met with, and makes radical treatment of the neck of the sac difficult and inefficient when the operation is performed by the ordinary method. By the method I have described the bladder was placed easily and efficiently in its normal position, and the peritoneal opening of the sac was closed at the peritoneal surface. The appearance of the parts in this patient suggested a congenital malformation in the relation between bladder and peritoneum in this region. In one patient suffering from a femoral hernia I performed practically the same operation. It was easy of accomplishment. I turned up a square inch of periosteum from the underlying pubes and attached it to the under surface of Poupart's ligament and the outer margin of Gimbernat's ligament.

The operation would not be so applicable to inguinal hernia in which intestinal adhesions existed within the sac. So far, I have operated on selected cases.

The operation is conservative. I have made no allusion to its performance by other surgeons because I can find no records. I hope I have not overlooked any record of this kind.

OPEN ETHER, WITHOUT CHILL.

BY

LIONEL JAS. PICTON, O.B.E., M.B.Oxon.,

HOLMES CHAPEL, CHESHIRE.

The advocates of warm ether have shown that the best temperature for the vapour is about body heat. If a thermometer be placed in the wool face-piece of an ordinary open-ether mask, with the bulb projecting over the patient's mouth, it will be found to rise to about 98° or higher, according to the patient's temperature. That, of course, is the maximum, and will occur on expiration; the minimum will occur when the intake of the patient's breath draws air through the half-frozen lint. If this inspiration temperature could be avoided, and something approaching the expiration temperature maintained, the administration of open ether would be freed from one of its chief objections. With this object, I tried a mask with a double dome of gauze, and intervening cavity in which the cold vapour and warm expired air would mix. The patients seemed less to resent the induction of anaesthesia than with the ordinary single dome.

Further experimentation, with the help of Mr. Harold Behrens, resulted in a metal chimney, about 8 in. high, built upon an ordinary mask. The open top of the chimney, 4 in. in diameter, was closed with a "drum" of gauze (two thicknesses of the material as it unrolls from the packet, or, for a robust patient, three thicknesses) clamped by a ring. This is kept just saturated with ether. The chimney narrows in the middle to a "waist" 2½ in. in diameter; and here is another "drum" of gauze, a single layer only, clamped between the upper and lower halves of the chimney. A third layer of gauze, also single, forms a dome in the lowest part of the chimney. Between the top "drum" and the "waist" the vapour is cold, as is indicated by condensation of moisture on the outside of the chimney. But the lower half of the chimney is free from condensation, and comfortably warm to handle, for the vapour within it is automatically warmed by its admixture with expired air.

In actual use anaesthesia is very smoothly induced and maintained with this mask; and I think that ill effects of ether—salivation, bronchial secretion, liability to pulmonary disorders—are reduced. (The aid of atropine is assumed.)

A small point in favour of the method is that the ether is kept from contact with the face. A more important advantage of this apparatus is that it induces deep breathing; the percentage of CO_2 in the chimney ensures that; but no cyanosis occurs, and there is less of the suffocating sensation caused by the gauze drums than by the ordinary lint mask. The sustained, deep, quiet breathing, noticeable when this mask is used, must be valuable as a cardiac auxiliary; and, by aspirating blood from the abdomen into the great veins in the thorax, must help to prevent shock.

The mask can be obtained from Messrs. Browne and Sayer, 30, Highbury Place, London, N.5.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF PHYSIOLOGY AND PHARMACOLOGY.

Professor F. Gowland Hopkins, F.R.S., D.Sc., F.R.C.P., President.

DISCUSSION ON ACIDOSIS IN DISEASE.

OPENING PAPERS.

I.—Professor F. Gowland Hopkins, M.B., D.Sc., F.R.S.

Our discussion, if its scope is to correspond with what is indicated by its official title, will deal with two related but sufficiently different sets of phenomena. We are faced, indeed, at the outset with some questions of nomenclature.

As a result of historical developments the term "acidosis" has come to have at least two meanings, and as consistency in nomenclature is a matter of real moment it would be satisfactory if discussion to-day could secure as one of its results the final removal of any ambiguity in the use of the term. This outcome would add to the comfort of those who think and write about such matters and prevent confusion of thought among others less well informed.

The first use of the term "acidosis" is usually ascribed to Naunyn, though I think it was in use for a year or two before, in 1906, he applied it to that condition of arrest in metabolism which leads to the circulation and excretion of hydroxy-butyric and diacetic acids. The use of the term in Naunyn's sense became well established, and, in clinical writings at least, it is frequently so used to-day. Such is the nature of the word, however, that it is not surprising that it should have become gradually applied to other conditions in which increased production in the body of acid substances of any sort is suspected. Finally, we find it applied to all conditions in which the acid-base equilibrium of the blood is upset in the sense of a diminished reserve of available base.

While the appearance in the blood of the special acids just mentioned does, under conditions, seriously alter the acid-base equilibrium, the disorder in metabolism which produces them may exist without leading to any significant disturbance in this sense. Van Slyke and Cullen state, for instance, that they have observed the excretion of 20 grams of acetone bodies (calculated as hydroxy-butyric acid) per litre of urine without the coincidence of an abnormally low plasma bicarbonate. It is clearly undesirable therefore that the same word should cover states of the body which may in effect be very different.

Every one, I think, will agree that, logically, the term "acidosis" should be confined to conditions which involve changes in the reaction of the blood, and since "acidity" in the older sense of the word is so rarely, if ever, established, we shall do well, in my opinion, to accept—as so many authors have now accepted—the definition of acidosis as a condition in which, even though the actual hydrogen-ion concentration (the "reaction") of the blood is little altered, or unaltered, there is a diminution in its potential neutralizing power, a lessening of its "reactivity." We may do well to go somewhat further and speak of "uncompensated acidosis" (Hasselbalch and Gammeltoft) when there is actual increase in the hydrogen-ion concentration C_H and of "compensated acidosis" (Van Slyke) when there is none.

Although it needs an actual change in the C_H of the body fluids to produce an immediate result of any sort, it is, I think, quite wrong to speak of a depletion of the alkali reserve (unless it be a wholly temporary phenomenon) as though it were of no importance. It affects potentialities. An individual displaying diminished alkali reserve is not in a position of equal safety with one in whom the reserve is normal. The former, unlike the latter, may, for instance, become perceptibly dyspnoeic on slight exertion, and he will become more intensely dyspnoeic than the latter with a given increase of exertion. As a mere result of mass action the blood with diminished base can less immediately deal with any sudden increase of acid production in the tissues.

Although, therefore, it may not be wholly logical to speak of "acidosis" when there is, as a matter of fact, no "acidity," there is, I think, justification enough for the suggested use of the term. We shall have to consider later whether under special conditions we ought, on the other hand, to speak sometimes of alkalosis.

For conditions in which the essential element is the circulation of the acetone substances, I can think of no better label than that of ketosis, as proposed by Allen. Chemically the term is more or less justifiable, and it has, at any rate, no undesirable connotations. When using the term "ketosis" we should be thinking especially of a particular metabolic anomaly, which may, or may not, involve "acidosis." When using the latter term we should have in mind a change in physico-chemical equilibrium which may indeed be due to metabolic errors, but may, on the other hand, depend upon something quite different. Ketosis and acidosis may coexist, but the important point is that the association is not necessary.

I trust that this matter of nomenclature may not be thought trivial, and wish that our discussion may settle it. To-day, however, we may expect, and indeed hope, to hear a discussion concerning all conditions that have hitherto borne the name of acidosis.

Acidosis proper, as just defined, has lately been the subject of much intensive experimental work and of important clinical studies, stimulated in particular by the painful results of gas warfare. The suggestion has reached me that in opening the discussion I should attempt a summary of the present position of the subject for the benefit of those who have not given special attention to it. It is clear that in such an attempt one must be very brief, and unhappily it will be impossible to give proper credit to individual workers. Much of the progress made has arisen from work done in this country, and one is glad to think on the present occasion that the older universities have taken the lead. Haldane with his co-workers at Oxford, and Barcroft and his colleagues at Cambridge, stand pre-eminent among those who have directed thought on these matters. The work and writings of Bayliss and Benjamin Moore must certainly not be forgotten, and in addition to these names, those of Hasselbalch in Copenhagen, and D. D. Van Slyke in America, call for particular mention; but others have helped in the advance.

The progress has been real, though, to say the truth, some recent advances on the scientific side consist rather in increased precision of statement, made possible by the progress of physical chemistry as a quantitative science, than in the acquisition of fresh fundamental knowledge. Improvements in technique, however, have been remarkable. Moreover, the greater precision in thought and statement has itself brought out new relations, offered new suggestions, and has even led to new controversies. One hopes that in the discussion to-day the controversial points may receive full attention.

Of the many factors concerned in the extraordinarily nice adjustment of the reaction of the blood and in the continued maintenance of its exact normal value, the effect of "buffers" comes first. Buffers are compounds of such type that when (say) a strong acid reacts with them stochiometrically it is replaced by an acid less fully ionized. Thus though the "acid" in the system increases in proportion to any addition, the "acidity" increases to an extent which may be relatively very small. When free acids, derived from metabolism or otherwise, enter the blood, a course adjustment making for neutrality occurs immediately with the rapidity characteristic of ionic reactions. This is buffer action. Fine adjustment is otherwise secured. Since the chief buffer in plasma is bicarbonate, the acid of low ionization is in this case carbonic acid, capable of immediate elimination by the lungs. Not only is any strong acid buffered upon entering the blood, but its "weak" representative is also quickly removed, and the removal moreover is automatically secured because the respiratory centre is stimulated to increased activity by the minutest increase in its concentration. But the rhythm of normal respiration would show wider variations than it does were not the functions of the lungs in maintaining a normal blood reaction seconded by those of the kidneys. The renal mechanism is highly sensitive to the existence of an abnormal base-acid equilibrium in the blood, and it excretes very promptly any excess of hydrogen or hydroxyl ions. Behind all this organization for preserving normality of reaction stands yet another safety mechanism. Metabolism can be rapidly modified so as to provide ammonia for the neutralization of acid, while, to judge from quite recent work, another modification may provide acid for the neutralization of base (J. J. R. McLeod).

I have said that the chief buffer in the blood is bicarbonate. Some believe that, so far as the plasma (not the whole blood) is concerned, it is the sole buffer of importance; but controversy, and that by no means wholly academic, is still acute with respect to the relative share, if any, that the plasma proteins take in acid-base equilibrium. I have my own opinion on this point, but I will leave it for discussion by those who have directly investigated it. I will just remark that if the proteins function in this way, they must form compounds with acids and bases which are capable of ionization. It is rather startling to find that Professor Cushny, as a result of studying the effect of passing serum through a colloid membrane, has just denied that ion-protein compounds exist in the blood. There seems so much evidence of a contrary kind that one feels discussion on the point would be valuable.

Whatever may be true of the plasma proteins, we have to admit, when the whole blood is considered, that the very wonderful substance haemoglobin exerts an influence of no small importance in the play of base and acid. It acts as a buffer with an efficiency which the plasma proteins certainly do not possess, and it promotes the decomposition of bicarbonates when they are exposed to diminishing tensions of carbonic acid. Very important is the fact that oxyhaemoglobin is a stronger acid than reduced haemoglobin, a circumstance that assists the elimination of CO_2 in the lungs and aids no less the fixation of the CO_2 in the blood as it traverses the tissues. Equally significant is another property of haemoglobin related to that just mentioned. It yields up its oxygen with increasing readiness as tensions of CO_2 increase, another advantage to the tissues.

But haemoglobin circulates in the corpuscles, and in the existence of the corpuscles we have another factor of importance in the phenomena which concern us. The whole blood is a system with two "phases." Across the interface, between corpuscles and plasma, ionic interchanges occur. If the hydrogen-ion concentration of the plasma tends for any reason to rise, then negative ions enter the corpuscles and positive ions enter the plasma, an interchange which checks rising acidity in the latter. In the whole blood we have not only a chemical buffer system (the buffer salts), but, in addition, a physical or mechanical buffer system (a buffer phase) supplied by the corpuscles. When we speak of the reaction of the blood we refer, it is true, more particularly to the reaction of its plasma. It is this which immediately affects the tissues. So long, indeed, as there is equilibrium in the blood the influence of the corpuscles need not be considered. It is when a *change* of conditions occurs that the corpuscles play their important part in determining the new equilibrium condition.

In spite, however, of various qualifying considerations, it remains true that the bicarbonate content of the blood plasma is a physiological factor of prime importance. One relation calls for great emphasis. The fraction $\frac{H_2CO_3}{NaHCO_3}$—that is the ratio which free carbonic acid bears to fixed carbonic acid—gives a direct measure of the hydrogen-ion concentration in the plasma at any moment. For those not completely familiar with the subject of our discussion, it will be a great help to keep that fraction in mind. If the numerator, that is the proportion of free carbonic acid, grows less without change in the denominator, then the hydrogen-ion concentration grows less, and conversely. If the denominator, that is the proportion of fixed carbonic acid, grows less without change in the numerator, then the hydrogen-ion concentration increases, and conversely. A determination of its alveolar tension gives us a measure of the free carbonic acid in the blood and the amount fixed as bicarbonate can be determined in various ways. When the alveolar tension is known, we may determine the fixed carbonic acid in blood or plasma while it is exposed to that particular tension. Thus knowing both the numerator and the denominator of the above fraction we arrive directly at the hydrogen ion concentration. We can measure, on the other hand, the actual reaction by indicators, or by the electrical method. We have again for determinations in the whole blood the extremely interesting method of Barcroft, which depends upon a property of haemoglobin already referred to. The use of this method led its author to what is, in a sense, a special definition of acidosis. Most observers seem to find a satisfactory agreement among these various methods of measurement, although there are, I think, some here prepared to discuss and criticize them.

To prepare the mind for considering the possible effects of disease upon the nice adjustments which secure a normal reaction in the blood, it is well to consider in turn each of the factors concerned.

(*a*) *The Salts.*—The buffer salts of the blood are not constant; their equilibrium is affected, for instance, by the diet. More permanent changes of an abnormal sort have been thought to take a share in the production of acidosis in disease. Such changes, it would seem, could only arise through some alteration in the normal "thresholds" for renal excretion. The point is one well worthy of discussion. When in anaemias the number of corpuscles is greatly reduced, this reduction may in itself, because of the relations I have dealt with, produce an appreciable effect on the reaction of the blood in the body (Parsons).

(*b*) *Respiration.*—It is clear that any interference with normal respiration must produce a profound effect.

Special interest seems to arise in connexion with the state of affairs produced by gas poisoning, when this has not greatly damaged the lungs, and by slight carbon monoxide poisoning. The condition in such cases involves, as Dr. Haldane has repeatedly pointed out, a mild grade of anoxaemia, and the symptoms, according to him, closely resemble those produced by high altitudes or by a reduction of oxygen pressure in experimental studies. Such cases are of illustrative importance because similar conditions probably exist, at some stage or another, in various diseases of the lungs which have as yet been less studied from this point of view. These cases, it seems, do not display much hyperpnoea during rest. They show, on the other hand, one very interesting phenomenon. The urine contains an excess of base, and ammonia formation seems to be reduced to a minimum. Now if we call to mind the ratio $\frac{H_2CO_3}{NaHCO_3}$, upon the conservation of which in the blood depends the maintenance of a normal reaction, it is easy to see that, if the numerator of the fraction be reduced by an undue removal of free carbonic acid, the proper ratio can be restored by a corresponding reduction in the denominator, and this would follow upon increased excretion of base by the kidneys. If the free carbonic acid were alone reduced there would exist a condition which may be fairly spoken of as "alkalosis." The ratio might, it is true, be corrected by the production of other acids in the tissues, and evidence is available to show that this may occur, but in the type of case under discussion the correction would seem to be arrived at by the excretion of base by the kidney. I find personally one point of difficulty in understanding the state of affairs as described by Dr. Haldane. In the case of himself and his colleagues, after exposure to very low tensions of oxygen, the change in the urine in the direction of alkalinity was so great that it would seem to be balancing a large depletion of carbonic acid, for which there was no evidence. The use of the term alkalosis in such conditions as those just described, as advocated by Dr. Haldane and Professor Moore, is doubtless in a sense justified. But it should be remembered that there is always a reduction in the alkaline reserve, a fact emphasized by the circumstance that in these conditions there is always dyspnoea on exertion. It seems to me therefore justifiable, as it is certainly convenient, to classify the cases under the head of acidosis. There may be said to exist, as Dr. Poulton has pointed out, two types of acidosis. Both may show reduction of alveolar tension of CO_2 and both suffer from reduction in the alkali reserve, but the one excretes an acid urine and the other an alkaline urine. The method of compensation is different. In every case when the relations between respiratory phenomena and blood reaction are under consideration, it is necessary to remember that the sensitivity of the respiratory centre to hydrogen-ion concentration may vary. Bayliss has shown that under the influence of morphine, for instance, the centre may become relatively so insensitive to CO_2 as to allow uncompensated acidosis to be established. A much slighter change may account for the fact that the alveolar CO_2 rises in sleep when there may be at the same time a slight fall in the alkali reserve (Leathes, Collip).

(*c*) *The Kidneys.*—Evidence that interference with the normal function of the kidneys may involve grave disturbance in the acid-base equilibrium of the blood is abundant, and I believe that acidosis of renal origin is a subject which would well repay discussion just now. My own reference to it must be brief.

That studies of the respiratory exchange ought to become almost a matter of routine in cardio-renal disease is sure. Any alteration in the alveolar CO_2 tension yields a datum in such cases which is undoubtedly valuable. It has been shown, one may note in passing, that a greatly increased sensitiveness on the part of the respiratory centre to an increase in the CO_2 of the inspired air is characteristic of some cases,[1] an indication probably of diminished alkali reserve.

But I propose to refer to two types of case only: first recalling to your memory the interesting studies of Lewis and Barcroft and their colleagues on a group of clinical cases exhibiting dyspnoea without cyanosis; and, second, quoting a case from the literature which illustrated how extreme may be the condition of acidosis in renal disease. In Lewis and Barcroft's cases the alveolar CO_2 was sometimes very low, indicating a marked reduction in the uncombined CO_2 of the blood; yet a study of the oxy-haemoglobin dissociation curves showed that, so far from "alkalosis" existing, there might be, as a matter of fact, uncompensated acidosis. Under the circumstances such a condition must be due either to the production of other acids in metabolism, or more subtle relations must exist, and, owing primarily to renal errors, the buffer-salt system is in some way inefficient. It is to be hoped that clinicians are on the look-out for cases of this sort, for their further study is desirable. My second reference is to a case described by Means and Rogers,[2] which while, I imagine, by no means unique, is worthy of quotation because it was so fully studied by scientific methods, and because, as I have said, it will serve to remind us that in renal disease the degree of acidosis may become extreme and its effects extraordinarily marked. The case was one of cystic kidneys. The alveolar carbonic acid was down to 0.9 per cent. (6.4 mm. Hg), and so extreme was the hyperpnoea that the pulmonary ventilation was ten times the normal. To judge from the "alkali tolerance" shown by the patient, the blood must have been greatly depleted of available base; 110 grams of bicarbonate given during a period of two days failed to make the urine alkaline. This condition, considering the state of the kidneys, is much more likely to have been reached by retention of acid than by hyperexcretion of base. There was, however, no hydroxy-butyric acid or acetic acid present. Such a case seems to me to be highly instructive when we are thinking of acid-base control as a whole. In connexion with nephritis there is evidence that the only factor concerned in maintaining the blood reaction not yet mentioned as affected by disease may also be rendered inefficient. In some kidney cases at least the protective metabolic production of ammonia fails.

It is clear that acidosis plays a large part in pathology. It is a pity, on the other hand, that it should often be called in to explain symptoms when there is no evidence for its existence. It is in too much danger of becoming merely fashionable. The only corrective for such fashions is the extended use of scientific methods in diagnosis.

I have left myself but little opportunity for introducing the subject of ketosis, though my own occupation makes me anxious that it should be discussed. The biochemist must certainly look to the pathologist, and especially, perhaps, to the clinician, for help in solving the problem of ketosis. From the chemical standpoint there is still no solution to the now long-posed riddle as to why the four-carbon acids fail to be oxidized when carbohydrates are absent or their metabolism arrested. The light is indeed no clearer when we seek to discover, on the other hand, why these substances sometimes appear when there is no glycosuria and when carbohydrate seems well utilized. There is clinical material in abundance, and I think the whole subject is one which well illustrates the need for that closer touch between the general practitioner and the laboratory for which I am to plead in another

Section. The practitioner beyond all doubt frequently meets ketosis, especially in children, but he does not always test the urine for diacetic acid, and, when he does, his observations too seldom become available for statistical or other lines of study.

Of late years it is true there have been praiseworthy attempts to classify cases of ketosis, especially in America, where chemical methods are applied more widely than they are in this country.

Children, it seems, often show a temporary form of the disorder which is of no serious import. Some gastro-intestinal disturbance occurs, with headache, and, perhaps, vomiting, while "acetone bodies" occur in the urine for a few days only, to pass away coincidently with the other symptoms. Another group of cases in children shows more serious symptoms. Here, however, there seems to be little danger to life so long as coincident acidosis is combated—so long, that is, as the urine can be kept alkaline.[3] But children, as is well known, sometimes display ketosis in an acute and fatal form, and not long ago a group of cases was brought together[4] which seems to represent a special type. It comprised infants at the time of weaning put upon a diet containing ample carbohydrate. The symptoms were acute and fatal, but as the food was retained, the cases were quite distinct from those of cyclic vomiting in which ketosis may be (but is probably not entirely) due to the carbohydrate starvation necessarily associated with the vomiting itself. Only by a careful classification of cases, accompanied by quantitative studies as well as qualitative tests, can we hope to get full light on the meaning of clinical ketosis. It is certainly very common in children as a secondary effect of obvious toxaemias. In a study, for instance, of more than three thousand cases of diphtheria and acute anginal affections it was found present in 65 per cent.[5] We know from experiment that the acetone precursors are formed in the liver, especially from certain amino-acids. It is probable (and at any rate easy to say) that, in these infective cases at least, and in post-operative conditions, ketosis follows upon a disturbance of the liver due to the action of toxins or poisons. But the pancreas has to be thought of. Exactly where, and exactly what, is the primary disturbance? I trust some of those who follow me will be able to throw some light on this most interesting problem.

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II.—W. M. BAYLISS, M.A., D.Sc., F.R.S.,

Professor of General Physiology in University College, London.

THE name "acidosis" ought to mean increase of acidity; that is, of concentration in hydrogen ions. Unless the respiratory centre is extremely insensitive, this is only permitted to occur to a very small degree, because of the increase in pulmonary ventilation due to stimulation of the centre. A slight increase in acidity does not appear to be harmful, and any great increase means that the whole organism, including the respiratory centre, is so deranged as to be practically moribund. A decrease in bicarbonate content may be present without increased acidity, provided that the respiratory centre is normally sensitive. The existence of this decrease implies production of fixed acid in the tissues (probably lactic acid), and this is due to deficient oxygenation, usually owing to low blood pressure or defective blood volume.

On the whole, it appears that the results often stated to be due to acidosis are not thus to be explained. They are to be attributed to other pathological phenomena, of which decreased bicarbonate is only one, and a comparatively unimportant, manifestation. Diabetic coma is most probably due to acetone and its derivatives as such, not to the acid properties of some of them.

Similar remarks apply to the opposite state of "alkalosis"; neither of the two being of importance in itself in so far as it is possible for it to occur while the organism remains alive.

III. H. H. DALE, M.D., C.B.E., F.R.S.,

Medical Research Council.

I ENDORSE the President's plea for a clearer definition and application of the nomenclature, and emphasize the desirability of the meeting arriving at some consensus of opinion on this point.

IV.—T. H. MILROY, M.D.,

Professor of Physiology, Queen's College, Belfast.

IT is well recognized that in the majority of conditions of acidosis the reaction of the blood is normal, although the alkali reserve is lowered. Such conditions have been referred to as cases of compensated acidosis, with the H_2CO_3 concentration falling proportionately to the decrease in $NaHCO_3$. A disturbance of this type is characteristic of most cases of ketonuria, where the alkali reserve has been lowered by the successful competition of the foreign acids, beta-oxybutyric and aceto-acetic, for the reserve alkali. The necessary accompaniment of the lowered bicarbonate concentration is a fall in the H_2CO_3 concentration in the blood, and thus in the alveolar air. The competition between carbonic acid and the foreign acids for the disposable base obeys a definite law, and the amount of the base secured by each acid will depend upon two things—the dissociation constants of the respective acids and their concentrations. If the simplest case be considered—namely, one equivalent of the base and one of each acid—then the distribution ratio will be equal to the square root of the quotient of the dissociation constants of the acids. Thus—

If x = fraction of the base neutralized by H_2CO_3
$1 - x$ = fraction of the base neutralized by β-oxybutyric acid

$$\text{Then } \frac{x}{1-x} = \sqrt{\frac{K\,(H_2CO_3)}{K\,(\beta\text{-oxybutyric acid})}} = \sqrt{\frac{3.04 \times 10^{-7}}{3.86 \times 10^{-5}}} = \frac{1}{11.2}$$

The theoretical and experimental investigation of the subject along the above-mentioned lines has led to interesting results, particularly with regard to the effects produced by the administration of bicarbonate and citrate in conditions of compensated acidosis.

V.—E. P. POULTON, M.D., F.R.C.P.,

Beit Memorial Research Fellow; Assistant Physician, Guy's Hospital.

1. *Measurement of Acidosis.*

THERE is an inherent fallacy in Van Slyke and Cullen's method of separating off the plasma from blood and then subjecting it to 40 mm. CO_2 and measuring the CO_2 content, because the value obtained varies with the CO_2 content of the specimen of blood used. The alkali reserve may be accurately measured by determining the CO_2 in whole blood at 40 mm., or the CO_2 in "true plasma" (that is, plasma separated from blood *after* equilibrium with CO_2 has been established) at the same pressure. The advantage of using "true plasma" is that the p_H of blood can be accurately calculated from it by Hasselbalch's formula:

$$p_H = p_{K_1} + \log \frac{\text{Combined } CO_2}{\text{Free } CO_2}$$

expressed as the p_H of blood at 40 mm. This value pro- —a very simple matter. Hence the alkali reserve may be bably lies between 7.41 and 7.31 in health. Another measurement of interest is the p_H of arterial blood; this may be inferred in some cases by using blood at the alveolar CO_2 pressure. Recently Campbell and I have been measuring the CO_2 content and CO_2 tension of blood withdrawn from the radial artery, while Hunt has been investigating the respiration in the same cases.

2. *Results in Disease.*

There is general agreement that in uraemia with nitrogen retention and in severe diabetes, acidosis—that is, increase of fixed acid and lowering of CO_2—occurs. Mr. Ryffel and I demonstrated this in 1913 for uraemia, and I published a series of observations in cases of diabetes in 1915. Barcroft's method was used. Parsons, Campbell, and I have since confirmed this by direct p_H measurements and CO_2 estimations. We have also observed acidosis in one case of tubal nephritis and in two cases of polycythaemia with splenomegaly. I wish now to draw attention particularly to cases of cardiac dyspnoea. Lewis, Barcroft, and others found an acidosis in cases of so-called cardio-renal disease, and explained the hyperpnoea on this hypothesis. No acidosis was found in rheumatic heart disease. It is admitted now that it is unsafe to use the oxygen dissociation curve to measure acidity, and on examining a series of cases of these two types we have been unable to find acidosis present in practically any of them. On the other hand, there was a tendency which was very marked in one case for the arterial CO_2 tension to be high, and I think that probably the hyperpnoea in all these cases may be due to slowness of the circulation causing accumulation of CO_2 in the venous blood, which results in excessive ventilation to get rid of it.

In certain cases of eczema and seborrhoeic dermatitis, as Dr. Barber and Dr. Semon have shown, the urine is highly acid and much sodium bicarbonate must be taken before neutralization of it occurs. Mr. Joffe at Guy's Hospital has found that there is no acidosis in the blood, and sodium bicarbonate, when taken by the mouth, causes the same increase in alkali reserve as it does in normal people. Hence the acidity must be due to a special excretion of acid by the kidney.

VI.—T. R. PARSONS, B.A., B.Sc.,

Cambridge.

IN the maintenance of the normal reaction of the tissues the reaction regulating mechanism of the blood plays a large part. In the normal organism this "buffer" action of the blood serves to prevent large changes in its reaction, even though the chief end product of normal metabolism—carbonic acid—is an acid of sufficient strength to produce very considerable changes of acidity in non-buffered solutions. The reaction changes in blood as its carbon dioxide tension is increased are much more gradual than those occurring in solutions of sodium bicarbonate, because as the carbon dioxide tension increases, an increased quantity of sodium bicarbonate is formed, and this opposes the ionization of the carbonic acid. The sodium necessary for the formation of this bicarbonate probably comes from the haemoglobin, which acts as a weak acid and exists as a sodium salt at low CO_3 tensions. Haemoglobin, therefore, has functions in the carriage of carbon dioxide and in the maintenance of the normal reaction of the blood as important as those connected with the transport of oxygen.

DISCUSSION.

Dr. P. J. **CAMMIDGE** (London) agreed that there was need for an exact definition of the term acidosis, and hoped that a conclusion which would be generally accepted might be reached. He was of opinion, however, that care should be taken in defining both acidosis and ketosis to allow of further developments in our knowledge coming within the orbit of the definitions arrived at. He was particularly anxious on this account, as experiments he had been carrying out suggested that the state of the liver played an important part in ketosis and certain forms of acidosis, and it seemed not unlikely that a common denominator for certain conditions of this type might eventually be found in the liver.

Dr. R. L. **MACKENZIE WALLIS** (St. Bartholomew's Hospital) considered the division of acidosis into compensated and uncompensated forms to be a very suitable one. The best example of uncompensated acidosis was that associated with uraemia. In this clinical syndrome there was well marked acidosis, and the action of the kidney as a regulator had to be considered. The kidney in ordinary circumstances was capable of regulating acidosis. In a case of uraemia with a blood urea content of 0.8 per cent. the intravenous injection of saline led to a rapid excretion of urine with recovery from the symptoms of uraemia. With regard to ketosis he had observed the occurrence in the urine of acetone bodies in hospital patients in morning specimens of urine. The occurrence of intermittent glycosuria associated with acetone bodies in the urine had received attention. The acetone bodies which occur in the urine in pregnancy indicated that the pregnant woman was in a state of unstable equilibrium. The slightest restriction of carbohydrate at once led to the appearance of acetone bodies in the urine, and the same followed vomiting in pregnancy. His work on the pancreas had led him to the conclusion that a catalyst was produced in the pancreas, and was essential for the formation of ethereal sulphates, since in the absence of pancreatic juice in the intestine there were little or no ethereal sulphates in the urine.

Dr. W. D. **WILKINS** (County Mental Hospital, Leek, Staffs) mentioned the fact, to which attention had been drawn lately, that in a large proportion of cases of acute mental disease acetone bodies were contained in the urine, without disturbance of carbohydrate metabolism. There seemed to be a relation between the presence of acetonaemia and mental symptoms, since in uraemia and diabetic coma the mental symptoms were prominent.

Dr. E. **GRACE SHERWOOD** (Stafford) said that since February, 1920, she had tested for acetone the urine of all sick children coming under her notice in general practice. Acetonuria had been observed in measles, tuberculous meningitis, cervical adenitis, and jaundice, and in a number of cases with no definite other disease. Some of the cases had all the appearance of a bronchopneumonia, but there were no clinical signs in the lungs. They made a rapid recovery on administration of potassium citrate or sodium bicarbonate. Other cases showed gastro-intestinal disturbance, ulceration of tongue and mouth, and offensive stools. In a patient aged 2½ with tuberculous meningitis, acetonuria was the first clinical sign of disease detected. Signs of cerebral irritation appeared some days later. Acetone was present in the cerebro-spinal fluid. *Post-mortem* examination in this case showed old caseous tuberculous glands in the mesentery, and a large number of enlarged soft, red glands. The base of the brain was covered with tubercles, and on the base and vertex were ecchymotic patches similar to those found in cases of acute confusional insanity showing acetonuria. In the spleen were tuberculous lesions, and giant cells microscopically. The liver showed fatty change.

Mr. **SYDNEY W. COLE** (Cambridge) mentioned his confirmation of Piper's work on the effect of the administration of pancreatin by the mouth on the incidence of post-operative ketosis. He found that most hospital patients previous to an operation suffered from ketosis, due in many cases to carbohydrate starvation. But even if this were prevented by giving glucose overnight and before the operation, the administration of a volatile anaesthetic was very apt to bring on a severe ketosis, especially after a laparotomy. The previous administration of certain preparations of pancreatin by the mouth markedly decreased the ketosis in about 50 per cent. of carefully controlled cases. Various preparations of the pancreas seemed to be without action, and this action certainly bore no relationship to the enzyme content. Observations on the ketosis of pregnancy, associated with vomiting, indicated that it seemed to be due in many cases to a defective action of the pancreas, and in certain cases at least was amenable to treatment with glucose and pancreatin.

Dr. A. F. **MARTIN** (Bradford) asked whether there might not be a connexion between the action of toxins in acute disease and the presence of acetone in the urine so commonly found in such cases.

SECTION OF MEDICAL EDUCATION.

SIR GEORGE NEWMAN, K.C.B., M.D., F.R.C.P.,
President.

DISCUSSION ON PRELIMINARY SCIENTIFIC EDUCATION IN THE MEDICAL CURRICULUM.

(**SIR GEORGE NEWMAN**, President of the Section, delivered an introductory address on "The Place of Preliminary Science in the Medical Curriculum," and there followed papers on the medical student's science course from the standpoint of chemistry, of physics, of biology, of anatomy, and of pathology, by Professors Arthur Smithells, Sir Ernest Rutherford, Sydney J. Hickson, Arthur Keith, and J. Lorrain Smith respectively. These papers were printed in the BRITISH MEDICAL JOURNAL of July 3rd.)

GENERAL DISCUSSION.

Dr. **SIMON FLEXNER** (Rockefeller Institute, New York), speaking by invitation, said he did not feel himself competent to discuss medical education in England; his feeling rather was that they in America had gained so much in the past from English medicine that criticism or even suggestion by an American would be an impertinence. But there were certain aspects of medical education which must engage the careful attention of all on either side of the Atlantic who were interested in advancing medical knowledge. It was rather from that point of view, and from the experience of the last twenty-five years in the United States, during which they had been endeavouring to raise the standard of medical education, that he might perhaps contribute to the discussion. One thing was axiomatic: namely, that the quality of education reacted upon the number of capable medical practitioners and investigators—laboratory men was a better name for them—who were turned out. It was true, as Professor Keith had suggested, that great talent in the way of investigation and discovery was rare, but there was, nevertheless, a very large amount of talent fairly generally diffused among our highly cultivated populations, and this could be made productive. Education offered the means whereby it could be so made. The talent for discovery was not wholly an innate or inherited quality; it came, or at least it was developed, as a result of education. Medicine to-day was a highly technical subject; it involved the use of instruments of precision; the medical man had to work more and more quantitatively. Machinery of an educational character was therefore needed to provide the practitioner as well as the laboratory worker with the crude materials on the basis of which observation and experiment could be carried out. Thus, the organization of medical education was of the first importance. He had an idea that in America the general respect for the man really trained in medicine was increasing. Yet the number of students who were going through the American schools was smaller to-day than during the period when that respect was less marked. The respect did not depend upon the number of persons who passed through a system, but upon the quality of the system through which they passed. There was something in the system which reacted upon the quality, not only of the average product, but of the men of unusual gifts who might drift into medicine. It was important, of course, to extend knowledge by research, but for the medical student research had a further importance—it had a fructifying influence upon him as he went through the stages of his education which nothing else could supply. At what point the student himself should come into that system of research it was difficult to determine finally. But it seemed to Dr. Flexner that in the organization of an educational system there must be allowed somewhere enough play for a young man, if he showed any bent or talent in that direction, quickly to get into touch with opportunities for some research on his own account which would prove most stimulating to him. Lastly, there should be no standardization of medical education—there must be a minimum of conformity. Qualification, of course, must be provided for, but the objects of this great experiment would be best served not only by insisting on a high standard but by allowing for diversity.

Professor PIERO GIACOSA (Professor of Pharmacology in the University of Turin) said he gathered that there were certain common views about medical education—namely, that a matriculation examination was necessary, and that some elements of the sciences of physics, chemistry, and natural history (zoology and botany) were to be studied in the secondary schools. He could assure them that such was the case in Italy, although there was room for improvement in these respects even in that country. He agreed with Sir George Newman in his description of the sound scientific basis required in the education of a physician. The practice of medicine must be built up on the solid ground of preliminary science, and no man ought to be allowed to announce himself as a specialist in any branch unless he had been through this fundamental curriculum. The specialist ought in every case to follow fixed post-graduate courses, and to submit special proofs of his attainments. This was what was going to be established in Italy. Professor Giacosa went on to urge the promotion of an international agreement with a view to obtaining a common standard of medical qualification in all civilized nations. Each country ought to conserve its own traditions and curriculums, but they should be so arranged as to produce the same results so far as the actual knowledge acquired by the medical student was concerned. The examinations in anatomy, physiology, and pharmacology in England and Italy, although different in their form, were substantially the same. He would leave it to the President of the Section to decide whether the time was ripe for a resolution on the subject, but certainly an international agreement ought to be in the minds of them all if medical education was to bear its best fruit.

The PRESIDENT said that Professor Giacosa's suggestion practically meant a free republic of medicine all over the world. One of the great difficulties was, of course, the varying standard of medical education and training. There were seventeen universities in Italy, twenty-two in England, and in America an immense number which they were endeavouring to reduce, so that really the issues raised by Professor Giacosa presented difficulties, but he would see that the suggestion was properly conveyed to the right quarters.

Dr. J. C. McWALTER (Dublin) thought it necessary to get down to the existing situation. What was it intended to produce? A competent doctor. What did the public expect from him? They expected him to cure or to relieve, or to comfort, a sick man. It was now generally held that it was impossible to cure any disease. Sir George Newman would be the last to suggest that the ordinary practitioner—the individual unit amongst the 30,000 practitioners of these isles—could do anything to prevent disease; the question was, could he really do any good for the patient? Probably not. The greatest ambition, then, could only be to do as little harm as possible. It was simply a superstition that any good could be done to the public by meddling with their life-history. Recently the State had adopted the superstition, and the result had been profitable for the profession financially, but in practice it had done no good. The State treatment of tuberculosis was a ghastly failure. The new Health Acts would probably also be a failure, as they were a mere superstition, but, as this would mean money in the pockets of the profession, they ought in gratitude to do the public the least harm possible. Beyond that they would not hope to go. With all the boasted advances in medicine, the expectation of life after fifty-five years had lessened rather than increased. A doctor ought to have some tincture of learning above that of a secondary-school boy. At present the average practitioner had not. The standard of the preliminary education ought to be raised. Latin should always be essential, and Greek ought no longer to be omitted. A modern language like French or German should be a necessity, and also a sound training in biology, physics, and chemistry. The present standard in these subjects was higher in technical schools than in many schools of medicine. In fine, they should strive to do the minimum of harm.

Dr. R. C. BUIST (Dundee) said that the essential reform of medical education must begin in the elementary school. The *enfant terrible*, with his wickedly good memory and his obliviousness of limits, showed the chief capacities needed for the scientific investigator, but few survived the traditional methods in "education." Even classics could be taught by the methods of natural science with economy of time and efficiency in result. In the university improvement was throttled by the tradition of the systematic lecture. Memory of words was so easy to test. The ability of the mind to deal with the facts could only be tested individually. In detailed method the school teaching of physics was too often mere aimless weighing and measuring, forgetful of the fact that it was a habit of weighing and measuring that made the physicist, and not a weariness of these processes. The specialist teacher was so often impressed by the facts of his subject that he lost his objective—the producing of a physical, a chemical, a physiological habit in the mind to which he presented them—or, if he remembered, he abandoned the task of modifying these habits as being hopeless in the time at his disposal. The student thus came to his clinical teacher with a collection of terms, but with the instinctive reference to the underlying facts weak or absent. The clinical teacher must revitalize the student's mind backwards through pathology to physiology, and thence to physics or chemistry or biology, till he grasped the idea of the patient as a man or woman with the ordinary properties of matter, showing all the conservatism of their inertia and all their biological traditions, in whom, for the time being, there was a particular phase of disbalance, requiring the action of certain factors—physical, chemical, biological—in order to bring back the normal state.

Professor H. S. RAPER (Leeds) said that he was taught a great deal of chemistry at school before entering the university. In his first M.B. course at the university the facts taught were the same as those learned at school, but the method of presentation was very different. So different was it that he realized at the end of the course what science really meant—a thing he had not realized after the school course. He felt strongly, therefore, that there was something in the presentation of the subjects of chemistry and physics at the university that could not be given at school. This was partly due to immaturity at school, and to the intellectual freedom of the university atmosphere. It was useful to inquire what was the fundamental principle which those who taught the medical student were trying to impart. They wished to make him scientific, and they must therefore train him to realize that science was advanced knowledge acquired by careful measurement and accurate observation. It was essential that he be trained to use his powers in this direction, and to trust his own work when it was well and carefully done, although the results might not harmonize with bald facts stated in his textbooks. He would thus learn how knowledge was won, and be able to make use of the same principles in the investigation of patients. By emphasis of this method the principles which would ensure the successful practice of medicine would be seen to be the same as those which were equally fundamental in the practice of chemistry, physics, or any other science.

Professor **RITCHIE** (Edinburgh) said that the important factor to be kept in mind in considering the preliminary education of the medical student was the psychological one. It was necessary to recognize that the school attitude and the university attitude towards knowledge were completely distinct. The first was receptive and dependent, the other was one of originality and independence. The problem of a university teacher was to develop in the student the faculties of original observation which were called for in facing the simplest clinical case. With regard to premedical education, the broader that was the better equipped would the medical student be for his later technical work, and in so far as school education in science was concerned its main object must be the utilization of scientific methods and technique for developing habits of exact observation. In this respect physics and chemistry were superior to biology as school subjects. There were, however, certain subjects of a literary and philosophical character which could not be taught at school and which it was an advantage to every medical practitioner to have studied. Provision should be made for these in the education of the student as was done in the preliminary "college" course insisted on in many American schools of medicine. It was only thus that the student of medicine could be prepared both for his profession and for the duties of citizenship. With regard to preliminary science at the university, the great difficulty was in getting the medical student to realize that he was not dealing merely with preliminary subjects, but that these furnished him with facts which were essential for him in his later technical studies. The only method of getting over the difficulty was to scrap the watertight compartment system in our medical schools and to substitute an organized and correlated curriculum in which each subject was dealt with in proper proportion and subdivided so that each aspect was presented to the medical student at the period in his curriculum when its practical bearings could best be realized. Finally, the principle must be recognized that a scientific subject could be treated in its practical applications to medicine without any sacrifice of scientific principle or method.

Dr. **CAREY COOMBS** (Bristol) said he would not have ventured to plead for a consideration of the claims of elementary psychology to be included in the preliminary part of the medical curriculum were it not for two circumstances: First, the whole profession, he believed, was feeling that our own experiences had proved to us the grievous inadequacy of our knowledge of psychology. Secondly, he had discussed the point with Professor Lloyd Morgan, whose opinion was of the highest value, not merely because of his position in the world of psychology, but also because for many years he had been connected with the early training of medical students. Professor Lloyd Morgan agreed that it was urgently necessary to give the medical practitioner of the future a far better grasp of psychological principles than he had received in the past. To do this it was advisable, if possible, to include some teaching of the elements of psychology in the earlier part of the medical curriculum. Another reason for doing so, he said, lay in the urgent need for reconciling in the mind of the medical man the clinical psychology that he must learn in the course of his practice with the academic psychology that was founded on accurate scientific methods. The difficulty, according to Professor Lloyd Morgan, lay in finding the right man to do the teaching. There were not many teachers of psychology who could take hold of academic psychology with the one hand and of empirical psychology with the other and weave them into a harmonious pattern. And yet, according to Professor Lloyd Morgan, the clinical psychology which was becoming so prominent to-day was really founded on the same facts as the academic psychology. Some kind of continuity ought to be shown to exist, lest clinical psychology should in the future fall away from its real foundation, scientific method. Dr. Coombs added that training in psychology was not only necessary for the production of efficient practitioners, but also for that of the investigators of the future. Much of the research work now being done and about to be done concerned itself with the reaction of mind on body, and it was highly important that such research should be conducted according to scientific principles.

Professor F. O. **BOWER** (Glasgow) said that in discussing the teaching of those subjects in the school as against the university period there was a psychological reason for treating physics and chemistry differently from the biological sciences. A boy took readily to sciences of measurement and exact statement, such as physics and chemistry, and these found their place rightly in the school period, leading up to courses in those subjects in the university specially designed for medical students. The boy could not at the age of 16 grasp with the same readiness sciences of comparison and opinion such as zoology and botany. It was an advantage to acquire at school some general knowledge of living things, but on entering the university the student should be launched upon the serious study of zoology and botany by the guidance of teachers who knew how to teach, who brought enthusiasm to the work, and selected such aspects of the biological sciences as should have their special value in relation to his later medical studies.

Professor J. A. **LINDSAY** (Belfast) said it was desirable for clinicians and those engaged in teaching the preliminary sciences to confer on this subject. What was wanted in the medical student was the acquisition of the scientific habit of mind, and especially the capacity for correct observation. How far the methods of observation cultivated in the chemical laboratory or the botanical gardens were of great utility in the hospital ward was a question upon which opinions differed. It was doubtful whether observation was a general or a specialized faculty. Medical education was confronted with three difficulties: First, the low standard of general education of students entering for the medical curriculum. Secondly, the overloaded state of the medical curriculum; the medical student of the time was overfed, and the final subjects were suffering from the multiplication of accessory courses of study. Thirdly, there was the difficulty of adapting the curriculum to the needs of that large majority of students whose future lay in general practice and that small minority who would become consultants and specialists. These difficulties might be to some extent insuperable, but it was well to study them and consider how far they could be mitigated. It was generally admitted that in the past the preliminary sciences had been taught with too little reference to their application to medicine, but this fault was in course of being remedied. These sciences should be taught partly as a mental discipline, partly in their direct relation to medical practice, and without burdensome detail. The student had too often the tendency to keep his pure science in one side of his brain and his medicine in the other side. Correlation should be cultivated. In the future it was probable that the schools would undertake the training of the student in elementary science, leaving the universities to provide teaching with a special reference to his future career. This proposal was viewed with dislike in some quarters, but it would probably become inevitable in view of the admitted necessity of lightening the curriculum. Reform was in the air. The fundamental principle which should govern any contemplated measures was the need of securing that the student approached the study of medicine, surgery, and the allied sciences with a trained mind.

Dr. H. B. **BRACKENBURY**, as an ordinary working member of the profession, deprecated the idea which seemed to run through some of the speeches that there could be two races of medical men—one with something superior in the way of education and the other with something inferior, and that the latter would do for the average general practitioner. The man who was going to be a general practitioner all his life needed to be at least as good a scientific man as the specialist or the professor. His was a different kind of work, it was true, but he ought to be on as high a level in his own work as the specialist or professor was in his. There were, of course, many inferior general practitioners; there were many specialists also who were not good specialists—specialists who got into the habit of routine and lacked enthusiasm—and it had been admitted in that discussion that there were even professors who did not do their work properly. They were all medical men, even though some of them had got into different walks of medical life, and they must all recognize that they had something in common as members of the same profession. He could not admit the relegation of the general practitioner to a lower level. In the second place, nothing had been said with regard to the place of examinations. It was of no use leaving the present system of examinations with an altered system of curriculum. The registration of medical students might be prevented until they were 18 years of age if this was thought wise, but the requirement should be made that during the preceding years they had made acquaintance with scientific subjects. Lastly, he wanted to utter his profound conviction that medical sociology could not be separated from the subject of medical education. Whatever schemes for the development of State services might be forthcoming, everything depended upon the place occupied by the general practitioner.

Professor T. **WARDROP GRIFFITH** (Leeds) was a little doubtful about giving a vocational bent to the training at too early an age. How many of those present made up their minds to be medical men at the age of 16 or 17? Some of the changes suggested in the way of lightening the cargo would tend to the accentuation of specialism at an earlier date than was the case even now. He did not think that the present method of teaching chemistry, physics, and biology should be radically altered. The test of good teaching should be to get the student, when he came upon a bit of chemistry, or other subject which he had taken in the preliminary science course, to deal with it intelligently. Professor Griffith expressed his cordial agreement with the value of lectures, to which one speaker had referred slightingly.

Professor A. E. **BOYCOTT** (University College, London) said that the proposal to transfer chemistry and physics from the professional curriculum to the school curriculum was unfortunate. Chemistry and physics could not be taught effectually to boys of 15 and 16. When chemistry and physics were taught to schoolboys it meant simply that they were taught odds and ends of things, and the result was that they reached the university without knowing any chemistry and physics to speak of. His other objection was to the crude proposition that boys of 15, or even of 14, should be told that they were going to begin vocational education at that age. That would be a great set-back. What was wanted was schoolboys with well-trained minds, not youths who had already acquired a certain amount of detached information with a view to starting on a career.

Mr. A. G. **TANSLEY**, M.A. (Lecturer in Botany, Cambridge), said that a remark made by one speaker in the discussion furnished the key to the situation—namely, that the students often felt that these preliminary subjects were imposed upon them and were not really part of their necessary training. It seemed to him that in the past the teachers—certainly of biology, and perhaps also of chemistry and physics—had fallen into the mistake of trying to turn out zoologists and botanists or chemists or physicists, as the case might be. They had taken up the same mental attitude towards students who were preparing for medicine as they would take up towards students who were preparing for other degrees. There had been too much of a feeling that the teacher must insist on the importance of his subject. But the primary object of biology for medical students was to help to provide a broad basis for the more special studies which came after, while a secondary object was to give some knowledge of the simple animal types leading up to man, as well as some preliminary training in simple dissection. The ideal would be to have one teacher for the whole of the student's biology, which should be taught as one subject and not separated into botany and zoology. If this was impracticable they should try to establish a closer co-ordination between the teaching in the two branches and be careful elsewhere to insist on the fundamental aspects of the study of living beings rather than on the special problems of the botanist or the zoologist. As for the time necessary to give students a good grounding in biology, at Cambridge they had now sixty lectures and 120 hours' practical work, of which twenty-four lectures and 48 hours' practical work were given to plants. In his judgement that was enough for the purpose. Mr. Tansley briefly indicated the plan of his own course, and again urged that all teaching in biology should be frankly tested by the criterion of its importance to the medical student.

RESOLUTIONS.

Three resolutions were handed to the President of the Section, but were not formally put to the meeting. They were, however, tacitly accepted, and the meeting concurred by applause in the President's suggestion that he should be authorized to convey them, along with the whole text of the discussion, to the University Grants Board and to the General Medical Council for reference to its Education Committee. They read:

1. That the lowest age of registration for a medical student be 17 years.
2. That in the forthcoming revision of curriculum promised by the General Medical Council the lightening of professional studies would be facilitated if chemistry and physics were made school subjects, biology remaining a professional subject.
3. That with a view to securing adequate training in physics, chemistry, and biology as applied to medicine by courses of these subjects within the professional curriculum, it is desirable to exact a knowledge of physics and chemistry of matriculation standard of all medical students before they register.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANTIMONY IN LEPROSY.

IN view of the success that has been obtained when antimony has been used in the treatment of some chronic ulcerated conditions due to micro-organisms, as well as in diseases which are macro-parasitic in origin, I was induced to test the efficacy of the drug in treating some lepers at Durban who manifested various aspects of the disease. As it was difficult to arrange for intravenous injections, I confined myself to intramuscular injections of the drug, using Oppenheimer's colloidal antimony (oscol stibium) in doses ranging from 1 to 4 c.cm.

The decided improvement in the clinical condition of these patients and their own conviction that the treatment was doing them good, encourages me to publish a few notes on the cases; though the treatment had to be discontinued just when it had become most promising, because the Union Government was unprepared for the patients to remain longer in Natal.

Case I (Chengadoo) gave a seven years' history of his condition. His was a typical tubercular form of leprosy. He had lost both eyebrows, a sign of leprosy which Dr. Roycroft of Greytown first pointed out to me as characteristic of the disease. There were numerous ulcerated nodules on the hands and feet, particularly on the tips of the fingers and toes. Some of these were actively discharging. There were also occasional pains in the joints. On March 9th he received 1 c.cm. oscol stibium intramuscularly. This dose was repeated on March 11th, and on each day until the 15th. Improvement in the condition of the ulcers was noticed on March 15th, though only the worst were being dressed. The injections were then discontinued for ten days, though *Bacillus leprae* was present in the nasal discharge. On March 24th, after receiving a total of 6 c.cm., all the ulcers were dry except the extremities of the right fourth finger and the left index. The patient stated that the pains in his joints had improved. On the 25th intramuscular injections of 1 c.cm. oscol stibium were recontinued daily until the 31st, but omitted on March 30th. On March 26th all the ulcers were dry. Dr. W. A. Murray, the Government pathologist, who kindly examined the nasal discharge of these cases, reported that *Bacillus leprae* was present on March 31st. Treatment was then discontinued for five days. At the end of this time two of the ulcers had broken out again. 1 c.cm. oscol stibium was given on March 6th, 7th, and 8th, and 3 c.cm. on April 9th and 10th, without ill effect, and it was proposed to continue with the larger doses; but as the lepers were sailing for Madras on April 20th treatment was discontinued. *Bacillus leprae* was present in the nasal discharge on April 13th. On April 16th, though the larger ulcers were still protected by dressing, there was no discharge except a slight haemorrhagic discharge from a nodule that had been grazed.

Case 2 (Dhama) could give only a three months' history of his condition. On March 11th there was pronounced left wrist-drop and contraction of both hands with "pins and needles" down each arm. There was also conjunctivitis of the left eye and irritability of the left eyelid. On March 28th he had had ten intramuscular injections of 1 c.cm. oscol stibium. After the fourth injection the eye condition had improved without other treatment. On March 24th, after the injections had been discontinued for nine days, the eye condition recurred, but was not so severe as when the treatment commenced. He stated that the sensations of pins and needles had disappeared from his left arm, which had been used for injection, and were better on the right arm. The patient was well able to straighten out his arms and hands, and there could be no doubt that his condition had materially improved. The injections of 1 c.cm. were recommenced on March 25th, and given daily for four days. On March 31st the patient had received 14 c.cm. of oscol stibium. Dr. Murray reported that *Bacillus leprae* was absent from the nasal discharge on March 15th and 31st. The injections seemed to have been responsible for an attack of diarrhoea lasting from March 29th to 31st, though the patient was subject to gastric trouble. However, 1 c.cm. was given intramuscularly on April 7th, 8th, and 10th, without appreciable ill effect.

Case 3 (Kamarth), with anaesthetic leprosy, commenced similar treatment on March 9th. By April 10th he had received a total of 18 c.cm. oscol stibium intramuscularly. No change in his condition could be detected. Bacilli resembling *Bacillus leprae* were present in the nasal discharge on March 15th and on April 13th.

Case 4 (David) commenced treatment on March 25th. He also presented the symptoms of the anaesthetic form of leprosy, with nasal catarrh and stiffness of the shoulders. He had worked at the Durban Zoo for several years, but his condition had only recently been diagnosed. Treatment commenced with 1 c.cm. oscol stibium intramuscularly daily for five days and again on the 31st. He received 1 c.cm. on April 6th, 7th, and 8th; 2 c.cm. were given on April 9th. No bacilli resembling *Bacillus leprae* could be detected in the nasal discharge sent to Dr. Murray at the Government laboratory on April 14th The improvement in this leper's condition was very real. When the injections were discontinued on April 16th, after a total of 13 c.cm. had been given intramuscularly, he was able to move his arms about without difficulty, and touched his back over his shoulders to demonstrate the improvement he had experienced. He stated that the irritability of the skin on his face and arms had disappeared, and that there was much improvement in the condition of his nose.

Conclusions.

It would seem, from the study of these lepers, that intramuscular injections of antimony have a decided effect upon the changes produced in a patient where *Bacillus leprae* is at all active. Irrespective of the possibly beneficial action of antimony in regard to the infectivity of leper patients, antimony would appear to have a very beneficial effect on the general condition of leper patients.

Durban. F. G. CAWSTON, M.D.Cantab.

SYPHILIS INSONTIUM.

I WAS very interested to read about Dr. McWalter's case (June 19th, p. 827), as lately there occurred in my practice another example of the condition.

The female infant of Mrs. X. was born about three weeks prematurely; it had several sores around its wrists and ankles which appeared to be syphilitic. Mr. X. was a widower whose child by his first wife is a fine healthy girl of six years old. He had never suffered from venereal disease. Mrs. X. had never had symptoms of syphilis, but she had slept before her marriage with some female relations who (she found out afterwards) were affected by the disease.

Examination of fluid from the sores on the infant showed the *Spirochaeta pallida*. A Wassermann reaction in the case of the male was negative, of the female positive. The most extraordinary fact is that the husband escaped infection.

Dublin. BETHEL SOLOMONS.

THERE are at present 7,724 female students in the German universities, 2,080 of whom are studying medicine, as compared with 944 in 1915, 200 dentistry (65 in 1915), and 16 pharmacy (6 in 1915).

Reviews.

RELAXATIONS OF A SURGEON.

IN the spring of 1880 Sir JOHN BLAND-SUTTON joined the Middlesex Hospital as a student; in the spring of the present year he retired after serving his hospital as student, teacher, and surgeon for a continuous period of forty years. During that period he has not only earned for himself a lasting place in the history of his hospital, but has also won for himself a name and fame in the English-speaking world. In the volume of essays[1] issued as a memento to mark the fortieth milestone of a busy professional life, the author spreads the riches of his mind for the reader's delectation.

Somewhere Samuel Butler has said that no man can write a book without reflecting his unconscious self in its pages. In this volume of anatomical and biological sermonettes the reader, if he is so minded, can discern the secret of the author's success in life. He has become great because he has succeeded, as few men have done, in keeping his interest and curiosity in the romance of living things as keenly alive at the end of forty busy years as they were on the day he first took a scalpel in his hand. He began his studies when Darwin's teaching was taking a firm hold on the minds of younger men—particularly in those interested in anatomical problems—leading them to see that every structure in the human body has a history which could be unravelled by dissection if the dissector had the gift of imagination. Bland-Sutton had this gift and was carried away on the crest of the evolutionary wave, and his interest in its progress has never palled.

In his student days this London bred lad spent his spare hours in the prosectorium at the Zoological Gardens hunting out the evolutionary history of ligaments, which, when written under the glow of his imagination, read rather like a romance than a narration of dull, dead facts. These essays on ligaments, with which several generations of medical students have become familiar, form the first twelve of the present series of essays; the remainder, twenty-seven in number, are the products of recent years—but all of them, even the most recent, has on it the same fresh bloom which marks the earliest. His interest in the marvellous adaptations to be seen in the stomach of the ox and gizzard of the fowl is as lively in 1919 as when he noted, "with admiration and delight," the manner in which the penguin, swimming under water in the aquarium of the Zoo, could use its degenerate wings as flippers.

We may cite a sample or two from these essays to show how patiently their author nursed his facts, hoping that further observations might clear up those which had the appearance of being mysteries. In a veterinary museum in France, which he visited while still a student, he noted a horse's skull with teeth implanted in the region of the mastoid. Then opportunities came his way of seeing living horses with mastoid teeth; he found the cavity in which they were placed always opened on the surface near the ear as a weeping fistula. Later he obtained guidance to the nature of these curious teeth from the examination of a sheep's ear, sent to him by John Evans, of Aberdare, in 1890. Near the opening of the ear there was implanted the normal incisor tooth of a lamb. Further observations showed him there existed all stages leading from a dentigerous mastoid cyst to a vestigial or duplex head attached to the parent head in the region of the mastoid; the mastoid teeth and fistula represented the mouth and jaws of a rudimentary twin head. The author's epigrammatic statement is that "mastoid teeth are memorials of a lost individual."

Another illustration of the continuity of his observations may be taken from his essay on abdominal pregnancy. It was when the author of these essays was still a medical student that Lawson Tait introduced operative treatment for ruptured tubal pregnancies and thereby reawakened an interest in the condition known as abdominal pregnancy. Bland-Sutton had noted the condition in mammals and observed that in such cases marks were always present of a former rupture of the uterus. He was able to satisfy himself that in every case of abdominal pregnancy the actual conception had occurred in the tube or uterus and that a gestation in the abdomen was secondary, being due to rupture of uterus or tube.

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[1] *Selected Lectures and Essays.* (Including Ligaments, their Nature and Morphology.) Fourth edition. By Sir John Bland-Sutton. London: Heinemann. 1920. (Pp. 309; 111 figures. 15s.)

Sir John Bland-Sutton has Frank Buckland's eye for the curiosities of natural history and John Hilton's racy, piquant and simple style. Indeed from his style alone one might well suspect him to be a student of the Bible, but there is no need to guess, for in these essays he gives us the most ample evidence. A series is devoted to "Medicine in the Bible" and biblical quotations are freely used, as when he cites a verse from Jeremiah which he believes will "bear the interpretation that this prophet, a keen naturalist, was familiar with the retained fetus." He has a lively sense of humour, and we are tempted to make one or two extracts to show the fullness and finish of his graphic, crisp style—the style of the born demonstrator of anatomy.

> In 1904 a gardener, aged 58, had signs of stones in his right kidney. The radiograph showed such a large shadow as to make me doubt its accuracy. During the removal of this kidney I had a great surprise: on withdrawing it from the loin, the sacculus containing the stones burst. In an instant the operation area was covered with hundreds of iridescent calculi resembling little balls of burnished gold. We tried to pick them up, but they ran over the towels, slipped between them, dropped on the floor like hail and were as elusive as globules of quicksilver.

The collected calculi to the number of 40,000 are now preserved in the Museum of the Royal College of Surgeons of England—the recipient of many of the rarest trophies discovered and won during Sir John Bland-Sutton's professional career. Here is another brief picture from the essay on "Circumcision," but clearly penned from experience gained in the streets of an Egyptian city:

> The ceremony is attended with great show, the boy being conducted through the streets in gaudy attire, attended by a procession, musicians, and the barber who cuts off the foreskin.

Or still another pen sketch, made during a transatlantic voyage, from the essay in which he descants on the degenerate muscles of "legs, wings, and flippers":

> If one steals unawares upon the whale in the fancied security of solitary seas he may be found playing kitten-like on the ocean as if it were a hearth. He flits the broad flukes into the air and smites the surface of the water with a thunderous concussion that may be heard for a long distance.

A passage which is reminiscent of Job; but in reading these essays one is more frequently reminded of the great John Goodsir when he explained: "I love the horse; I have dissected him three times." Bland Sutton has dissected and described the marvellous mechanisms he has found in the animal kingdom because he loves them. In these essays, too, there are new observations published for the first time, such as the feeding of the fallow deer with madder to study the manner in which their antlers grow, and the dissections made to demonstrate the changes in the symphysis pubis of the pregnant guinea-pig before the young pass through the pelvis. He has also striven to revive two lost arts. One of these is the art of practising a first-hand knowledge of comparative anatomy on the part of consulting surgeons; the other is the art of wood engraving. No one who values the art of illustration will turn over the pages of this volume without being struck by the beauty of the 111 wood block engravings which enhance the interest of its pages—the work of Berjeau and Butterworth—some of them being made from drawings by the veteran anatomist artist, Mr. R. E. Holden. In seeking to resuscitate the art of wood engraving Sir John Bland-Sutton has added another to his many services to medicine and to literature.

"THE EXTRA PHARMACOPOEIA."

THE first volume of the seventeenth edition of MARTINDALE and WESTCOTT'S *Extra Pharmacopoeia*[2] is now before us, and we know that the whole profession will welcome the appearance of a new and thoroughly up to date edition of this invaluable compendium of information. It is five years since the appearance of the last edition, and these have been years of rapid change, and hence the new volume contains a very large amount of fresh information.

The *Extra Pharmacopoeia* has been in universal use for so many years that it is unnecessary to describe its general merits, which are well known to all medical men and pharmacists; indeed, the new items of interest that it contains are so numerous that it is not possible to describe them in detail. The authors, however, furnish a preface of 20 pages, in which a concise review of the more important new features of the book is given. This preface is, indeed, a summary of all the important advances in therapeutics since 1915.

The new antiseptics, introduced to meet the demands of war surgery, are perhaps the most important and interesting of all the new drugs described; for instance, the preparation, chemical characters, and therapeutic actions of chloramine-T, eusol, acriflavine, malachite green, and brilliant green, as well as bipp, are described, and we believe that this is the first time that all this information has been collected and published in a readily accessible form.

Some of the other recent advances in therapeutics mentioned are the improvements in the technique of the treatment of syphilis with organic arsenic preparations, and of malaria with quinine, that resulted from the use of these remedies on a large scale during the war; the use of antimony preparations in the treatment of tropical diseases; the actions of vitamines, of colloidal metals, of chaulmoogra oil, and of quinoidine. These are merely some of the forty subjects which the authors mention in their preface as being additions of outstanding interest to the *Pharmacopoeia*.

A new feature of the work which will be of particular interest to chemists is the description of the process of manufacture of some sixty organic chemicals, the subjects of expired British patents; many of them were previously made in Germany. A German patent specification is, the authors point out, usually a series of ingeniously devised booby traps, designed to hinder anyone attempting to produce the drug concerned. The authors state that the directions which they furnish will enable chemists to avoid these traps, and that most of this information has been acquired by them by research; this knowledge they now give to the world.

The volume concludes with a most useful summary of all the recent Orders in Council and Acts regulating the sale of drugs and poisons.

In general the book deals in a very exhaustive fashion with the chemistry of practically every drug in use in medicine, and provides a mass of information about the recent advances in therapeutics that can be found nowhere else in an accessible form.

When so much useful information is provided in so convenient a form, it seems ungracious to criticize, but there is no doubt that the value of the volume would be increased if more copious reference were given to the results of pharmacological research. Full references are made to all articles appearing in the important chemical, pharmaceutical and clinical journals, but very scanty references are made to pathological, pharmacological, or biochemical journals. Hence only those researches upon the action of drugs which happen to appear in clinical journals are referred to, and, as a result, the evidence given as to the action of a drug in many cases does not represent the most reliable work on the subject.

For instance, as regards cocaine, the authors state in the preface: "Personally we think that cocaine itself as an anaesthetic has only fallen into disfavour through a few exaggerated mishaps owing to faulty technique." This conclusion does not agree with the reported cases of mortalities produced by local anaesthetics, which show that severe toxic symptoms and death occur more frequently after the use of cocaine than after the use of cocaine substitutes, and moreover the exhaustive researches of Hatcher (Eggleston and Hatcher: *Journ. of Pharm. and Exp. Ther.*, xiii, 1919) have shown that cocaine is very much more toxic to animals, when injected hypodermically, than are most of the cocaine substitutes, but no reference is made by the authors to this work.

Again, the antiseptic actions of hypochlorous acid and dyes are dealt with at length, and full references are given to all work appearing in the *Lancet* or in the *British Medical Journal*, but no reference is made to Carrel's original work on this subject (Carrel and Dehelly: The Treatment of Infected Wounds, *Military Medical Manual*, 1918).

Probably the authors feel that the enormous bulk of scientific literature compels them to restrict the scope of their references, but their work is so well known and convenient that it enjoys an almost semi-official status, and hence it is very important that practitioners consulting it should realize these limitations in the scope of its references. We have called special attention to this omission of references to the bulk of recent pharmacological research because, unfortunately, it has a general significance; it is an indication of the divorce existing between laboratory research and the clinical use of drugs.

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[2] *The Extra Pharmacopoeia.* By W. H. Martindale, Ph.D., Ph.C., F.C.S., and W. W. Westcott, M.B., D.P.H. Seventeenth edition, vol. I. London: H. K. Lewis and Co. 1920. Fcap. 8vo, pp. 1150. 27s. net.)

The *Extra Pharmacopoeia* is now in its seventeenth edition, and if there had been any general demand from the medical public to hear the results of scientific research, as well as the results of the clinical application of drugs, then fuller references to the former would undoubtedly have been provided long ago. Yet the example of the action of local anaesthetics, already mentioned, should convince anyone of the importance of a knowlege of the results of laboratory research upon the action of drugs. The practitioner desires a drug that will produce local anaesthesia, but which will not produce toxic symptoms when absorbed, and particularly one which will not produce an occasional fatal result. Now the only possible way of accurately determining the comparative toxicity of two drugs is by animal experiment, and in the case of local anaesthetics these experiments have been performed on a large scale, with very definite results. Therefore it is a matter for regret that in this, the most popular non-official Pharmacopoeia in the English language, the action of the various local anaesthetics should be discussed and numerous references given to toxic actions observed in clinical practice, and yet no reference made to the results obtained by carefully controlled experiments upon animals.

We have perhaps given rather undue emphasis to this one aspect of the book, but it indicates what we believe to be an undesirable trend in medicine. In concluding this review, however, we wish once more to emphasize the fact that the *Extra Pharmacopoeia* represents an amazingly thorough collection of all the most recent evidence concerning the chemistry and the clinical application of nearly every drug in use in medicine; and, after perusing it, the reader is astonished that it should be possible to compress so much information into a pocket volume.

NOTES ON BOOKS.

THE thirty-sixth issue of the *Year Book of the Scientific and Learned Societies*[3] gives a brief record of the work done in science, literature, and art during 1918–19, together with particulars of Civil Service departments which carry out or supervise scientific research. The *Year Book* is compiled from official sources, and gives a handy synopsis of organized scientific undertakings in Great Britain and Ireland. Twenty-six societies not previously appearing are included in the present edition. The section devoted to medicine occupies thirty-five pages. The entry referring to the British Medical Association gives the officers of the Association and the members of Council, but the statement that "no scientific meeting was held" in 1919 should have been corrected, for a special clinical and scientific meeting was held in April. In the next edition of this useful reference book we hope to see a record of the scientific work carried out in the Sections at Cambridge this summer, and perhaps a reference to the British Medical Association lectures, which are proving so successful.

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[3] *The Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* Thirty-sixth annual issue. London: C. Griffin and Co., Ltd. 1919. (Demy 8vo, pp. 342. 9s. net.)

APPLIANCES AND PREPARATIONS.

Light Filters for the Microscope.

MESSRS. KODAK, Limited, in addition to their light filters for photomicrography, now announce a set of nine circular filters for visual work with the microscope. They are 1⅜ in. in diameter, and are for the standard substage ring. Blue, green, yellow, and red are the colours used; and one, "tungsten to daylight," is for the conversion of the light from metal filament vacuum lamps, etc., to equivalent daylight. Full information concerning the use of these filters can be obtained by applying to the makers for a pamphlet entitled "Notes on the use of Wratten M Filters." The price of the set of nine is £2 5s.

MINISTRY OF PENSIONS.

APPOINTMENT OF CONSULTANTS.

THE following physicians and surgeons, in addition to those whose names have already been announced, have consented to act as honorary consultants to the Ministry of Pensions:

Honorary Consultants in Cardio-vascular Cases.—Dr. J. McIlwaine, Ulster Region; Dr. H. J. Starling, Eastern Region; Dr. Carey F. Coombs, South-Western Region; Dr. T. Wardrop Griffith, C.M.G., Yorkshire Region; Dr. W. E. Hume, C.M.G., Northern Region; Dr. John Hay, North-Western Region; Dr. Thos. Mather Thomson, Ireland South Region; Dr. W. T. Ritchie, O.B.E., Eastern Portion of Scotland Region; Dr. John M. Cowan, C.B.E., Western Portion of Scotland Region.

Honorary Consultants.—Sir James Dundas Grant, K.B.E., Honorary Consultant in Aural Diseases to the Ministry; Dr. Hugh Maclean, Honorary Consulting Physician to the Ministry; Sir Robert W. Philip, M.D., Honorary Consulting Physician in Tuberculosis to the Ministry; Mr. Chas. J. Bond, C.B., C.M.G., Honorary Consulting Surgeon in East Midland Region; Dr. Astley V. Clarke, Honorary Consulting Physician in East Midland Region; Sir Arthur Chance, C.B.E., Honorary Consulting Surgeon, Ireland South Region; Dr. W. R. Dawson, O.B.E., Honorary Consultant on Functional Nervous and Mental Cases for Ireland; Dr. F. C. Purser, O.B.E., Honorary Consultant on Organic Neurological Cases for Ireland.

VITAL STATISTICS OF ENGLAND AND WALES.

(Concluded from p. 974, vol. i.)

THE PUERPERAL STATE.

DURING 1918 the number of deaths assigned to pregnancy or childbirth was 2,509, corresponding to a rate of 3.79 per 1,000 births. If the classification be adopted which was in use up to 1910 there must be deducted from this number 156 deaths, which with one exception were allocated to puerperal nephritis and albuminuria; the mortality thus calculated is reduced to 3.55 per 1,000 births, as against an average of 3.74 in the ten years immediately preceding and 3.66 in 1917. If 2,529 deaths from enteric fever, malaria, influenza, pulmonary tuberculosis and other conditions stated to have been caused by or associated with pregnancy and childbirth be included, the proportion is raised to 7.6 per 1,000 births—a figure greatly in excess of those of previous years, which ranged during 1908–17 from 4.77 to 5.27. For this sudden inflation of a stable mortality influenza was wholly responsible; in connexion with pregnancy or childbirth 1,620 more deaths took place from influenza and 225 more from pneumonia than during 1917. Of the 2,509 deaths assigned to pregnancy 54 were attributed to haemorrhage of pregnancy, 137 to placenta praevia, and 184 to other puerperal haemorrhage. Among other "accidents of childbirth" to which deaths were attributed were: contracted pelvis 35, Caesarean section 19, rupture of uterus 16, and inversion of uterus 8. Under the heading "puerperal fever" (845 cases) 478 deaths were ascribed to septicaemia or sepsis, 98 to peritonitis, 21 to pyaemia, 19 to pelvic cellulitis, 16 to septic phlebitis or septic thrombosis, and 7 to pelvic abscess. Deaths ascribed to puerperal convulsions numbered 383.

SUICIDE.

During 1918 the number of deaths ascribed to suicide was 2,765 (1,845 males and 920 females). In addition 1,245 other deaths (913 males and 332 females) were returned at inquests under "open verdicts," and although classed as accidental must in many cases have been due to suicide; the great bulk of these (674 males and 332 females) were cases of drowning. For both sexes, but especially among females, the deaths allocated to suicide showed some increase over the unusually low figures of the preceding year. The increase was present in each quarter, but was much more marked during the fourth quarter, when 709 deaths were registered, or 168 more than in the same quarter of 1917, and more than in any fourth quarter since 1914. The great rise of suicide mortality during the fourth quarter of 1918—a period of national rejoicing—appears all the more remarkable when it is remembered that during the last decade the deaths from this cause have with great constancy been fewer in the fourth than in earlier quarters of the year. Dr. Stevenson remarks that divergence from so well established a rule suggests the existence of some special inducement to suicide among the female population about the period of the armistice, which was signed on November 11th. It has been stated that about this time many women were greatly disturbed at the prospect of the return of husbands who were likely to discover children—born or unborn—whose existence had been concealed from them during their absence on military service. Dr. Stevenson has tested this conjecture by making a weekly analysis of the deaths from suicide among females during the last quarter of 1918; the figures were:

> Week ending October 12th, 22; October 19th, 18; October 26th, 17; November 2nd, 21; November 9th, 33; November 16th, 23; November 23rd, 22; November 30th, 15; December 7th, 20; December 14th, 17; December 21st, 19.

The November excess is thus seen to be quite definite; its height was reached at a time when, although the armistice had not been signed, it may well have been evident that the war was almost over. Another analysis shows that nearly all the increase occurred among females of child-bearing age; in 1918, 61 per cent. of deaths were of women under 45, as against 51 per cent. in the previous four years. Dr. Stevenson concludes that "the records both of date and age are consistent with the hypothesis suggested, but, of course, they do not prove that the increase was caused entirely in this way." An examination of the modes of suicide employed since 1911 shows a remarkable decline for both sexes in suicide by poison. The yearly deaths from this cause of males have fallen from 305 in 1911, and 324 in 1912, to 102 in 1917, and 96 in 1918; and those of females from 210 and 223, to 94 and 122, respectively. No legislation has been passed which could account for this; and consultation with the Pharmaceutical Society showed that during the war there had been no increase in the difficulty of purchasing the poisons usually employed for suicide. In marked contrast with this decrease, the mortality from coal-gas poisoning became greater during the war. As might be expected, suicide by means of weapons—firearms and cutting or piercing instruments—was more common. The standardized mortality rate per million from suicide was 82 in London, 71 in county boroughs, and 87 in rural districts, as compared with 74 in all areas in 1918.

PREVENTION OF VENEREAL DISEASES.

DEPUTATION TO THE MINISTER OF HEALTH.

A DEPUTATION of the Society for the Prevention of Venereal Disease was received by Dr. Addison, Minister of Health, on July 2nd. The members included Dr. R. D. Batten, Mr. H. Wansey Bayly, Dr. Bond (M.O.H. for Holborn), Colonel E. T. Burke, Sir James Crichton-Browne, Sir Bryan Donkin, Captain W. E. Elliot, M.P., Dr. Mearns Fraser (M.O.H. for Portsmouth), Dr. Reginald Hayes, Professor Leonard Hill, Sir W. Arbuthnot Lane, Mr. C. F. Marshall, Sir Frederick Mott, Sir Thomas Oliver, Sir G. Archdall Reid, Dr. C. W. Saleeby, Dr. J. H. Sequeira, Professor W. J. Simpson, and Dr. Leonard Williams.

Lord WILLOUGHBY DE BROKE, who introduced the deputation, submitted the following resolution:

> That inasmuch as the Ministry of Health has failed, and public bodies, including the London County Council, have declined, to provide the means of delayed disinfection against venereal disease at ablution centres, this meeting calls upon the Ministry of Health and upon local authorities to instruct all qualified chemists to sell such means of immediate self disinfection against venereal disease as may be approved from time to time by the Ministry of Health or by medical officers of health.

Everybody, he said, was agreed that all the influence of research and administration ought to be applied to the prevention and cure of venereal disease, and that all means of moral prevention ought to be constantly employed, especially with regard to the youth of the nation. With regard to the question of medical disinfection, he said a policy of setting up disinfecting centres was full of pitfalls and difficulties. The society, therefore, was addressing itself to the efficacy of immediate self-disinfection, and the policy they recommended was that the Ministry of Health should take such steps as would educate the public in the whole hygiene of this important subject. He urged that the knowledge which had been coming out since the war should be wisely and scientifically directed by the Ministry.

Captain W. E. ELLIOT, M.P., said that the House of Commons was intensely interested in the problem of the prevention of venereal disease, and that the measures for the prevention of these diseases were not being pushed with sufficient vigour. They felt that as it was by quite a recent legislative Act of the House of Commons that the sale of disinfectants was prohibited, unless very much stronger arguments could be brought against it than had hitherto been done, they could not continue the responsibility of prohibiting the sale of disinfectants approved of by medical men.

Dr. SEQUEIRA stated that the number of new male patients, mostly ex-soldiers, suffering from syphilis, admitted for treatment at his clinic at the London Hospital in 1919 was 90 per cent. above the number attending in 1918, and that there was an increase in female patients of 15 per cent. He considered that the increase in cases of ophthalmia neonatorum and lip chancres proved that there was a definite increase in venereal disease, and that increased attendance at clinics was not the result of increased knowledge of these diseases amongst the people. Lord Astor's statement at the annual meeting of the National Council for Combating Venereal Disease, that "death from syphilis, general paralysis of the insane, and locomotor ataxy had not increased," was grossly misleading.

Sir ARCHDALL REID stated that about 40,000 men passed through his hands during the war, and up to 1917 there was a vast amount of syphilis. In the beginning of January, 1917, a policy of immediate self-disinfection was advocated among the troops under his command, with the result that venereal disease practically disappeared. He considered that the evidence against immediate self-disinfection produced by Lord Astor's Interdepartmental Committee was most unreliable. The White Paper admittedly made most inaccurate statements, and could not be trusted.

Mr. WANSEY BAYLY said he was permitted by the Secretary of the Labour Party to state that—

> The matter is now under discussion, and that, judging by the expressions of the committee at the last meeting, the great majority of them are in favour of a very wide distribution of the literature issued by your society and the dissemination of the knowledge contained therein.

He had recently given twelve lectures to trade union organizations, and on every occasion a unanimous vote of acoord with the society's aims had been passed. He read a long list of names of distinguished medical members of the grand committee of the society, and he concluded from the wide support the society had received from these leaders of the profession that the bulk of medical opinion was with his society. He stated that fourteen borough councils had adopted the policy of his society, and that the National Birth-rate Commission in their last report recorded the opinion that the methods for prevention of venereal infection by immediate self-disinfection should not be withheld from the public.

Dr. C. W. SALEEBY stated that at present venereal disease was beating the Ministry of Health, and was spreading at the present moment at an appalling rate, and that he had personal knowledge from Manchester that this was the case.

Dr. MEARNS FRASER considered that the Ministry of Health was failing to apply the knowledge due to the growth of modern science to the solution of the venereal disease problem. He related how he had induced the public at Portsmouth to go in for immediate self-disinfection.

Lady ASKWITH read a short communication from Dr. Jane Lorimer Hawthorne, who was prevented by illness from attending. She considered that of all racial poisons syphilis had the most far-reaching effects upon maternal and child life, and that if women knew that it was this that killed their babies before birth, during birth, and after birth, they would not be content to go on merely hoping for better things, but would demand that their sons and daughters should be equipped with a knowledge of life's difficulties and problems.

Sir WILLIAM ARBUTHNOT LANE appealed for the financial support of the Ministry of Health, and based his argument on the fact that the Society for the Prevention of Venereal Disease is composed, with comparatively few exceptions, of medical men who have everything to lose by the destruction of disease and nothing to gain.

Sir JAMES CRICHTON-BROWNE pointed out that of the three chief killing diseases—cancer, tuberculosis, and venereal disease—in the latter alone had we a preventive immediate in its action, and, if properly applied, almost infallible. He thought that if we could instantly abolish venereal disease the Chancellor of the Exchequer need have no anxiety about excess profits; he urged strongly that the society should be given such assistance as would enable it to spread abroad knowledge by means of which prevention could be obtained.

Reply by the Minister of Health.

Dr. ADDISON, in replying, said that they did not really know whether venereal disease was increasing or not, because they had no data supplied of a properly ascertained scientific kind. They knew that there was a great increase of people attending centres or clinics. The propaganda of the society represented by the deputation, and the general public enlightenment, were perhaps bringing people to realize that they must be properly treated. At all events, they had not got a basis of ascertained fact on which it was quite safe to dogmatize. It was suggested that the Ministry should issue certain instructions to local authorities and to the public, and he pointed out that it would be necessary to have an overwhelming case to justify such action and to avoid the conflict of opinion. They would have to contend with a great wave of public feeling, which would suggest that the Government was really encouraging vice. It had been urged by the deputation that their suggested policy would be successful if scientifically and thoroughly done. That might be a true statement. They could not, however, deal with a population of 40 millions on the same basis as Sir Archdall Reid, with iron discipline at his command, could deal with 2,000 soldiers at one time. That was quite different from placing something at the disposal of any citizen with certain instructions as to use. They had to have a very strong case that would meet the intense and vehement opposition which such a proposal would arouse, and if they were not successful it would put the whole movement back a generation. There would be great objection raised, and he thought they must admit that a great deal of it would be well founded. To adopt such a proposal towards the population as a whole—boys and girls, men and women—would be held, and he thought with material ground, as doing something which would tend to encourage people to run risks. Last year he appointed a very strong body of men, who had reported to him that certain drugs, if properly applied, were efficacious, but if these drugs were not properly or scientifically applied their efficacy could not be relied upon. They also reported that the use of such drugs gave rise to a false sense of security and encouraged the taking of risks, and that, in spite of the most careful instructions, the issue of packets to soldiers resulted in men who used them for self-disinfection still having infection. Could they rely, he asked, on the general public properly and scientifically using those things? (Lord WILLOUGHBY DE BROKE and others: "Yes.") He did not think that that was a question that could be satisfactorily answered. In Manchester two experimental centres had been established under the corporation, and so far the results were encouraging; those experiments were being watched with anxiety. He assured the deputation that the Ministry was anxious to take any practical measures they could thoroughly recommend for the prevention and treatment of the disease, and they were quite prepared, if they were certain they were going to have good results, to face novel methods. He thought the campaign of instruction and enlightenment which the society was carrying on was all to the good.

MEDICO-POLITICAL MATTERS IN TASMANIA.

As a consequence of recent legislation adopted by the Tasmanian Government very grave issues have arisen, and the fundamental principles which have hitherto determined the relations between the State and the medical practitioner throughout the empire are threatened. In our issue of April 19th, 1919 (p. 485), a summary was given of the chief events of the dispute which has led to the present very unsatisfactory situation.

The dispute arose in 1916 in connexion with the Tasmanian general hospitals; the greater part of the income of these hospitals is derived from Government grants, but they had honorary staffs. The Tasmanian Branch of the British Medical Association raised objection to the treatment of well-to-do persons in these hospitals; the view of the Government, on the other hand, was that the hospitals were for all classes, and that the rich and the poor had equal claims for treatment therein. In spite of protracted negotiations a deadlock occurred, and in April, 1917, the honorary staffs of all the hospitals resigned, expressing at the same time their willingness to continue to serve the hospital until suitable arrangements had been made, and to attend emergency cases when requested to do so by the resident staff. The offer was not accepted, and a new staff was appointed. From January, 1918, until January, 1919, information concerning the State aided hospitals of Tasmania was published in the *Australian Medical Journal* and this JOURNAL.

In the autumn of 1918 the Tasmanian Legislature passed an Amending Medical Act, which permitted the admission to the medical register of the island of practitioners qualified in America, a country with which Tasmania is not in medical reciprocity. The duration of the curriculum in America may be only four years, whereas in Australia it must be five years at least. In 1919 at least two officers with American qualifications formed part of the hospital staffs.

Since then grave developments have occurred. On December 24th, 1919, an Act to amend the Medical Act of 1918 was passed by the Tasmanian Legislature. This extraordinary piece of legislation comprises the following provisions: (1) The Tasmanian Medical Council is deprived of the power to remove from the Medical Register the name of a medical practitioner who has been convicted of a felony or misdemeanour, or who has been guilty of infamous conduct in any professional respect. In such cases the Medical Council must now apply for an order of the Supreme Court or a judge thereof, giving particulars of the charge made and the grounds of the application; "every person, for the removal of whose name any such application shall be made, shall have the right to have the truth of disputed matters of fact determined by the verdict of a jury in like manner as issues in actions are tried in the court in its ordinary jurisdiction. Questions of fact to be tried by the jury shall be stated in writing, and in case the parties fail to agree upon such questions, the same shall be settled by a judge prior to the hearing." (2) By Clause 19a (1) of the Act it is made an offence (entailing heavy penalties) for any one registered practitioner to refuse or fail to meet in consultation any other registered practitioner. (3) Clause 19b makes it a similar offence for any person or association to prevent, or attempt to prevent, directly or indirectly, any medical practitioner from accepting an appointment in a State-aided hospital. We subjoin *in extenso* these truly remarkable clauses:

> 19a (1) If any registered medical practitioner in active practice without reasonable excuse (the proof of such reasonable excuse being upon him) refuses or fails to consult with or render professional assistance, in consultation, to any other registered medical practitioner seeking such advice or assistance, he shall be guilty of an offence, and shall on conviction forfeit and pay for each offence a penalty of not less than fifty pounds nor more than two hundred pounds. The foregoing expression, "reasonable excuse," shall not include any resolution or by-law or any agreement of any company, association, or body of persons whatsoever, whether verbal or written.
>
> (2) The registered medical practitioner seeking any such advice or assistance as hereinbefore mentioned shall in every case be legally liable to pay to the registered medical practitioner rendering such advice or assistance a fair and reasonable fee (including expenses if any therefor), and shall, if requested to do so, pay such fee in advance.
>
> 19b. Any person, association, company, or body of persons who directly or indirectly prevent, or endeavour to prevent, or aid in preventing in any way whatsoever, any medical practitioner, nurse, or other person applying for, accepting, or holding any appointment or position in any State-aided hospital or charitable institution, shall be guilty of an offence, and shall on conviction forfeit and pay for each offence a penalty of not less than twenty-five pounds, nor more than two hundred pounds.

The Tasmanian Legislature, in sanctioning these pieces of legislative "frightfulness," has frankly divested itself of the robe of the statesman, and assumed the armour of the partisan. We greatly doubt, however, whether the Tasmanian doctors will allow themselves to be terrorized. While sympathizing with them on the deplorable limitations and distortions which characterize the outlook of the Tasmanian bureaucracy, we do not doubt that they will continue undismayed to resist outside dictation as to the way in which they shall give or not give their services to charity.

The clause which makes it an offence to refuse or fail to meet any other doctor who desires a consultation constitutes an unwarrantable interference with individual liberty. In the absence of a universal State service this clause is unjustifiable, and to attempt to enforce it would be monstrous. Clause 19b is, of course, aimed at the British Medical Association, which published in its JOURNAL a statement advising readers, before applying for posts in the State-aided Tasmanian hospitals, to make themselves acquainted with the conditions of dispute. At the request of the Tasmanian Branch, which wishes loyally to observe the law for the time being in force in the State, this statement is not being repeated, but it is deemed advisable to lay the facts before the members of the Association and the profession generally. We shall not hesitate to recur to the matter when necessary in order that the development of the position in Tasmania may be understood, and we observe that the *Australian Medical Journal*, in its issue of January 31st, 1920, says: "It will be our duty to the medical profession in the Commonwealth to remind its members from time to time of the reasons why the medical positions in the Government hospitals in Tasmania are undesirable positions to hold."

There still remain to be considered those portions of the

Act of 1919 which transfer from the Medical Council to the judicial courts the power to remove names from the register in the case of practitioners guilty of fraud, misdemeanour, or infamous conduct in a professional sense. As an act of partisan warfare the Tasmanian authorities have not hesitated to take away from the practitioners of the island the power of professional self-government—a power which, according to universal recognition, has been justly merited and justly used; a power which has played a significant part in maintaining a high standard of professional conduct, and a power which has at many junctures jealously safeguarded the interest of the general public. Whether the Tasmanian Legislature has in this matter exceeded the legitimate limits of its activity remains to be determined.

The position was brought to the notice of the Representative Body at Cambridge, when it unanimously instructed the Council to investigate the grave situation which has arisen in Tasmania. The Chairman of Council assured members in Tasmania that the Association would do all that was in its power to assist them.

MOTOR NOTES FOR MEDICAL MEN.

By H. Massac Buist.

The Undue Overhang Menace.

An important problem concerning the safety of road travel is presented by the motor char-à-banc with very wide coachwork and excessive overhang at the back. Medical men are complaining of "incidents" when encountering them in ever-increasing numbers all over the country. Commercial enterprises are locking up large sums of money in putting such vehicles on our high-roads and by-roads. Our relatively narrow main and secondary thoroughfares are not designed for them. Whether the matter be regarded from the point of view of the road user approaching or desiring to overtake such a vehicle, it is equally dangerous. One has only to follow an example along the road to realize that, with the continual deviation of our highways and byways, such char-à-bancs practically block up the whole road. Overhauling them, therefore, is attended with considerable risk, for when taking a corner the back sweeps threateningly. The Government departments concerned are tardy to act, though they are prompt to announce that they will inquire concerning the need to take action. Hardship would be caused if the Government were so deliberate in its procedure that commercial enterprises were to spend further sums of money in the acquisition of vehicles of a kind the use of which is manifestly undesirable and is subsequently to be prohibited. Some have suggested that these char-à-bancs should be confined to the main roads, and their use on the by-roads forbidden. Certainly in narrow thoroughfares and the lanes, as in Devonshire, where they are frequently encountered at this season, they are a positive menace. They occupy the entire road. Even if one has the luck to scrape by it is only by getting so much under the hedge that one's tyres get destroyed by loose stones, broken glass, and so on, and there is no foundation under the wheels on the side right against the hedge, consequently one's car is apt to become uncontrollable. The fact that the individual's vehicle is so much lighter than these char-à-bancs means that any damage they would sustain would be a mere nothing compared with that wrought to the car by its impact on such a massive and weighty structure. Orders placed with the manufacturers for such vehicles indicate that hundreds more are coming on to the road. Therefore it is impossible to judge the degree of danger of the situation from evidence on the highways at the moment. A solution of the problem short of one involving loss of capital is hard to devise.

Entirely Different Chassis Needed.

In connexion with such vehicles the law should compel the design of the chassis and, above all, of the coachwork to be submitted to the authorities, and require them to deal with these problems ahead of the event, as it were, not after a mistake has been committed and money has been spent on building undesirable types of machines. Some would say that the best solution is to make double-deckers of these machines, accommodating the given number of passengers on a much shorter and narrower body. This, however, is scarcely practical. The public appreciates travelling in an open vehicle without any roof over the head, and at a normal altitude above road level, so that there is no sense of topheaviness. The routes these vehicles travel in the course of taking sightseers about the country render it undesirable for the double-deck system to be employed. If, therefore, such machines are not to have excessive overhang, but are yet to have normal wheel bases, it follows that they cannot be run economically because they cannot carry enough passengers. An entirely different sort of chassis would be needed. Moreover, if the wheel base of, say, a 30 cwt. chassis were lengthened to accommodate half the number of passengers carried by a three-tonner, yet without undue overhang, still the lesser machine would be relatively difficult to manœuvre on the road, though nothing like as bad as the larger.

Of course local authorities are likely to take action in respect of their own districts; but this is never a satisfactory form of dealing with such an important matter as road traffic. We should approach all such business from the national, not from the local standpoint. We are likely to witness a campaign on the subject, for of course the traders affected are concerning themselves greatly in the matter already. They have on their side a popular cry, "co-operative motoring." But they have ranged against them pedestrians, pedal cyclists, those who use horse-hauled vehicles, and users of motor vehicles of the types and sizes for which our roads are suitable. If we are to have entirely different highways, built on the straight Continental principle, wide. with no hedges, whereby we should sacrifice a vast amount of scenic beauty, then there would be no cause for concern about the use of bulky char-à-bancs. As it is, there is no gainsaying that they render the road quite unsafe for other users, though doubtless they are secure enough from the point of those driving and travelling in them.

Motor Fuel Distribution.

The Automobile Association has now got going, near Bath, the second of its demonstration roadside bulk storages for the supply of benzol to passing motorists. The scheme is exactly akin to that at Aldermaston, beyond Reading. Through the enterprise of the Anglo-American Oil Company it is being supplemented quite independently by the setting up at garages all over this country of a series of curbstone motor fuel supply pumps on the principle of delivering spirit stored in bulk below the surface of the ground direct into the tank of the motorist in quantities from a gallon to five gallons, thereby both eliminating the causes of dissatisfaction and decreasing the cost of fuel distribution in retail. The two-gallon can has always been expensive; difficult to keep clean; liable to leakage; fraught with the risk of condensation leading inevitably to complaint that the petrol is adulterated with water, and so on. The elimination of these sources of complaint and the reduction of distribution cost are therefore to be welcomed, particularly as the scheme has been carried out on a principle that does not prevent the motorist from knowing what brand of fuel he is buying. In the United States of America, where the curbstone supply system is common, motor spirit is not sold under any brand name. In this country, however, it is possible for the individual motorist to know exactly what brand of spirit he is buying. The curbstone pumps are quite sightly and absolutely accurate as to measurement. There is no risk of spilling; the evaporation that occurs is the least possible; and cleanliness is ensured in a way quite impossible when handling a painted can which probably has dust on its exterior, which takes quite a time to empty, and so forth. At night the curbstone supply pumps are easily recognizable. Each is surmounted by an electric lamp. On either side of the bulb in connexion with it there appears the brand name of the particular spirit supplied through the installation. It is a development long awaited in this country, and one which will be rapidly in general evidence.

Car Production at Last.

During the last two months I have visited a number of motor factories both in the north of England and the Midlands and am happy to be able to report, in brief, that we are now on big scale production in general. The only cloud on the horizon is the objection of certain Sheffield workers to the three shift day principle as the only current means of enabling the immediate demand for steel to be coped with. Provided this does not interfere with the output of springs for certain makers, there is no question that at last the paralysis of production occasioned by the long series of strikes will have passed. Quantity production will make a very rapid and marked change in the situation alike in regard to supplies of vehicles and to prices. Big output has taken longer to get going than the work of small makers and assemblers owing to the sheer scale of such enterprise. For example, the hold up of the supply of one component, such as dynamos, springs, lamps, or what not, prevents the output of cars, though all the other parts be available. Further, a firm must have an enormous number of finished parts manufactured before it can begin assembling on what is called the track system, such as Wolesleys are using for their two four-cylinder models. I have seen at the works at Adderley Park, Birmingham, which occupy thirty-five acres, 1,000 complete sets of finished parts for the 15 h.p. four-cylinder model. The stores will always contain about that number, since it is impossible to assemble one car every two and a half hours on any other terms. The Angus-Sanderson, the Bean, and such like new style propositions are also beginning to come through very satisfactorily. Rover attained all but 100 per cent. long ago. Moreover, the vast factory they acquired at Birmingham to build the two-cylinder V type air-cooled engined light car, examples of which did so well in the London-Edinburgh and the London-Exeter trials, is now delivering. Now the big machine is set in operation, of course output will rise rapidly. Austin is another big manufacturer who is turning out well over 100 complete cars a week.

FUTURE PROVISION OF MEDICAL SERVICES.

MUNICIPAL REPRESENTATIVES' MEETING AT BRISTOL.

A MEETING of the Bath and Bristol Branch of the British Medical Association was held at Bristol on July 9th to consider the report of the Consultative Council. Previous to the meeting of the Branch, which was held in the Council Room of the University, a luncheon was given at the Royal West of England Academy by Dr. P. Watson-Williams, President of the Branch. Among those who accepted the invitation to meet Lord Dawson at the luncheon were the Lord Mayors of Bristol and Cardiff, representatives of the medical profession, of all the hospitals, the University and the Education Committee of Bristol, and the Bristol branch of the Red Cross, and visitors from neighbouring towns, representing principally the hospitals of their localities, including Cardiff, Exeter, Salisbury, Bath, Gloucester, Cheltenham, Hereford, Taunton, and Swindon, as well as the medical officers of health for Somerset, Wiltshire, Gloucestershire, and Bath rural.

Dr. WATSON-WILLIAMS, in proposing the toast of "The Consultative Council," said that it was the British Medical Association which initiated the movement culminating in the creation of a Ministry of Health. The West of England had an interest in that movement from the beginning. A suggestion made by Dr. Rumsey of Cheltenham at the annual meeting of the Association in Dublin in 1867 led to a joint committee being formed by the British Medical Association and the Social Science Association to pursue it further. In the following year a deputation from the British Medical Association, including representatives from Bristol, Bath, and Cheltenham, waited on certain members of the Government to ask for the setting up of a Royal Commission on the chaotic state of public health administration; and on June 6th, 1868, the BRITISH MEDICAL JOURNAL went further and urged "the appointment of a Minister of Health." Over and over again during the fifty years which followed the British Medical Association had reiterated its plea, until, in 1918, the Representative Meeting resolved to urge upon the Government the importance of establishing a Ministry of Health immediately. The recommendations of the Consultative Council aimed at supporting rather than supplanting existing organization. Their object was not the effacement of the present provisions but their co-ordination and evolution. The Council constituted an organized nexus between the Ministry and the medical profession, and was intended to be an official channel by which the profession could give direct expression of its views to the Ministry.

Lord DAWSON began his speech with a tribute to the Minister of Health. It was by no means a usual procedure for reports made by Councils to Ministers to be published for the open criticism of the public and of the profession most concerned. That such a course was followed in this instance was due to the liberal-mindedness of Dr. Addison. At the beginning of the eighteenth century, save for provision for paupers and perhaps a few religious institutions, there were no hospitals in the modern sense of the word. Soon, however, the great movement for the establishment of voluntary hospitals began, and Bristol was one of the first cities to rise to the occasion with the setting up of its Royal Infirmary. The interesting book in which Dr. Munro Smith had written the history of that great institution showed in a startling way how very modern in many respects was the hospital organization and even the amenities of the staff nearly two hundred years ago. Now that a new chapter was opening in the story of the hospitals of this country, the west of England was once more in the forefront. Already in the county of Gloucester a scheme had been laid down by the medical officer of health, Dr. Middleton Martin, whereby general practitioners were brought into relation with primary hospitals, which were staffed by themselves, and these primary hospitals were further brought into relation with secondary hospitals in the larger towns. Such a scheme, although it had not yet reached the stage of fruition, showed that here in the west the responsible people were thinking in terms of 1920. The provision for the health of the people in hospital or otherwise was demonstrably inadequate. It needed not to be swept away, but to be expanded and adjusted. Hospitals were inadequate because the population had grown more rapidly than they; also because the basis on which hospitals had been distributed was not determined by the needs of local populations, but by the chance existence of public spirit and benevolence in the district; again, recent progress in medicine demanded increased institutional treatment, which the present hospital system was not elastic enough to supply. It was not a case merely of providing more hospitals, but of the careful grading and linkage of hospitals. Another reason why change was imperative was to be found in the awakening of the public conscience on health matters; people had now a positive instead of merely a negative conception of health, and there was a sharper demand for preventive measures and for dealing with incipient disease. The general practitioner of the future must be more closely identified with preventive medicine and have access to necessary equipment. The present state of the hospitals proved how completely they had been outgrown. Many hospitals had waiting lists hundreds deep, and this was the more lamentable because these waiting lists comprised the people in whom disease was in its early stages and whom it was most important to cure from the point of view of the community. The disability from sickness was a great weight upon the nation. In 1916 sickness benefit in England, for men alone, amounted to nearly 3½ millions sterling, representing 6,800,000 weeks of sickness and consequent withdrawal from employment. The average annual loss due to sickness and disablement in the case of both sexes for the years 1914–16 worked out at 270,000 years, and in these estimates all light sickness (of shorter duration than four days) was excluded, as well as all maternity cases and cases in sanatoriums. If an adequate health organization existed these figures should at least be halved. The criticism had been levelled at the report of the Council that it would entail a huge expenditure on medical services at the time when the country was impoverished; but he and his colleagues recognized that great wars must be followed by strict economy, and that however desirable certain changes might be, it was necessary to wait for the full development and to do the best that could be done in the meantime. All that was asked at the moment was that stock be taken of the position, that a review should be made of what existed at present compared with what should exist, and that a scheme be devised in outline sufficient to reveal the plan according to which the health organization of the future should be shaped. There was already a patchwork of medical services—tuberculosis, venereal, and so on—which had come each in response to an urgent demand, and not as the result of any ordered policy. The time had come to consider the whole position and decide upon the lines of development, and then set to work cautiously and tentatively to build up the fabric of a medical organization to approximate to national needs. The Consultative Council was quite prepared to find that such a fabric could only be set up bit by bit. Certain principles must be laid down, but they must be principles which should be capable of some immediate applications, and he hoped that one such application might be made in Bristol. The burden of the report was simply this: the provision of fabric and equipment, together with freedom of action for doctor and patient. It was fully recognized that the bulk of patients would be seen as heretofore in their own homes or at the practitioners' surgeries; but in each district there should be set up an institution which would contain the necessary equipment for the practitioner to complete and accelerate his work. The primary health centre would be a general practitioner clinic; only in the secondary health centre would the patient be transferred from the care of his own medical attendant. The primary centre was the most important part of the scheme at the moment. The secondary hospitals already existed; the primary hospitals were only represented at present by a few cottage hospitals inadequately equipped. The primary centre would provide equipment, while at the same time the pecuniary relation between doctor and patient would remain undisturbed. It was the more important that the laity and the medical profession should discuss this matter together in view of the tendency for certain infirmaries to be handed over to the municipalities. A municipalized service was one step forward to the nationalization of medicine, and that would be a disaster alike to the medical profession and to the public. This was not a time for criticism on the ground that the scheme would cost so many millions. What it was ultimately going to cost was of small importance. In 1870 many people might have been frightened had they then been told that the Education Act would by 1918 cost the country annually 33¼ millions; but no one at this time of day ventured to urge that less should be spent. The heavy expenditure which some forecasted on these new health arrangements would not come at once, and when it did come it would be more than met by the corresponding gain in national health and efficiency. He hoped that in the West Country, with its traditional munificence in hospital matters, two primary health centres might be set up as an experiment, one of them in the town and the other in the country. They would be of great service to their locality; they would relieve the strain on existing institutions, and they would have the high value of an example to the whole nation.

The Lord Mayor of Bristol, who proposed the health of representatives from neighbouring towns and counties, expressed his satisfaction that no great expenditure was immediately demanded, for in his position as head of a great municipality he was committed already to raising large sums of money for housing and other purposes. It had been estimated that the full scheme would cost 150 millions, of which 90 millions would be for medical men and 60 millions for nurses and establishment charges. His advice was to hasten slowly.

The Lord Mayor of Cardiff, who responded to the toast, was less pessimistic than his brother magistrate. He had no fears with regard to the finance of the scheme, if only its provisions were assimilated over a course of years. Once the real meaning of the scheme was understood by the people in the industrial areas particularly that it was not intended to interfere with the freedom of relation between doctor and patient he was sure that they would lend a willing hand to make it a success. He hoped that the scheme would not be worked by existing local authorities; a separate *ad hoc* body should be created in the various districts. He looked to the scheme to mature in twenty years, by which time he believed the results would be magnificent.

The health of the Chairman was proposed by Mr. H. H. Wills, President of the Bristol Royal Infirmary; Dr. Watson Williams, in acknowledging the compliment, questioned the accuracy of the estimate quoted by the Lord Mayor of Bristol, and said that he believed a sum of £100,000 would establish and equip two health centres, the one large and the other smaller.

The Meeting of the Bath and Bristol Branch.

The meeting of the Bath and Bristol Branch was attended by about one hundred members.

The President, Dr. P. Watson-Williams, called on Lord Dawson, who said that his desire was to elicit the opinion of the members present and to hear their criticisms, which he hoped would be constructive. The profession had an opportunity such as it had never enjoyed before in its history. It had been an individualistic calling, but there had been growing up in recent years a steadily increasing relation between the doctor and the community. It was for the profession now to give a lead to the nation on health matters. The public, in whose eyes the profession had gained a heightened esteem during the war, was prepared to listen to constructive proposals. The interim report of the Consultative Council was an attempt to systematize medical services. It endeavoured to make the preventive and curative sides of medicine meet in the general practitioner, who must be looked upon more and more as the guide in matters of health of the residents of his district. The director of the communal clinic of the primary health centre should be a man whose practice was in the district; his post should be a part-time one, paid on a time basis. This was the alternative to a whole-time salaried service. Training would be required for such a post, but this simply meant an extension of post-graduate instruction. As methods of investigation and treatment of disease became ever more complex the more did the insufficiency of the general practitioner's equipment become apparent. Nothing astonished him more as a consultant than the excellent work which was done by men under poor conditions. One of the vital parts of the organization now foreshadowed was the full participation of the general practitioner in the communal equipment available at the health centre. The ideal primary health centre would have a certain number of rooms available for the examination of patients; there would be *x*-ray provision, particularly for screen examinations, also facilities for blood testing, and so on. The administration would charge a flat rate for the use of the equipment; the pecuniary relation between doctor and patient would remain undisturbed. In the larger centres there might be arrangements for physiotherapy and massage at reasonable charges. There would also be wards, including private wards for patients who could afford to pay for them, though the treatment would be the same, of course, in the private as in the general ward. The various communal clinics which were already growing up would be brought under the wing of the primary health centre. The primary health centre had then to be correlated with the secondary health centre in the shape of the existing hospital in the large town. Here those consultative services which were envisaged as part of the National Insurance scheme, but were held up by the war, would be available. The consultants would serve on a part-time basis and at scheduled rates, paid by the State. This would attract young consultants, to whom a certain assured income, however small, was a great help in the early days of practice. A great deal depended upon the maintenance of intellectual traffic between the primary and secondary health centres. The cost of the scheme had figured largely in the debate at the recent Representative Meeting, but it was not intended to pepper England with primary health centres right away. He would be content to see a dozen such centres established within a reasonable time.

Dr. J. Middleton Martin (M.O.H. Gloucestershire) gave an account of the plan developed in that county. While it was more or less a simple matter to provide in the towns the special services now required, the matter was more complicated in country districts. In Bristol, for example, there were 13,000 persons to the square mile, while in Gloucestershire, not one of the most sparsely populated counties, there were only 268. It was out of the question to provide special services adequately for a scattered population on the same lines as for a compact population. It would be disastrous to the medical profession if continually branches of work were taken away from the general practitioner; nor would it be good for the community, because the preventive side of public health required a knowledge of the circumstances of the local community and the homes of the people, and who possessed this knowledge to the same extent as the general practitioner? Therefore the aim in Gloucestershire had been to bring the general practitioner into relation with what Lord Dawson's report called primary health centres. The attempt was made to develop the present communal services in centres where the local practitioners could deal with the cases. It would be mainly an out-patient service, but a certain number of beds were also wanted. The stations would be of a very simple character, but capable of development. The direction of these centres was an important consideration. There had been complaint in the past that medical schemes were under lay direction. Medical matters were so technical that there must be medical direction of such services, and from a plan already in operation in Cheltenham he had conceived the idea of setting up a medical advisory committee, composed, in the case of Gloucestershire, of the general practitioners in charge of the out-stations and the consultants at the hospitals. All medical matters would be referred to that committee, which would be the governing body in medical matters. He did not suggest that all difficulties had been overcome, but sufficient advance had been made to prove the practicability of the idea. As for finance, the complete scheme was not too expensive to be carried out at the present time. The money had been found in Gloucestershire by pooling the sums available for the separate schemes, and in this way sufficient money was found without increasing the estimates.

Dr. **MARCUS MILLIGAN** (Bath) suggested that in each area, in association with the scheme, there should be formed a local guild of preventive medicine, or guild of health—a body whose function would be the collective study of all health matters, as well as health propaganda. All the general practitioners and consultants in the area would be included in the guild, as well as such persons as certifying factory surgeons, the public analyst, some representative of the education authority, members of the dental profession, and also veterinary surgeons.

Dr. **H. C. BRISTOWE** (Wrington, Somerset) spoke of the difficulties in the more sparsely populated rural areas, where the means of communication were mostly, not main roads or railways, but winding lanes, and the population scattered in small villages, none of them with more than 800 inhabitants, with hamlets and solitary houses in between. Practitioners engaged in work in these districts had not time to go a further five or ten miles to attend the primary health centres in a neighbouring town or larger village. He pleaded for smaller centres less ambitiously equipped and distributed more frequently in the sparsely populated districts.

Dr. **R. H. NORGATE** (Bristol) asked what provision it was proposed to make for chronic cases—the many people who could not earn their living and were a burden on their families.

Dr. **WILLIAM GORDON** (Exeter) said that his first acquaintance with the scheme inclined him to destructive criticism, but Lord Dawson by his advocacy and Dr. Middleton Martin by his practical experiment had established a case for the primary centre. They were countering the tendency to set up whole-time services, and were restoring to the general practitioner what he ought not to have lost; that was so much to the good. But the scheme as it stood on paper suggested that there was going to be undue interference from the secondary and teaching centres with the general practitioner. Mutual counsel and help there should be, but as little interference as possible. He hoped also that it would not be laid down that those in charge of these centres should keep elaborate routine records. This would interfere with the time available for the care of the patient. Whatever records were kept should be of the simplest kind. The expression "team work" was unfortunate; the profession in England had been made great by reason of its individuality, and the individualism of English medicine should be most sedulously preserved. After all, the highest human achievements were individual, not the work of a team. The speaker uttered a threefold warning: First, against hustling; secondly, against too much attention to what Labour people were thinking or were likely to think; thirdly, against the German tradition which magnified equipment at the expense of genius.

Dr. **G. T. MYLES** (Clifton), while admiring the report as a whole, thought that to express unqualified approval at this stage might mean the handing over by the profession of a blank cheque to the State. The success of the scheme depended entirely on the whole-hearted support of every section of the profession, and if very much new work was put upon the profession adequate remuneration must be given; with this subject the report did not deal. Lord Dawson had said elsewhere that he could himself drive a coach and four through his own scheme, but the speaker thought that it would be possible to drive through this scheme with its primary centres nothing less than a whole-time service State-controlled.

Dr. **NEWMAN NEILD** (Clifton) said that in all these schemes for the health of the people there were two possible methods. One was for the Government to put down the money first; but no great improvement in the health of the community had ever been gained by that method. The other was first to stimulate the enthusiasm of the profession so that it started doing pioneer work and left the matter of payment until later; that was the way in which advance in medicine had always been gained. He felt sure that Lord Dawson could be trusted to see that individualism had sufficient play, but some were afraid that certain lines of research and methods of treatment would be forced upon them whereby a free and untrammelled individualism would be lost.

Dr. **L. S. LUCKHAM** said that the city of Salisbury, with some 25,000 people, had a large neighbouring country district containing villages of 200 or 300 inhabitants. It was very difficult to establish primary health centres which would meet the case of such a district. The most valuable thing would be to combine the county hospital with the primary centre, the two working together. A great deal of hospital accommodation was taken up because homes were not suitable even for minor cases of illness.

Dr. **E. J. MACLEAN** (Cardiff), speaking as a member of the Welsh Consultative Council, said that the Councils were advisory to the Minister, and in no sense intended to replace the organized bodies of the profession. There was nothing in these Councils which would interfere with the status of the British Medical Association. So far from its functions being replaced, the Association should be strengthened. Many people thought that in view of the administrative power which the profession possessed some State control was necessary, and the maximum amount of it would be gained through a State medical service. The reports of the English and Welsh Consultative Councils in large part agreed, but that was not the result of collusion, for the Welsh Council had deliberately kept away from the English body in order that the problems might be approached with an unbiassed mind. The Welsh Council was composed not only of members of the medical profession, but of representatives of various public authorities, and thus the criticism of these representatives was available on the various points as they arose. The Principality was compact, and members of the Council had been able to visit various types of areas—purely rural areas, mixed areas, and densely populated industrial areas; certain principles had been applied to each of the three sets of conditions. The present stage was not one for much criticism, but there would come a time when very critical and contentious issues would have to be faced.

Dr. **C. E. S. FLEMMING** (Bradford-on-Avon) said that the profession had had placed within its grasp what it had been fighting for for years—namely, the opportunity to do its work properly. He was not sure that the fear that the independence of the individual practitioner was threatened was well grounded, but it was important that independence should be maintained, and equally so that they knew what was meant by independence. Independence from every sort of control was impossible in a country such as this; the profession acquiesced in intra-professional control. With regard to the relation of the general practitioner to preventive medicine, he would like to see every medical man given more powers approximating to those of a medical officer of health—powers to advise, report, and suggest—because no man was better able to make an effective medical officer of health than the general practitioner. There was nothing revolutionary in the primary health centre; it was the development of institutions and work already in existence.

The **PRESIDENT** conveyed to Lord Dawson the thanks of the Branch, and said that the views expressed might be summed up in the statement that the profession feared organization being imposed upon it from without, and believed that the best way to meet the situation was to co-ordinate its work and prove its statesmanship.

Lord DAWSON, in reply, agreed that the Consultative Council in no way usurped the present means of communication of the views of the profession. At the same time it did offer a nexus between the profession and the Minister. The Council, although nominated by the Minister, was absolutely independent. There seemed to be a fear amongst some speakers of the danger of State service or State control. But where some had pointed to individualism he saw only intellectual anarchy. If by individualism was meant absence of all control, that was something which would not be good for the profession, and something which the community was not in the least likely to concede. Various instalments of State service had already been set up. The report of the Council was not making for State service; he regarded it as the sole alternative to a State service. He agreed with what had been said about the dangers of bureaucratic control, but he had found no responsible person in the Government or Ministry of Health eager for such control. There would be no cast-iron health service organized from Whitehall. The Ministry of Health would be the inspirer, controller, and co-ordinator—that was all. Subject to certain broad principles there would be considerable difference of detail in the various areas. Whatever the constitution of the local health authority, the medical profession as such must be represented upon it. A few broad-minded medical men would have an influence on such an authority far beyond their numbers. The majority of members must be elective, but in the co-opted minority the profession claimed to have a strong voice. He agreed that the profession must be adequately remunerated, but it would be a mistake to let it be supposed that pecuniary considerations occupied all their thoughts. He believed the general effect of a properly organized system would be to improve the pecuniary position of the men who practised under it, and he did not believe that in most instances it would increase their work, although it would add enormously to the interest of the work. He sympathized with the criticism which had come from sparsely populated areas. The question of subcentres and also of travelling dispensaries had been considered by the Council, but had not yet reached the stage of definite proposals. It must be remembered that the report was interim, and that the scheme was capable of indefinite adaptation. As for team work, it was simply untrue to say that the work of the medical man was purely individual. In the very simplest operation did not the anaesthetist play a part? Team work merely meant the pooling of the wisdom of a set of workers. He agreed that equipment was not everything; it was the spirit which underlay equipment that mattered, but there must be equipment to encourage the spirit. Finally, he deprecated the remarks of Dr. Gordon on the subject of Labour. He had found most intelligent views forthcoming from that quarter, and if a broad-minded scheme were hammered out, he was sure that Labour would offer unprejudiced assistance.

THE RENTS RESTRICTION ACT.

DURING the passage of the new Rents Restriction Act through Parliament a large number of amendments were suggested, some of which were accepted by the Government and others rejected. The Act finally received the Royal Assent on the day after the old restriction Acts had expired. It came into force on July 2nd, but was only printed at the end of last week. It extends the scope of the old Acts, and applies to all dwelling houses or parts of dwelling houses let as separate dwellings, of which the rateable value in the Metropolitan Police District is less than £105, in Scotland less than £90, and elsewhere less than £78. The rateable value of any house for this purpose is its pre-war rateable value, or, if there was then no assessment, the amount of the first assessment thereafter. Such a house is within the scope of the Act notwithstanding that the tenancy is one that includes board, attendance, and the hire of furniture, or that part of it is used for business, trade, or professional purposes, and once a house becomes subject to the Act it so remains to the end of the chapter. The Act, however, does not apply to houses of which the rent payable under any existing tenancy is less than two-thirds of its rateable value.

This, broadly, is the scope of the Act. Its provisions fall into two main heads—restrictions on increase of rent and on ejectment. No increase of rent on premises subject to the Act can be made except—

(*a*) Where the landlord has, since August, 1914, incurred expense in the improvement or structural alteration of premises he may demand further rent equal to 6 per cent. on the amount of the expense.

(*b*) Where the rent includes rates he may increase the rent by the amount by which the current exceed the pre-war rates.

(*c*) Where the landlord is liable to do all repairs he may put the rent up by 25 per cent., and if part of the repairs only by an amount to be determined, in default of agreement, by the county court, and

(*d*) In addition an all-round increase not exceeding 15 per cent. on the net rent is sanctioned, provided that, in the case of houses which were subject to the old Acts, not more than 5 per cent. may be added during the first year.

A great deal of doubt appears to exist as to whether any of these increases apply to houses which are held upon an existing agreement or lease. As to this the Act provides that no increase can be made "except in respect of a period during which, but for this Act, possession could be obtained by the landlord," and the Act is perfectly clear that the rent of premises held under lease or agreement cannot be increased unless, owing to some breach of covenant, the landlord becomes entitled to claim possession. Moreover, a tenant who is liable to have his rent increased under (*c*) and (*d*) above may apply to the county court to deprive the landlord of the rights given by the Act on the ground that the house is not reasonably fit for human habitation.

With regard to possession, no order for the possession of premises to which the Act applies can be obtained unless:

(*a*) The rent is due and unpaid or an obligation of tenancy broken.

(*b*) The tenant's conduct is a nuisance or annoyance to his neighbours, or he has been convicted of putting the house to an improper use, or has been guilty of waste.

(*c*) The tenant has given notice to quit and the landlord has contracted to sell the premises.

(*d*) The dwelling house is reasonably required for the landlord's own occupation and alternative suitable accommodation is available. But where the landlord is a man who has purchased the house after service in the forces the question of alternative accommodation does not arise, nor where the premises are required for occupation by a former tenant who gave up possession of them in order to serve in the forces.

Not only does the Act protect the interests of actual tenants, but also where a tenant dies intestate leaving a widow who resided with him at the date of his death, or where, there being no widow, members of the tenant's family so resided, such persons are entitled to the protection of the Act. This is a new feature.

There are two further important provisions with regard to premiums and furnished lettings: To require the payment of a fine or premium or the fixing of any pecuniary consideration as a condition of the grant, renewal, or continuance of a tenancy of premises to which the Act applies is illegal, and anyone doing so is liable to a fine not exceeding £100. Moreover, any such premium paid under an agreement made since March 25th, 1920, is recoverable. It remains to be seen how far this provision will put a stop to the premium or key money evil.

With regard to furnished houses, the Act provides that anyone who lets or has, before the Act came into force, let a furnished dwelling house at a rent which is proved to the county court to represent more than 25 per cent. over the normal pre-war profit is liable to refund the excess and to a penalty not exceeding £100. Here again it will be interesting to see how far this provision will assist the man who has been forced to pay extortionately for his furnished house at the seaside; but here, as in many other respects, the Act depends for its success upon the rigour with which it is enforced in the local county court.

Legislation of this type can only be regarded as an attempt to palliate the grave scandal of the housing shortage, which is presumably anticipated will not be overcome for several years, since the Act is expressed to remain in force until June 24th, 1923.

From the point of view of the legal profession, no doubt the Act will be even more fruitful in litigation than its predecessors.

British Medical Journal.

SATURDAY, JULY 17TH, 1920.

SOME PRINCIPLES AND AN EXPERIMENT.

In responding to the invitation of the Annual Representative Meeting to speak on the Interim Report of the Medical Consultative Council, its chairman appealed to the profession to look at the position seriously. It was perhaps hardly necessary to make such an appeal, for the profession is profoundly interested. Of this our recent issues have afforded many instances, and again this week many pages of the JOURNAL are occupied by reports of events and discussions bearing more or less directly upon the many and difficult problems which arise. The discussion has centred round the Interim Report of the Medical Consultative Council, and Lord Dawson of Penn has not spared time or trouble in explaining to meetings of the profession the main features of the scheme. He has steadily maintained that the public, deeply moved by questions concerning the better treatment of disease, is looking to the medical profession for guidance. The main object of the Consultative Council's report is to afford the profession concrete proposals for its consideration and criticism. Already the air is being cleared in this way, and eventually the profession, having formed its own opinion on main principles, will be in a position to give the public and the legislature the guidance both recognize they need.

We will not attempt anything in the nature of a full investigation of the whole complex matter, but it seems desirable to call attention to a few recent events. It will be remembered that the Representative Meeting discussed the scheme of the report in a general way, and formulated certain principles, which will be submitted to the Divisions in the course of a memorandum the Ministry of Health Committee is engaged in preparing. The first principle adopted was that the establishment of primary health centres is the pivotal idea of the changes recommended in the report. The second was that any system for the prevention of disease, as well as for its treatment, should be based on domiciliary health service, and that general practitioners should be actively encouraged in the practice of both. The third was that the local health authority for each area should contain adequate representation of the medical profession in the area and of other persons or bodies engaged in public health work. The Representative Meeting also reiterated the opinion it had previously expressed that a whole-time salaried State service would be detrimental to the best interests of both the public and the medical profession.

The discussion at the meeting of the Bath and Bristol Branch on July 9th (page 83) was for several reasons particularly informing. One reason was that the area of the Branch includes a part of Gloucestershire, and the meeting had an opportunity of hearing from Dr. J. Middleton Martin, County Medical Officer, an exposition of the plan which has been developed there. In its general features it nearly resembles that of the Consultative Council, but there are differences traceable to special local conditions and financial considerations. Lord Dawson in this connexion emphasized the fact that the report of his Council was not final, and pointed out that the scheme it propounded, while intended to serve the profession as a guide to the principles governing the present situation, was capable of indefinite adaptation to special circumstances. The Gloucestershire scheme proposes the immediate establishment of thirty-three centres, varying very much in size and equipment. Outpatient departments are to be opened up at existing cottage hospitals and at a number of outstations of the general hospitals. The county is divided into four hospital areas related to the general hospitals of Gloucester, Bristol, Stroud, and Cheltenham, the last-named area being subdivided into a home district dependent on the Cheltenham General Hospital and a Cirencester district, there being a cottage hospital of eighteen beds in that town. The scheme, Dr. Martin states, has been accepted by the county council, the general hospitals, and the general practitioners of the county. It will be administered by a board of management consisting of representatives of the county council and its committees, of the War Pensions Committees of the hospitals in Gloucester, Cheltenham, Stroud, and Bristol, and of the British Red Cross Society, a sum of £7,000 having been given by the Joint Council towards the total expenditure of £14,000, which it is estimated will be sufficient to set the scheme going. The annual expenditure is estimated to be £15,000, but as the hospitals and out-stations will be used for the communal services of the county this expenditure will, in large part at least, be met from the funds in the hands of the county council, including contributions from the Ministry of Pensions and the Ministry of Health.

Lord Dawson in his speeches at Bristol welcomed the Gloucestershire scheme, as, for two reasons, was to be expected. First, because Gloucestershire will provide a working test, in its application to mixed rural and industrial areas, of a scheme analogous to that of the Consultative Council; and secondly, because the utilization of existing cottage hospitals as primary centres is part of the scheme of the Consultative Council. We publish this week a letter from Dr. J. N. Marshall of Rothesay, showing that a system, evolved in the Island of Bute and based on the Rothesay Cottage Hospital, has worked thoroughly well for twenty-five years, gradually increasing its usefulness during that period. The hospital contains 13 beds; the average daily number of in-patients during 1918 was between eight and nine. Nearly all the patients pay something, varying from 7s. a week to 42s., the amount paid by an occupant of one of the three private wards. All practitioners in the island are members of the staff of the hospital. The fear has been expressed that the right of every practitioner to send cases to the hospital might occasionally cause difficulties owing to the limited in-patient accommodation, but Dr. Marshall states that in practice no such difficulties have arisen.

The report of the Consultative Council expressed the opinion that existing Poor Law infirmaries might be adapted to the purposes of primary centres, and here again events are marching in the direction suggested. In response to representations of the Sheffield Division (p. 93) one of the boards of guardians responsible for the area has agreed to place 100 beds in its hospital at the disposal of the public to relieve the congestion of the voluntary hospitals.

Many members of the profession fear that the scheme of the Consultative Council will lead on to a whole-time State medical service, which the British Medical Association has declared would be detrimental to the best interests of the public and of the medical profession. It is not to be denied that there are grounds for the fear that an effort may be made to thrust such a service on the country against the wishes of the medical profession. There is much weight in Lord Dawson's contention—that if a whole-time salaried State service is to be avoided the profession must be prepared with an alternative. At present that offered by the report of the Consultative Council holds the field, and, as this issue of the JOURNAL shows, evidence is accumulating that the general body of the medical profession, both consultants and general practitioners, is disposed to look upon it with favour.

THE PRELIMINARY SCIENTIFIC SUBJECTS AND THE CURRICULUM.

THE number of the sections at the Annual Meeting of the Association varies from year to year; some are constant, others appear intermittently. That at this meeting there should be a section on medical education was doubly appropriate—first, because it was in accord with the *genius loci*, since Cambridge is a chief seat of sound learning, and secondly, because in these days of active reconstruction and, it is to be anticipated, of considerable change and reform, medical education is in all our thoughts. Sir George Newman, the President of the Section, in his introductory address, after dealing with the present problems of medical education generally, went on to consider some of the aspects of the special subject for discussion, "The place of preliminary science in the medical curriculum." That the five years' medical curriculum is overloaded all who took part in the debate admitted, and they agreed also that it is important to lighten without lengthening the course. But there was no suggestion of abandoning the teaching of chemistry, physics, and biology; on the contrary, their progressive importance was emphasized, but the speakers advocated improved methods of instruction and a closer correlation with the science and art of medicine.

Sir Ernest Rutherford and Professor Smithells declared that the instruction in physics and chemistry now given to medical students was very unsatisfactory. To provide a constructive policy it is necessary to ascertain the causes of the failure; the system of schedules—often of some antiquity—in these subjects seriously hampers the teacher, and by keeping him in a narrow furrow prevents any elasticity in his presentation of the subject; closely allied is the want of correlation between these preliminary scientific subjects on the one hand, and biology, physiology, pathology, and medical practice on the other hand. It has become most essential to link up the subjects, and so do away with their splendid isolation in watertight compartments. At present the average medical student regards his training in preliminary science as a labour to be surmounted and the subjects forgotten as soon as possible: usually the latter aim is successfully attained without any long delay; probably only a wise modification of the present methods of teaching these subjects is required in order to change the students' attitude. The consensus of opinion was generally in favour of school instruction in chemistry and physics, not with the object of getting them out of the way, but to enable further teaching and correlation with medicine to be more effectually carried out after registration as a student. The method of special classes for medical students adopted at Edinburgh by Professor Barger and by others elsewhere is a move in the right direction. In biology, which has even more intimate relations with medicine and pathology, the case for school instruction is not as strong as for the other two preliminary sciences, for, as Sir E. Rutherford pointed out, a reasonable acquaintance with physics and chemistry is a necessary preliminary; further, it is not so easily dealt with at secondary schools as in medical colleges, where it can be made both useful and interesting by correlation with parasitology and with other practical aspects of clinical work. Although at first sight it might appear that time would be saved and the curriculum lightened by banishing the preliminary subjects to the secondary schools, this is not the whole matter, for, as Professor Hickson points out, this step might tend to lower the standard of education, both special and general, and so medical education would suffer rather than gain.

Professor Keith, who, probably intentionally, rather overstated the case in declaring that the urgent problem was the education of the teachers rather than of the students, insisted on the importance of showing the students the practical applications of the preliminary sciences. In this he had many supporters, but he went further, and urged that the science teachers should not only be medically qualified, but should keep their clinical knowledge up to practice pitch. From experience gained as a pathological teacher Professor Lorrain Smith maintained that it was desirable to continue the instruction in what are called the preliminary sciences throughout the various stages of the curriculum by special biochemical and biophysical teachers, who would enable students to enter more thoroughly into metabolic and other problems.

The whole course of the debate showed that teachers of the preliminary subjects have become alive to the need for what may be called concentration in teaching. The opinion of the meeting as summarized was that chemistry and physics should be school subjects, and that evidence of a knowledge of them up to matriculation standard should be required of a medical student before registration as such. The recommendation that the earliest age at which a candidate should be allowed to register as a medical student should be 17 was perhaps a corollary.

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THE FUNERAL SERVICE FOR GENERAL GORGAS AT ST. PAUL'S.

THE funeral service of Major-General William Crawford Gorgas, K.C.M.G., D.S.M., late Surgeon General of the United States army, was held on July 9th in St. Paul's Cathedral at noon. The coffin was borne from the Queen Alexandra Military Hospital at Millbank, where General Gorgas died, on a gun carriage of the Royal Horse Artillery. It was escorted by six military pall-bearers—Major-Generals Sir W. G. Macpherson, A. P. Blenkinsop, Sir G. B. Stanistreet, and Colonels O. L. Robinson, H. A. Hinge, and J. R. McMunn of the Army Medical Service. Headed by the band of the Coldstream Guards, the military escort, under the command of Brigadier-General Steele, marched along the Embankment towards the cathedral. General Gorgas's saddled charger, led by a dismounted Lifeguardsman, followed the gun carriage. During the progress of the funeral procession through the streets a salute of minute guns was fired in Hyde Park. On the steps at the west end of the cathedral the coffin was met by the Dean and cathedral clergy, who preceded it up the nave, the choir singing sentences from the burial service set to Croft's music. The pall bearers in the cathedral were the naval and military attachés of the United States Embassy; Sir Anthony Bowlby, the newly elected President of the Royal College of Surgeons of England; Major General Sir Havelock Charles, Medical Adviser to the Secretary of State for India; Brigadier-General John Finney, of the United States Army Medical Service;

Lieut.-Colonel Sir James Kingston Fowler, M.D., representing the Colonial Office; Surgeon Rear Admiral Sir R. Hill, Medical Director-General of the Navy; Sir George Makins, late President of the Royal College of Surgeons; Dr. Charles Mayo, of Rochester, New York; Sir Norman Moore, President of the Royal College of Physicians of London; Sir Humphry Rolleston, President of the Royal Society of Medicine; Professor W. J. R. Simpson, Vice-President of the Society of Tropical Medicine and Hygiene, and Mr. Henry S. Wellcome. There was a very large congregation in the Cathedral, and under the dome stood official representatives of Royal persons, governments and institutions. The King was represented by Lieut.-General Sir John Goodwin, Director-General of the Army Medical Service; Queen Alexandra, by Colonel Sir Henry Streatfield; and the Duke of Connaught, Colonel-in-Chief of the Royal Army Medical Corps, by Colonel Sir Edward Worthington. The American Ambassador and Mrs. Davis attended, and the widow was accompanied by Major-General Noble, of the United States Army. His Majesty's Government was represented by Dr. Addison, Minister of Health, and the Army Council by Major-General Sir G. F. Ellison. There were representatives of the High Commissioners of the Dominions, and officials of the Admiralty, War Office, Foreign Office, and of South American Republics. There were also many naval and military officers from the United States and a large number of prominent Americans resident in London or visiting this country. Dr. Alexander Granville represented the Egyptian Government, Colonel Sir Lisle Webb the Ministry of Pensions, Lord Goschen the Medical Research Council, Sir Donald MacAlister the General Medical Council, Sir David Bruce the Royal Society, Dr. Alexander Blackhall-Morison the Royal College of Physicians of Edinburgh, and Professor Sir Archibald Garrod the University of Oxford. The President, to his regret, was unable to attend, but the British Medical Association was represented by the Chairman of Representative Meetings, the Treasurer, and the Medical Secretary, and the BRITISH MEDICAL JOURNAL by Dr. N. G. Horner (Assistant Editor). When the clergy and choir had reached their stalls, and the coffin, covered with the Stars and Stripes, had been placed on the catafalque under the dome, the choir sang the 90th Psalm. The lesson was read by the Dean of St. Paul's, from 1 Cor. xv. The following hymns were sung: "Nearer, my God, to Thee," "Lead, kindly Light," and the Republican battle hymn, "Mine eyes have seen the glory of the coming of the Lord," never, we suppose, heard in St. Paul's before. As the coffin was carried out to the West Door, the band of the 2nd Life Guards, stationed on the Chancel steps, played Chopin's *Marche Funèbre*, while all the congregation stood. The body was conveyed back to the hospital by motor and was taken thence by train to Southampton, for interment in the United States. The service was deeply impressive and will not be forgotten by any who were present. All felt that it was fitting that the highest honour this country could pay him should be paid to William Crawford Gorgas, the great medical administrator, who died in our midst.

EPSOM COLLEGE.

FOUNDER'S DAY will be celebrated at Epsom College on Tuesday next, July 20th. At 12.30 o'clock there will be a service in the College Chapel, and at 3.15 Dr. Christopher Addison, Minister of Health, will distribute the chief prizes and address the school. There will be refreshments in the college grounds immediately after the prize-giving. The sixty-seventh annual general meeting of the governors of the college was held on June 25th at the offices, 49, Bedford Square, London, W.C., with the treasurer, Sir Henry Morris, in the chair. The annual report of the council states that heavier expenditure will be necessary in the next few years to make good the deficiencies and defects in the buildings, the result of ordinary and prolonged wear and tear. Heavy additional expenses are incurred by the higher scale of salaries, by increases in the cost of board, and by the general rise in wages and other outgoings. The expenditure account shows a total deficit for the past year of £4,425. As a result of the greatly increased cost of maintaining the school the council has had to increase the school fees as from September next for all boys. For many years there has been a mortgage of £14,000 on the college lands and buildings; the interest on the mortgage is higher and a sum of £6,000 must be paid off at once. The council has decided to create mortgage debenture bonds of £100 at 5 per cent., on the security of the college land and buildings, up to the amount of £25,000. The council is confident that many friends of the college will take up these debentures, and thus show their appreciation of the good work carried out not only by the college itself as an educational institution, providing a first class education for the sons of medical men at low cost, but also by the Royal Medical Foundation attached to the college, in assisting necessitous medical men, their widows and families.

MEDICAL GRADUATE WORK IN LONDON.

A CONSIDERABLE amount of post-graduate work has been arranged in London during the summer months, and within the next few weeks additional courses are likely to be announced. At the National Hospital for Diseases of the Heart a course extending over two weeks will begin on Monday, July 19th. Work will begin at 10 a.m., the first session being devoted to practical instruction in graphic methods (including the polygraph and electrocardiograph); at 11.15 laboratory and clinical demonstrations will be given illustrating the physiology, pathology, and therapeutics of the heart and circulation; clinical work in the wards and out-patient department will occupy the afternoon, and a lecture will be delivered at 5 p.m. The number of entries for this course is limited, and it is now almost complete. The North-East London Post-Graduate College (Prince of Wales's Hospital, Tottenham) has arranged, in conjunction with the Fellowship of Medicine, an intensive course during the same period covering the various departments of medicine and surgery. Demonstrations will be given each day at 10.30 a.m., 11.45 a.m., 2 p.m., and 3 p.m. A lecture (open to all qualified practitioners without fee) will be delivered each day at 4.30 p.m. Luncheon will be obtainable in the neighbourhood of the hospital, and tea will be provided at 4 p.m. Courses of lectures are now being given at the London Hospital and the Cancer Hospital. At the former Dr. Theodore Thompson and Dr. George Riddoch are giving a course on neurology on the Tuesdays and Wednesdays in July and August at 2 p.m., ending on August 18th. At the Cancer Hospital a course of clinical lectures on the diagnosis and treatment of cancer is being given on the Tuesdays and Fridays in July and August at 4.30 p.m. Mr. Victor Bonney has resumed his "Talks on Gynaecology" at the Middlesex Hospital each Saturday morning at 10.30 during July and August. The Wednesday afternoon lectures at Queen Charlotte's Hospital come to an end on July 28th. For September a course of proctology is being arranged at St. Mark's Hospital, City Road, and the postponed course on spa treatment will open at Bath on September 20th. The *Bulletin* of the Fellowship of Medicine contains the detailed syllabus of these courses, together with an extensive list of daily hospital appointments open to members of the Fellowship of Medicine. Graduates who intend to devote any portion of their time to study in London are invited to communicate with the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1, stating the class of work in which they are most interested.

PRESENTATION TO SIR JOHN MACALISTER.

The presentation of a testimonial to Sir John MacAlister, subscribed by his numerous friends, took place at the house of the Royal Society of Medicine on July 7th, when Sir Humphry Rolleston, as the last act of his presidency, handed over to Sir John a cheque for £711. Sir Humphry said that those who had subscribed to the testimonial came from a far wider circle than the Fellowship of the Society; at the same time it was fitting that the ceremony should take place at the Society's house, for it was impossible to think of Sir John MacAlister without thinking of the Royal Society of Medicine. His friends knew him as a most unselfish and devoted comrade, capable not only of warm sympathy, but of promptitude, even sometimes of impetuosity, in rendering help. The late Sir William Osler had most happily described him when he said that he was "the man who poked the fire." The treasurer of the testimonial fund, Sir Arbuthnot Lane, joined in Sir John's praises, laying particular stress on his patience in the mastery of detail; and the Secretary, Mr. Percy Dunn, indicated from how far afield many of the contributions had come; there were subscribers in Bombay, Calcutta, Adelaide, Mombasa, and various cities in the United States, and one contribution from Peking. Sir John MacAlister, after expressing his thanks for the gift, said that he had never served the Society for money. As a youth he chose medicine for the love of it, but circumstances foiled his ambition, and, largely through the help of Sir Clifford Allbutt, he secured the post he had most coveted—that of librarian of the old Society in Berners Street. There he had hoped still to find opportunity for the pursuit of his medical studies, but as he became more and more absorbed in the Society's affairs and saw the Society to be an entity capable of great expansion, the idea of a medical career for himself was finally abandoned. After a grateful tribute to his staff, he thanked various officers of the Society, past and present, in particular the retiring president, who, he said, had taken a more intimate and affectionate interest in the work of the Society than any president in his experience. When the Wimpole Street building was erected a duplicate set of keys was made for the president's benefit, but they had hung listless on their ring until Sir Humphry Rolleston's tenure of office, when they had been used, and used constantly.

A PIONEER IN AMERICAN NAVAL MEDICINE.

In an article[1] based on much literary research, especially into many "Officers' Letters" scattered through the volumes covering the years 1809 to 1848 in the library of the United States Navy Department, Captain F. L. Pleadwell, M.C., U.S.N., gives a biography of William Paul Crillon Barton (1786–1856), whose influence on the medical and sanitary reform in the American Navy recalls that of Sir Gilbert Blane at a rather early date in the Royal Navy. Barton came of a literary family, and, as a contemporary writer remarks, "his forebears were eminently qualified to infuse into his mind the rudiments of knowledge and the principles of virtue." His brother, John Rhea Barton, was a distinguished surgeon and, as the inventor of Barton's bandage, is still remembered; his uncle, Benjamin Smith Barton, was professor of botany and in later years succeeded Benjamin Rush as professor of the theory and practice of medicine in the University of Pennsylvania. Called William after his father, the future naval surgeon received a classical education at Princeton, where, like the other members of his class, he assumed the name of some celebrated character—in his case that of Count Paul Crillon whose initials he retained throughout his life. After qualifying in 1808, he practised for a year in Philadelphia, and then entered the American navy, in which he distinguished himself by his professional skill, and particularly by his bold and fearless advocacy of necessary reforms in the medical department and of improvement in the status of the naval surgeon. During his periods of shore duty he was most active, publishing in 1814 his *Treatise containing a Plan for the Internal Organization and Government of Marine Hospitals*, and in 1830 another entitled *Hints for Naval Officers Cruising in the West Indies*. In 1815 he succeeded his uncle as professor of botany in the University of Pennsylvania, and on this subject also he wrote. When the Bureau of Medicine and Surgery in the Navy Department was instituted he became the first incumbent (1842–4), and in this capacity corrected numerous abuses—not, however, without encountering opposition and unpopularity, so that after eighteen months he expressed his "earnest wish to retire from the scene of unavailing efforts." He opposed the introduction of the title "surgeon-general," which would otherwise have been his, and it was not brought in until 1869. He was a remarkable personality; he was vehement in manner, and a vein of irony and sarcasm was perceptible in almost everything he said; he had the eccentricity of genius, which was prominent in his dress. He was an accomplished performer on the violin and flute, and a vigorous advocate of temperance, and in his *Hints for Naval Officers* delivered himself as follows: "A brandy-drinking physician! I cannot conceive of such a thing. I will not admit it to be possible. I trust that there are none in the navy." Perhaps it was more than a coincidence that soon after this expression of opinion he was directed to hold himself in readiness for duty in a ship called the *Brandywine*.

A MEETING of the Medical Board of the International Red Cross League was held in Geneva during the first days of this month. It was attended, among others, by Sir George Newman, Medical Officer to the Ministry of Health and the Board of Education, and by Sir Walter Fletcher, Secretary to the Medical Research Council.

DR. RICHARD A. BERRY, Professor of Anatomy in the University of Melbourne, has been appointed Stewart Lecturer for 1921 in that university. The lectureship was founded by the late Dr. Stewart to provide for the delivery of three lectures in Melbourne on some subject of national importance to Australia. Professor Berry has recently, in conjunction with Mr. S. D. Porteus, Director of the Research Laboratory of the Training School at Vineland, New Jersey, issued a report describing a practical method for the diagnosis of mental deficiency and other forms of social inefficiency. Professor Berry will devote his Stewart course to this subject.

THE Honorary Fellowship of the Royal College of Surgeons of England was, on July 8th, formally conferred on four distinguished foreign surgeons: Professor A. Depage of Brussels, M. Pierre Duval of Paris, Professor John Finney of Johns Hopkins University, Baltimore, and Dr. Charles H. Mayo of Rochester, Minnesota, whose brother, Dr. William Mayo, received the same honour in 1913. The admission of the four new honorary Fellows was the first official act of the new President of the College, Sir Anthony Bowlby, who had been elected to the office at the meeting of the council on that day. Sir Anthony Bowlby, K.C.B., K.C.M.G., K.C.V.O., became a Fellow in 1881, and, after the retiring president, Sir George Makins, is the senior member of the council, having held office since 1904. He was re-elected for a further period of five years at the head of the poll on July 2nd. Last year he was appointed senior vice-president of the College, and retired after long service from the post of surgeon to St. Bartholomew's Hospital. He was Bradshaw Lecturer in 1915 and Hunterian Orator in 1919.

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[1] *The Military Surgeon*. Washington, D.C., 1920, xlvi, 241-281.

ANNUAL MEETING NOTES.

SECTION OF SURGERY.

A RUNNING account of the first two days' proceedings was given in our last issue. Both the scientific and general interest of the Section continued to be well maintained on the third day of meeting, Friday, July 2nd. Under the chairmanship of Mr. Harry Littlewood, C.M.G., a vice-president of the Section, the morning sitting was devoted to a discussion on the end-results of peripheral nerve injuries treated by operation. In leading, Sir William Thorburn presented some general considerations and summed up the recent work on the subject. Apart from strict anatomical continuity, at which they had always to aim, a good functional result required that a sufficient number of axons should enter a sufficient number of peripheral sheaths capable of leading them in the right direction, and that meant that motor axons should join with motor axis cylinders and sensory with sensory. They were faced with the question of shunting off axons into peripheral channels: macroscopic, as when the proximal end of the hypoglossal was attached to the distal end of the facial, and microscopic when rotation of the approximated ends of a known nerve occurred. They had, further, after attaining a good anatomical and a satisfactory functional result, to look to the economic value of the end-result. Economically the limb may be of little value on account of psychical conditions, secondary muscular and joint changes, and on account of a condition he had called local ataxia, where visual control was required by the patient for the true function to be performed. He thought from a study of published papers that a perfect neurological result was rarely if ever attained; good results were obtained in somewhere between one-third and two-thirds of all cases. Nerve grafting he regarded as only a last resort, and he was more than dubious of its value. Nerves supplying large muscles of homogeneous type (musculo-spiral) recovered better and more quickly than nerves whose distribution was small and complicated (ulnar). Time required for recovery was very great; the down-growth of axons was regarded as at the rate of 1 mm. per day, and it was not wise to take too rosy a view of these cases. Mr. Percy Sargent dealt with some practical details. In his view direct end-to-end suture was the only practical means of restoring conductivity. The criteria of good "late-results," a term preferable to "end-results," ought to be specified. Satisfactory evidences of nerve regeneration might be found in a limb more or less functionless, and apparently good functional results might be obtained in a limb upon which the patient had concentrated all his powers, making it perform what after all were only "trick movements." Sensibility as well as muscular power must be restored for the regaining of useful function, and this restoration varied in importance with different nerves. In this connexion he wished to emphasize the importance of re-education, and pointed out how better standards of comparison must be instituted. A second group of cases requiring operative treatment was concerned with morbid conditions of an injured nerve evidenced by nutritional and vasomotor changes in its area of distribution and by causalgia. In both conditions he advocated treatment by operation, commending alcohol injections in causalgia. An animated and informing discussion was carried on by Miss Forrester-Brown, who narrated some results obtained by Sir Harold Stiles; Mr. Copland of Leeds; Mr. Joyce of Reading, an advocate of a method of double lateral implantation of the wide-apart cut ends of a nerve; Mr. Bristow of Shepherd's Bush; Mr. Naughton Dunn of Birmingham. Dr. L. E. Shore, of Cambridge, pointed out that perfect anatomical end-to-end suture was impossible, there was constant twisting and changing of position of axis cylinders in their downward progress. It was thought that there were two classes of motor nerves, one for mass movements, as the musculo-spiral, and one for detail muscular movements, as the median. The Chairman contributed a few words to the discussion, and the openers replied. Mr. Herbert Tilley followed with an able paper on the inflammatory lesions of the nasal accessory sinuses regarded from the standpoint of the physician and surgeon. The paper was illustrated with many lantern slides, and amply supplemented by a demonstration in the afternoon on endoscopy of the lower air passages and gullet, of which an account was given last week at page 49. Other demonstrations on this afternoon were given in the Pharmacological Laboratory by Mr. Arthur Cooke and Dr. J. W. McNee on the methods of blood transfusion. Major M. Sinclair completed his demonstrations on fractures and their treatment, which were so successful on the two previous afternoons, by a lantern exhibition showing the results obtained by his methods. This was enthusiastically received by a good audience, who, on the invitation of Professor Griffiths, accorded Major Sinclair hearty thanks. Sir George Makins, at the close of the morning session, expressed the gratitude of the members of the Surgical Section to the Secretaries for their enterprise and able management, commending the introduction of the papers by Mr. Kidd, Lieut.-Colonel Elliot, and Mr. Tilley on subjects which though not actually within the sphere of general surgery, were intimately related to it. The afternoon demonstrations were a new feature of the meeting; the large and keen audiences were a clear indication of the high value placed upon the efforts of the demonstrators, Major Sinclair and Messrs. Cole, Gillies, Cooke, McNee and Tilley, whose work during the war was so widely known, and whom very many members of the Section were desirous of meeting personally.

THE POPULAR LECTURE.

THE Popular Lecture of the British Medical Association was delivered in the Examination Hall at Cambridge on Friday of the week of the Annual Meeting by Dr. G. S. Graham-Smith, F.R.S., Lecturer in Hygiene in the University of Cambridge. He dealt summarily in three-quarters of an hour with the anatomy, life-history, and habits of flies. Sir James Barr was in the chair, and in introducing the lecturer alluded to the extraordinary fly-infestation which was experienced during the Mesopotamian campaign, when flies were actually eaten in multitudes because they could not be brushed off the food. Dr. Graham-Smith touched on the relations between common flies and disease, especially the guilt of the house-fly in conveying summer diarrhoea, and his admirable lantern views enforced the moral, if any such enforcement were necessary. From the point of view of disease, he said, the fly population might be divided into two categories—namely, flies which disseminated disease by the fouling of food through their faeces or vomit, and the flies which introduced the germs of disease into the human organism by biting. He confined himself almost entirely to flies of the former description, of which the common house-fly, *Musca domestica*, was the most familiar. He included, however, other species, such as bluebottles and greenbottles, also the stable-fly, *Stomoxys calcitrans*, which, unlike the house-fly, was able to bite, and was often mistaken by those whom it attacked for an ill-natured house-fly which had developed a sort of insectile rabies. By means of some good photomicrographs and drawings shown through the lantern, Dr. Graham-Smith described in detail the various parts of the fly's anatomy, its suctorial mouth and elastic abdomen, and then took his audience through the four stages of its history—the egg, the larva, and the pupa, followed by the emergence of the perfect fly. A good deal was also said on the subject of flies as parasites and the parasites of flies. Not only did mites infest certain flies, but it appeared that the eggs, larvae, and pupae, as well as the finished product, might all have to stand host to unsolicited guests—another instance of the bewildering arrangement whereby "the little fleas had lesser fleas, and so *ad infinitum*." The unpleasant habits of the fly, particularly in breeding on slimy refuse, and also regurgitating its food—the vomit marks of the fly were found in certain circumstances to be more than twice as numerous as the marks of the faeces—were touched upon, and altogether the fly was represented as a creature for which little that was good could be said. But Dr. Graham-Smith concluded his lecture by reading a whimsical account of the supposed observations of a scientifically minded fly on the curious actions and manners of a human being who got in its way, which suggested that the fly might have something to say for itself. A vote of thanks was warmly accorded to the lecturer.

Medical Notes in Parliament.

Tetanus in War.

In reply to Mr. Robert Young, on July 6th, Mr. Churchill said that six cases of tetanus occurred among other ranks wounded or injured in action during the South African war, or an attack rate of 0.28 per 1,000, and three deaths, or a death rate of 0.14 per 1,000. There were no cases of tetanus among officers. He was unable to give statistics with regard to the Russo-Japanese, Crimean, and Franco-Prussian wars. On July 8th Mr. Waterson inquired as to the incidence of tetanus in the recent war as regards wounded men brought to England, wounded men nursed in France or other parts of the Continent, wounded men in Mesopotamia, and wounded men in Gallipoli and Egypt and other theatres of war, giving the attack rate and the death rate per 1,000 in each case. Mr. Churchill regretted that complete statistics were not yet available. For the period from August, 1914, to December, 1918, the number of cases of, and deaths from, tetanus reported in France, Belgium, and the United Kingdom among the troops wounded in France and Belgium gave approximately an attack rate of 1.22 per 1,000 and a death rate of 0.49 per 1,000. He had no figures at present regarding the incidence of tetanus in the other theatres of war mentioned, but was informed that very few cases occurred in any of them.

Future of the Indian Medical Service.—Sir W. Joynson-Hicks asked, on July 12th, whether the Secretary for India had reached a decision as to the future of the Indian Medical Service. Mr. Montagu replied he would be in a position to decide on this question and to make an announcement when he received the Government of India's recommendations on the Reports of the Army in India Committee—in so far as it dealt with military medical organization in India—and of Sir Verney Lovett's Committee on Medical Services in India. The two Reports had to be considered together. Copies of the Lovett Committee's Report for publication were on their way to England, and he hoped to publish both reports simultaneously, very shortly. Meanwhile, copies of the report of Lord Esher's Committee had been sent to the Government of India, which would forward its views on both reports as soon as possible.

Colonial Medical Service.—In reply to Lieut.-Colonel Fremantle, on June 30th, Lieut.-Colonel Amery, Under-Secretary Colonial Office, said that the Committee on the Colonial Medical Service had not yet presented its report, but he believed it was being printed at this moment.

Sickness Insurance.—Asked by Mr. Charles Edwards, on July 1st, whether he was disposed to accept an amendment of the National Insurance Act so as to give the same sickness benefits to persons over 70 as for those under that age, Dr. Addison declared himself unable to take up such a suggestion. The extension of sickness and disablement benefits to persons over 70 would necessitate an increase in the contributions payable by all insured persons throughout the whole period of their insurance, and the only persons who would derive any advantage from such increase would be the very small proportion who continued in employment up to or beyond the age of 70. The extension would also involve great administrative difficulties, as, in the case of the aged, the incapacity for work through sickness was not distinguishable from infirmity due merely to old age. The experience of friendly societies had shown that the risk was not one which could be properly covered by insurance. Provision for the needs of aged persons was already made under the old age pensions scheme.

Lincoln Friendly Societies' Dispensaries.—In reply to a question by Mr. A. T. Davies, on June 29th, as to why the war allowances were being withheld from medical officers of the Lincoln Friendly Societies' Dispensaries, the Minister of Health said that war allowances were being paid to approved medical institutions which complied with the condition that the accounts and particulars of membership should be furnished to establish the case for a grant and to enable the amount of the grant to be measured. The instructions issued on October 15th, 1915, were not relevant to the case. If the Lincoln Friendly Societies' Dispensaries furnished the particulars required, the case for a grant would be fully and impartially considered.

Cost of National Insurance.—Replying to Mr. R. Young, Dr. Addison, on July 12th, said that the total cost of National Health Insurance from its inception to December 31st, 1919, was in round figures £190,000,000; the amounts paid in benefits and administration were £99,000,000 and £25,000,000 respectively, leaving a balance in reserve at that date of £66,000,000.

General Nursing Council.—Mr. Alfred Davies asked the Minister of Health, on July 7th, whether he appointed the present Chairman of the General Nursing Council set up under the Nurses' Registration Act, without consultation with the members of the Council. Mr. R. Richardson asked whether the Chairman of the General Nursing Council had neither experience nor knowledge of medical or nursing matters to enable him to understand and to guide the Council in its deliberations on professional subjects. Dr. Addison replied that the Council had to prepare statutory rules and to perform judicial functions in relation to the removal of unfit persons from the Register. In view of the amount of quasi-legal work involved, he thought it necessary to appoint a chairman with legal experience, and he was fortunate in persuading Mr. Priestley, K.C., to accept the post. He was not under any obligation to consult the members of the Council, and he took full responsibility for the appointment. There was no foundation for the suggestion that the Council had been hampered; on the contrary, it continued to make rapid progress.

Income Tax of Residents Abroad.—In Committee on the Finance Bill, on July 7th, on the clause which, while broadly excluding from relief in respect of income tax persons living abroad, makes an exception in favour of an income taxpayer "resident abroad for the sake of health," Mr. Godfrey Locker-Lampson moved an amendment to the effect that the exception should apply equally to a husband living abroad on account of his wife's health. After some discussion the amendment was withdrawn on a promise from Mr. Baldwin that the matter should be looked into before the bill was taken on Report.

Ministry of Pensions.—Since April 1st the number of disabled ex-service men employed on the temporary staff of the Ministry of Pensions has been increased from 3,465 to 3,954. The total number of ex-service men now employed is 10,235; the number of women employed is 14,202; of the latter number at least 5,000 are engaged on such work as cleaning. The total staff of the Ministry of Pensions is now 25,070, which is an increase of 16,509 in little more than a year. Mr. Chamberlain states, however, that he is satisfied that every effort has been made to keep the number at the lowest limit. During the last year, the number of persons drawing benefit has almost doubled, and various institutions and hospitals have been transferred to the management of the Ministry. He is assured that the time is in sight when the volume of work will automatically begin to decline and the staff be proportionately reduced.

Slum Area Conditions.—In reply to Lieut.-Colonel Fremantle, on June 30th, the Minister of Health, after mentioning that the interim report of the Slum Areas Committee dealing particularly with the London problem had been published, said that it was unfortunately not practicable, save in so far as reconstruction was possible without material displacement of the population, to deal on a large scale with slum areas, except in the preparation of schemes, until much more progress had been made in providing new houses. This was an additional reason why it was important that the London County Council should press forward their big housing schemes with all dispatch.

The Definition of Total Disablement.—In reply to Mr. R. Young, on July 1st, who asked whether the term "totally disabled" was merely a pension classification or whether it meant totally unable to follow any trade or profession, Mr. Macpherson said that the award of a pension at the maximum degree of disablement did not necessarily mean that the pensioner was totally unable to follow any trade or profession. The assessment of a disablement pension was based on the medical aspect of the man's disability. He could not state the number of men in receipt of maximum pensions who were in employment. Pensions awarded on the basis of 100 per cent. disablement were in many cases reduced when a fresh medical examination revealed an improvement in the man's physical condition.

Hospitals for Pensioners.—Sir H. Harris asked whether the 3rd London General Hospital, which was to be closed on July 31st, had been offered to the Ministry of Pensions and declined, and whether he could state the number of war pensioners now receiving treatment in civil hospitals. Mr. Macpherson replied that the hospital mentioned had been offered to the Ministry; but the accommodation was considered less suitable for the requirements of the Ministry than that of another hospital, the transfer of which was being considered. The number of war pensioners now receiving treatment in civil hospitals was approximately 15,000.

Small-pox in Glasgow.—In reply to Mr. Waterson, on July 7th, the Solicitor-General for Scotland (Mr. C. D. Murray) stated that the number of cases of small-pox in Glasgow this year up to July 7th was 306.

Answers in Brief.

The Mount Pleasant Hospital, Chepstow, costing £110,000, has been transferred to the Ministry of Pensions.

The approximate number of missing officers and other ranks of the Regular Army and Territorial Force in all theatres of war respecting whom no definite information has been received, and whose deaths have now been officially accepted upon lapse of time, is 99,868.

The number of licences granted on June 1st for the sale of Grade A milk (certified) was eight in England and Wales, and for the sale of Grade A milk 12 in England and Wales and 11 in Scotland. No licences for the sale of certified milk were granted in Scotland.

Dr. Addison states that steps have been taken to bring before local authorities the utility of army huts and hostels for temporary housing purposes. The number so far acquired for conversion will provide accommodation for over 3,000 families.

The question of special grants to naval officers to meet the cost of providing new peace time uniforms is under consideration. Such grants have already been made to army officers.

The head quarters school of army sanitation is now at Blackpool, and is to be established permanently at Aldershot.

The Ministry of Transport states that the question of speed limits for motor vehicles is included within the terms of reference of the Departmental Committee on the Taxation and Regulation of Road Vehicles; legislation on the subject would not be attempted until after it had reported.

England and Wales.

RELIEF FOR THE SHORTAGE OF HOSPITAL BEDS IN SHEFFIELD.

THE serious shortage of beds in the Sheffield hospitals has induced the Sheffield Division of the British Medical Association to approach the two boards of guardians in the area with the suggestion that some beds in their institutions might, in order to meet the emergency, be used temporarily for other than Poor Law patients. We are indebted to Dr. Henry Brown, the Honorary Secretary of the Division, for an opportunity of reading the replies received. The reply of the Sheffield Union is to the effect that its hospital is fully occupied. It contains 734 beds (men 339, women 215, children 180), but one of the children's wards, containing 25 cots, is in the hands of the painters, and a block is closed for lack of nursing staff, so that there are only 678 beds and cots available. On a recent date there were 160 beds and cots empty, but of the adult beds 24 are reserved for influenza and phthisis. Of the cots some are reserved for newborn and suckling babies, for children suffering from syphilis or other contagious diseases, and others for influenza and whooping-cough; there has been difficulty in separating cases of infectious diseases. The net result is that at present the margin of beds vacant is, in the opinion of the medical superintendent, Dr. J. Clarke, too small to make it possible for the Sheffield guardians to offer beds for the purpose desired.

The Ecclesall Hospital, on the other hand, is in a position to offer 100 beds for other than distinct Poor Law cases—40 surgical and 40 medical, divided between the sexes in equal portions, and 20 for children. The hospital contains 400 beds, and has a well-equipped operating theatre and *x*-ray department. It has two medical officers and a radiologist; the medical staff is quite prepared to deal with an increase of surgical work. There are also two consultants to the hospital, whose services can be obtained when necessary. In the ordinary way the method of admission to the hospital must follow a specified course. The district medical officer visits the patient, and certifies that he is apparently in poor circumstances, and should be admitted to hospital. His certificate is handed to the relieving officer, who, after obtaining particulars of the patient's means and family, gives an order for admission. The guardians have found that persons have objected to inquiries into their circumstances and family concerns to so great an extent that, rather than enter a Poor Law hospital, they have preferred to forego hospital treatment altogether. The duty of the guardians is to collect from the patients or their relatives as much as they can afford towards the cost of maintenance, but no distinction in treatment is made between persons who can afford to pay the full cost, or less, or nothing. The guardians have now, in order to meet the present emergency, decided to forego these formalities, and have notified that if any medical man attending a patient in the union's district considers that his patient should have hospital treatment, and notifies the relieving officer of certain particulars it is necessary for the guardians to have, the relieving officer will immediately arrange for the admission of the patient. If the patient is able and willing to pay 24s. 6d. a week towards the cost of his maintenance, it will not be necessary to make any inquiries into his means. If he is not able to pay that amount, the guardians will be obliged to ask further questions as to what he or his relatives can afford to pay. The medical officer of the hospital will have authority to admit cases of emergency at once, and an ambulance will be available.

Scotland.

NEW BUILDINGS OF EDINBURGH UNIVERSITY.

THE KING, who was accompanied by the Queen and Princess Mary, laid the foundation stone of the new buildings at Liberton for the University of Edinburgh on July 6th. In his reply to an address by the Vice-Chancellor, the King congratulated the University on making timely provision for an even greater improvement in scientific research and education. Afterwards the Queen received the honorary degree of LL.D. and signed the album of honorary graduates.

HONORARY DEGREES AT EDINBURGH.

The University of Edinburgh, on July 8th, honoured certain of its Emeritus Professors by conferring on them the honorary degree of LL.D. In presenting Professor Francis M. Caird, the Dean of the Faculty of Law said that his name

> has long been a household word for supreme skill in all branches of surgery, systematic and operative, and for clinical teaching of surpassing clearness and incisiveness. In the true spirit of science he has domesticated among us many Continental improvements in his art, neither offended by their novelty, nor prejudiced by their foreign origin. His great accomplishment as a surgeon and his lovable qualities as a man are eminently deserving of the best honour the University has to offer.

In presenting Professor William Russell, the Dean said:

> Professor Russell's long and distinguished teaching record, first in the extra-mural school and then in the Chair of Clinical Medicine, entitled him to rank with the great Edinburgh teachers who have extended the influence of our medical school to the ends of the earth. His comprehensive knowledge made him a reliable guide through the labyrinth of medical theory and practice, while his original researches into the nature of cancerous cells and diseases of the circulation have established his fame as a pioneer in therapeutics. Two causes in particular have always found in him a powerful protagonist—the one, the open door for the medical education of women; the other, the maintenance of the independent status and the honourable traditions of his profession intact and unsullied.

Among other recipients of the same degree on this occasion were Mr. Rudyard Kipling; Dr. George Saintsbury, Professor-Emeritus of English Literature; Mrs. George Kerr, a member of the board of managers of the Edinburgh Royal Infirmary; and Miss S. E. S. Mair, who has done much for women's education in Edinburgh.

SMALL-POX IN GLASGOW.

Hopes founded upon a reduction a fortnight ago in the number of cases of small-pox in Glasgow have been falsified; sixteen new cases were admitted to the hospital on July 3rd and 4th. They came from various parts of the city, and included ten adults and six children.

Correspondence.

FUTURE PROVISION OF MEDICAL SERVICES.

A Successful Cottage Hospital.

SIR,—The fact is now pretty generally recognized that the general practitioner requiries more facilities in his work, especially in the way of institutional treatment. This has been emphasized by recent expressions of opinion by Sir Clifford Allbutt, Sir George Newman, and also by the Consultative Council under the chairmanship of Lord Dawson, which advises the Ministry of Health.

As long ago as 1909 I had the honour of addressing the Glasgow and West of Scotland Branch of the British Medical Association on this subject, and then, as now, I am strongly of opinion that the cottage hospital worked on proper lines provides the necessary facilities.

It is certain that without the assistance which an institution can give in the way of a nurse and operating room it is difficult to carry out modern asepsis, and a great deal of minor surgery, which it is both profitable and educative for a practitioner to do, must either be neglected or sent elsewhere.

It is also certain that the diagnosis of many doubtful cases of disease becomes clear after a few days of continuous observation in a hospital bed, aided by such help in examination as a hospital equipment should afford.

Some doubts have been expressed by practitioners as to the practicability of working small local hospitals, or primary centres as they are called by the Consultative Council, and it may be useful to refer to a cottage hospital here which has been in existence for over twenty-five years, and which has been successful in supplying the facilities referred to.

Situated in the chief town of an island with a resident population of about 12,000, it is used and supported by all classes of the community. It contains two wards of five beds each and three private rooms, an operating room, a small outdoor room, and an *x*-ray room. Unfortunately there is no pathological department. It is staffed by a matron, two nurses, and two probationers. All the practitioners in the island send patients to the hospital and attend them there, making their own arrangements about the payment of fees.

The outdoor department is used only when patients are sent there by their doctor to have something done or to have some examination made, except in so far as it is used as a child welfare centre. The management is in the hands of a committee which includes all the practitioners.

The expenses of the hospital, which now amount to about £1,400 yearly, are met by income from endowment, from subscriptions, but largely from payments made either by patients or by public bodies using the hospital. The patients pay from 7s. to 21s. weekly in the ward and £2 2s. in the private rooms. A few are admitted free. The public bodies which make payments are the National Insurance Committee for Sanatorium Benefit (non-pulmonary tuberculosis), the Highlands and Islands Medical Service Board, the Education Authority, and the Ministry of Pensions for disabled soldiers and sailors. The Scottish Board of Health pays an annual sum for the use of the outdoor department as a maternity and child welfare centre, and also pays the medical men for work done there, all of them taking a share in this as in the other public service work. For the last four or five years the income has somewhat more than balanced the expenditure, and though regular charges are made for admission advantage is freely taken of the hospital, and it is one of the most popular institutions on the island.

The advantages which the community derives from such an institution are very great. Many lives have been saved by operations requiring immediate performance. Many patients are saved from going on the waiting list of a general hospital, and are enabled to have treatment carried out by a doctor of their own choice and near their home surroundings. Though there is no official relation between the cottage hospital and the general hospital as is contemplated in Lord Dawson's interim report, use is freely made of the services of consulting surgeons and physicians from the general hospitals in Glasgow.

The advantages to the local medical men are hardly less evident than those to the public. Much educative work can be done, which leads to a higher standard of practice, and naturally to more remunerative work. It may be that insured persons receive more treatment than is demanded by the regulations, but this in the long run is no disadvantage to the panel practitioner. Another advantage to the doctors is that they are all enabled to take a share in work paid for by public bodies, which in other places is often done by whole-time appointed men.

Though the doctors are on an equal footing, each doing the work he feels inclined for, some specialization has naturally occurred, and this has led to much good co-operative work.

Difficulties might have been expected to arise from the fact that about half a dozen doctors have access to the hospital simultaneously, but as a matter of fact no such difficulties have arisen.

The hospital has always been fortunate in having a good matron, which helps much in the smooth working of the place.—I am, etc.,

Rothesay, July 11th. **J. N. MARSHALL.**

SIR,—The importance of securing a full and fair discussion by the medical profession generally of the report of the Consultative Council must be my excuse for offering a few suggestions which may help towards this end.

1. *Objections to the Report.*—The most common criticism is that it is visionary and hopelessly unpractical from the financial side. Sir James Barr, speaking at the Annual Representative Meeting, is reported to have estimated the expenditure for the first year alone at £1,000,000, and it is assumed that this expenditure would be in addition to all the existing costs. This estimate may be regarded as a perfectly logical one if the report is taken as it stands without allowing for the possibilities of economies in the existing health services to which the nation is already committed. The fact is that the budget, as it could be drawn upon the basis of the report, is one almost entirely of new commitments, without at all clearly showing the expenditure which these would replace.

2. *Existing Communal Services.*—It would be helpful if, side by side with the maps and diagrams in the report, there could be placed a map of certain typical centres, urban and rural respectively, indicating the provision which is already made from public funds for health services. In this there would be no need to deal with the unknown problems of the future, but simply to record facts. These should take account of the following departments: Public health, education, insurance, pensions, Poor Law, and the special treatment of mental diseases, tuberculosis, venereal disease, and fevers, in addition to maternity and child welfare services, so far as these have been organized. There might thus be recorded:

(*a*) *The buildings* which are in use for preventive and curative services, for laboratories, or for any other purpose in the above departments, including administration.
(*b*) *The staff*, medical, nursing, or administrative, employed, and
(*c*) *The cost* of all of these.

When this has been done it might be useful to give as an appendix the voluntary hospital or nursing provision in the areas and the approximate cost of the same. These figures would indicate the greatness of the problem which has to be faced, which is at present, to most of us, an unknown quantity.

3. *Adaptation of these Services in the New Scheme.*—The whole crux of the situation lies in the practical distribution of the existing services in the new unified scheme of the Consultative Council. The general practitioner is told that his work is the foundation upon which the whole system primarily depends; that he is to have spacious buildings, a competent nursing staff, laboratories, *x*-ray plant, and abundant facilities for modern medical and surgical treatment. This is a tempting bait, but perhaps it is somewhat overdone, and there is little wonder if he is suspicious. He is doubtful, on the one hand, as to the part of the new services which will come into his hands, and on the other hand he greatly fears that his liberty of practice is passing away from him, and that the State medical service which he dreads is coming stealthily along in spite of the evident desire of the Consultative Council to avoid it. There is only one way to dispel these doubts, and that is absolutely plain statements on the whole situation. However difficult the problems may be they must be faced, and better sooner than later. If the profession is to consider, with much expenditure of time and money, all the issues involved, then let the case be fully put before them.

I should like to have emphasized the extreme urgency of the position, but I have already trespassed too long upon your space. Perhaps I may be permitted to add something further on another occasion.—I am, etc.,

London, E.C., July 9th. **CHARLES F. HARFORD.**

PUBLIC HEALTH SALARIES.

SIR,—The discussion at the Annual Representative Meeting of the British Medical Association on the question of minimum salaries for public health appointments has brought to light the existence of strong opposition in certain quarters to the legitimate demands of medical men employed by local authorities. Mr. F. J. S. Heaney's contribution to the debate should be read carefully by every member of the British Medical Association. It is a fratricidal utterance which can only do harm. The public health service has always been starved, but its growth has not been retarded in consequence. It may be that this starvation has actually stimulated its growth. The fact remains that there are at the present moment upwards of 1,000 well qualified medical persons employed who are receiving under £600 a year, and have little chance of improving their remuneration without the assistance of the 23,000 members of the British Medical Association. Of the 1,460 persons in the public health service there are probably not 300 who receive over £750 a year.

The existence of this growing army of underpaid persons is a grave danger to the medical profession, and if allowed to continue may prove before many years the undoing of the general practitioner. He would be well advised not to turn a deaf ear to the call for assistance, for the longer assistance is delayed the more difficult will it be to render efficient aid.—I am, etc.,

W. H. DAVISON.

Birmingham, July 6th.

VACCINAL CONDITION OF SMALL-POX CARRIERS.

SIR,—Dr. Kidd, in his reply to my letter, points out that unrecognized cases of small-pox may occur amongst the unvaccinated as well as amongst the vaccinated. He enumerates two different categories: (1) Those which may occur with a severe type of disease, and (2) those with a mild type; and he suggests, therefore, that even though the whole population were unvaccinated we should not entirely eliminate the unrecognized case, which under modern conditions is such a fruitful cause of the spread of small-pox.

This is true, but I do not think that it materially affects the validity of my argument that our present system of infantile vaccination tends to spread small-pox. It is only very rarely indeed that unrecognized cases occur in unvaccinated subjects when we are dealing with a severe type of the disease. The comparatively few recorded cases have generally been mistaken for purpura haemorrhagica, malignant measles, etc. The patient is always very ill, so that a doctor has to be summoned. The proper safeguard against mistakes of this kind is the adequate instruction of all medical students in the differential diagnosis of small-pox, a part of the medical curriculum which in past years was notoriously neglected.

As regards (2), unrecognized cases in the unvaccinated of a mild type, these may be subdivided into (*a*) where a doctor is called in, and (*b*) where no doctor is called in. In (*a*) a doctor should always be able to diagnose the disease, because, even though mild, the disease is true to type and not highly modified. The proper safeguard against mistakes is again adequate education in diagnosis. In (*b*)—that is, cases which, although unvaccinated, are of such mild and trivial character that no doctor is called in—these only occur when we have to deal with an exceptionally mild strain of small-pox which causes practically no mortality or disfigurement, and is therefore of little account (for example, 1,000 cases in Australian epidemic with only one death). No particular harm is done, therefore, even if some of these cases are overlooked, because, being naturally mild, they breed true and produce only mild cases. Far otherwise is it with overlooked cases of small-pox occurring in vaccinated subjects. Such cases also may be so (apparently) mild and trivial that no doctor is consulted, but the mischief done by them is incalculably greater than by the corresponding overlooked cases in the unvaccinated. In reality these mild vaccinated cases are of a most deadly nature, because their mildness is artificial, being the result of vaccination, and they *do not breed true.* That is to say, when they pass the disease on to unprotected persons the mildness disappears and the disease reveals itself in all its true hideousness, and often with fatal results. It is useless to say that if everyone were protected by vaccination this would not matter. It is quite impossible to protect the whole community, or anything like the whole community, by infantile vaccination. The protection is far too evanescent. Indeed, even with a system of revaccination it is practically impossible to protect the whole community, as Germany has now discovered.

I submit, therefore, that to suggest, as Dr. Kidd does, that unrecognized cases of small-pox sometimes occur amongst the unvaccinated does not destroy the validity of the argument that infantile vaccination, by masking the disease, tends to favour its spread in a virulent form.

No one has a greater faith in vaccination for conferring immunity on the individual than I have, nor a more profound conviction of its immense value in helping us to fight small-pox, but, like many other good things, it should be "used fresh." Vaccination which is twenty or thirty years old is apt to be a hindrance rather than a help.—I am, etc.,

Leicester, July 3rd. C. KILLICK MILLARD.

The Services.

THE War Office will appoint for four years a Territorial officer of the rank of Major as D.A.D.M.S., East Anglian Division, with the pay and allowances of the rank. He must give his whole time to the work, and will be required to reside in Ipswich or the neighbourhood. Applications should be made to Colonel Gostling, D.S.O., A.D.M.S., the Red House, Chesterton, Cambridge.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

AT the Graduation Ceremonial, held in the M'Ewan Hall on July 8th, the following degrees were conferred:

LL.D. (*honorary*).—Emeritus Professor Francis M. Caird, Emeritus Professor William Russell.

M.D.—G. J. Adams, P. Allan, *D. C. Barron, L. D. Callander, †S. T. Champtaloup, D. Cook, *T. F. Corkill, *J. W. Edington, H. Evans, ‡G. W. M. Findlay, A. W. Forrest, H. J. C. Gibson, J. Gossip, T. P. Heriot, W. N. W. Kennedy, J. Lawson, W. A. Lethem, ‡D. M. Lyon, W. F. M'Lean, F. G. Macnaughton, D. J. M'Rae, J. R. Menzies, G. Nicholson, ‡E. D. Pullon, A. Robertson, J. A. R. Thompson, C. B. Tudehope, *W. G. Wyllie.

D.Sc. (*Department of Public Health*).—S. T. Champtaloup.

M.B., CH.B.—H. Alexander, R. L. Baikie, P. Barlow, G. S. Barnett, R. E. Batson, C. F. Beyers, S. Borochowitz, F. G. H. Brown, K. S. Brown, H. W. Burne, R. M'D. Cairns, G. S. Calver, A. Campbell, §Helen Campbell, H. Cohen, Dorothy Court, J. R. Crolius, M. Danziger, J. Davidson, J. H. Dick, Margaret L. Dobbie, H. J. C. Durward, B. A. G. A. Edelston, §J. H. Fairweather, O. Fitzpatrick, Elizabeth S. Forbes, Dora W. Gerrard, G. M'K. Gibbon, Mary L. Gilchrist, J. A. Gillison, M. S. Goldberg, Jessie Gordon, ‖Janet Grant, A. W. P. Haine, §J. E. Haine, §A. J. C. Hamilton, S. W. Hardikar, Christina M. Hawick, J. P. Hope, J. P. Immelman, W. Isbister, W. Kantor, Eleanor H. Kelly, D. J. A. Kerr, Ba Kin, S. Levey, J. A. L. Loudon, D. I. O. Macaulay, J. F. M'Conchie, Margaret M. M'Dowall, A. G. MacGillivray, §Agnes M. Macgown, §Agnes R. Macgregor, H. MacKay, Florence E. M'Kenzie, Jean R. Maclean, J. McLeman, Jane MacLennan, §Annie S. MacLeod, Jean S. B. M'Neil, P. B. Malherbe, V. G. Massie, R. M'K. van der Merwe, §C. B. F. Millar, Christine G. Mitcheson, D. J. Morrison, Emily M. Mure, A. R. Murray, D. J. T. Oswald, A. S. Paranjpé, W. P. Petrie, ‖K. M. Purves, J. C. Rabie, C. B. Reekie, Ruth J. D. Ritchie, Hera Ross, Annie M. Roxburgh, C. W. Rubidge, Louie A. Rubidge, Helen M. Russell, H. J. E. Schultz, T. Scott, C. Shapiro, G. A. Sinclair, W. A. Sinclair, P. B. Smale, Alice B. S. Smith, Dorothy M. Smith, §T. Sprunt, I. M. Thompson, H. Thomson, Mabel Thomson, Marjorie Thomson, D. L. M'R. Tod, J. C. Truter, T. C. Wakefield, Grace Walker, Edith G. Wilkes, A. A. Wilson, §J. M'L. Young, W. L. Zeeman.

B.Sc. (*Department of Public Health*).—Lieut.-Colonel T. C. Lauder, R.A.M.C.

D.P.H.—G. A. Borthwick, G. Campbell, J. Dick, G. F. P. Heathcote, Wilhelmina W. Hendry, Mary P. Hislop, A. J. Pollock, F. B. Sutherland, J. M. Tyrrell.

* Commended for thesis.
† Highly commended for thesis.
‡ Awarded Gold Medal for thesis.
§ Passed with second class honours.
‖ Passed with first-class honours.

The following prizes, scholarships, etc., were also presented:

Faculty of Medicine.—Thesis Gold Medallists: G. W. M. Findlay, D. M. Lyon, E. D. Pullon. Cameron Prize in Practical Therapeutics: Sir Robert Jones, K.B.E., C.B., F.R.C.S. Eng. and Edin., Director of Military Orthopaedics, St. Thomas's Hospital, and Consulting Orthopaedic Surgeon, Royal Infirmary, Liverpool, for the important advances he has made in orthopaedics and many valuable contributions to the literature of the subject during the past five years. Ellis Prize in Physiology: R. J. S. M'Dowall. Gunning Victoria Jubilee Prize in Materia Medica: F. G. Macnaughton. Ettles Scholarship and Leslie Gold Medal: A. W. Davison. Allan Fellowship in Clinical Medicine and Clinical Surgery: Agnes R. Macgregor. Freeland Barbour Fellowship: Helen Campbell. M'Cosh Graduate's and Medical Bursaries: D. L. M'R. Tod. Beaney Prize in Anatomy and Surgery: A. J. C. Hamilton. Mouat Scholarship in the Practice of Physic: H. W. Burne. Conan Doyle Prize: S. Levey. Annandale Gold Medal in Clinical Surgery: A. J. C. Hamilton. Buchanan Scholarship in Gynaecology: Janet Grant. James Scott Scholarship in Midwifery: D. A. Miller. Scottish Association for Medical Education of Women Prize: Janet Grant. Dorothy Gilfillan Memorial Prize: Janet Grant. Wellcome Medals in the History of Medicine: Gold Medal, A. C. White; Silver Medal, Hilda M. Davis. Pattison Prize in Clinical Surgery: J. M. Black. Wightman Prize in Clinical Medicine: T. Ferguson. Cunningham Memorial Medal and Prize in Anatomy: J. Gray. Whiteside Bruce Bursary: R. C. Burton and Margaret C. Tod, equal.

Faculty of Science.—Baxter Natural Science Scholarship: I. M. Thompson.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony on July 8th the following degrees were conferred:

M.D.—*E. W. H. Cruikshank, *H. R. Souper, J. G. Copland, J. L. Menzies.

The Straits Settlement Gold Medal for the best thesis, handed in during 1918, 1919, or 1920, for the degree of M.D. on a subject dealing with tropical medicine, was awarded to William Linton Millar, M.D. (since deceased).

M.B., CH.B.—†Gertrude H. Lendrum, ‡J. H. Mulligan, ‡Annie Anderson, Emily M. Badenoch, Isobel C. Brown, Enid Calder, Margaret W. Calder, Gertrude E. Cormack, A. A. Duffus, J. B. Duguid, J. G. Elmslie, V. L. Ferguson, G. M. Fyfe, G. M. Gray, ‡J. C. Hall, A. Hastings, Robina Inkster, H. M. Jardine, H. D. Low, †J. D. MacLaggan, ‡Annie E. Melvin, Matilda F. Menzies, ‡Marjory M. Milne, F. D. Ross-Keyt, A. McI. Smith, D. I. Walker, H. T. Wee, Hilda S. Young.

The John Murray medal and scholarship awarded to the most distinguished graduate M.B. of 1920 was presented to Y. G. Murray.

D.P.H.—A. W. H. Cheyne, E. J. Clark, G. W. Elder, T. W. E. Elliott, A. F. Fraser, G. A. C. Gordon, A. Johnstone, S. W. Lund, Maggie F. J. Moir, J. Skinner, J. L. Smith, J. H. Stephen, J. W. Stephen, W. Taylor, J. W. Tocher, B. Yule, §V. T. B. Yule.

*Honours for thesis.

†Passed Final Medical Professional Examination with much distinction.

‡Passed Final Medical Professional Examination with distinction.

§With credit.

UNIVERSITY OF ST. ANDREWS.

THE University Court has appointed Dr. David Lennox of Dundee to be Lecturer in Forensic Medicine.

The following have been approved at the examinations indicated:

THIRD M.B., B.CH.—*Materia Medica:* J. C. Anderson, A. J. Campbell, Cora C. Campbell, D. A. K. Cassells, D. C. Clark, G. R. M. Cordiner, J. Craigie, W. M. Cumming, Jean M. Davidson, Violet C. Dobbie, W. S. D. Elder, R. N. Foggie, C. R. Henderson, Mary M. Jack, W. L. Kinnear, Norah M. Lindberg, Annie T. McDonald, N. McLeod, Jeannie H. Morton, Margaret C. Muir, Janet L. A. Muirhead, R. Norrie, M.A., S. S. Ogilvie, J. E. Overstead, A. Pride, A. B. Richardson, Nora A. M. Rodger, Agnes T. H. Shepherd, Lucy C. Simpson, B. Singh, Edith M. D. Smith, Janet O. Stephen, A. K. Tateson, Frances H. Watson, T. Wilson.

Pathology: F. E. Anderson, J. C. Anderson, Cora C. Campbell, D. A. K. Cassells, D. C. Clark, G. R. M. Cordiner, J. Craigie, W. M. Cumming, Jean M. Davidson, Violet C. Dobbie, W. S. D. Elder, Ruby N. Foggie, P. G. Grant, C. R. Henderson, Mary M. Jack, W. L. Kinnear, Norah M. Lindberg, N. McLeod, Jeannie H. Morton, Margaret C. Muir, Janet L. A. Muirhead, R. Norrie, S. S. Ogilvie, A. Pride, A. B. Richardson, Nora A. M. Rodger, Agnes H. T. Shepherd, Lucy C. Simpson, B. Singh, Edith M. D. Smith, A. K. Tateson, W. Thomson, W. L. Tullis, Francis H. Watson, T. Wilson.

Medical Jurisprudence and Public Health: G. G. Buchanan, T. K. Buchanan, Katharine M. Campbell, Georgina S. Craig, D. W. Dawson, W. S. D. Elder, V. S. Ewing, H. Fisher, Phyllis Fleming, M.A., Annie A. Fulton, A. H. Harkins, L. Jacobs, Isabella D. Kilgour, Nona S. Lesslie, Katharine D. Macfarlane, Elizabeth W. MacVicar, Isobel M. Mansie, J. E. Overstead, R. S. Paton, M.A., J. D. Stewart, Christina J. Thomson, Margaret L. Tod, W. L. Tullis, Margaret H. R. Young.

FOURTH M.B., CH.B.—*Medicine:* Bessie M. Davidson, Mary Ellison, Frances L. Knipe, Margherita M. Lilley, M.A., Christian E. Little, J. B. Macdonald, G. J. Murray, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

Surgery: Bessie M. Davidson, Mary Ellison, Christian E. Little, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

Midwifery: Bessie M. Davidson, Mary Ellison, Frances L. Knipe, Margherita M. Lilley, M.A., J. B. Macdonald, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

SECOND D.P.H. (*Sanitary Law and Vital Statistics, and Sanitation and Epidemiology*): C. Averill, J. E. Cable, Mary L. David, T. Montgomery, A. G. Reekie, G. R. Tudhope, W. A. Young.

UNIVERSITY OF CAMBRIDGE.

DR. SHILLINGTON SCALES has been appointed University Lecturer in Medical Radiology and Electrology.

UNIVERSITY OF MANCHESTER.

THE following have been approved at the examinations indicated:

M.D.—F. A. Bearn, S. L. Heald, N. T. K. Jordan, H. Sheldon, J. F. Ward.

FINAL M.B., CH.B.—N. Abddh, K. V. Deakin, Georgiana M. Duthie, ‡F. R. Ferguson, Evelyn A. Garnett, F. G. Hamnett, J. Harris, Sylvia K. Hickson, E. Jones, F. C. Jones, J. N. Laing, H. A. Lomax, *‡W. E. Mason, Doris B. Norman, Emily M. Peach, G. Sheehan, Constance Snowdon, Annie E. Somerford, §G. L. Taylor, Mary I. Turner, F. A. van Coller, J. B. Wright.

Medicine and Obstetrics: May Blakiston, J. W. Crawshaw, A. M. El Aguizy, H. Tomlinson.

Surgery.—F. H. Anderson, P. Fildes.

Medicine.—Irma M. C. Jehan-sart.

Obstetrics.—H. W. Taylor.

Forensic Medicine and Toxicology. ‖G. V. Ashcroft, E. C. Berg, Nancy E. Bleakley, Muriel Coope, T. E. Coope, Eugenia R. A. Cooper, S. W. Drinkwater, Winifred M. Edghill, T. N. Fisher, Kathleen M. Fullerton, E. Gleaves, Florence M. A. Graham, W. H. Gratrix, A. Haworth, Ruth Hill, C. D. Hough, Violet M. Jewson, Marguerite F. Johnstone, Jessie Kilroe, A. W. Kirkham, R. R. Lane, J. Leather, G. H. Lees, Eva G. Le Messurier, W. L. Maitland, P. B. Mumford, T. O'Brien, L. S. Potter, W. E. Powell, Margaret Pownall, Bertha Renshaw, H. L. Sheehan, Florence G. Sherry, Margaret Single, J. W. Smith, H. Stafford, Doris A. Taylor, S. N. Taylor, Norah M. Walker, S. Wand, S. Waterworth, R. Williamson, J. R. Wright.

Awarded distinction in * Obstetrics, † Medicine, ‡ Surgery, ‖ Forensic Medicine and Toxicology. § First Class Honours.

THIRD M.B., CH.B. (*Pharmacology, Therapeutics, and Hygiene*): F. D. Abbatt, R. Ancerton, J. H. Appleton, Mary W. Atkinson, [illegible] C. Berg, J. E. Bennett, Doris H. Bentham, B. Broman, G. H. Buckley, A. Chadwick, F. W. Clough, H. M. Coope, N. S. Craig, O. M. Duthie, Kathleen M. Eastwood, Beatrice L. Ellison, H. E. Emmett, Caroline M. Edwards-Evans, J. H. [illegible], W. Gerrard, Doris M. Harmann, A. Ingham, E. L. Jo[illegible], Mary Kent, G. L. Meachim, Nora Mills, Winifred H. M[illegible], A. C. Newman, A. A. Pomfret, Hilda Pratt, G. T. Robinson, A. Rosenstone, R. Saleh, Eleanor P. Smith, H. Southworth, G. B. Stenhouse, J. H. Struthers, L. Unsworth, Emmeline Wat[illegible], C. B. V. Walker, Margaret Wild, S. J. Woodall, J. Worthington, J. Yate. *Hygiene:* Margaret Dunn[illegible] Greenhalgh, A. G. Edward-Evans, F. W. W. Fox, C. B. Lakshman, G. A. Lord, Dorothea A. C. Partington, Margaret I. Warburton.

UNIVERSITY OF SHEFFIELD.

THE degree of Ch.M. *ex officio* has been conferred upon Percival [illegible] Barber, Professor of Midwifery, and Arthur Marcus Connell, Professor of Surgery, in the University of Sheffield.

The following candidates have been approved at the examinations indicated:

M.D.—Lydia M. Henry, L. Samuels.

FINAL M.B., CH.B.—Constance M. Chappell.

UNIVERSITY OF LIVERPOOL.

THE following have been approved at the examinations indicated:

M.D.—G. H. Darlington, P. E. Gorst, Mary E. Illingworth, Phoebe A. Ince, S. D. McAusland, F. C. Plummer, H. G. Roberts, J. F. Roberts, R. E. Roberts, M. B. Strock, W. R. Williams.

M.B. AND CH.B., CLASS I.—W. J. Birchall, with distinction in obstetrics and medicine.

PART III. *Medicine, Surgery, and Midwifery:* Esther Ashworth, Evelyn F. Bebbington, G. N. Campey, J. Flanagan, R. O. Jones, T. M. Jones, D. M. Mather, Annie A. Muir, G. H. Potter, Edith M. Seward, Marguerite G. Sheldon, Nellie Wall, D. O. Williams.

PART I.—*Pathology:* J. L. Armour, A. V. Campbell, C. H. R. Carmichael, E. N. Chamberlain, Florence M. E. Davies, Helen M. Duvall, F. H. Edwards, M. H. Finegan, W. M. Frazer, P. R. Hawe (with distinction), A. R. Jones, R. M. Jones, C. L. Kopeland, Beatrice M. Niven, C. Voigt.

PART II.—*Forensic Medicine and Toxicology and Public Health:* O. A. Akjaly, F. H. Alexander, *†G. P. F. Allen, *†J. L. Armour, *†J. R. Bhatia, J. S. Bradshaw, †Doris Brown, †W. E. A. Burton, †Doris M. Cassady, †Mildred M. Clegg, *R. W. Cowie, †A. C. Crawford, †Gladys W. Darlington, †H. S. Fox, †W. M. Frazer, †G. L. Gately, W. S. Gilmour, J. Goldberg, *†S. B. Herd, G. M. Hughes, Isabel E. Imison, E. W. Johnson, Isobel K. Johnstone, *R. J. Jones, Irene E. Kenworthy, A. Livingston, F. Q. McKeown, H. R. Madan, †R. F. J. Martin, †J. H. Moorhouse, M. Newman, †J. B. Oldham, †G. W. Phillips, †Kathleen M. Platt, J. H. Pottinger, †A. McK. Reid, J. K. Reid, †T. R. Roberton, Gladys Rutherford, C. F. H. Sergeant, F. C. H. Sergeant, S. G. Sheir, *†S. S. Shrikanth, W. T. de V. Thomson, *L. F. Unsworth, *†S. V. Unsworth, †C. A. Wells, *†T. A. Williams.

* Distinction in forensic medicine and toxicology.
† Distinction in public health.

D.P.H.—F. A. Belam, J. Cullen, Constance M. Edwards, A. V. Glendenning, H. Middleton, S. R. Richardson, R. Rimmer, A. A. Turner, J. Walker.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B.—PART II (Completing Examination): T. H. A. Pruniger. PART I (only): W. H. Royal.

D.P.H.—C. H. Hart, S. H. Kingston, A. D. Symons. PART I (only): F. V. Cant, A. D. Fraser.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY council was held on July 8th, when Sir George Makins, President, was in the chair.

Special Primary Examination for the Fellowship.

The following regulation was passed: That on account of the delay which has occurred in the demobilization of officers in the army in the East (India, Persia, Mesopotamia, etc.), an additional first professional examination for the Fellowship under war conditions be held in May next, and that it be definitely stated that such examination is to be the last held under special war conditions. The committee will only consider applications for admission to the examination from those who have been prevented from returning to this country by reason of the exigencies of services in the East.

Dental Examiners.

A vacancy occasioned by the retirement of Sir Frank Colyer will be filled at the meeting of the council on July 29th.

Election of Professors and Lecturers.

Hunterian Professors.

Arthur Keith: The principles of craniology applied to clinical and racial problems (six lectures).

W. Sampson Handley: The pathology and treatment of lupus.

W. G. Howarth: Mucocele and pyocele of the nasal accessory sinuses.

C. W. Gordon Bryan: Injuries of the diaphragm, with special reference to wounds involving both thoracic and abdominal viscera.

Harry Platt: The surgery of the peripheral nerve injuries of warfare (two lectures).

A. G. Timbrell Fisher: Loose bodies in joints.

Arris and Gale Lecturers.

F. W. Edridge Green: The cause and prevention of myopia.

J. Faulkner Dobson: The function of the kidneys in enlargement of the prostate gland.

J. Howell Evans: The azygos system of veins in their association with surgical affections.

Erasmus Wilson Lecturer.

S. G. Shattock: Six demonstrations on pathological specimens in the museum.

Arnott Demonstrator.

Arthur Keith: Six demonstrations on the contents of the museum.

Thomas Vicary Lecturer.

Sir D'Arcy Power: The education of a surgeon under Thomas Vicary.

Election of President and Vice Presidents.

Sir Anthony A. Bowlby was elected President, and Sir Charles Ballance and Sir John Bland Sutton Vice Presidents.

The next ordinary meeting of the Council will be held on Thursday, July 29th.

Obituary.

MONTAGU HANDFIELD-JONES, M.D.LOND., F.R.C.P.,

Consulting Obstetric Surgeon to St. Mary's Hospital.

WE announced last week the death on July 2nd, from heart failure following a long illness, of Dr. Charles Montagu Handfield-Jones, the well-known obstetrician and teacher. He was the elder son of the late Dr. Charles Handfield-Jones, F.R.S., and was born on May 12th, 1855. His father was for nearly forty years physician to St. Mary's Hospital, Paddington, and had a considerable reputation in his day, both as a clinician and for his original studies in histology. Both sons entered the medical profession, and the younger, Dr. C. R. Handfield-Jones, formerly physician to the Warneford Hospital, Leamington, is now in practice in the Isle of Wight.

Montagu Handfield-Jones, like his father, was educated at Rugby and at St. Mary's Hospital, where he gained a scholarship in natural science and an entrance exhibition, and had a distinguished student career. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1879, and graduated M.B. of the University of London with honours in obstetric medicine in 1883, in which year he obtained also the M.R.C.P. diploma. In 1886 he proceeded to the M.D. degree, and in 1900 was elected a Fellow of the Royal College of Physicians of London. Dr. Handfield-Jones was for many years lecturer on midwifery and diseases of women at St. Mary's Hospital Medical School, and obstetric surgeon to the hospital. He had been assistant physician to the Chelsea Hospital for Women, and was surgeon to in-patients at the British Lying-in Hospital and consulting obstetric surgeon to the Paddington Dispensary. In 1893 he was appointed an examiner in midwifery to the English Conjoint Board, and in later years he served as examiner in midwifery and diseases of women in the Universities of Cambridge and London, and in the Victoria University of Manchester. He was a past President of the Obstetrical Section of the Royal Society of Medicine and of the Harveian Society of London. In 1895 Dr. Handfield-Jones delivered the Harveian Lectures on the heart in its relation to pregnancy, parturition, and the puerperal state, and he was chosen to contribute the article on the development of modern gynaecology to Allbutt and Playfair's *System of Gynaecology*. Beyond these works he made a considerable number of contributions to the literature of gynaecology and obstetrics, which appeared in this and other medical journals or in the *Transactions* of the Obstetrical Society and of the Medical Society of London.

Thirty years ago, in an introductory address to the students of St. Mary's Hospital, Dr. Handfield-Jones revealed much of his own character and outlook on life. His subject was individualism in its relation to medicine, and he described this quality as the religion and master-principle of the strong man. He insisted that the great enemy of individualism was mental laziness. The gist of his message was that in medical education the aim should be above all to teach the student to think for himself, to believe in his own powers of observation, and to rely upon his own judgement; for the profession of medicine, he held, would rise or fall in the eyes of the world according to the character and attainments of its component members.

DR. ANDREW MITCHELL, who was an outstanding figure among the general practitioners in the north of Scotland, died on May 26th. He was born at Afleck, Aberdeenshire, in 1849, and was educated at the Old Grammar School, Aberdeen, and graduated M.B., C.M. at Aberdeen University in 1872. After holding the appointments of house-surgeon and house-physician at Dundee Infirmary, he succeeded Dr. Leslie in practice at New Deer, Aberdeenshire, where he skilfully and faithfully administered to rich and poor alike for forty-six years. Dr. Mitchell retired on account of ill health brought on through overwork during the influenza epidemic of 1918, and never recovered his strength. He was post office and police medical officer for the district, as well as public vaccinator and Poor Law officer. He was a very keen volunteer during his early days, and was commissioned as surgeon-captain in 1875 to the 3rd Volunteer Battalion Gordon Highlanders. He retired with the rank of colonel in 1908. He received the V.D. for his services. He was a very familiar figure among the sportsmen of the district, being a keen horseman and enthusiastic shot. His unfailing good humour and interesting conversation made him very popular, and his sympathetic nature was appreciated by all. He is survived by a widow and two sons, the elder of whom served for two years during the war in East Africa as captain in the R.A.M.C.

Medical News.

THE Sir Alfred Jones laboratories of the Liverpool School of Tropical Medicine will be opened by Lord Leverhulme on Saturday, July 24th. The ceremony will take place at 3 p.m., and afterwards the Mary Kingsley memorial medals will be presented.

THE annual general meeting of the British Pharmaceutical Conference will be held at Liverpool from July 19th to 23rd.

MANSFIELD House University Settlement, of thirty years' standing, is open to receive as residents men who are interested in and prepared to devote time to social studies and activities. An interesting programme lies before the Settlement in the coming autumn and winter. The Warden, Mansfield House, 89, Barking Road, Canning Town, E.16, will be glad to answer any inquiries.

DR. JOHN FREDERICK WILLIAMS has been awarded the medal of the Order of the British Empire for "courage and devotion to duty on the occasion of an air raid in rescuing persons who had been buried in a cellar of a burning building."

THE offices of the Board of Education are about to be removed from the Victoria and Albert Museum to the premises formerly occupied in King Charles's Street, Whitehall. The Medical Branch will remain at Cleveland House, 19, St. James's Square, S.W.1.

AT the statutory meeting on June 21st the University of Ottawa conferred the degree of Doctor of Literature on Captain J. C. McWalter, M.D., LL.D., High Sheriff of Dublin, and President of the Dublin Branch of the British Medical Association.

THE fifty-seventh annual general meeting of the British Pharmaceutical Conference will be held at Liverpool from July 19th to 23rd under the presidency of Mr. C. A. Hill, B.Sc., who will deliver his presidential address, on progress in science and pharmacy, on Tuesday, July 20th.

MISS MARIAN SCOTT RIDDELL, R.R.C., has been appointed Registrar of the General Nursing Council established under the Nurses' Registration Act, 1919. She was trained at St. Bartholomew's Hospital, and before the war was Matron of the Chelsea Hospital for Women. During the war she served as Matron of the 2nd London General Hospital, and subsequently of the 53rd General Hospital in France, until she was appointed Principal Matron and afterwards Acting Matron in Chief of the Territorial Force Nursing Service.

THE value of chaulmoogra oil in leprosy is well recognized, and various preparations have been made from it in the hope of obtaining one of greater efficacy than the crude oil. Thus several varieties of sodium chaulmoograte have been prepared, and have been used with advantage in India on the advice of Sir Leonard Rogers and others. The United States Public Health Service now announce that an ethyl ester prepared from chaulmoogra oil by Professor L. E. Dean, head of the chemical department of the College of Hawaii, has given very satisfactory results; forty-eight lepers treated with this preparation who were liberated on parole in October, 1919, have since remained free from the disease.

THE third Italian Congress of Medical Radiology will be held in Rome on October 28th, 29th, and 30th, under the presidency of Professor Francesco Ghilarducci, who will deliver an opening address. The chief subjects for discussion will be radio-activity in biology and clinical medicine, the radiological examination of the heart and great vessels, and the radio-therapy of cancer. Those who intend to take part in the congress should communicate not later than October 1st with the secretaries of the congress at the R. Istituto di Elettroterapia e Radiologia Medica, Policlinico Umberto I, Rome.

OUT of 156 clinical thermometers borrowed from doctors and nurses and tested by the Sanitary Bureau of New York City, 84, or 54 per cent., were found to be grossly inaccurate. Legislative action is contemplated.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

I. asks as to certain expenses incurred by him in the course of his professional work as a medical inspector under the Workmen's Compensation Act.

*** The basis of the return is not stated, but the cost of hiring a car for professional journeys is certainly allowable; Since I. purchased a car these expenses have been replaced by the cost of running his own car, but no portion of the outlay on the purchase can be treated as an expense for income tax purposes. If and when I.'s brother acts as his chauffeur, he can deduct the cost, whether incurred in cash payment or by way of providing board and lodging, provided that the amount does not exceed what would be paid to a chauffeur who was not a relative. The sum mentioned appears reasonable. It is, however, perhaps worth emphasizing that if the basis of the declaration as regards receipts is the previous year or three years, the expenses deducted must be calculated on the same basis.

PAROXYSMAL SNEEZING AND COUGH.

A. R. asks for advice in the treatment of the following case:—A man, aged 74, who left Mauritius eighteen years ago, after residing there for thirty-five years, has for thirty years suffered from sudden attacks of coryza and sneezing if he sits in a draught or gets wet. The attacks have become more violent, and are attended by a spasmodic cough, which is not relieved by the ordinary sedatives. An autogenous vaccine has been prepared and twenty injections given without result. He had malaria at one time, and now the only treatment that does any good is fifteen grains of quinine.

LETTERS, NOTES, ETC.

STERILE CATGUT.

THE London Hospital, which is frequently surprising us by new departures, announces that, as it is as easy to make large quantities of sterilized catgut as small, it has been decided to sell the surplus manufactured in its catgut department to other hospitals and to private surgeons. Messrs. Allen and Hanburys have undertaken to arrange for the sales.

THE LATE DR. A. P. SPELMAN.

IN our issue of May 15th, 1920, p. 689, we published an appeal on behalf of the widow and children of the late Dr. A. P. Spelman, of Dunmore, co. Galway, who, when only 26 years of age, was killed by the overturning of his motor car on his return from a visit to a patient. Dr. T. A. Hereghan, who acted as treasurer of the fund, has now furnished us with the following complete list of subscriptions received in response to the appeal.

	£	s.	d.		£	s.	d.
Dr. McArdle, Dublin ...	10	10	0	Dr. Morris, Galway	3	3	0
Dr. B[illegible], Manchester	10	10	0	Dr. Flannery, Hollymount ...	3	3	0
Dr. Moore, Dublin .	10	10	0	Dr. Rendall, Nottingham	3	3	0
Dr. M[illegible]n, Dublin	5	5	0	Dr. P. J. Keneally, Tralee	3	3	0
Sir W. de Courcy Wheeler, F.R.C.S., Dublin ...	5	5	0	Dr. J. MacDonagh, Galway	3	0	0
Dr. V. Tighe, Dublin ...	5	5	0	Dr. Kennedy, Dublin ...	3	0	0
Dr. [illegible], Dublin	5	5	0	Dr. McKinney, Dublin ...	2	10	0
Dr. McLaverty, Dublin .	5	5	0	Dr. O'Hea, Dublin	2	2	0
Dr. Mooney, Dublin ...	5	5	0	Dr. Walsh, Westport ...	2	2	0
Dr. P. J. D[illegible], Claremorris ..	5	5	0	Dr. O'Carroll, Dublin ...	2	2	0
Dr. T. A. Hereghan, [illegible]	5	5	0	Dr. Gray, Ballinasloe ...	2	2	0
Dr. M[illegible], Tullamore .	5	0	0	Dr. Ronayne, Manchester	2	2	0
Dr. Kane, [illegible] .	5	0	0	Dr. Mangan, Carna .	2	2	0
Dr. Melville, [illegible]	5	0	0	Dr. Darcin, Dublin .	2	2	0
Dr. Phelan, Callan .	5	0	0	Dr. McNulty, Killala ...	2	2	0
Captain Richardson, R.A.M.C. .. .	5	0	0	Dr. Martin, Clifton ...	2	2	0
Dr. Cassidy, Lisnaskea	5	0	0	Dr. Elliott, Cookstown ...	2	2	0
Dr. Law, Coleraine	5	0	0	Dr. Peck, Hastings ...	2	2	0
Dr. Mahon, Galway	3	3	0	Dr. Solomons, Dublin ...	2	2	0
Dr. McGuinness, Dublin	3	3	0	Dr. MacLeod, Evesham	2	2	0
				Dr. Powell, Blessington	2	2	0
				Dr. Brennan, Blackrock .	2	2	0
				Dr. Fagan, Omagh .	2	2	0
				Dr. Redmond Keating, Tralee	2	2	0

	£	s.	d.		£	s.	d.
Dr. Keogh, Dublin ...	2	2	0	Dr. Barry, Philipstown	1	1	0
Dr. Kelly, Roscommon .	2	2	0	Dr. Staunton, Swinford	1	1	0
Dr. Gilmour, Dublin ...	2	2	0	Dr. Mills, Ballinasloe ...	1	1	0
Dr. Ryan, M.P., Wexford	2	2	0	Dr. Casey, Clifden ...	1	1	0
Right Hon. M. F. Cox, Dublin	2	2	0	Dr. Sandys, Cork ..	1	1	0
Dr. Doolin, Dublin ...	2	2	0	Dr. Brown, Edinburgh ...	1	1	0
Dr. Lockhart Stephens, C.B.E., D.L., Emsworth	2	2	0	Dr. Fennell, Southbourne	1	1	0
Dr. FitzGerald, Hollymount	2	2	0	Dr. Ryan, Glenlara ...	1	1	0
Dr. McDonnell, Vicker's Croft	2	2	0	Dr. Campbell, Galway ...	1	1	0
Dr. Flannery, Tubbercurry	2	2	0	Dr. Murphy, Cork ...	1	1	0
Dr. Doyle, Gurteen ...	2	2	0	Dr. Ryan, London ..	1	1	0
Dr. Ryan, Clondalkin ...	2	2	0	Dr. Shepherd, London ...	1	1	0
Dr. Florence Stoney, Bournemouth	2	2	0	Dr. O'Gorman, Gouran...	1	1	0
Dr. Clarke, Loughlin ...	2	0	0	Dr. Duncan Scott, Cambridge	1	1	0
Fr. McEniry, Ballymacarbery	2	0	0	Dr. Dudley, Stourbridge	1	1	0
Dr. G. McGuire, Claremorris	2	0	0	Dr. Johnstone, Edinburgh	1	1	0
Dr. Pollard, Bristol ...	2	0	0	Dr. Berry, Burnham ...	1	1	0
Captain C. S. Hamilton, R.A.M.C., Exeter ...	2	0	0	Dr. Blight, Cardift ...	1	1	0
Dr. Forde, Castlerea ...	2	0	0	Dr. McMillan, Glasgow...	1	1	0
Dr. Wilson, Tunbridge Wells	2	0	0	Dr. King, Dalkey	1	1	0
Dr. Bride Martyn, Middlesbrough	2	0	0	Mr. Frank Healy, Claremorris	1	1	0
Dr. Cooney, Lusk... ...	2	0	0	Mr. Edward Fitzgerald, Ballinrobe	1	1	0
Dr. McNamara, Corofin...	2	0	0	Dr. Charlotte Warner, Newcastle, co. Down ...	1	1	0
Col. McNamara, Corofin	2	0	0	Dr. Branford Morgan, Norwich	1	1	0
Dr. Knott, Castlebar ...	1	1	0	Dr. Rossiter, Ballinasloe	1	1	0
Dr. Stokes, Fethard ...	1	1	0	Dr. Waters, Carbury ...	1	1	0
Dr. Wilson, Dublin ...	1	1	0	Dr. O'Brien, Dublin ...	1	1	0
Dr. M. Ryan, Dublin ...	1	1	0	Dr. Evelyn Fisher, Port Talbot	1	0	0
Dr. Barniville, Dublin ...	1	1	0	Dr. M. McDonagh, Galway	1	0	0
Dr. Keane, Ennistymon	1	1	0	Dr. Orton, Coventry ...	1	0	0
Dr. Broderick, Cabinteely	1	1	0	Dr. MacHenry, Galway	1	0	0
Dr. Hawkshaw, Ballinrobe...	1	1	0	Anon	1	0	0
Dr. Alfred Cox, London	1	1	0	Dr. Crean, Ballyhaunis	1	0	0
Dr. Pope, Hereford ...	1	1	0	Dr. McBride, Castlebar	1	0	0
Dr. E. Mincelieus, London	1	1	0	Dr. Madden, Kiltinagh...	1	0	0
Dr. Burke, London ...	1	1	0	Dr. Scanlon, London ...	1	0	0
Dr. Hawkins, Avonmouth	1	1	0	Dr. Dickson, Lochgelly	1	0	0
Dr. Whiteside, Tamworth	1	1	0	Dr. M. Lee, Newport ...	1	0	0
Dr. McNeill, Pitlochry ...	1	1	0	Dr. Crowley, Loughrea...	1	0	0
Dr. Beirne, Charlestown	1	1	0	A Friend, per P. J. Kenealy, Tralee ...	1	0	0
Dr Corboy, Fort Prospect	1	1	0	Dr. O'Sullivan, Crookstown	1	0	0
Dr. Thompson, Tuam ...	1	1	0	Dr. Mark Love, Stroud ...	1	0	0
				Dr. Hollis, Hove	0	10	0
				Dr. O'Malley, Cork	0	10	0
				Sir Jenner Verrall, Bath	0	10	0
				Anon.	0	7	6

A CORRECTION.

IN the account of the meeting of the Section of Electro-Therapeutics at the British Medical Association meeting, appearing in last week's JOURNAL, Dr. C. Worster Drought was mentioned as describing experiences with condenser tests in nerve injuries while "acting as a military *radiologist*"; this, of course, was a misprint for *neurologist*.

NICE DISCRIMINATION.

WE are indebted to Mr. J. S. Lewis for quoting in the *Welsh Outlook* from a play, described as a comedy of Welsh life during the war, a pretty compliment to the medical profession, which is delightful by reason of its unconscious humour. It is contained in the following stage direction: "If the actor playing the part of the doctor has a strong dignified personality and powerful voice, the description 'physician and friend' can stand, otherwise he should be referred to as 'herbalist.'"

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36, 37, and 38.

THE following appointments of certifying factory surgeons are vacant: Bishop's Waltham (Hants), Bothwell (Lanark).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

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NOTE. It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

Sir GEORGE H. MAKINS, G.C.M.G., C.B., P.R.C.S.,
President.

DISCUSSION ON SURGICAL TREATMENT OF GASTRIC ULCER.

OPENING PAPERS.

Sir BERKELEY G. A. MOYNIHAN, K.C.M.G., C.B.,
Professor of Clinical Surgery, University of Leeds.

IN discussing the surgical treatment of gastric ulcer the first matter for consideration relates to the importance of discovering any sources of still continuing infection which may first have led to the development of the ulcer. The primary infection cannot always be discovered—indeed, cannot often be localized with certainty, but it is a fair assumption to make that any chronic infection of which the evidences are still discoverable may have acted as a cause of the original ulcer, or have provoked a recurrence of it in one or more of those attacks which are a characteristic feature of the clinical history. The causal infection may not be found until the abdomen is opened, for in my view a large number of the cases of gastric ulcer upon which the surgeon must operate are secondary to an infection arising in some part of the intestinal canal, more especially in the appendix. But there are not a few cases in which the infective agent appears to reach the stomach by way of the mouth. Disease of the teeth or gums, of the antrum or other accessory sinuses, or of the nasopharynx, have all been found in cases upon which I was asked to operate. If in any such case the lesion is a gross one, and likely long to continue, it is most necessary that it should be dealt with before any operation upon the ulcer itself is undertaken. If constant search is made for a diseased fang, alveolar abscesses, and septic conditions in the upper part of the pharynx or air passages, the evidence of serious disease, requiring radical treatment, will be discovered far more frequently than is generally believed. One method of inquiry worth pursuing is the investigation by *x* ray of the alveolar processes in all patients to whom a barium meal is to be given preparatory to a screen examination of the stomach. One of the factors most certainly causing a recurrence of ulceration in the stomach, or of ulceration at or near the suture line after gastro-enterostomy has been performed, is infection derived from one or other of the several sources here indicated.

The necessity for the surgical treatment of a gastric ulcer is a confession that medical treatment has failed. As commonly employed, it is doomed to failure. It too often consists in the mere administration of a bismuth mixture, when the sufferer is treated in the out-patient department of a large hospital. There is not anything approaching the necessary accommodation in hospitals in this country for the patients suffering from gastric or duodenal ulcers, whose successful treatment by medical means necessitates that constant, watchful supervision of every detail which hospital treatment alone affords. A successful operation upon a patient suffering from gastric or duodenal ulceration will depend in part upon careful and adequate preparation. Not a few of the patients are weakly, ill-nourished, and of a low resisting power when first they come under our care. By keeping them at rest for a few days, giving them large quantities of fluid by the mouth, or by rectum, or subcutaneously; by the administration in such fluid of sodium carbonate or glucose; or occasionally by performing a direct transfusion of blood, their condition can be greatly benefited, and the risks of operation correspondingly reduced. The practice of withholding fluids for a few hours before operation is always, I think, a procedure of very questionable value; in patients reduced in strength by lack of nourishment, or by pain extending over long periods, it is positively a factor pregnant with harm. When the operation is performed the choice in exceptional circumstances of hedonal as an anaesthetic is very helpful. The anaesthesia is quietly induced, lasts long, gives remarkable relaxation of the abdominal wall, and provides two or three pints of fluid at a time when fluid is much needed.

The surgical treatment of a chronic gastric ulcer[*] may call for the performance of one or other of the following operations:

I. Gastro-enterostomy.
II. Excision.
III. Gastro-enterostomy combined with excision by knife or by cautery (Balfour's operation).
IV. Gastro-enterostomy combined with jejunostomy.
V. Resection of a part of the body of the stomach—"sleeve resection."
VI. Partial gastrectomy.

I. GASTRO-ENTEROSTOMY.

The operation which has been the most frequently practised in the past, and is still that preferred by many operators, is gastro-enterostomy. The operation was first practised on September 27th, 1881, by Wölfler in Vienna. He was dealing with a case in which carcinoma of the pyloric part of the stomach was causing obstruction, and the intention was to remove the growth by one of the methods recently introduced by his master, Billroth. Owing to the presence of secondary deposits and the fixity of the tumour, resection was impossible, and the abdomen was about to be closed when Nicoladoni, acting as assistant, suggested that the obstruction might be relieved by making an opening between the stomach and the small intestine. The success in this, and in many similar cases, was an event of great significance, and one of the most important landmarks in the history of abdominal surgery. It was not long before examples of pyloric stenosis due to the healing of a simple ulcer were treated by the same method. What happened is known to all the world. Patients who had suffered for years from the miseries of the confirmed dyspeptic, who finally had the extreme discomforts caused by the recurrent vomiting of the stagnant and fermenting contents of the stomach, who lived on the most restricted diet in order that their sufferings might be lessened, were suddenly restored to vigorous health, were able to satisfy, without apprehension or unhappy consequences, their keen appetites; rapidly gained health and happiness, and added considerably to their weight. No operation in surgery had ever produced more striking or swifter results. Owing largely to the advocacy and the successful work of Doyen, the operation began to be practised in cases of ulcer occurring in the body of the stomach, cases in which no obstruction was caused either by the open ulcer or by the stenosis resulting from its partial cicatrization.

Results by no means so happy were soon witnessed, and in cases whose number seemed quickly to mount up the ultimate consequences of the operation were disastrous. There were several reasons for this. The chief, perhaps, was the inaccuracy of the diagnosis in many instances. It was not then, it is not now, sufficiently realized that the diagnosis of gastric ulcer is difficult and that the disease is rare. The operation came to be practised for "chronic dyspepsia," and many of the little splashes of thick lymph so often seen on the under surface of the transverse mesocolon, adherent to the posterior wall of the stomach, were assumed to be the scars of gastric ulcers which had healed. And so in many cases when the stomach was normal, where the lesion causing the symptoms lay elsewhere, the short-circuiting operation was performed, with unhappy consequences. Another reason for the disasters following upon operation was a technical one. The anastomosis was made with a long proximal loop, which, emptying with increasing difficulty, became waterlogged; or adhesions obstructed the efferent jejunum; or the opening into the stomach was badly placed. From one or other cause such difficulties as regurgitant vomiting were frequently seen. Further reasons were found in the inability of the ulcer to heal even after gastro-enterostomy had been perfectly performed in an appropriate case, and in the later development of cancer of the stomach, presumably upon the base of an unclosed ulcer.

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[*] Discussion of the treatment of the acute perforation of a chronic gastric ulcer is omitted from this paper.

A few years ago a revision of my own cases in which a gastric ulcer had been clearly demonstrated showed that the results could be classified into three groups.

1. *The Results were Excellent.*—With the same alacrity that is witnessed in cases of duodenal ulcer, or in cases of pyloric stenosis, the patient lost all discomforts, and made a speedy and excellent return to health. I had not then in all cases indicated in a diagram, made immediately after the operation as I do now, the exact position and the approximate size of the ulcer; and therefore I am not able to say exactly what the condition of the stomach was in this group of cases. But in many cases it is certain that the ulcer was near to the pylorus; that the gastro-enterostomy opening was on the proximal side of it. In others the ulcer was on the lesser curvature and was small, and free from adhesions. It had not, that is to say, perforated the coats of the stomach to become adherent to the abdominal wall, liver, or pancreas.

2. *The Results were Indifferent.*—Some patients were found to have improved, in many cases for periods of months or years, others were known to have relapsed. At a subsequent operation the ulcer was found to be still present; it was then removed by local excision by the cautery, or by the performance of the operation of partial gastrectomy.

3. *The Results were Bad.*—In this class of cases malignant disease developed in the base of the ulcer, and so near to the ulcer as to make differentiation impossible. The question of the degeneracy of a simple ulcer into a malignant one is still warmly debated, and there is no approach to an agreement between the several authorities. The evidence considered by the protagonists on either side is clinical and pathological.

In more than half the cases of carcinoma of the stomach treated by operation there is a history suggestive of the previous existence and of the recurrence of a gastric ulcer. No one is more ready than I am to admit that such a history is not a full warrant for asserting that an ulcer has been present. For on the clinical evidences alone a diagnosis of gastric ulcer, however confidently made, cannot always be upheld. The only certain evidence obtained before operation is afforded by a radiological examination, and I do not know of any case in which a diagnosis of gastric ulcer has been positively made with this and other methods in which carcinoma was subsequently found. The clinical evidences, therefore, however strongly suggestive, are not positive proof. In about 25 to 30 per cent. of the cases of carcinoma of the stomach removed by operation the claim that the malignant change is imposed upon a simple one appears on pathological grounds to be irrefutable; and every surgeon knows that in a small number—not less, certainly, than 10 per cent.—of the cases of gastric ulcer, to all appearances simple in character, a microscopic examination of the specimen removed by operation reveals the early stage of carcinoma. Now, histologists do not always agree as to the conditions which may be accepted as indicating the earliest changes from simple to carcinomatous states. Much of our knowledge of the microscopical appearances of cancer is based upon an examination of specimens long dead, of specimens months or years old, which have been lying upon the laboratory or museum shelves. The changes that occur in such circumstances are not known. But, as I have ventured to urge, an examination of specimens so recently removed as to be hardly yet dead is necessary before we know what conditions in carcinoma are authentic and what are the changes which are merely due to corruption. We must recognize a "histology of the living," which is probably as far removed from the histology of the dead as we now all recognize the "pathology of the living" to be from the pathology of the dead.

We must finally consider this fact also, that when gastro-enterostomy is performed for a chronic gastric ulcer, the "physiological" results of the operation, though they may not bring about the healing of the ulcer, may yet delay or prevent its progress towards carcinoma. We must take account of the possible effects produced by the change from an acid to an alkaline medium. Nothing is more remarkable than the difference in destiny of a chronic duodenal ulcer and of a chronic gastric ulcer. It is admittedly one of the great rarities in pathology to find an ulcer of the duodenum that has become malignant; and it is certainly a far more frequent thing, allowing for all reservations, to find an ulcer of the stomach in which carcinoma has developed. Embryologically the stomach and the duodenum as far down as the ampulla of Vater are one. This difference in the prospective changes in ulcers on one or other side of the pylorus may be due to the different reactions of the fluids by which they are bathed.

Those who practise the operation of gastro-enterostomy for the relief of ulcers in the body of the stomach rely upon the so-called "physiological results" of the operation—that is, upon the effect produced by the constant entry into the stomach through the anastomosis of the alkaline bile and pancreatic juice. There is no doubt that these juices are found in the contents of the stomach removed by tubage in all cases after gastro-enterostomy has been performed; and there appears to be very little doubt that the success of the best methods of therapy in cases of gastric ulcer—that of Sippy, for example—depends upon the very frequent administration of alkalis, which, it is claimed, neutralize the gastric acidity, and so allow of healing in the ulcer. Much of the explanations given is conjectural, and regard is perhaps insufficiently paid to the effect of the administration of alkalis in provoking a greater output of acid in the gastric juice to overcome the alkali administered. I am very sceptical as to any substantial "physiological" value possessed by the operation of gastro-enterostomy. Its other effects are purely mechanical. The stomach is emptied more quickly through a gastro-enterostomy opening; the pyloric spasm which so often accompanies gastric ulceration is robbed of its effects, and the persistent local spasm which causes the characteristic "incisura" may either be prevented by a division of the muscular fibres causing it or rendered ineffective by the drainage of the stomach on its proximal side.

The making of an anastomosis between the stomach and the jejunum does not prevent the subsequent development of a gastric ulcer. I have records of one case in which a gastric ulcer, well removed from the anastomosis, developed after the operation and went on to perforation; and of three others in which gastric ulceration developed after the performance of gastro-enterostomy for a duodenal ulcer.

Sherren[1] records a case of carcinoma of the stomach developing in a patient upon whom gastro-enterostomy was performed for a perforated duodenal ulcer. Coffey, a surgeon of great sagacity, in a paper on "Gastro-enterostomy still the operation for chronic gastric and duodenal ulcer," records[2] two cases in which an ulcer in the stomach developed after gastro-enterostomy had been performed for duodenal ulcer.

In consequence of my experience I have abandoned gastro-enterostomy alone in the treatment of chronic gastric ulcer, for:

(*a*) The results, even when the operation was "successful," were not so satisfactory as those which now follow gastrectomy. The morbidity was greater, the return to health slower, the ability to take food early and generously was wanting, a more watchful after-care was necessary.

(*b*) Some cases returned with the ulcer still open, and a further operation was required. In such cases the ulcer had almost always perforated all the walls of the stomach, and adhesions had occurred to the liver, pancreas, or abdominal wall.

(*c*) Some few cases returned with carcinoma of the stomach after so long an interval as to make it probable that the cancerous change had occurred after the operation had been performed. Estimates of this sort are, I admit, fallacious, for the chronicity of some forms of malignant disease of the stomach is remarkable. I have recently been consulted, on account of a return of her symptoms, by a patient upon whom four years and seven months ago I performed gastro-enterostomy for carcinoma of the lesser curvature of the stomach, causing obstruction, when secondary deposits were present in many glands, in the falciform ligament (one of these nodules was removed for microscopical examination and confirmed the diagnosis), and the liver.

(*d*) There is evidence to show that gastric ulcer may develop, even after gastro-enterostomy has been performed, when the stomach itself was normal.

The operation of gastro-enterostomy is made as simple as possible, though it is by no means always easy. Clamps are used, and a vertical application of the highest accessible portion of the jejunum is made to the posterior surface of the stomach along a line which is a continuation downwards of the upper part of the lesser curvature. In this way the lowest portion of the stomach is drained by the new opening. Two layers of sutures are used; both are of the finest chromic catgut (six nought). It is never necessary to have more than two layers, nor to use any unabsorbable material, such as linen or thread or coarse chromic catgut. Any large vessel springing from the greater curvature and running directly on to the anastomotic line is ligatured separately. The opening into the lesser sac is carefully closed by approximating the cut edges of the transverse mesocolon to the suture line. The principles applicable in all operations are observed—gentle handling, absence of exposure or chilling of any parts directly engaged in the operation, and scrupulous care at every step. The mortality in my own hands during the last ten years is 1 per cent., and there has been no death in the last 350 cases of gastric or duodenal ulcer.

II. Excision.

The operation of excision was introduced with great hopes, which unhappily have not been gratified. I have practised excision by several routes, and have removed ulcers of various sizes. A small ulcer on the anterior or posterior surface has been excised, and the opening left in the stomach either closed by interrupted sutures of catgut or utilized to form an anastomosis with the jejunum. Wedge-shaped excision of ulcers on the lesser curvature has been carried out, sometimes with ease, oftener with difficulty, and with a resulting deformity of the stomach. Ulcers on the posterior wall, perhaps burrowing into the pancreas, have also been removed through an incision in the anterior wall of the stomach. I have been profoundly disappointed with the results. My colleague Mr. Collinson, in a paper read before the American Medical Association in 1914,[3] found that in thirty-nine cases of excision there were fifteen in which severe recurrence of symptoms was observed. Eleven patients were submitted to a second operation, and seven of them showed active ulceration at the site of the excision, one had developed a fresh ulcer distal to the original one, and three had extensive adhesions which crippled the action of the stomach. The operation may fail on account of technical errors. Too small an area of induration surrounding the actual crater may be removed; the hard, stiffened edges of the wound which remain, infiltrated by inflammatory products which have long been there, may not heal kindly or rapidly, and fresh ulceration may start before cicatrization is complete. Of such a condition I found evidence in a case of my own, related by Mr. Collinson in the paper to which I have referred. In other cases a deformity of the stomach may be consequent upon the removal of an ulcer, especially of one which lay upon, or near, the lesser curvature; the normal peristaltic movements will then be checked at the line of scar, as a radiological examination will plainly declare. The use of unabsorbable sutures, especially continuous sutures, may lead to secondary ulceration. All continuous "seromuscular" sutures probably penetrate to the mucosa in more places than one; if this occurs, the suture will eventually ulcerate its way through to the lumen of the bowel and be discharged, or hang loose at the suture line for months or years. Finally, even with a careful technique, adhesions may form between the suture line and any viscus or the abdominal wall in contact with it, and some embarrassment of the action of the stomach will then certainly result.

For these reasons, and in spite of some very satisfactory results, I have abandoned the operation altogether in cases of gastric ulcer. The disappointments it brings are too many, and are neither easy to foresee, nor certainly to be prevented.

III. Excision, by Knife or by Cautery, combined with Gastro-enterostomy.

At an early stage in our experience of the operation of excision alone it was found that in some instances, after suture of the wound was complete, a considerable degree of distortion of the stomach resulted, the lesser curvature was much puckered, and the whole organ warped in outline. To have left the stomach in such a condition would inevitably have meant that a further operation would soon be necessary in order to overcome mechanical difficulties. And little by little it became the practice to combine with the operation of excision that of gastro-enterostomy also. The results were certainly better than before, but the combined operations, in point of difficulty always, and often in point of time and of danger also, equalled or exceeded the operation of partial gastrectomy. As the technique of this latter operation was steadily improved, it began in my own hands to replace other methods, and I reverted to the practice so ably advocated by Rodman, of "removal of the ulcer-bearing area."

Balfour of Rochester, with that fertility of resource which is one of the characteristics of his fine work, replaced the method of excision of the ulcer by that of its complete destruction by the actual cautery. Balfour's operation has among its many merits that of simplicity. If an ulcer lie upon the lesser curvature, or near it, a little nearer the cardia than the pylorus, or down upon the posterior wall, the operation of excision was apt to be difficult. The method of Balfour makes the treatment very much easier, quicker, safer, and gives results far more satisfactory. I learnt the method in Rochester, where I saw several operations performed by W. J. Mayo. In ulcers near or upon the lesser curvature there is often a covering of fat, developed probably, as in the case of an infected gall bladder, as a protection against perforation. This fat is dissected upwards towards the lesser curvature, until the base of the ulcer is seen clearly. The crater of the ulcer is then completely destroyed by the actual cautery, which pierces the entire thickness of the wall of the stomach. The gap which remains is closed by interrupted sutures, in two layers, and the flap of fat turned downwards to cover the suture line like a lid. Posterior gastro-enterostomy is then performed in the usual manner.

Of all methods of dealing with gastric ulcer, short of gastrectomy, I am convinced that this is one of the best; it destroys the ulcer more completely than does the method of excision, for the effect of the cautery extends widely beyond the seared edge of the wound. If by chance there is an early carcinomatous change it is probable that much of the risk of local recurrence is removed. No more tissue is sacrificed than is necessary, and the suture of the wound offers, as a rule, no difficulty.

My own experience of this operation is small. At the time when I should have been inclined to make it an almost routine procedure for many cases I had been led by my unsatisfying experience of other methods to become more and more radical in the treatment of gastric ulcer, and to consider the removal of the part of the stomach as the operation of choice. There are, however, cases in which everyone will admit the great value of the operation: cases of ulcers difficult of access, in patients for whom, because of recent haemorrhages, or a degree of pain which has made the taking of food exceedingly difficult, the simplest operation that is sufficient to cure, or relieve the disease, is indicated.

IV. Gastro-enterostomy Combined with Jejunostomy.

This is a method which I have advocated and practised in cases of grave difficulty. The results have been excellent. There are ulcers of the stomach so large, so awkwardly placed, and so deeply penetrating the liver, or the pancreas, in patients whose general condition is so poor that any operation becomes serious. Such cases may be unsuitable for Balfour's operation, by reason of the size or remoteness of the ulcer; and for the operation of gastrectomy by reason of the extremely feeble condition of the patient, who has perhaps recently suffered from a copious haemorrhage. In all such cases I perform gastro-enterostomy in "Y," generally by the anterior route. The intestine is cut across about 18 in. below the flexure, the distal end closed, and the side of this distal part united to the anterior wall of the stomach. As large an opening as possible is made proximal to, or in the zone of, the ulcer and extending sometimes over the fundus of the stomach. The proximal divided end of the jejunum is then anastomosed to the side of the distal limb a few inches below the gastro-enterostomy opening. Into this proximal part, at a point about 3 in. above the junction which has just been made with the distal limb, a tube is introduced and fixed by the method of Witzel. The tube passes for several inches down through the entero-anastomosis into the jejunum. It is brought out of the abdominal wall through a small separate incision to the left of the umbilicus. It is through this tube that all nourishment is given for months, or for years, until a radiological examination shows that the ulcer is healed, or until a trial of one month, during which food is given, discloses no return of the symptoms. During this time the greatest care is taken to keep the mouth clean by friction and frequent washing. I have never had any difficulty with a patient craving for food. The sufferings endured before operation, and the relief immediately afterwards, by their sharp contrast, make the patient disposed to do all one asks. One patient, whose stomach showed the largest ulcer I have ever seen (we described it as resembling the mouth of a letter box through which the hand passed deeply into the liver), took no food for two years and nine months after this operation, though I gave her permission to do so. She took food generously through the tube, and gained 4 st. in weight. Since removing the tube, now a few years ago, there has been no recurrence of symptoms. Indeed, up to the present time, in no case in which this operation has been practised has the ulcer returned.

V. RESECTION OF A PART OF THE BODY OF THE STOMACH—"SLEEVE RESECTION."

This operation is, of course, reserved for those cases in which the ulcer occupies approximately the middle part of the stomach. After resection of a cylindrical portion of the organ the cut ends are united. Advocacy of this operation appears to be restricted to a few surgeons, and consequently the number of cases performed is relatively small. I practised it on two occasions only, long ago. In both the operation promised well, but one of the patients returned after four years with an hour-glass stomach, for which a second operation was necessary. The rôle of the operation is necessarily a very limited one. I think I am hardly likely to perform it again. But so far as I can judge of the experience of others it has had a fair measure of success.

VI. PARTIAL GASTRECTOMY.

My early experience of the operations already mentioned was satisfactory enough so far as immediate results were concerned; but as time passed patients began to return with one degree of discomfort or another until I was convinced that many of the methods practised were not justified by their end results. And by degrees I was brought to realize that gastric ulcer was a far more serious disease than duodenal ulcer. It was soon found to be comparatively a rare disease, far less frequent in occurrence than had been universally believed, and certainly very difficult indeed to diagnose with confident assurance and constant accuracy. The diagnosis so frequently made of "gastric ulcer" in out-patient rooms and in private practice is not sustained when the parts are examined upon the operation table. Other diseases—duodenal ulcer, chronic appendicitis, cholelithiasis, tuberculous enteritis, laxity of the attachments of the colon—are all found in the absence of any palpable or visible lesion of the stomach, and explain the symptoms of which the patient has complained. A host of diseases, organic and functional alike, are called "gastric ulcer." And consequently much of the literature and most of the statistics dealing with the subject of "gastric ulcer" lack that foundation of truth which only an accurate diagnosis can afford.

In the cases of indisputable gastric ulcer, when the ulcer is demonstrated beyond cavil by a radiological examination or by inspection upon the operation table, a far greater seriousness attaches to the disease than to the condition of duodenal ulcer. Operations upon it are more serious, partly by reason of the extent of the operations themselves, chiefly, I think, in consequence of the less robust state of the patients. Recoveries after operation are fewer whatever the nature of the operation, and the rate of mortality of the patients in the years subsequent to operation, as Balfour has recently shown in a paper of great value and of new significance,[1] is, in the cases attended in the Mayo clinic, three times as high as in patients operated upon for duodenal ulcer. This on reflection is not so startling a fact as may at first appear; for many of the patients suffering from duodenal ulcer are men otherwise of robust strength and splendid health. I have operated upon international football players, golfers, lacrosse players, and many distinguished athletes for duodenal ulcer. Such people are not often found among those who suffer from gastric ulcer; and, though there are exceptions, the types of stomach found in the two diseases are distinct from one another, as Hurst has shown. The local conditions found in the two diseases are different also. A duodenal ulcer is often a simple round "terraced" ulcer affecting the intestine alone; a gastric ulcer is very prone to extend and to burrow deeply into other parts—the pancreas, the liver, the abdominal wall; and the later history of the two diseases is very different. I lean to the belief that many of the cases of carcinoma of the stomach with which the surgeon can deal successfully have their origin in a chronic ulcer. That is not the universal view, but the opinion of those who hold it is weighty and well founded. Carcinoma is excessively rare in that part of the duodenum affected by chronic ulcer. Prompted by all these considerations, I was gradually brought to view gastric ulcer as a disease requiring direct and radical treatment, and that it was not safe to trust to the indirect method of gastro-enterostomy, which, whether its action is "physiological" or mechanical, merely produces a condition of things in which healing can more easily take place.

My choice of operation now always falls upon partial gastrectomy, whenever it can with reasonable safety be performed. The risk is not great: over a period of ten years it is not more than 2.5 per cent. All things considered, and account being taken of the five years succeeding operation, it is probably a safer operation and is certainly more immediately satisfactory than gastro-enterostomy alone. It cannot always be practised. The condition of the patient may forbid it. The ulcer may be so large and so placed as to make removal a matter of so great technical difficulty that the immediate hazards are unfair to the patient. But as experience grows the number of such cases diminishes. Nowadays I rarely practise any other operation than partial gastrectomy or gastro-enterostomy in "Y" combined with jejunostomy. The details of the operation of gastrectomy are briefly these: The duodenum is divided just beyond the pylorus, after ligature of the pyloric and gastro-duodenal arteries. An opening is made in the transverse mesocolon, in the arch of the anastomosis of Riolan in order to guide the surgeon in his ligature of the omentum below the greater curvature, so that the middle colic artery may be avoided, and in order that the conditions at the back of the stomach may be early and fully investigated. After division of the great omentum as far towards the left as the point at which the stomach is to be divided, the whole organ is turned over the left edge of the parietal wound, until the coronary artery is brought into view and ligatured with great ease at exactly the place required. As soon as this vessel is cut an anchor is "let go," and the stomach is moved more freely. Then while the stomach is held as a retractor an anastomosis is made between it and the jejunum. I now always apply the end of the stomach to the side of the jejunum.

In my early cases I twice encountered a little difficulty in making the jejunum so apply itself to the stomach as to avoid a kink at the upper end of the anastomosis. In both cases some bilious vomiting occurred. In order to prevent this I now usually divide the jejunum completely across, about eight to ten inches below the duodeno-jejunal flexure, close the distal end, and make an anastomosis in "Y." This takes a few minutes longer, but the expenditure of time is worth while. The results are excellent. The condition after operation is remarkably good; in almost all cases the patients have the most tranquil progress that one could wish. And not one single case I have ever operated upon has had a recurrence of trouble. Once the convalescence is complete the history is without incident.

Whatever the operation from among all those mentioned which may be selected in each individual case regard must always be paid to the power of the patient to bear it, and to its exact application to the particular conditions disclosed when the parts are directly examined. Before the operation commences the surgeon should never reach a definite decision to perform any one procedure; he must apply at the moment of operation the method which best meets the indications in each case. And here, as elsewhere, the little things count. Care in preparation, scrupulous exactitude in every detail, gentleness, deliberation, with such speed as comes naturally from much practice, and is unsought as a special feature—all these together will sometimes turn what would otherwise be failure into easy and certain success.

Statistics.

For the purpose of illustrating my practice in connexion with operations upon the stomach and duodenum I have collected together, with the help of my colleague, Mr. E. R. Flint, and my secretary, Miss Mackill, all the records of cases operated upon by myself since the year 1909, including the very lean years of war. Every case of simple disease of the stomach or duodenum (excluding acute perforation) is included: cases of gastric ulcer, hour-glass stomach, duodenal ulcer, and jejunal or gastro-jejunal ulcer following upon gastro-enterostomy.

The cases of ulceration are as follows:

Ulceration.

		Cases.	Deaths.
Gastric ulcer alone	179	235	7 = 2.9%
Gastric ulcer with duodenal ulcer (including some cases of hour-glass stomach) . ..	35		
Gastric ulcer alone causing hour-glass stomach	21		
Duodenal ulcer alone		563	3 = 0.53%
Pyloric ulcer		9	0
Jejunal or gastro-jejunal ulcer		27	2 = 7.40%

In 4 cases the original gastro-enterostomy had been performed by me.

The greater severity of cases of gastric ulcer as compared with duodenal ulcer is strikingly shown; and the serious nature of cases of jejunal ulcer is evident.

Operations Performed.

Operation.	Cases.		Deaths.	Remarks.
Gastrectomy	80		2 = 2.5%	One case of almost total gastrectomy for large multiple ulcers, eroding the pancreas and the liver.
Gastro-enterostomy –				
Posterior	660	694	7 = 1%	Five deaths were due to lung complications, associated in one with tuberculosis.
Anterior	8			
In "Y"	12			
In "Y" with jejunostomy	12			
With gastrostomy ...	2			
(All these combined in a great majority of cases with removal of the appendix, and several with operations upon the gall bladder. In two ovariotomy was performed also.)				
Excision of gastric or duodenal ulcer with or without gastro-enterostomy, including Balfour's operation	42		1	The fatal case was one of duodenal ulcer; cholecystectomy and appendicectomy were also performed.
Hour-glass stomach (multiple operations, gastro-enterostomy with gastro-gastrostomy, &c.)	17		1	*Post-mortem* report: "Extreme fatty infiltration of right auricle and ventricle, chronic fibrosis of kidneys."
Jejunostomy	2		1	The fatal case had a gastro-jejunal ulcer of large size, with much induration around it. The patient was exceedingly ill, and suffering intense pain.

Summary.

There were in all 835 operations (upon 834 patients), with 12 deaths—a total mortality of 1.43 per cent. Excluding the cases of jejunal ulcer there were 808 operations on cases of gastric and duodenal ulcers with 10 deaths—a mortality of 1.23 per cent.

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WHEN I was asked to open a discussion on gastric ulcer before this Surgical Section it seemed like carrying coals to Newcastle, as so much of our knowledge of ulcers of the stomach and duodenum has been developed by the distinguished members of the British Medical Association; I refer to Sir Berkeley Moynihan, Mr. Paterson, Mr. Sherren, and many others who have actively participated in this work.

Gastric ulcer is a comparatively rare disease, representing but a fraction of 1 per cent. of the findings at general necropsies. Nevertheless, because of the chronic character of the disease with years of complaint a large number of persons, in the aggregate, are being treated for this trouble. The disease is more common in males than in females, the proportion being three to one. The proportion of gastric to duodenal ulcer is approximately one to four, as shown by reports from our clinic, where from January 1st, 1906, to January 1st, 1920, 1,191 patients with gastric ulcer and 4,532 patients with duodenal ulcer were operated on. A very small percentage of patients have multiple ulcers in the stomach and duodenum; in only 203 instances during the fourteen years were both gastric and duodenal ulcer found in the same patient. In a series of 638 patients with gastric ulcer observed in a five-year period, 28 had multiple ulcers; Sir Berkeley Moynihan, in 1902, called attention to the occurrence of this condition.

As to the etiology: ulcer is undoubtedly developed by a combination of local chemical effects, or by direct interference with the circulation through infarction emboli of bacteria. The two are most surely associated. In the diseased tissue, during the periods of varying activity and remissions of chronic ulcer, bacteria can be cultivated from excised ulcer tissue which has been made wholly free from surface contamination. If the cultures grown in such experiments are injected into animals, a high percentage of similar ulcers are produced. In the chemistry of the bacterial products, I believe, lies the explanation of the chronicity of the disease. Reeves and others have shown that in the order of frequency of selection the areas of the stomach most often involved in ulcer are on the lesser curvature, in which parallel arterioles supplied at both ends by arterial majors give an opportunity for some stasis, and should bacteria be present in the blood supply, emboli may destroy a local area of circulation, or bacterial infiltrated tissue by chemical action may bring about the same result. The relationship of pepsin and acid has always been recognized as associated with the development of these so-called peptic ulcers. The experimental surface ulcers on the mucous membrane may be produced in numbers by certain toxic materials, bacterial or drugs, injected into the circulation or administered by mouth, but such ulcers are fleeting; they are not considered in this discussion. Dr. Sippy, of Chicago, one of America's greatest internists, should be credited with having done the most to co-ordinate medical thought with regard to the condition of gastric ulcer and its medical treatment, which is based on changing the environment of the ulcer area by controlling the corrosion of gastric acids during exacerbations. He has shown that the combined acids have little to do with activating pepsin during the period ordinarily given for digestion, and that free acid is the activating agent. The medical treatment of gastric ulcer in an exacerbation during waking hours is directed towards controlling and lowering this acidity by dilution or neutralization of gastric contents each hour. The food which is permitted has a fairly high percentage of fat which delays digestion; the next hour is given to alkalis. This procedure is carried on while the patient is awake and in bed, while the symptoms are acute. Patients are under surveillance for a long period with repeated tests of the stomach's content and a regulated diet. Such treatment, although effective at least in affording temporary relief, can seldom be obtained by the majority of those afflicted. The patients may be too poor financially, or for other reasons so situated that they cannot secure the treatment. The ulcers under discussion occur in every country, in every climate, and with every type of food. Because of the years of disability such patients, with recurring attacks, who are cared for in and out of hospitals represent a fairly high, and far too high, percentage of gastric ulcer as compared with other diseases. While they are being cared for during many years of recurring attacks, some develop conditions demanding immediate surgery, such as hemorrhage, obstruction, and perforation, and not a few develop cancer on ulcer, of which approximately 25 per cent. remain confined to the stomach (a local disease) until death occurs. Ulcer of the duodenum, however, rarely develops a malignancy. Undoubtedly many ulcers exist without recognized symptoms in hyposensitive people or in nonsensitive areas of the stomach. A few such become evident through haemorrhage or perforation.

Judging from the literature on this subject, as presented by the internist and by the surgeon, there would seem to be a wide divergence of opinion with regard to the condition and its results. Personal conversation with some authors, however, shows that their view-point is not so dissimilar as appears from the emphasis placed on certain conditions and symptoms. The internist, in urging medical care, refers to the danger of surgery. In the 4,532 cases of duodenal ulcer the operative mortality was but 1.76 per cent.; death naturally occurred in the most severe and often neglected cases, while in the 1,191 cases of gastric ulcer the mortality was 3.77 per cent.; but all admit the greater seriousness of the latter condition. Again, the internist refers to the rare bad results largely avoidable, such as the vicious circle and gastro-jejunal ulcer, and other conditions that were recently discussed by Sir Berkeley Moynihan. It is true that some surgeons performed gastro-enterostomies because of symptoms—for example, digestive reflexes, abdominal and spinal—without positively determining the presence of the ulcer. In a number of cases, to the discredit of surgery, it is necessary to cut off and close the gastro-enterostomy which has been made, although no ulcer was present, and has left the patient far worse than before the operation. We have so dealt with a few hundred cases in which the gastro-enterostomies had been advised, based on symptoms alone, since the presence of the ulcer had not been proved. Fourteen of the patients were our own who had been operated on in the early developmental period of gastric surgery on the surmise that they were suffering from ulcer on the posterior wall. The surgeon, on the other hand, appears to discredit the internist, as he never sees an ulcer in the early stage unless it has perforated or is causing haemorrhage. The larger number of patients have been under treatment by many physicians for a long period before receiving the benefit of surgery; and again, the surgeons frequently find that they are giving surgical intervention for secondary conditions, with varying symptoms of gastric disturbance which are not caused by ulcer, but are the response of the stomach in pyloric spasm induced by disease of the appendix, more commonly disease of the gall bladder, or more rarely disease of the pancreas, and although the patients have passed years in active care and treatment of their stomachs, the gastric trouble is of reflex origin.

That ulcer is not produced by traumatism is the testimony of surgeons who operate on persons who have accidentally swallowed foreign and sharp or hard materials, and on the insane who swallow their table cutlery, nails, hairping, and similar undigestible material. Ulcer is rarely produced by direct traumatism, and if it were there would be the greatest difficulty in healing incisions for gastrotomy or gastro-enterostomy, as in securely adjusting the approximation against leakage and haemorrhage devitalization by suture of the incised area is an essential in the operation.

In the diagnosis of gastric and duodenal ulcer much attention is paid to the history given by the patient of attacks and intervals of health. The questions of relief obtained by taking food, fluids, or alkalis, and the relationship in time of appearance of symptoms to the last meal are of importance. A stomach which has developed qualitative food dyspepsia rarely has an ulcer, but represents a gastric reflex appearing within the half-hour, while quantitative food dyspepsia is usually associated with interference of peristalsis, which, if intestinal, appears at the end of the first hour. Surgery is usually indicated for relief, but not necessarily surgery of the stomach, for haemorrhage (vomited and by bowel) may come from gastric erosion, from the liver, the pancreas, or from rupture of veins within the stomach caused by splenic disease. In true ulcer haemorrhage is a symptom in approximately 20 per cent. of cases, but we pay little attention to occult blood except in unusual conditions. It is of interest, however, that in the study of a large series of our early cases of gastric ulcers about one in four patients had had haemorrhage before operation, and one in twelve suffered from haemorrhage afterward. This is an additional reason for destruction of the ulcer which we strongly recommend as well as the gastro-enterostomy, since if destruction of the ulcer alone is sufficient to cure, natural perforation and its healing should theoretically cure. Perforation is a common occurrence, without, however, relieving symptoms. It is not so serious as has been believed, since Nature usually protects by immediate stasis and adhesions.

We place great reliance in the x ray to corroborate the clinical history and general diagnosis of the condition. Dr. Carman and co-workers of the clinic, who have a wide experience in such cases, are able to make the diagnosis from the x-ray standpoint in 95 per cent. The importance of the x ray is very great in determining whether the ulcer is gastric or duodenal, which is often difficult or impossible clinically.

We believe with Sippy that control of the acids limits peptic activity and gives relief of symptoms, but we also agree with Moynihan that treatment but tides the patient through the exacerbation and does not cure permanently. A gastro-enterostomy, however, permanently applies the medical principle of treatment, by overcoming pyloric spasm, preventing retention of gastric secretion after food has left the stomach, and by allowing sufficient quantities of the alkaline secretion of the duodenum to pass into the stomach and lower the general acids. This fact was first called to our attention by Mr. Herbert Paterson. Dr. Lemon in our clinic, in a series of 200 cases, showed the reduction in general acids after operation to be 39 per cent., and in free hydrochloric acid 46 per cent. The change in the local environment apparently permits Nature to heal the ulcer as well as to overcome symptoms. The retention of secreted acids before operation in a stomach free of food indicates a pyloric spasm and a varying loss of balance between the neutralizing alkalis in the first portion of the duodenum and those of the stomach, and herein lies the defect of pyloric operation, which for a time relieves by removing the control of the gastric outlet, but the acidity is not changed. A high proportion of combined acids as compared with the amount of free acid indicates delay or retention caused by spasm or obstruction. In gastric ulcer the marked lowering of free acid and increase of combined acids may indicate malignant change, although the fact is admitted that cancer of the stomach occurs rarely with a high acidity. The same change in acids—lowering of free acid and increase of combined acids—is often found associated with pyloric spasm, secondary to cholecystitis and pancreatitis. Achlorhydria is seldom changed by medication or surgical intervention.

In a study at the clinic from July 1st, 1914, to July 1st, 1919, of 647 operations, on 638 patients with calloused ulcer of the stomach, it has been shown that the average mortality was 3.2 per cent., more than double the average mortality in 2,734 operations performed in the same period on 2,720 patients with duodenal ulcer. Five hundred and thirty-four ulcers were located on or around the lesser curvature, eighty-five involved the posterior wall, nine were on the greater curvature, and five on the anterior wall; the location of five was not definitely recorded. Of those on the posterior wall 8.2 per cent. were in the pyloric third, 73.3 per cent. in the middle third, and 16.5 per cent. in the cardiac end. All were of the chronic perforating variety, and fifty-three were attached to and involved the pancreas in the ulcerative process. Fifty-seven of these eighty-five patients were males and twenty-eight were females; their ages varied from 18 to 69, with an average age of nearly 44; the average duration of symptoms was 6½ years. At the clinic investigations for many years have led us to reiterate the assertion that gastric ulcer is potentially malignant, although at *post-mortem* examination for extensive disease causing death, it may be impossible to determine that an early ulcer was present. Many ulcers that we have excised and considered benign showed the presence of carcinoma in a limited area of the margin. We believe that Aschoff is correct in his assertion that if the lesion is cancer originally the base of the ulcer will prove to be cancer, but in our cases the cancerous area was in the margin only, and therefore we considered cancer developed on ulcer as shown by Wilson and MacCarty.

Balfour, on the theory that malignant cells are much more vulnerable to heat than normal cells, suggested and developed a slow destruction of ulcer by perforation with the cautery and immediate closure and gastro-enterostomy.

In the removal of perforating posterior ulcers of the stomach attached to the pancreas we use the upper approach through the gastro-hepatic omentum. The finger is hooked around the attached ulcer area and the ulcer shaved from the pancreas, its margins are cut away with a knife or cautery, and the opening closed with chromic catgut sutures. To protect and mobilize this area of the stomach a gastro-colic omental opening is made between the stomach and the colon, and the tip of the omentum is drawn through the opening and plastered over the posterior wall of the stomach to which it is fixed by sutures, covering the area from which the ulcer was excised as well as the pancreas, as suggested by William J. Mayo; a posterior gastro-enterostomy is also made.

In eighty-nine operations performed in the clinic for hour-glass stomach the operative mortality was 7.4 per cent. Of the various methods of excision and plastic enlargement of the stomach for the relief of this most distressing condition we now prefer to perform the sleeve resection of the central portion of the stomach, usually with gastro-enterostomy. If there is a recurrence, we remove the lower half at the second operation, uniting the narrowed proximal portion to the jejunum. For extensive ulceration and thickening, as well as local cancer in the pyloric region after resection of the stomach, as a *rule* we also make the same type of union of the stomach with the jejunum, although in some cases the Billroth No. 1 method of reuniting the duodenum to the stomach has been accomplished with good success. I first saw the end-to side union of the stomach and the jejunum in 1912 in Germany and in Austria, where it was called by some the Hofmeister operation, and by others the Enderlin. Later we found it had been described by Polya in 1911. I performed five of these operations in 1913. After division of the stomach the proximal end was drawn through an opening in the mesentery of the transverse colon to which it was sutured and the jejunum applied to the whole of the cut area of the stomach, a large opening being made and the duodenal division being closed by suture. Mr. Sherren, in a recent number of the *Lancet*, describes the method as one he began using in 1911, but he does not state when it was first described. He is mistaken in believing he introduced the operation in America as late as 1914. We found that in some cases this operation gave trouble from traction of the transverse colon on the stomach, and, when it was made for cancer, recurrence produced early obstruction. Balfour obtained a higher percentage of good results by making the same attachment of the jejunum anterior to the colon, and we have adopted this method and found it highly successful. In large openings in the end of the stomach I have found additional advantage in partial closure and covering the closed portion with unopened jejunum held by suture. By turning the jejunum to the right a loop of fourteen inches is sufficient to provide for the drop of the colon, the jejunum passing around to the left of the sagging transverse colon and coming out of its splenic flexure so that it receives no pressure from the colon.

Gastro-jejunal ulcer is an unfortunate condition which occurs in a small percentage of patients who have been primarily relieved by gastro-enterostomy, but even the present small percentage of occurrence can be markedly reduced, I believe, by avoiding the use of permanent suture material for the temporary requirement demanded in the ordinary case of gastro-enterostomy; undoubtedly it can be lowered still further if more attention is paid to freeing the patient of the foci of chronic infection, usually streptococci, which give the opportunity for new infarctions at the point of gastro-jejunal union, often before healing is completed.

Up to January 1st, 1920, we had operated on 83 cases of gastro-jejunal ulcer, of which 47 followed a gastro-enterostomy performed in the clinic for benign duodenal or gastric ulcer and 36 followed primary operations elsewhere. In a number of this group the permanent silk suture was found hanging in the ulcer indurated area, and in others it had apparently but recently passed out; in 4 cases we have seen the sutures hanging from the ulcer area and exposed to the gastric fluids four years following the operation. In such conditions the patient complains much as before the operation, the trouble being more continuous. The *x* ray gives valuable aid in the diagnosis of gastro-jejunal ulcer in about 80 per cent. of cases. In three instances we have seen such ulceration perforating the colon, producing a gastro-jejunal colic fistula. If the ulcer area is small its excision is advisable, re-establishing the opening by catgut suture. In extensive areas of ulceration and partial closure the gastro-enterostomy was undone, the bowel and the stomach closed; in a few cases it was found advisable to enlarge the pyloric outlet by some of the plastic methods.

Gastric ulcers should receive special consideration because of the seriousness of perforation, chronic symptoms, and frequent deformity and fixation of the stomach and the not infrequent development of carcinoma, and because the results following gastro-enterostomy for gastric ulcer are certainly not so good as following gastro-enterostomy for the relief of duodenal ulcer. Graham, in an investigation of 438 cases of duodenal ulcer, found that from the standpoint of the patient 70 per cent. who survived operation considered themselves well following gastro-enterostomy, 27 per cent. were improved, and 3 per cent. unimproved.

The future condition and length of life of these persons is a problem recognized by insurance companies in considering the applications for insurance of those who have had operations for gastric ulcer. Hunter, actuary of the New York Life Insurance Company, in an investigation at the clinic of the results of operation in a large series of cases of gastric and duodenal ulcers, found that the average death rate for the four-year period after operation in patients with gastric ulcers was slightly more than three times the normal, while in the duodenal ulcers it was slightly less than normal. The series consisted of 2,431 patients, and all but 108 were traced.

Conclusions.

If it is true that the majority of the cases of duodenal and gastric ulcer have an average duration of a number of years, many extending from twenty to thirty years, it is probable that there is an exaggerated idea of their danger to life. Few persons die from perforation, and few from haemorrhage—more, however, than die from surgical procedures. It is true that they suffer, are disabled, and should be relieved; and it is also probable that but a small percentage of the total number of ulcers are recognized or treated for the true condition. Gastric ulcers may give greater discomfort than duodenal ulcers, and, because of the danger of malignant degeneration, should be destroyed at the time of the operation unless this procedure would add unwarranted immediate risk. I believe patients who suffer from gastric ulcer should be told of this danger.

In fact, the surgical treatment of ulcer is the best recognition of the value of medical treatment by permanently overcoming delay or obstruction and lowering the acidity with the patient's own alkalis.

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MR. PATERSON said that the correct application of any surgical procedure depended on a proper appreciation of its effects. Clinically, therefore, it was of the utmost importance to determine whether in the treatment of gastric ulcer, the operation was purely mechanical or had any physiological effect on the gastric activities. Sir Berkeley Moynihan had said that "we must consider this fact also, that when gastro-jejunostomy is performed for a chronic gastric ulcer, the physiological results of the operation though they may not bring about the healing of the ulcer, may *yet delay or prevent its progress towards carcinoma*." That seemed to indicate a change of view, but later on Sir Berkeley Moynihan said, "I am very sceptical as to any substantial physiological value possessed by the operation." Possibly these opposed statements indicated that Sir Berkeley Moynihan was in a state of philosophic doubt. Sir Berkeley Moynihan, Mr. Paterson thought, was a living illustration of the words of the greatest of American writers: "a foolish consistency is the hobgoblin of little minds." He was never afraid to change his views and to admit the alteration of his opinions.

I think, Mr. Paterson continued, that the beneficial results of gastro-jejunostomy cannot be attributed to hastened evacuation of the stomach. Hastened evacuation is a far from constant result of gastro-jejunostomy.

Is there any constant effect of gastro-jejunostomy on the condition of the stomach contents? There is—namely, a definite and constant increase in the mineral chlorides. To what is this due? The conclusion is irresistible that it is due to small quantities of bile and pancreatic juice gaining entrance to the stomach through the anastomosis. This is nature's method of alkaline medication, and is a very different thing from the intermittent action of alkalis administered by the mouth, the effect of which is to stimulate the secretion of acid.

The fact that gastric ulcer sometimes recurs after gastro-jejunostomy is not incompatible with the physiological explanation of the operation. The hyperacidity before operation may be such that the amount of alkaline juices which backflow into the stomach are insufficient to neutralize the acid gastric contents. We must also bear in mind that gastric ulcer is by no means frequently associated with hyperchlorhydria, and it is not always excess of acid but the continual presence of a weak acid which keeps up the ulceration. So after gastro-jejunostomy indiscretions in diet may produce hypersecretion, and the constant action of a weak acid in the stomach contents may lead to recurrence of ulceration. The work of Dr. Charles Bolton has an important bearing on this question.

One other point: with regard to the grafting of malignant disease on simple ulcer—Sir Berkeley Moynihan has admitted that the clinical evidence is inconclusive—I would go further and say that there is no clinical evidence of any scientific value concerning such a happening. He has admitted the uncertainty of a diagnosis of gastric ulcer from the history. Nor is the pathological evidence more convincing. Doctors Wilson and MacCarthy state that in 71 per cent. of their cases there was "a large ulcer with scar tissue centres and overhanging border, deep in the bases of which cancer is present. Further, almost every case gives a clinical history suggesting gastric ulcer for a long period of years preceding the relatively short period when the history became that of gastric carcinoma." Apart from the assumption that a previous history of gastric trouble is evidence of gastric ulcer, the weak point of this argument appears to be the absence of proof that an ulcer in which cancer cells are present has ever been other than malignant. The presence of scar tissue is not necessarily evidence of non-malignancy. Further, the border line between a benign and a malignant growth is a narrow one, and a given tumour may be inherently malignant before, clinically or pathologically, we can recognize its malignant character with the means at present at our disposal. There remains this solid fact: Patients on whom gastro-jejunostomy is performed for gastric ulcer rarely die from gastric cancer. Professors Kocher and Grenot estimate the proportion as less than 3 per cent. In my own experience the proportion is less than 2 per cent.

If, however, carcinoma supervenes in anything like the proportion of ulcer cases alleged, then a considerable number of patients who have had a gastro-jejunostomy performed for gastric ulcer ought subsequently to die from gastric cancer. They do not do so; therefore, either carcinoma does not originate in gastric ulcer very often or, if it does, then gastro-jejunostomy stays the progress of the carcinoma. This is a dilemma from which there is no escape. Either carcinoma is not often grafted on a simple ulcer, or, if it is, then gastro-jejunostomy cures cancer. Clearly, therefore, this argument for the performance of partial resection in preference to gastro-jejunostomy falls to the ground. I do not dispute that partial gastrectomy is advisable and necessary in certain cases, but do let us be sure of our principles and not use arguments in favour of the more severe operation which are not conclusive and not supported by solid facts.

One last point. Gastro-jejunostomy is but an incident in the treatment of gastric ulcer. Prolonged and careful after-treatment is of no less importance than operation.

A. H. BURGESS, F.R.C.S.,

Manchester.

MR. BURGESS emphasized the importance of clearly recognizing the two objects aimed at in the surgical treatment of gastric ulcer (1) to get rid of the ulcer itself, and (2) to cure the abnormal condition allowing of its continued existence—that is, hyperacidity. Both objects were necessary for success. The former was attained by excision of the ulcer, or by Balfour's method of destruction with the actual cautery. Mr. Burgess much preferred a clean-cut excision to the cautery, the range of action of which was difficult to control; the latter was attained, so far as it was possible to attain it by surgical means, by gastro-enterostomy. Neither excision alone nor gastro-enterostomy alone was sufficient; a combination of the two was the ideal procedure. But in actual practice it was often an easier and a quicker operation to perform partial gastrectomy, and he now agreed that that was in most cases the better procedure. Where, however, the ulcer was very high up on the lesser curvature, almost the whole stomach would require removal, and in these cases he still preferred a local excision of the ulcer (the wound in the stomach being sutured transversely), combined with gastro-enterostomy. He referred to the help given to partial gastrectomy by the inter-colo-epiploic route described by Pauchet of Amiens; it allowed splendid access to the posterior wall, and complete avoidance of all danger to the middle colic artery. Mr. Burgess believed firmly in the so-called "physiological" action of a gastro-enterostomy. The advantages of making a large opening between the stomach and jejunum, almost universally agreed upon, were easily explicable on the "physiological" theory, but if gastro-enterostomy were a purely "drainage" operation, then there was no great object in having the opening larger, ultimately, than the cross section of the efferent loop, since the width of a drain was that of its narrowest point.

He urged that more attention be paid to the after-treatment of these cases, and that the diet of all these patients should be carefully regulated subsequently. He advised all his patients to take alkali in some form almost as an article of diet after gastro-enterostomy.

CHARLES RYALL, F.R.C.S.,

London.

MR. CHARLES RYALL said that in considering the question of the surgical treatment of gastric ulcer it was well to remember that the ulcer was the outcome of a simple inflammatory process, and that it was very similar to any other simple chronic ulcer, such as that of the leg. The causes were probably predisposing and exciting; though the former, such as hyperacidity in the stomach, ulcer and vascular stasis in the leg, might be easy to surmise, the real exciting cause was more difficult to determine. Dr. C. Mayo's observations and research in gastric thrombosis or emboli might prove to be of great importance in solving the problem. The question whether gastric ulcer could be made to heal was answered by the fact that not only were healed scars found in the stomach, but other cicatrizations, causing pyloric stenosis and hour-glass contractions. Ulcers of the leg healed if they were given rest unless they were fixed to the parts beneath by a fibrotic bed of scar tissue, occluding the blood supply, and it was just the same with gastric ulcer, when mobile and not fixed: when given rest it would heal. To give it rest, both mechanical and physiological, gastro-enterostomy was necessary. Paterson had pointed out the advantage of physiological rest, and in Mr. Ryall's opinion too much credit had not been given him for the work he had done.

Mr. Ryall considered that it was unsafe to dogmatize as to what should be done in cases of gastric ulcer before an exploratory operation was performed. He did not believe that any set or fixed operation was applicable to all cases. It was therefore wise generalship to be guided by what was found. When on exploration the ulcer was found a gastro-enterostomy was essential.

It was necessary also to determine whether the ulcer was likely to bleed, liable to perforation, or likely to interfere with function by the formation of a deforming cicatrix. These types had undoubtedly to be dealt with by extirpation. The application of the cautery was undoubtedly useful, but it was not free from risk of being followed by haemorrhage unless the chief vessels of the part were secured by underpinning, and one could underpin freely in the stomach without fear of necrosis. He was not in a position to say that every ulcer of the stomach must be excised.

That there was some relation between chronic ulcer and cancer was indisputable, but his opinion was that too much importance had been attached to the incidence of cancer and chronic ulcer. It was only by working on with persevering observation that the surgeon could hope to attain the high standard of treatment aimed at by Sir Berkeley Moynihan.

Brigadier-General JOHN FINNEY, Hon. F.R.C.S.Eng.,

United States Army Medical Service.

DR. FINNEY was greatly interested in the discussion, especially in consideration of results. He personally had found difficulty in determining the true nature and actual cause of the ulcer. The diagnosis was not easy from any point of view, and he had to admit (he spoke from the heart) that sometimes he had not been able to decide whether an ulcer were present or not, even when the stomach was in the wound, in his hands, before his eyes. His cases had not responded as he had hoped to treatment, whether by excision or by any other procedure, so he now found himself, when the abdomen was opened for supposed gastric ulcer, with a very open mind. He had gone through the whole gamut of operations for the treatment of gastric ulcer and had failed to effect a cure a sufficient number of times to make him sceptical about laying down any hard and fast rule. It was possible to get certain general principles fixed in one's mind after a time, and to possess certain strong impressions, and it was these which influenced action in individual cases. Every case was a law unto itself, and uniform results from one procedure in all cases were unattainable. His own predilection was for pyloroplasty, because in cases in which he was unable to decide whether an ulcer was present or not an examination could be made of the internal stomach wall, and in some cases of ulcer of the anterior wall of the stomach the disadvantages of gastro-enterostomy were avoided by a pyloroplasty. However, he found himself gradually enlarging that group of his cases in which resection was the preferable operation, and so far he had had no mortality in that operation. But he still admitted that each case he operated on he was sorry for.

WILLIAM BILLINGTON, M.S., F.R.C.S.,

Birmingham.

THE ease and certainty with which the symptoms of ulcers of the stomach can be relieved by operation depends very largely upon the site of the ulcer. Those situated at or near the pylorus are almost invariably cured by gastro-enterostomy alone. As the site of the ulcer passes from right to left the difficulty in obtaining successful operative results increases. Sir Berkeley Moynihan's experience is common to most surgeons, and I am able to confirm in every detail what he says with regard to the unsatisfactory results of excision of the ulcer without gastro-enterostomy, excision of the entire segment of the stomach in which the ulcer is situated—the "sleeve" operation—and ordinary posterior gastro-enterostomy with or without excision of the ulcer. Some years ago I excised the ulcer widely and sutured the opening without performing gastro-enterostomy in 25 cases. Only those cases were selected in which the excision could be carried out easily and without producing deformity. The results in this series were the worst that I have had, except where the "sleeve" operation was performed, when the results were equally bad. When posterior gastro-enterostomy was performed for ulcers in the body of the stomach, with or without excision of the ulcer, the results were better but uncertain.

Provided that the ulcer is within the stomach there can be no inherent difference in its pathology whether it be situated in the pyloric portion, the middle portion, or the cardiac end. Given an ulcer of the same extent and depth difference in situation can alone account for the different results obtained. Sir Berkeley Moynihan proves this absolutely, but he gives no satisfactory explanation of the cause. He rightly, in my opinion, discredits the contention that the beneficial result of gastro-enterostomy in some cases is due to the admission of alkaline intestinal fluid into the stomach at an early stage of digestion. We are all familiar with the nausea and discomfort of which patients complain when such regurgitation occurs to any extent—that is, when a mild vicious circle insufficient to cause actual vomiting follows the operation, and experience teaches that absolutely satisfactory results follow gastro-enterostomy combined with jejuno-jejunostomy where little or no intestinal content leaks into the stomach.

I believe the underlying factor to be the effect which an ulcer penetrating deeply into the muscle of the stomach wall has upon peristalsis. Stomach peristalsis is a far more composite affair than intestinal peristalsis. Time does not allow of my elaborating the point, but a surgical ulcer of the stomach appears to have the same effect upon peristalsis that a bridge has upon the vibrations of a violin string—the parts of the string on either side of the bridge vibrate separately and independently. In other words, the ulcer physiologically, though not necessarily anatomically, divides a single stomach into two, and these can never again be converted into a single organ. The scar resulting from excision of the ulcer acts in the same way as the ulcer. Acting upon this supposition, I have for some time now regarded every stomach with an ulcer situated in the body as an hour-glass stomach and treated it as such, that is, by a long anastomotic opening which extends well on either side of the line of the ulcer, or by a double anastomotic opening. The essential thing is to establish an opening on either side of the ulcer. Though not able to give actual statistics, I have now carried out this treatment in about 50 patients, and the results have been more satisfactory than any I have previously obtained. Sir Berkeley Moynihan excises the distal pouch together with the ulcer, leaving the patient with the proximal pouch only. In his experienced hands this has proved a comparatively safe procedure, but it cannot be regarded as other than a very severe operation, and is only applicable in a proportion of cases. Double gastro-enterostomy is comparatively simple and safe, and applicable to almost every case of ulcer of the body of the stomach. When the posterior operation is impracticable the anterior method is employed, and no great difference in results is observable. I am, however, with increasing frequency, carrying out a jejuno-jejunostomy at the same time, there being greater risk than in an ordinary gastro-enterostomy of a mild form of vicious circle being established.

R. P. ROWLANDS, M.S., F.R.C.S.,

London.

WE all owe a great debt of gratitude to Sir Berkeley Moynihan, Dr. Mayo, and others, who have taken so much trouble to collect and bring to this meeting the instructive statistics of their brilliant results in such a large number of gastric operations. Their work is and has been for a long time an inspiration to all surgeons and a revelation to most physicians.

It is now generally admitted that gastric ulcer is much rarer than we used to think and that its clinical diagnosis is often at fault, even with the aid of the *x*-ray examination and fractional chemical analysis of the gastric juice. In many cases an operation is still necessary to establish the diagnosis without delay, and a microscopic examination of the ulcer is the only certain way of proving the absence of early carcinoma. Therefore an operation for supposed gastric ulcer should always begin with an exploration of the whole abdomen and be followed by a detailed examination of the stomach. Any distant source of infection should be removed if possible, and no operation should be performed on the stomach unless there is a visible and palpable gross lesion of it. The choice of the best operation for such cases ought not to be made until the exact conditions are known.

Many of the poor results following gastro-jejunostomy have been due to its performance in unsuitable cases, and many others are due to errors of technique too often arising from insufficient knowledge and experience. Before performing the operation, which is too often considered simple and easy, without due regard to the ultimate functional result, a surgeon should take pains to practise it on the cadaver and perform it first on the living only under the direct supervision of a master hand. Like marriage, a gastro-jejunostomy should not be taken in hand inadvisedly, lightly, or wantonly, but reverently and discreetly, for the patient has to live with the anatomical and physiological results of the operation, and it is vital for his recovery and comfort that the very best known method should be adopted. The removal of a useless organ, such as the appendix, is a very different affair.

In spite of what some previous speakers have said, I still think that gastro-jejunostomy is a very good operation for the treatment of pre-pyloric ulceration, and even of small soft movable ulcers elsewhere. Almost invariably it immediately stops pain and spasm, often very severe before the operation, and allows the patient to eat plenty of nourishing food, and thus enables the ulcer to heal in the majority of cases. I believe that the operation has physiological as well as mechanical results, and that the diminution of the hyperacidity of the gastric juice by the flow of bile and pancreatic juice into the stomach is a very important element in the cure of the ulcer, probably far more powerful and constant and certainly far less irksome than the frequent administration of alkalis by the mouth. Cauterizing the ulcer can be added with advantage in suitable cases, after Balfour's method.

It seems a pity to abandon a good, comparatively simple and safe operation because its results are not perfect in every case. Sherren reports over 85 per cent. out of 187 patients perfectly well for over two years after the operation. It would seem wiser to be more careful in the selection of cases, and to limit the operation to those already mentioned, reserving the more severe, difficult and dangerous operations for large ulcers which have become adherent to the pancreas, liver, or abdominal wall, or are suspected of malignancy. If partial gastrectomy becomes the most common operation for gastric ulcer and is performed by a large number and variety of surgeons the mortality will be very serious. Even in specially skilled hands it is about five times that of gastro-jejunostomy. The very nature and severity of the operation will always make it more dangerous than gastro-jejunostomy. What is right for an expert himself is not necessarily right for him to advise others less expert than himself to do, and partial gastrectomy is clearly an operation that should be reserved for experts. However, the fact that we cannot be sure whether an ulcer of the stomach is innocent or malignant, and that in a small proportion of cases even the most experienced surgeon is sure to make mistakes, is the strongest argument of all for more frequently adopting the more radical operation of partial gastrectomy. It is certain to become more popular with skilful surgeons on this account, and because of the excellent functional results and the freedom from recurrence of symptoms. Time only will show whether secondary ulceration will follow partial gastrectomy, but, owing to the small part of the stomach usually left, it would appear unlikely.

It seems to me that Moynihan's method of joining the jejunum to the stomach may possibly be followed by jejunal ulceration, and as the anterior direct method of Mayo with reversion of the jejunum avoids the kinking which Moynihan mentions as the reason for his Y modification, this modification seems unnecessary. I should also fear the same complication after his method of gastro-jejunostomy with jejunostomy, for a considerable length of the jejunum would presumably be bathed with undiluted gastric juice. I think, however, that this operation is an excellent one for what hitherto appeared to be an intractable but small group of cases.

THE PRESIDENT OF THE SECTION.

Sir **George Makins** said that he had listened with great interest to Mr. Paterson's arguments in favour of the good which followed gastro-enterostomy being due to purely physiological results, but his experience had been that where the operation had been performed on account of mechanical obstruction of the pylorus the results had been the most satisfactory and delightful. His view, Sir George Makins said, was that the mechanical influence of the operation was that which was most important and most effective.

In regard to the question of development of malignant disease, he thought there could be no doubt that carcinoma did follow upon and in an ulcer. Cancer did follow simple ulcer of the leg, though not frequently; it might be a more common consequence in the stomach, though no evidence had been produced to show that a considerable proportion of stomach cancers did follow simple ulcers.

He wished to congratulate the Section on the success of the discussion.

REPLY.

Sir **Berkeley Moynihan** said: The discussion has been wide, but has revealed few disagreements on principles, so that there is little which calls for reply. The point which I mentioned in my opening remarks needs emphasis once again that no operation is applicable to all cases, nor to all patients; the conditions of the ulcer and the state of the patient both require anxious consideration. The performance of gastro-enterostomy alone has given results which in early days of surgical work were properly considered as satisfactory. But as experience has grown and technique has improved, better results than are given by this operation are, in appropriate cases, within our reach, and should be afforded to our patients. Take Mr. Paterson's cases, for example. In a recent publication, so far as I can accurately read his figures, in cases in which gastro-enterostomy has been successfully performed, the mortality from the later development of cancer of the stomach is as great as the mortality of that primary gastrectomy which would have cured the patient once for all. The same is true, I think, of Dr. Coffey's cases, though neither he nor Mr. Paterson distinguish in their reports between the operation as performed for gastric and for duodenal ulcers. I do not plead for the invariable performance of gastrectomy. But surgeons will find that the performance of gastrectomy will steadily increase in their practice.

With regard to the "physiological" effects of gastro-enterostomy. This implies that the bile and pancreatic juice, in entering the stomach through the new opening, tend to alkalinize the contents of the stomach. Now, the normal reaction of the stomach contents is acid; the cells of the gastric mucosa live their lives and perform their due functions in an acid medium. If a word should describe the condition brought about by gastro-enterostomy —a condition which is the very denial of normal physiology—it should be "antiphysiological."

Hyperchlorhydria is not the rule in cases of gastric ulcer. In my own cases it has been present in less than 30 per cent. Smithies has shown that in 2,168 cases of *proved* gastric ulcer (which is quite a different thing from "gastric ulcer"), the free HCl values were absent or below normal in 25.6 per cent., normal in 41 per cent., and above normal in 33.4 per cent. Therefore the "physiological" value of the operation can only be necessary in one-third of the cases; and in none of the cases is there yet any proof that an ulcer of the stomach heals better in an alkaline than in an acid medium. But if a "physiological" result is needed, gastro-enterostomy is not the best method of producing it; it would be better to join the gall bladder to the stomach.

THE DIAGNOSIS OF GLAUCOMA.

BY

ROBERT H. ELLIOT, M.D., F.R.C.S.,

Lieutenant-Colonel I.M.S. (ret.).

The invitation to address you to-day on the subject of the diagnosis of glaucoma suggested that I should lay special stress on the great advance which has been made during the last few years in our knowledge of the disease. That advance has been especially fruitful in two directions: (1) In the accuracy of the methods of our diagnosis, and (2) in the efficacy of our operative methods. Though we are primarily concerned to-day with the former of these considerations, it will be impossible to do justice to our theme if we fail to realize that the recent great advances in glaucoma surgery have entailed a grave responsibility in the exercise of the available methods of diagnosis.

We may roughly divide the history of glaucoma into three great periods: The first of these began over four centuries before the dawn of the Christian era with the mention of the disease in the writings of Hippocrates, and extended in nebulous mistiness for more than 2,250 years. The second period was ushered in by Helmholtz's invention of the ophthalmoscope in the year 1851, for this discovery opened up an entirely new path for the diagnosis of glaucoma, and thus paved the way for an intelligent understanding of the pathology of the disease. It was an era of solid and wonderful progress, and many great names are associated with it. Time does not suffice to speak of Weber's discovery of cupping of the optic disc, or of the magnificent work done by Bowman, Mackenzie, Leber, Stellwag, and others, but there are certain names over which we must linger. It was Laqueur who, in 1876, introduced us to miotics; it was von Graefe who, in 1857, advocated iridectomy; and it was de Wecker who, whilst championing his master's teaching, first saw clearly what that master had only dimly apprehended namely, the value of the filtering scar. Last but not least, I would mention the name of a great Englishman, fortunately still with us, who, by an epoch-making and lifelong study of the disease, has made a firm road for us all to follow, and has thus been indirectly responsible for a large part of the progress on which we congratulate ourselves to-day. I need hardly say I refer to Mr. Priestley Smith. The third cycle began in the year 1906, when the magnificent work of Lagrange inaugurated a new era under whose auspices we meet to-day. The introduction of the operation of sclerectomy by that great Frenchman materialized the dreams of von Graefe and de Wecker, converted their longing foresight into the practical triumphs of the surgery of to-day, and gathered glaucoma into the list of curable diseases. I should be remiss indeed if I failed to mention the services to ophthalmology of Stellwag, who introduced sclerotomy, and of Herbert, who—even before the writings of Lagrange —was doing magnificent pioneer work in his search for an ideal method of securing a filtering cicatrix, a task on which he is still engaged. You will see from the list I have quoted that neither Great Britain nor her great ally France has cause for anything but pride in the past pages of this volume of the history of ophthalmic surgery.

We stand in a very different position from that of the surgeons even of fifteen years ago; but I would remind you that privileges bring corresponding responsibilities. When the treatment of glaucoma was all but hopeless, it mattered comparatively little whether we could ascertain beyond the shadow of a doubt whether the disease was progressive and at what rate the advance of the signs and symptoms was taking place. I hold it as an article of faith that to-day the great majority of cases of glaucoma can be arrested if only the diagnosis is made at an early stage and the treatment used is rational and correct. Success or failure depends very largely on the methods of diagnosis employed, and on the care and attention given to each individual case.

Let me make it clear at the outset that our present refinements in diagnosis help us in three distinct ways: (1) They enable us to recognize with certainty the presence of glaucoma even at a very early stage, and probably before any permanent damage to vision has occurred. (2) As soon as we have diagnosed glaucoma, they put it within our power to ascertain with ease whether the disease is progressive or not, and, if the former should prove to be the case, to measure accurately the rate of advance of the pathologic process. (3) They furnish us with a means of estimating the value of any treatment we adopt for the arrest of the disease.

We must now speak of the methods of diagnosis at our disposal, but it need hardly be said that the time allotted for this lecture only permits of our doing so in the barest outline.

The Ophthalmoscopic Evidence of an Increase in Intraocular Pressure.

I confidently assume that you know all about the typical pathologic cupping of the optic disc in the later stages of glaucoma and its accompanying atrophy. There is, however, a much earlier and a much more delicate sign than this, namely, an increased pulsation of the retinal vessels. In most normal eyes a slight venous pulse can be distinguished, either where a vein first emerges from the substance of the optic nerve or where a distinct bend in the vessel takes place. If the pressure within the eye rises, one of the first results is an accentuation of this venous pulse. If a further rise in pressure takes place, the pulse is communicated to the arteries as well as to the veins, and may become a very marked feature of the ophthalmoscopic picture. When the surgeon is in doubt as to whether a retinal pulse is present, he may accentuate it and make it readily visible by pressing gently with his finger tip on the ball of the eye, through the upper lid, whilst continuing the ophthalmoscopic examination. To summarize: Marked venous pulsation in a doubtful case is suspicious; arterial pulsation is more than suspicious, unless some other explanation of its presence is available.

There is another way in which a doubtful pulsation may be rendered demonstrable—namely, by the use of a mild mydriatic, such as cocaine, euphthalmin, or even homatropin. This is deliberately done by certain foreign surgeons, but I would caution the practitioner against it, unless very careful safeguards are provided; a meiotic should always be instilled afterwards, and the patient should be kept under observation until all danger is past.

Mechanical Tonometry.

The old rough and ready method of finger tonometry is only of value as a preliminary test. Not one of you would pretend to measure a patient's temperature by placing your hand upon his skin; you would use a clinical thermometer. In like manner the modern ophthalmic surgeon estimates the pressure within the eye by means of a carefully devised mechanical instrument known as a tonometer, which measures the tension of the coats of the globe, and so, by inference, arrives at a reliable estimate of the pressure to which the fluid within the eye is subjected (Fig. 1). It is impossible now to enter into details on this subject, but there are certain elementary facts to which I desire to invite your attention, since they are of practical interest to your patients and therefore to yourselves: (1) The taking of a tonometric measurement is quick, easy, and painless; (2) in the hands of an expert it causes no alarm to the patient and is quite devoid of danger; (3) it practically eliminates the personal element involved in the surgeon's hopes, desires, and fears; (4) clinically, it is a reliable instrument, especially in the matter of comparative readings between the two eyes, or of one eye at different periods.

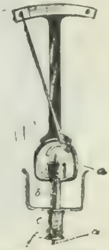

FIG. 1.—Schiötz tonometer.

When the indications given by the tonometer are positive, they are of great value; when they are negative, they do not rule out the presence of glaucoma unless they have been repeated under different conditions and at different times of the day and night; in other words, continuous readings may be required. When this is the case, it is better, especially in old patients, to carry out the examination in a nursing home or hospital.

(1) Accurate tonometry is of the greatest value in the positive diagnosis of glaucoma, especially when the record differs in the two eyes. (2) Readings taken from time to time often throw much light on the course the disease is taking. (3) The value of medicinal or operative treatment can often be gauged by tonometry with accuracy and impartiality.

Perimetry.

In opening this section of the subject, I should like to reaffirm my strong conviction that the perimetric examination of a patient, when suitably conducted, furnishes alike the most delicate and the most reliable indications (1) of the presence of glaucoma, (2) of the progress, if any, that the disease is making, and (3) of the value of *any* method of treatment whether medicinal or operative.

It is important to realize that there are two main elements to be considered: (1) Any limitations or alterations in the field of vision as a whole, and (2) any changes in that part of the field lying within 26° of the centre of vision.

1. *The first of these* can be best dealt with by the aid of the ordinary perimeter, an instrument with which every student is familiar; but certain essentials must be borne in mind: (i) The examination must be made with care, a large number of points being registered; (ii) it must be conducted along concentric circles from the centre to the periphery, and not along radii. I lay stress on this matter because we so often see charts which profess to plot a field on the strength of obviously not more than six or eight observations. Such tracings are of little, if any, value. (iii) Small test-object must be used.

Quite early in the course of glaucoma the field is found to be shrunken, and there are certain features of this shrinking which, if not characteristic, are at least highly suggestive: (i) It is the *nasal* portion of the field which suffers first, and which in most cases suffers most up to the very end; (ii) the peculiar phenomenon known as *Roenne's step* can be demonstrated in a very large percentage of the cases if the rules laid down above are strictly obeyed. We have not time to linger over this sign at present, but shall hope to demonstrate it to any of you who are sufficiently interested this afternoon. The essential feature of it is that one half of the field, either the upper or the lower, is curtailed to a greater degree than the other, thus giving the appearance of a step in the chart (Fig. 2).

2. *The changes in that part of the field lying within twenty-six degrees of the centre of vision* are best conducted by the aid of special perimeters which are worked at a considerably greater distance (1 to 2 m.) than the ordinary instruments, and with much smaller objects (1 to 2 mm. in diameter) than those usually employed. By these means we get a more accurate delineation of scotomata, and we make the patient's task much easier, owing to the magnification thus given to the defects. We shall speak briefly of certain important phenomena found by these methods in glaucomatous fields.

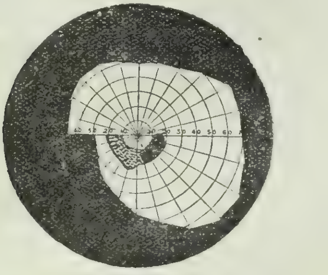

FIG. 2 — Visual field (R.E.), showing Roenne's step and Bjerrum's sign.

(*a*) *Bjerrum's Sign.* This is a peculiar scotoma, which starts from the blind spot, sweeps round the central area of fixation, either above or below it, or both if double, and ends on a horizontal raphé on the nasal side of the field. It has been described as being bow-shaped, sickle-shaped, comma-shaped, comet-like, and so on; it really has a shape of its own, which once seen is easily appreciated. The lesion of which this sign is evidence is believed to be situate at the margin of the papilla, and to be an indication of the injury inflicted by the sharp edge of the disc on certain bundles of nerve fibres as they cross over (Fig. 2).

(*b*) *Seidel's sign* is merely a very early stage of Bjerrum's sign, and consists, according to Seidel, in an elongation, either upward or downward, or both, of the blind spot. These elongations terminate in pointed ends; a somewhat crescentic figure is formed with its concavity toward the centre of fixation of the field. Seidel laid stress on the fact that his sign could be detected at a very early stage indeed, and even before any other evidence of glaucoma could possibly be elicited (Fig. 3).

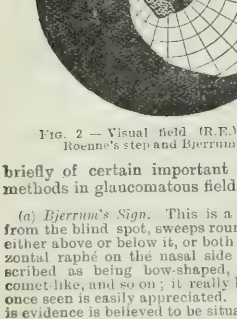

FIG. 3.—Seidel's sign.

(*c*) It was whilst endeavouring to test Seidel's work that I hit upon what I think I may venture to call *a third* and very important *sign of glaucoma*. I argued that if the scotoma was really a sign of injury to nerve bundles, it should, when sufficiently carefully mapped out, manifest itself, not as a pointed crescent, but like the outspread hairs of a paint-brush, some of the hairs—to carry on the simile—extending further than others. My reason for this was that if it is a question of nerve bundles being injured, and if only certain of them are injured, it would seem probable that there would be a differentiation in the amount of injury between the damaged bundles, or even between the fibres of any individual bundle. To test this point I adopted (i) Priestley Smith's circular method of examination; (ii) Bjerrum's principle of small test objects used at long distances from the eye; and (iii) with these I incorporated an idea of my own, namely, the examination of the field at degree intervals from 0° out to 30°. The results justified my expectations, and showed that, at a very early stage of glaucoma, the blind spot not merely shows an enlargement whose general tendency is to run concentric with the circles of the visual field, but which also ends in both directions in jagged points, just as I had anticipated (Fig. 4). This test enables anyone who will use it carefully (1) to detect glaucoma before any other evidence of it is in existence; (2) to watch with great accuracy the course of the disease, detecting any progress that may be made, or establishing the fact that the pathologic process is stationary; (3) to determine the value of any methods of treatment, operative or otherwise, which may be employed; and (4) to explain improvements in or deteriorations of vision as experienced by the patient, in the absence of any detectable changes in central visual acuity or in the peripheral limits of the visual field. The examination can be conducted easily, quickly, and accurately after a very little experience with the scotometer which I have devised for the purpose (Fig. 5).

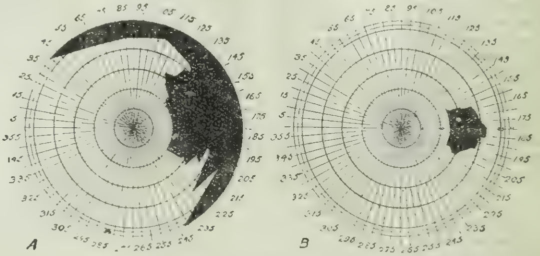

FIG. 4.—The author's sign of glaucoma. A, Before operation. B, Shortly after operation.

Examination of the Light Sense.

This is a subject on which we must necessarily be brief, since it has not yet come fully into its own; but the time is not far distant when it will be better understood and correspondingly more highly valued. We know that one of the most bitter complaints of the late glaucoma patient is the difficulty he finds in adapting himself to any changes in the surrounding light, and the limitations to which he is subjected when the daylight fails or when the source of artificial illumination is poor. There is good reason to believe that a slight failure in light sense is one of the earliest indications of the onset of glaucoma. We are still looking for an ideal instrument for testing this sense, one which will be quick and easy to use and will, at the same time, be reliable in its indications. Young's revolving cards, which I shall hope to have the opportunity of showing you this afternoon, appear to fulfil the necessary indications; but they are so new to us that it is difficult to speak with certainty.

Measurement of the Diameter of the Cornea.

Priestley Smith has shown that those who have a relatively small cornea are likely to present other anatomical peculiarities, which predispose to an obstruction to the outflow from the angle of the chamber, and so favour the onset of glaucoma. It is therefore most desirable that we should be able to measure one at least of the diameters of the cornea with accuracy. I know of no method of doing this, though I have tried all that have been advertised or recommended, inclusive of the German models. I have for some time past been endeavouring to have a suitable instrument constructed; the main difficulty has lain in the present state of industry. In addition to this, few English makers care to take up the manufacture of an expensive instrument in view of the fact that its cost alone condemns it amongst our own surgeons. I hope soon, however, to overcome all the difficulties, and to have a suitable instrument placed on the market for those to use it who will.

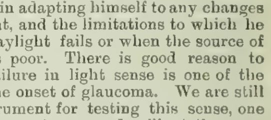

FIG. 5. Author's scotometer.

My object has been to employ the limited time at my disposal to indicate the advances that have been made and that are in process of being made, and to show that we now have it in our power (1) to detect glaucoma in its very earliest stages, (2) to watch its course with accuracy and confidence, and (3) to check the results which we attain by any of those methods of treatment which we may think right to adopt.

I would ask permission to make a few final remarks of a practical nature which arise out of what has gone before. Circumstances demand that I should be brief, and therefore I must be dogmatic.

1. In the observation of a case of glaucoma we must take account of the evidence obtained from scotometry, perimetry, tonometry, ophthalmoscopic appearances, and other physical signs, and from diminution in the visual acuity. I want you to observe carefully the above order, which is deliberate and intentional. A diagnosis should never be made on the strength of one feature of the case alone if any shadow of doubt exists in the surgeon's mind.

2. If we have clear evidence that the disease is progressing, and that progress is due to an increase in tension, it is our duty unhesitatingly to recommend an operation for the production of a filtering cicatrix, and to urge that this be undertaken at the earliest possible moment. If there is one point on which all the greatest authorities, from von Graefe onward, are agreed, it is that the earlier the operation is undertaken the better is the prospect of success. Not only will more sight be saved thereby, but the procedure itself is easier for the surgeon and safer and more certain for the patient.

3. It is idle to pretend that any operation for so serious a condition as glaucoma is devoid of anxiety, and both sides of the question should be set squarely before the patient. As already stated, the risks of failure increase progressively in proportion to the delay, but against this is ever to be placed the fact that progressive glaucoma is a relentless disease, which ends in the majority of cases in total blindness. Even when central vision is lost at the time of operation—an ever-present danger in late cases—peripheral vision is often retained indefinitely, to the great advantage of the patient.

I think I have said enough to convince you that the recent progress, both in diagnosis and in treatment, has added very gravely to the responsibilities of all who meet with glaucoma at an early stage. Given care and courage, the management of a case of the disease, if diagnosed at an early stage, should very, very seldom end in disaster.

DISCUSSION.

Dr. **WALLACE HENRY** (Leicester) desired to lay some stress on the great assistance in the differential diagnosis of glaucoma in its earliest stages to be obtained from a careful study of the light minimum perceptive power. Dr. Henry mentioned incidentally that when he began the study of light perception, twenty-five years ago, he could find no assistance from previous work of English ophthalmologists, and had to turn to Izard, Chibert, Forster, and Samelsohn in order to get any information on the subject. Its study should be carried on not merely as a matter of scientific interest but because of its practical clinical value. This was especially the case in such diseases as glaucoma, atrophy of the optic nerve, and toxic amblyopia. From his own experiments with a photometer, described twenty-four years ago in the *Ophthalmic Review*, he could confirm Samelsohn's statement that in the earliest stages of glaucoma there was a rapid reduction in the light minimum sense, but very slight reduction in light difference sense. The reverse was the case in incipient atrophy. There was a reduction, but to a small degree in light minimum, but a considerable degree in light difference. In toxic amblyopia there was no reduction in light minimum sense.

Mr. **GEORGE WHERRY** (Cambridge) said that progress in surgery, and especially in ophthalmic surgery, had followed always the introduction or perfecting of some instrument, beginning with the Helmholtz ophthalmoscope, and now, for the early diagnosis of glaucoma, the tonometer and perimeter, and other such aids. Unless a fairly early diagnosis was made, no cure could be hoped for. The optic nerve in glaucoma became atrophied, and hopeless blindness followed if the disease progressed and no operation was done. A permanent cure could only be expected by operation. There were relief remedies such as eserine and other myotics, and in this regard Mr. Wherry asked for an opinion from Colonel Elliot as to Martin Fisher's work with animals' eyes in which artificial glaucoma was produced by soaking the eyes in acidulated water, the tension being afterwards lowered to normal by the subconjunctival injection of a sodium citrate solution. Mr. Wherry had the greatest respect for the magnificent work of Priestley Smith both on the normal structure and growth of the eye and on glaucoma.

Dr. **ANTILL POCKLEY** (Sydney, N.S.W.) said that while he hesitated to confess to a difference of practice from Colonel Elliot, who was so great an authority on glaucoma, and who had so modestly refrained from referring to his own great work, he yet thought it well to raise a point with regard to the tonometer. Colonel Elliot had said that he had never seen any harm result, but Dr. Pockley said that he had seen accidents to the cornea from the instrument. No doubt these accidents were due to its careless use without proper aseptic precautions. But the possibility of carelessness must be reckoned with, and an unnecessary element of danger should not be introduced. He said unnecessary because in his opinion the state of the tension was the least important factor in determining the line of treatment in chronic glaucoma. The repeated careful methodical examination of the field, combined with what information could be got from the *tactus eruditus* of the finger tips was for all practical purposes sufficient to determine the line of treatment.

Lieut.-Colonel **ELLIOT**, in reply to Dr. Wallace Henry, said that an instrument for testing the "light minimum" and the "light difference" was a great desideratum. It must be of such a nature as to be capable of being used quickly and easily for clinical purposes. At present no such instrument existed. If Dr. Wallace Henry would continue his investigations in that direction and would provide such an instrument he would render a great service to ophthalmology. In reply to Mr. Wherry, Colonel Elliot said that Fisher's work had brought no real help to the eye surgeon. The strength of acid solution required to produce the changes which Fisher described was far in excess of anything that would be met with under clinical conditions. Nor had the treatment by the injection of citrate solutions proved of any practical value: the results had been disappointing in the extreme, whilst definite harm had been done by the adhesions excited by such injections; these adhesions, when they were met with, made the later treatment by filtering operations difficult or impossible. In reply to Dr. Pockley, he said that it was true that there was an element of risk in the use of tonometry on old eyes if ordinary precautions were not taken. A very small quantity of liquid paraffin used to moisten the piston of the footplate of the tonometer was a great protection to the corneal epithelium. To turn old people out into the dust of the street after a prolonged tonometry was to take an unnecessary risk. They should be kept in a home or in a hospital or under other suitable observation for twenty-four hours, and should have a 12½ per cent. solution of argyrol instilled at three-hour intervals. It would be quite impossible to say that a surgeon had performed a glaucoma operation unnecessarily or by mistake. He was the more thankful for this because, if it were not so, a surgeon might find himself placed in a very difficult predicament. It was to be remembered that undoubted cupping of the optic disc might totally disappear after the relief of tension by operative measures. This statement did not rest on his own experiences alone, but on that also of several other widely known surgeons. Again, the association of cataract with glaucoma, both after and independent of operations for the relief of the condition, was widely known. It would therefore be most unjust to blame a surgeon because of lens opacities met with after a glaucoma operation.

A DEMONSTRATION ON BLOOD TRANSFUSION.

BY

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AND

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[THE following is an account of a demonstration given by request. The method described will be familiar to the majority of those who used it or witnessed its use in the Army abroad, but it is believed that it will be of considerable interest to others who had not that advantage.]

The Choice of Donors for Blood Transfusion.

It is important that no one should be used as a donor who has suffered from any disease communicable by the blood—syphilis, malaria, trench fever, etc.

There exist in the plasma of man bodies which will agglutinate, and often subsequently haemolyze, the red blood corpuscles of certain other individuals. Transfusion of such incompatible bloods is likely to be fatal to the recipient, haemoglobinuria and severe jaundice resulting from agglutination and haemolysis of the unsuitable corpuscles introduced.

It has been shown by Moss that all individuals fall into four groups as regards these agglutinative and haemolytic properties of their blood serum and plasma.

Table showing the Classification of Moss into the Four "Groups," and the Percentage of Individuals belonging to each Group.

Serum of Group.	Red Cells of Group.				No. of Individuals in Each Group.
	I.	II.	III.	IV.	
I	0	0	0	0	I ... 5 %
II	+	0	+	0	II ... 40 %
III	+	+	0	0	III ... 10 %
IV	+	+	+	0	IV ... 45 %

+ = Agglutination. 0 – No agglutination.

Transfusion can be made safe by testing the effect of the recipient's serum on the prospective donor's red blood corpuscles. Such a test is impracticable in cases of urgency, owing to the time required to carry it out.

A simpler method, and the one now almost universally employed, is to test the "group" of both donor and recipient. This can be done in a minute or two, and a glance at the table shows at once whether the blood of the donor will be suitable.

It is not necessary for the donor to belong to the same group as the recipient. The one essential practical consideration is that the recipient's serum should not agglutinate the red cells of the donor. (The plasma necessarily injected along with the donor's red corpuscles is so diluted at once in the circulation that in practice it has no action whatever on the red corpuscles of the recipient.)

It will be seen from the table that the red cells of Group IV are agglutinated by no other group.

Group IV individuals are "*universal donors*," and their blood can safely be transfused into any recipient.

Group I individuals do not agglutinate with their serum the red cells of any other group. Group I individuals are "universal recipients," and can take blood safely from any donor.

Group II and *Group III* individuals can only receive blood from their own group or from "universal donors" (Group IV).

The Test in Practice.

Looking at the table, it will be seen that to recognize all the groups it is only necessary to keep in hand a stock of serum of Groups II and III. The only other apparatus required are glass microscope slides, and a needle for obtaining the drop of blood from the finger or ear.

A drop of each of these serums is placed on a glass slide, and a small drop of blood from the individual to be tested is mixed separately with each serum. Agglutination, if it occurs, does so within a minute or two, if the test serums are active, and is aided by gently rocking the slide. If agglutination occurs, the drop of blood runs into small masses resembling brick-dust. The change is perfectly obvious to the naked eye, and no microscope is required.

Using Groups II and III serums in this way, it is obvious from the table, that if

Both serums agglutinate, the individual belongs to *Group I.*

Neither serum agglutinates, the individual belongs to *Group IV* (universal donor).

Group II serum agglutinates, the individual belongs to *Group III.*

Group III serum agglutinates, the individual belongs to *Group II.*

Method I.

A Kimpton's tube is sterilized in the autoclave and coated inside with saturated solution of paraffin (M.P.54 C.) in ether. The donor and recipient lie on adjacent tables with arm boards. To each a light tourniquet of tape is applied near the shoulder.

The *recipient's* vein is exposed under novocain for 1½ in., cleared, and kept empty of blood by placing an expanded pair of dissecting forceps beneath it. A ligature is attached to the distal part of the exposed vein. The tourniquet is removed, and a V-shaped incision made with its opening towards the shoulder. Mosquito Spencer Wells forceps are attached to the vein and covered with a saline swab.

The *donor's* vein is exposed in the same manner by a V-shaped incision towards the hand, and without the removal of the tourniquet. A ligature is attached to the proximal end of the exposed vein. The cannula of the Kimpton's tube is placed in the vein pointing peripherally and the forceps relaxed; it is kept there by pulling on the ligature. The flow of blood is aided by grasping movements of the donor's hand and suction from Ingram's bulb applied to the air tube by an assistant. The amount of blood obtained is 400 to 500 c.cm. The cannula is withdrawn, allowing the forceps to expand and empty the vein. The operator's finger is applied to the cannula, which is now inserted into the recipient's vein pointing centrally. The flow of blood is aided by positive pressure from Ingram's bulb. Transfusion is stopped before the blood reaches the cannula. The tube is discarded into saline, and a fresh tube taken for the second part. The amount transfused is usually from 800 to 1000 c.cm. Both veins are tied off, the used portion excised, and the wounds closed.

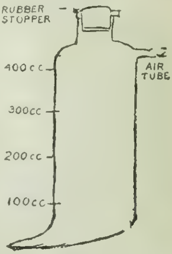

FIG. 1.

The drawbacks to this method are clotting and waste of blood if the flow is delayed, and that exposure of the vein is necessary.

Method II.

Citrated blood by Robertson's bottle. There is placed in the bottle 150 c.cm. of 3.8 per cent. citrate solution, and the whole apparatus is sterilized in the autoclave, the two needles being protected by plugging into test tubes half full of liquid paraffin. The outlet tube closed by the stopcock.

A light tourniquet is applied to the donor's arm to 50 mm. Hg pressure, the vein well filled by movements, the skin cleansed, and novocain 1 per cent. injected into the skin. Pressure is made with the pump to fill the inlet tube with citrate solution and drive air out of the needle.

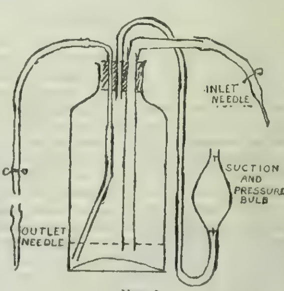

FIG. 2.

The stopcock on the inlet tube is closed, and the pump reversed ready for suction. Slight suction is made in the bottle, and a small nick is made over the vein with the point of the scalpel, the needle is inserted under the skin, the inlet stopcock opened, and the needle pushed into the vein. Moderate suction is maintained, and the bottle rocked with rotary movement, the donor keeping up grasping movements; 700 c.cm. can thus be obtained. If clotting occurs a fresh start must be made. When 700 c.cm. has been obtained the tourniquet is removed, the stopcock closed, and the needle removed. The bottle is next placed in a glass jar containing water at body temperature, and care is taken to see that the rubber cork is tight, to prevent its being forced out by pressure.

The recipient's arm is prepared as the donor's was, and then pressure is produced inside the bottle by the pump, the outlet stopcock opened to fill the tube with citrated blood and then closed again. The tourniquet is tightened and the needle placed in the vein when the glass connexion will fill with blood. Directly this occurs the tourniquet is released, the tube connected, and transfusion begins. At the end the stopcock is closed before air bubbles reach the needle.

It may be necessary to expose one or both veins, and use a cannula.

Sodium citrate solation (3.8 per cent.) is prepared by adding 6 grams of citrate to 150 c.cm. of water.

SECTION OF PHYSIOLOGY AND PHARMACOLOGY.

Professor F. GOWLAND HOPKINS, F.R.S., D.Sc., F.R.C.P., President.

DISCUSSION ON QUININE AND ITS RELATED ALKALOIDS IN PHARMACOLOGY AND THERAPEUTICS.

OPENING PAPERS.

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Pharmacological Laboratory, Cambridge

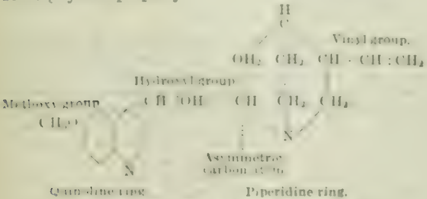
DURING the five years of war the disease which caused the greatest loss of effective man power was malaria. In the months of October, November, and December, 1919, the various pension boards throughout the United Kingdom found that one of every thirteen cases they examined was due to the ravages of this disease; so that not only did malaria add considerably to our casualty lists during the war, but the nation is still suffering from its effects by sickness and loss of money. The greatest mortality and sickness occurred throughout the campaign in Salonica and East Africa, and during the advance in Palestine in 1918. Quinine and its derivatives have assumed, therefore, a significance perhaps never before appreciated to the full.

Quinine is peculiar among alkaloids in that it has no very definite specific action on any particular tissue in the body. Its action on all living tissues is to cause diminished activity and diminished metabolic changes. Sometimes there is a transient increase of activity before the depression is evident.

Chemistry.

Quinine has a complicated molecule which is illustrated graphically in order that I may refer to its derivatives. It is formed from the combination of a quinoline ring with a piperidine ring.

With our present knowledge no benefit can be derived from endeavouring to determine how this complex molecule produces its action. It cannot be stated with certainty whether the effect is due to mass action, whether the side chains combine with constituents of the living cell or even whether the whole action may not be the result of some physical property.



Constitutional Formula of Quinine.

Quinine derivatives are formed by alterations in the methoxy, the hydroxyl, or the vinyl group. The asymmetric carbon atom allows of isomeric modifications.

Cinchonine differs from quinine only in the absence of the methoxy group ($O.CH_3$). If this methoxy group is replaced by the OH radicle we get cupreine. Many derivatives have been prepared by replacing the H of the OH group with another group, so as to form an insoluble quinine ether; these ethers are split up by the alkali of the duodenum into quinine compounds, and are exactly analogous in their relation to quinine as aspirin is to salicylic acid. Such quinine derivations are aristoquinine (diquinine ester of carbonic acid), euquinine (ethyl carbonate), and many others. Their insolubility makes them tasteless, but they have no advantage over quinine. Hydroquinine, from which many of the newer and more valuable derivatives are formed, has the vinyl group $CH=CH_2$ converted into CH_2-CH_3. Ethyl hydrocupreine is hydroquinine in which the methoxy group OCH_3 is changed to ethoxy $O.C_2H_5$, and by substituting the higher homologues we can obtain the iso propyl, isoamyl, and octyl hydrocupreines.

The pharmacological action of derivatives from each of the rings composing quinine is full of interest. Thus, from the piperidine ring we are in close relation to nicotine, and from the quinoline ring we have many antiseptic substances, and more recently the interesting substance phenyl quinoline-carbonic acid, which, with its allies, is unique among drugs, in that it renders the kidney easily permeable to uric acid and urates, without influencing metabolism, so that more uric acid is present in the urine and less in the blood. This remarkable action is analogous to the effect of phloridzin, which renders the kidney permeable to sugar.

Protozoa.

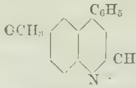
The most characteristic action of the quinine alkaloids is their effect on undifferentiated protoplasm. All kinds of ciliary movements are rendered slower and ultimately cease; spermatozoa and ova are destroyed by small percentages; paramoecia and amoebae in such amounts as 1 in 30,000 are killed in a few hours, though the amoebae of salt water are not injured by much stronger amounts. The spirochaetes of vegetable decomposition become motionless in the presence of quinine in strengths of 1 in 10,000, but those of relapsing fever are not influenced even by such strengths as 1 in 500. Similar concentrations of quinine in the blood act on the white blood cells in the same way as in the case of pond amoebae: movements cease, and the corpuscle becomes granular. Quinine, then, should have the power to limit inflammatory processes, for it prevents the migration of white blood cells, and it is possible that the internal administration of large doses of quinine may limit pus formation. Symptoms, however, are not conditions to be lightly stopped. He who stops a useful cough with morphine may drown the patient in his own expectoration. Washed tetanus spores given hypodermically to guinea-pigs or monkeys do not produce tetanus; if quinine is injected into the animals the day before or the day after the spores are injected, then tetanus is contracted (Semple). Other alkaloids like morphine have not this action.

We are not in a position to explain why certain protozoa are unaffected by quinine; but as quinine has the same type of action on all living protoplasm, it may be assumed that in these instances for some unknown reason the alkaloid does not reach the organism.

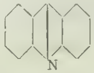
Table showing some of the Results obtained by [illegible] on Paramoecia.

Drug.	Lethal Strength				
	1 in 1,000.	1 in 5,000.	1 in 10,000.	1 in 25,000.	1 in [illegible]
Quinine sulphate ...	[illegible]	15 min.	30 min.		
Quinine hydrochloride	[illegible]	10 min.	[illegible]		
Cinchonine hydrochloride	[illegible]				
Cinchonidine hydrochloride	[illegible]				
Ethyl hydrocupreine sulphate	[illegible]	[illegible]	[illegible]	[illegible]	
Isopropyl hydrocupreine sulphate	[illegible]	[illegible]	[illegible]	[illegible]	
Isoamyl hydrocupreine [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Methyl phosphine ...		—	[illegible]	[illegible]	[illegible]

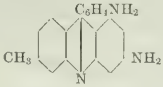
Too much reliance should not be placed on these figures, as paramoecia lose their resistance by keeping, and I have frequently noticed that paramoecia which have been in a hay infusion some weeks are destroyed by concentrations of quinine salts which were without effect on them when they first appeared in the infusion. Isolated observations on paramoecia are valueless, and all observations with new drugs should be standardized against one of the quinine salts. Phenyl para-methoxy chinaldine is the most active of the quinoline derivatives as a protozoal poison, and is included in the table for that reason. Methyl phosphine is the most active paramoecial poison known. It is an acridine derivative, and its relation to acridine will be seen from a comparison of the two formulae.



Phenyl p.-methoxy quinaldine.



Acridine.



Methyl phosphine.

Acridine and its derivatives have a remarkable effect in destroying micro-organisms, but in the light only; this point is illustrated by the following experiment from Jodlbauer and v. Tappeiner. The experiment was made on paramoecia on a very bright day.

Action of Acridine on Paramoecia.

Strength of Drug.	In the Light.	In the Dark.
1 in 2 millions	Death in 3 hours	Living after 48 hours in a strength of 1 in 30,000.
1 in 5 "	" in 4 hours	
1 in 10 "	" in 9 hours	

Such experiments need not detain us, for however interesting they may be in helping to obtain an explanation of how these drugs kill protozoa they are at present of academical interest only, although more is likely to be heard of them in the future.

Unfortunately during the war quinine derivatives could not be obtained easily in England, and so till now there has been little opportunity of testing their value in malaria. Ethyl-hydrocupreine is perhaps the only one with which any considerable number of tests have been made, and Izar and Nicosia, Liefmann, and others state that it will cure cases which are resistant to quinine. Experiments have, however, been made with the natural alkaloids from cinchona bark other than quinine and with hydroquinine, and we shall no doubt hear something about these to-day.

Quinine has never had much vogue in the treatment of syphilis in this country, though it has been used considerably in France. The new derivatives of quinine offer a large field for experiments not only in syphilis but in diseases caused by trypanosomes. It would be out of place for me to refer to the treatment of malaria by quinine except to solicit information. It is generally taught that quinine penetrates the red blood cell with difficulty, and that so long as the parasite is hidden within the corpuscle quinine exerts little or no destructive action.

There is, I believe, serious doubt as to the validity of this hypothesis, and I hope for some enlightenment from those who have had the opportunity for making observations.

Ferments.

Quinine retards all vital processes, both building up and breaking down; it spares tissue waste in small amounts and stops all production of energy in large. Some tissues it is true show an apparent transient stimulation under the influence of small doses of quinine, such, for example, as striped muscle. But here there is a sudden liberation of lactic acid and other substances due to the direct poisonous action of the quinine on muscle. In large doses the effect is strictly comparable with the changes in rigor mortis, but in small doses these breakdown products may afford more assimilable material and increase temporarily the work of the muscle.

Table showing the Effect of Small Amounts of Quinine on some Typical Ferments.

Ferment.	Percentage of Quinine.				
	0.005 %	0.05 %	0.5 %	1 %	2 %
Autolytic ferment of liver—					
Rabbit	–	–	–	–	
Dog	+	+	–		
Pepsin	+	+	+	0	–
Lipase (dog's stomach) ...	–	–	–		
Oxydase	+	–	–		
Invertin (yeast)	–	–	–		
Diastase (pancreas)	+	+			

In this table + means increased action; – means diminished action.

Attempts have been made to explain the action of quinine by its effect on unorganized ferments, and it will be noticed by a reference to the table that certain of the ferments of which we have some knowledge act better in the presence of small amounts though their action is retarded by large amounts of quinine. Traces of quinine in blood inhibit acid formation. The synthesis of hippuric and salicyluric acids by the surviving kidney is stopped by minute amounts of quinine.

The action of quinine is not therefore confined to intact protoplasm but extends to the ferments.

Local Anaesthesia.

General protoplasmic poisons like carbolic and hydrocyanic acids usually produce local anaesthesia when applied to a mucous membrane or injected subcutaneously, and sometimes this action serves as an indication for their toxicity on tissue cells. Quinine has been used as a local anaesthetic combined with urea, which increases its solubility and enables it the better to penetrate tissues, but the new compound is weaker, and must be used in twice the strength which would be required for quinine. The quinine derivatives differ from cocaine and its allies in that they are more destructive to tissues other than nerve—that is, they are less specific for nerve.

The necessary strengths of the quinine derivatives to produce local anaesthesia of the rabbit's cornea have been estimated as follows:

Strengths of Quinine Derivatives Producing Corneal Anaesthesia.

Quinine HCl	1 in 60
Cocaine HCl	1 in 50
Hydroquinine HCl	1 in 100
Ethyl hydrocupreine HCl	1 in 100
Isopropylhydrocupreine HCl	1 in 800
Isobutylhydrocupreine HCl	1 in 1,000
Isoamylhydrocupreine HCl	1 in 1,200
Eucuprinotoxine .. . ... (Isomeric with the last)	1 in 2,000

With all these salts the latent period before anaesthesia occurs is longer, by about four times, than that of cocaine, but the anaesthesia is prolonged, lasting one hour or more.

The nature of this anaesthesia is, I believe, entirely different from that produced by cocaine, stovaine, novocain, and the like. The latter drugs exert a selective action on nerve fibrils, and when they are placed under the skin they paralyse all nerve fibrils with which they come in contact, leaving other tissues relatively unaffected. The quinine derivatives, though they may be twenty or more times as powerful as quinine on the rabbit's cornea, have little or no selective action for nerve fibrils. When placed under the skin in concentrations which will not paralyse sensory nerve fibrils they nevertheless produce anaesthesia. This clearly suggests that they may affect the sensory nerve endings, and experiments are now in progress with a view to determining the nature of the anaesthesia.

Morgenroth and Ginsberg state that anaesthesia of the rabbit's cornea can be produced by isopropyl- and isoamylhydrocupreine in concentrations twenty to twenty-five times less than that required for cocaine. Thus a few drops of 0.08 to 0.1 per cent. of isoamylhydrocupreine produces an anaesthesia lasting from sixty to ninety minutes. An isomeric derivative of isoamylhydrocupreine which

Morgenroth has termed eucuprinotoxine is stated by him to be the most powerful local anaesthetic known, being forty to fifty times more potent than cocaine. Regarding their effects on the human eye we have not much information available, but I have convinced myself that these alkaloids are more irritant than cocaine; even a 0.2 per cent. solution of ethylhydrocupreine, which is not strong enough to cause anaesthesia, induces some irritation.

What is required in medicine is not a superquinine but a quinine with more specialized selective actions on certain organisms. Isoamylhydrocupreine is from ten to twenty times more powerful than quinine (1) in destruction of protozoa, (2) as a germicide, (3) as a local anaesthetic. It is, however, not ten times more poisonous than quinine, as 25 grains may be administered in the twenty-four hours without ill effect. So that it is clearly a step in the right direction. Whatever future these alkaloids may have in medicine it seems improbable, in view of their lack of specificity for nerve fibres, that they will have much vogue as local anaesthetics.

Metabolism.

Since quinine depresses all living tissues in much the same way its effect should clearly be discernible in metabolism. Our facts in this respect are not uncertain, though it is not simple to understand their interpretation. Under the influence of quinine and its derivatives general metabolism is lowered, as shown by the diminution in the excretion of urea, sulphates, phosphates, and chlorides in the urine. The diminution of the urinary metabolites is of such a nature as to leave us no option in concluding that there is a diminished protein breakdown, and we might from this with some confidence prophesy that there would be a simultaneous diminution in the absorption of oxygen and in carbon dioxide output. Such, however, is not the case; the gaseous metabolism is hardly influenced. Furthermore, in febrile conditions the temperature is brought down although the heat loss is not increased; that is to say, there may be other important sources of heat in the body besides the oxidation of carbon compounds. These facts are true in health and fever. Quinine therefore prevents excessive protein breakdown and is legitimately used in wasting diseases for this action. It is unlike arsenic and many other drugs in that it does not diminish oxidation, so that no danger arises from increased production of acid, lactic, butyric, etc., from the incomplete oxidation of carbon compounds. I shall make no attempt to explain these facts, as there are other and more interesting points for discussion.

Bacteria.

Until recent years almost the only assured remedies against poisoning by bacteria have been the antitoxins. In general bacterial infections antiseptic drugs so far described destroy the body tissues before they destroy the micro-organisms. The newer quinine derivatives offer a new field for investigation. Some of them exert specific actions in a remarkable degree towards micro-organisms. It sometimes happens that a small change in the vinyl side-chain of the quinine molecule produces a profound difference in its effect on certain bacteria. The reason for this is unknown; it may be due to a very delicate chemical reaction or to some change in physical property which enables the alkaloid to penetrate the bacterium more easily; but the relationship between chemical constitution and pharmacological action is no nearer solution than it appeared to be thirty or forty years ago. Below is a table, modified from Rohde, showing the relative bactericidal action of the quinine derivatives on some micro-organisms.

Relative Bactericidal Action of Quinine Derivatives.

	Diphtheria Bacillus.	Tetanus Bacillus.	Strepto-coccus.	Staphylo-coccus.	Pneumo-coccus.
Quinine hydrochloride	1 : 100	1 : 1,000	1 : 1,000	1 : 500	1 : 2,000
Ethyl hydrocupreine hydrochloride	1 : 400	1 : 2,500	—	1 : 500	1 : 400,000
Isopropylhydrocupreine hydrochloride	1 : 800	—	1 : 8,000	1 : 1,000	1 : 200,000
Isoamylhydrocupreine hydrochloride	1 : 2,000	1 : 20,000	1 : 40,000	1 : 8,000	1 : 20,000
Heptylhydrocupreine bihydrochloride	1 : 8,000	—	—	1 : 64,000	—
Iso-octylhydrocupreine	1 : 8,000	1 : 60,000	1 : 80,000	1 : 16,000	—
Eucuprinotoxine ...	—	—	1 : 60,000	1 : 52,000	—

Ethyl Hydrocupreine.

It will be seen from this that the only really high degree of specificity so far discovered is that of ethyl hydrocupreine for the pneumococcus. This drug kills the pneumococcus in strengths of 1 in 500,000 or less, but for other bacteria it must be 100 or 1,000 times stronger to produce a comparable effect. By injections into rats, mice, and guinea-pigs this alkaloid can effect a cure of the septicaemia caused by pneumococcus; but when it is used in the treatment of pneumonia in man the evidence as to its specific action and value is, so far, conflicting. There are not lacking many physicians, especially Germans, who extol its virtues for pneumonias of various kinds; some few deprecate its use on account of its toxic action on the eye. There can be no longer any question that this alkaloid kills the pneumococcus in the blood of man when administered in doses that it is perfectly permissible to administer. Results have shown that a bactericidal action for pneumococci is produced in the blood serum of patients if they receive by the mouth an amount of ethyl hydrocupreine hydrochloride corresponding with 0.024 gram per kilogram body weight per twenty-four hours. It is not easy to explain why physicians have not obtained more striking results with a drug which destroys the primary cause of the disease. It is of comparatively little value to administer tetanus antitoxin when the toxin has already poisoned the nerve cells, and I venture to suggest that for a similar reason ethyl hydrocupreine may be of little value when the pneumonic condition is at its height. The pathology of early pneumonia is not well known, but the pneumococcus is apparently plentiful only in the early stages of the attack. The inflammatory process then continues in the ordinary course and may go on, even though all the pneumococci be dead. If this interpretation is correct, ethyl hydrocupreine would be of little value in the treatment of well pronounced cases of pneumonia, but should be of inestimable value in early cases and as a prophylactic. So certain are we of our facts concerning this drug—that we can render the blood of our patients pneumococcicidal—that the gravest reasons only should condemn it to oblivion.

The dose recommended by Morgenroth is 20 to 25 gr. in the twenty-four hours, and this dose Moore and Chesney have shown to be sufficient to render the blood pneumococcicidal.

Unfortunately, treatment by ethyl hydrocupreine is not free from danger. It is well known that quinine in medicinal doses may contract the field of vision and even produce blindness. This effect seems to be more pronounced with the substance under discussion, and although Morgenroth has justifiably criticized some of the physicians who after using the alkaloid described amblyopia, on the ground that they prescribed unnecessarily large doses—Feilchenfeld, for example, administered 60 gr. in twenty-four hours—yet such a writer as L. Schreiber describes optic atrophy after using the drug on a patient, and states that after very careful dosage permanent toxic symptoms may appear. W. Zweig describes how a dose of about 8 gr. caused total amblyopia; in this case gradual improvement occurred, but a grave disturbance of sight remained which induced him to advise against this form of therapy. E. Leschke also draws attention to the disturbance of vision, and recommends the use of smaller doses and the employment of the less soluble derivatives such as the base or salicylic ester. Ethyl hydrocupreine, therefore, though a true specific for the pneumococcus, is not ideal, as in a small proportion of patients the optic nerve and retina may be affected; it is true that this condition is generally transient, as with quinine, yet permanent disturbance of vision sometimes results. The number of physicians—and I have some thirty reports before me—who write favourably of this treatment is large in comparison with those who have no use for it.

Ethyl hydrocupreine has been employed for diagnostic purposes. Pneumococci and mucous streptococci are inhibited by strengths of 1 in 400,000. Ordinary streptococci, meningococci, and gonococci need very much higher concentrations. It is also regarded by Angstein and by Axenfeld and Plocher as a specific for pneumococcal ulcus serpens; the latter writers, on account of the pain which may occur from its local application, recommend the preliminary use of holocaine.

Other Allied Derivatives.

None of the other allied derivatives of quinine have had such extensive trials as that we have discussed. Perhaps the next most common is iso-octylhydrocupreine: this was reported upon favourably by certain Germans who employed it in the treatment of war wounds. Thus E. Bebergeil obtained most satisfactory results in suppuration cases. R. Klapp incised septic wounds and treated with the iso-octyl at considerable depth. He used 0.1 gram in a litre of physiological saline with the happiest results. These observations were confirmed by Otto Ansiun, and several other Germans speak well of it in combating inflammatory conditions.

Isoamylhydrocupriene was employed by J. Tugendreich in numerous cases of carcinoma of the mamma. He states that the pains diminished, ulceration frequently healing rapidly; the drug was used as the free base dissolved in oil. Michaelis regards this alkaloid as a specific in Vincent's angina. Isoamyl has not given satisfactory results in influenza and acute rheumatism.

These observations made during the last three years are sufficient to show the possibilities of the quinine derivatives, and we are after all only touching the fringe of this branch of pharmacology.

Absorption and Excretion.

Quinine administered by the mouth as one of its more soluble salts appears to be absorbed in the same way as other alkaloids. It passes for the most part through the stomach unchanged and is absorbed by the duodenum. No reason exists for supposing that it reaches the blood in any form other than quinine. The more soluble salts of quinine are absorbed a little quicker than the more insoluble, and the quinine esters—aristoquinine, euquinine, saloquinine, and the like—are absorbed considerably more slowly, since they require to be hydrolyzed by the alkali of the duodenum; no doubt, as in the case of analogous ethers like salol, some is not hydrolyzed, and passes through the alimentary canal unabsorbed. All observers agree that individuals differ in the rate at which they absorb quinine, but it seems clear that when soluble salts are taken the whole of the quinine is absorbed, since none is found in the faeces.

On reaching the blood quinine distributes itself in the various tissues, and Ramsden states that it accumulates in most tissues at a higher concentration than in the blood. Accumulation is especially marked in the suprarenal, spleen, and kidney. This is not the rule, as most alkaloids, as was shown first by Heger in 1873, and later by many other observers, tend to collect in the liver and are frequently excreted by the bile. Albertoni showed in 1876 that quinine could be detected in the bile of dogs two hours after oral administration. In the blood Baldoni found the greater percentage of quinine in the corpuscles, but Hartman and Zila and also Ramsden and Lipkin found more in the plasma; this is of some importance in view of its action in malaria, and I hope we shall hear more about it. Quinine is then excreted by the kidney unchanged.

All observers again agree that the excretion shows marked individual and daily changes. It may be detected in the urine half an hour after administration, but excretion may not be complete for two days. The whole of the quinine is certainly not excreted by the urine; we shall not, perhaps, be much out if we accept the figure of Nierenstein and state that about half the quinine ultimately finds its way into the urine unchanged; and most other observers give smaller figures. As mere traces only are excreted elsewhere the quinine must either be stored up in the body or destroyed: the latter view is correct; estimation of the total quinine in the body will not account for that which is missing.

It has long been known that the liver destroys morphine, atropine, nicotine, and other alkaloids, and we have reasons for believing that this action is due to a ferment. An emulsion of rabbit's liver gives, after filtration through a Berkefeld filter, a liquid possessing a destructive power against alkaloids; this same emulsion, filtered through a Pasteur Chamberland filter or heated for thirty minutes at 60° C., has lost this property. Ramsden has performed a similar type of incubation experiment with quinine, and finds that the liver, kidney, and intestinal wall have considerable power to destroy quinine *post mortem*, but that the suprarenal bodies, spleen, bone marrow, etc., have not this property. It will be noticed here that the quinine tends to collect in high concentration in the spleen and suprarenal organs, and that it is just these organs which are unable to destroy it.

It was shown further in my laboratory that nicotine was destroyed the more readily by the liver if the animal had been previously subjected to daily doses of the same alkaloid—that is, tolerance may be explained by enhanced ferment action. In the case of quinine this tolerance does not seem to be so clear, since some authorities state that as much quinine is excreted by those who habitually take the drug as by the novice. Nevertheless, Ramsden states that when quinine is administered in a succession of large doses an abnormally high proportion of that ingested is metabolized.

Lipkin showed that one product of the destruction of quinine by the liver is quitenine, which is identical with quinine except the vinyl group ($CH=CH_2$) is changed to the COOH group. This oxidation renders it relatively harmless, and were the oxidation carried no further would afford the animal some protection, but quitenine appears only as a trace in the urine, and oxidation of the quinine molecule must therefore proceed further.

Methods of Administration.

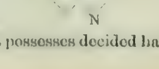
Much has been written of the advantages and disadvantages of the various methods of administering quinine, but I suppose everyone will agree with MacGilchrist that "subcutaneous and intramuscular injections (1 in 1 to 1 in 10) are inferior to quinine by the mouth in rapidity of action and thoroughness of absorption." In strong solution some of the quinine injected is fixed locally and not absorbed. When it is placed in muscle the surrounding fibres enter into rigor mortis, probably on account of the local liberation of lactic acid. Other drugs, like caffeine and potassium iodide, also produce rigor in muscle when injected in concentrated solution. This effect could be avoided by suitably diluting the quinine, in which case Nierenstein shows that no appreciable difference occurs in the excretion of the bihydrochloride whether given by the mouth or by injection into a vein or muscle. Nierenstein also gives the important fact that when more than 11 grains of quinine base per litre of urine are passed, a temporary albuminuria may ensue.

Doctors have been hampered in the past by having the sulphate of quinine thrust upon them; it is easy to prepare and therefore cheap. The two hydrochlorides seem to me to be in every way superior, but others will refer to this in detail.

Blackwater Fever.

Blackwater fever is yet another difficulty associated with quinine therapy. It is a subject on which I have no right to speak, except as to the validity of the evidence dealing with its causation. This evidence shows that the condition is not known in patients who take large doses of quinine for non-protozoal diseases. On the other hand, it does not appear to occur in malaria, at least in its typical form, unless large doses of quinine have been administered. The story of the attack is clear in its suddenness, and points to a sudden liberation into the blood of poison which destroys the corpuscles. Many such poisons are known, but quinine is not one of them. Sulphonal given daily in large doses accumulates in the tissues, and the patient may be free from its ill effects for weeks, but on the sulphonal attaining a certain concentration it suddenly acts and the patient may bleed half the blood in his body into the urine in the course of a few hours.

It has been suggested by Cleland and others that the presence in the serum of a foreign protein from disintegrated merozoites may induce anaphylaxis, but blackwater fever has nothing in common with anaphylaxis as we know it, and search must be made for some other poison. Nierenstein suggests that this substance may be haemoquinic acid, a disintegration product of quinine, which he separated from twelve out of thirteen urines of patients suffering from blackwater fever. He gives it the provisional formula—



—and states that it possesses decided haemolytic properties.

His paper does not prove whether this product is the result or the cause of blackwater, and it is not stated whether its injection into animals causes blackwater.

In these remarks I have endeavoured to state briefly some of the recent observations on the action of quinine and its derivatives. I have not touched on its action on individual organs and tissues because quinine has little specific action in the normal body and depresses all tissues, though especially simple undifferentiated protoplasm. Nor have I attempted to speak of its application in malaria, as there are those here who speak with authority.

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It will perhaps be useful that I should emphasize briefly some of the more interesting points in the work carried out by Lipkin, Whitley, and myself, and by Lipkin alone.

1. Quinine is very rapidly destroyed by liver pulp. One of the products is quitenine ($R.\,CH : CH_2 \rightarrow R.\,COOH$). The destructive agent is thermolabile, and acts only in presence of oxygen. Intestine, kidney, and striped muscle also destroy quinine.

2. Quitenine has no curative effect in benign tertian malaria.

3. Quinine is taken up very rapidly by the tissues and is there stored—in most of them at much greater concentration than that found at the same time in the blood. In the suprarenals this concentration may reach an immense figure—for example, 700 times. Maximal figures are, for the kidney, 35, and for the spleen, 24 times that in blood.

4. The concentration of quinine in the red blood corpuscles is about one-third of that in the surrounding serum (presumably also of that in plasma). In view of Morgenroth's contrary finding Dr. Lipkin has recently again estimated the partition-coefficient and has fully confirmed our former statement. He allows me to quote his results.

Defibrinated calf's blood was mixed with the same volumes of 0.85 per cent. salt solutions containing quinine hydrochloride, and, after an interval, centrifugalized.

Milligrams of Quinine per Litre of Blood Mixture.	Concentration of Quinine in Blood Mixture.	Ratio of Concentrations of Quinine in $\frac{\text{Serum}}{\text{Corpuscles}}$.
2.5	1 in 400,000	2.8
5.0	1 in 200,000	3.0
10.0	1 in 100,000	3.2
25.0	1 in 40,000	3.3
50.0	1 in 20,000	3.4
100.0	1 in 10,000	3.4

The partition-ratio found by us in 1911 in guinea-pig's blood from an animal poisoned with quinine at a concentration of 1 in 33,000 was 3.4. Blood from a man during blackwater fever with 1 of quinine in 140,000 parts of blood gave a ratio of 2.2. These ratios are all less than the true figures, since it was impossible to get corpuscles free from serum.

5. The ratio of concentration of quinine $\frac{\text{urine}}{\text{blood}}$ is, during the early stages of excretion, always very high, unless very little quinine has been taken, or there is reason to suspect defective functioning of the kidney. Ratios of 20 to 40 are common, but much higher figures may be reached. In one case it was certainly not less than 375, reckoned for "whole blood," and 250 if reckoned for plasma, probably a "record" instance of the secretory power of the kidney. During blackwater fever it was only 0.94.

6. Although we made a regular practice of testing quinine urines for albumin, the only cases in which it was found were cases of blackwater fever. It has not been our experience that "when more than 11 grains (650 mg.) of quinine base per litre of urine are passed, a temporary albuminuria ensues." Even 3,000 mg. per litre was not accompanied by albuminuria.

7. It is extremely difficult to bring the concentration of quinine in the blood up to 10 mg. per litre. The highest figure we observed was 16.6 mg., and was associated with symptoms of quinine poisoning so grave that we regard that concentration, if maintained for some hours, as not remote from the extreme limit compatible with life. Even that concentration, although in one case maintained during forty-eight hours, failed to effect a radical cure of the patient's benign tertian malaria. It is concluded that failure to cure malaria by quinine is not due to failure to attain, within the limits of the tolerable, sufficient concentration of the drug in the blood.

8. It is an important, and still an open, question whether the malarial parasite is damaged at all by quinine itself in such concentrations as are attainable in the blood, or whether the damage which it suffers during quinine medication is not due to some metabolite of quinine produced only in those tissues (liver, gut, kidney, and muscle) known to destroy quinine—possibly to a fugitive aldehyde R.CHO intermediate between the ingested drug and quitenine. Should this be the case, the chances for some of the parasites to escape destruction would be very greatly multiplied, and the failure of quinine to achieve the "therapeusis magna sterilisans" might find an explanation and possibly even a remedy.

Major H. W. Acton, I.M.S.

Progress in the prevention and treatment of malaria forms an unfortunate chapter in the history of medicine, advances having been continually hindered by apathetic officials. Malaria is the most important disease in the tropics, and any progress made means a great gain to colonization. The difficulties that beset Sir Ronald Ross when working at the transmission of malaria are known to all. The Mian Mir experiment was considered to prove that antimalarial measures were too costly and not applicable to India. The value of preventive measures was demonstrated to the world during the construction of the Panama Canal, and it was shown that success depends on money and administrative ability. In 1820 Pelletière and Dumas isolated quinine from cinchona bark. Since that date quinine has been regarded as a specific for malaria, to the exclusion of the other alkaloids. Many years ago Cunningham suggested that there might be other alkaloids in cinchona bark as efficacious as quinine. In 1866 a committee was appointed in India to test this, and cinchonine, cinchonidine, and quinidine were tried on 1,200 cases of clinical malaria; the committee found that all three alkaloids exerted an immediate curative effect. No notice was taken of this work, quinine always being considered to be the only specific.

In 1902 Sir David Prain advocated the use of the total alkaloids "cinchona febrifuge," but this was regarded with suspicion as he was in charge of the cinchona plantations, and might be trying to introduce a substance more easily made than quinine. The Dutch were in 1852 the first to cultivate cinchona in Java. These cinchonas were all grown from a packet of seeds collected from one great tree of *Cinchona calisaya* var. *ledgeriana*, growing on the slopes of Chimborazo. The seeds were brought by Ledger, and offered for sale to the India Office, and then to the Indian Government, but were declined by both. The Dutch who bought the seeds at once realized the profitable nature of the industry. Java is now the most important cinchona-growing area in the world, a position largely achieved by long-continued chemical and botanical researches. Nine years later, through the efforts of Sir Clement Markham, *C. officinalis* and *calisaya* chiefly were grown in India, but both barks are inferior to Java bark. An excellent site was secured in Sikkim fulfilling all the conditions necessary for cultivation. A great part of this valuable site has been sold to tea planters, as India always hoped that private enterprise and the Dutch would relieve her of the incubus of growing cinchona. For several years no chemist was employed, and conditions went from bad to worse, so that the Indian bark became very inferior in quality. As the grafts could not be selected from trees with good quinine yields, Sir David Prain after great difficulty managed to obtain an expert quinologist, and the cultivation of cinchonas then rapidly improved. The folly of allowing quinine production to be a monopoly of other nations was only realized in 1916, and attempts are now being made to increase the area of cinchona plantation. The aim of India should be supply cinchona alkaloids to the whole of the British Empire.

The Rate of Multiplication of the Parasite.

Sir Ronald Ross first pointed out that fever in malaria was closely correlated with the number of parasites in the blood. The diagnosable limits at which parasites can be found in benign tertian infection is about 1 parasite in every 100,000 red blood cells, or 50 parasites per cubic millimetre. This concentration represents a population of about 250,000,000 parasites and is not sufficient to cause fever. This degree of concentration is called a parasitic relapse. In two to four days the parasites attain a sufficient concentration to produce fever—that is, a febrile relapse. The following equation represents the factors concerned in the production of a parasitic relapse, provided the rate of multiplication is not impeded:

$$K = Nr^{\frac{t}{2}}$$

where K = 250,000,000 parasites—that is, sufficiently numerous to diagnose microscopically; N = the number of asexual parasites introduced at the original infection or remaining after treatment; *r* = rate of multiplication, 24-fold in benign tertian infection, and 12-fold in malignant tertian infection; *t* = time in days excluding the day of infection, or the last day of treatment. As the multiplication occurs in a forty-eight hour cycle in both infections *t* is divided by 2.

The rate of multiplication is continuous, and occurs during quinine treatment because (1) the cinchona alkaloids only affect the young forms, for if a dose is given after a paroxysm the next attack of fever is usually not aborted; (2) in the intermittent types of quinine treatment relapses frequently occur between the doses.

TABLE I.—*Showing the Number of Parasitic Relapses that occurred during the Course of the Different Methods of giving Quinine.*

Type of Treatment.	No. of Men Treated.	No. of Relapses during Treatment.
(i) **Ross and Thomson's continuous oral treatment of 30 grains daily, followed by 15 grains for ninety days**	76	None.
(ii) Intramuscular injections (12) with a continuous oral treatment of two months	36	None.
(iii) Oral continuous, 30 grains daily for three weeks	190	None.
(iv) Oral intermittent (Stephens), 45 grains on two consecutive days weekly for eight weeks	90	14
(v) Oral intermittent (Stephens), 30 grains given as in Series (iv)	113	5
(vi) Intramuscular injections (12) followed by intermittent oral as in Series (v)	58	2

The blood of each patient was examined weekly during treatment, and when parasites were found such cases were recorded as relapses.

That is, there were no relapses during treatment among 302 men undergoing a course of continuous quinine, but among 261 men undergoing an intermittent course there were 21 relapses during treatment. This shows that a continuous treatment is the only sound way to administer these alkaloids, and that multiplication continues in spite of destruction.

(3) Relapses of benign tertian often occur immediately after quinine treatment, indicating that the parasites must be very near febrile limits.

The Production of Cures.

Sterilization, or the destruction of every asexual parasite in the host, is what is meant by the term "cure." Cures may be natural or artificial.

Natural cures are seen more commonly in malignant tertian than in benign tertian fevers, and were it not for this fact, in many parts of the tropics the native population would have been decimated long ago, as few ever get quinine. Natural cures may occur in one of the following ways:

1. The destruction of asexual cycle by the tissues of the body—for example, by phagocytosis, immune substances, etc. We can dismiss this possibility because in spleen smears cells are seen engulfing pigment granules and gametocytes, but never the asexual forms. The malarial parasite is a haemosporidian, and does not leave the red blood cell except to infect another erythrocyte. Antibodies have not been proved.

2. The excessive production of gametocytes. There is abundant evidence in favour of this view. (*a*) Gametocytes are non-multiplying, sexually differentiated forms produced by the multiplication cycle. Gametocytes can only multiply by fertilization in the insect's body and require a lower temperature (18° to 22° C.). Schaudinn's view on parthenogenesis is an erroneous conception of the gametocyte function, and has led to an enormous amount of confusion. (*b*) The appearance of gametocytes in the peripheral blood in untreated cases heralds a subsidence of the fever. (*c*) The relative percentage of gametocytes is high in long relapses, and are often the only forms seen in latent malaria.

The immunity of the native is due to the excessive gametocyte formation. A parallel condition is seen in chronic cyst carriers of amoebic dysentery. I may therefore conclude that natural cures are produced by an exhaustion of the asexual cycle owing to excessive gametocyte production; this best explains how the parasite and host can maintain an equilibrium for their mutual benefit. The parasite, by producing a large number of sexual forms, can propagate its species without unduly taxing the host.

Artificial cures are produced by the cinchona alkaloids destroying the young asexual forms, and such cures can be described as occurring in three stages.

1. *The immediate curative effect* as shown by the subsidence of fever and disappearance of parasites from the peripheral blood. The effect is produced by the action of these alkaloids in reducing the parasitic concentration from febrile to afebrile limits—that is, from billions to millions.

TABLE II. *Showing the Results of the Immediate Curative Effect when Quinine is given Intravenously or Orally in Benign Tertian Infections.*

	Disappearance of Parasites in Hours.						Cases Observed.
	24.	48.	72.	96.	120.	144.	
Intravenous ...	38	29	5	1	—	—	73
Oral administration (30 grains daily)	—	22	42	31	5	—	100

Unfortunately I was transferred at the most critical stage of my experiments and have not the figures for the effect of cinchona febrifuge and quinidine available, but I found that the parasites disappeared within seventy-two hours after treatment, as compared with 120 hours after quinine. I therefore conclude that in benign tertian infections all the crystalline alkaloids of cinchona exert a marked immediate curative effect. The best results were obtained with cinchonidine and quinidine. As one would expect, quinine acted quicker when given intravenously than when by mouth. My experience in Dagshai on malignant tertian infection was very limited, but the results of the 1866 Commission indicate that these alkaloids act well on clinical malaria.

2. Sterilization or cure is brought about by the complete destruction of the asexual cycle. We know from clinical experience that a few doses of quinine are not sufficient to effect a cure, so that the rate of destruction of each parasitic brood must be under 100 per cent. If we denote this rate of destruction by "*f*" then—

$$K = N(1-f)r^{\frac{t}{2}}$$

This equation represents the condition of affairs during treatment, as the rate of destruction probably remains constant. In malignant tertian infections, owing to the slower rate of multiplication—that is, twelve-fold—equilibrium is established when the rate of asexual destruction approaches 92 per cent. of the parasites. If the rate of destruction of each parasitic brood is greater than 92 per cent., a cure results. In benign tertian infections, owing to the rate of multiplication being twenty-four-fold, to attain an equilibrium, a destruction of 95 per cent. of the asexual forms is necessary, and a still higher percentage to effect a cure. The rate of parasitic destruction produced by quinine in benign tertian infections must be about 95 per cent., as a two months' course cures 25 per cent. of the cases, and a four months' course 50 per cent. The destruction rate of cinchona febrifuge, cinchonidine, and quinidine must be greater than quinine in this infection, as 50 to 60 per cent. are cured during a short course of treatment. In malignant tertian infections a month's course of quinine sterilizes most cases, so that the parasiticidal rate of quinine must be well over 92 per cent. The obvious line of research is to test carefully these alkaloids on both types of parasites and then select the alkaloid with the highest percentage of cures. The minimum duration of treatment necessary for complete sterilization should next be investigated. Owing to the difference in the rate of multiplication of these two parasites we would expect the duration of treatment in benign tertian infections to be twice as long as in malignant tertian infections.

3. *Incomplete Destruction or Relapses.*—As we have ruled out the sexual forms, we are left to consider the part the asexual form plays in the production of relapses. (*a*) Resistant forms. Against this theory the following points may be advanced: Such forms have not been demonstrated microscopically. The relapses when plotted form a skew curve. If these forms were present we would expect a secondary wave on this curve. Latency is better explained by gametocyte production. (*b*) The asexual cycle is only partially destroyed by treatment. The gametocytes are produced from the multiplication cycle. Their brake-like action retards the multiplication rate, and explains how long relapses, latency, and spontaneous cures occur. This effect can be expressed by the equation already given for destruction; the fraction "*f*" represents the number of asexual forms converted into gametocytes, and, as they are non-multiplying forms, it is equivalent to destruction.

TABLE III. *Showing the Relative Counts made on Cases of Benign Tertian Infection Relapsing after Treatment with Quinine.*

Percentage of Gametocytes present in Relation to Asexual Forms.											No. of Cases Observed.
Nil.	10.	20.	30.	40.	50.	60.	70.	80.	90.	100.	
4	10	14	7	8	9	3	6	2	—	2*	65

* In each of these two cases only two parasites could be found.

The majority of our relapses showed this gametocyte production, a few showed high counts, and were associated with relapses that occurred eight to ten weeks after treatment.

The tests of a cure I have already dealt with in a previous paper.

The Choice of the Alkaloid.

The first important observation made on taking over charge of the research laboratory at Dagshai, Simla Hills, was that malignant tertian infections were absent. This I have already explained in a previous paper as due to the specific action of quinine. We tested the value of the different methods of quinine administration on more than 600 cases of benign tertian infection, and found that quinine had a low sterilization rate—that is, about 75 per cent. of the cases relapsed in spite of treatment. This marked the first step in our research—that is, that quinine is a specific for malignant tertian and of little value in benign tertian infections. I considered "the total alkaloids cinchona febrifuge" worthy of trial owing to its cheapness and to the fact that the same amount of bark would yield twenty times more cinchona febrifuge than quinine. The latter alkaloid forms only 5 to 6 per cent. of the alkaloids in Indian barks. In India during the war the majority of non-State-aided dispensaries were forced to use cinchona febrifuge for financial reasons. Colonel Alcock, F.R.S., I.M.S., of the London School of Tropical Medicine, has informed me that he used cinchona febrifuge for many years in the treatment of malaria. Sir David Prain has told me that one of the big druggists in Bombay uses cinchona febrifuge in the preparation of his malarial specific, and considers that its curative results are better than quinine. We tested cinchona febrifuge on two series of fifty-three and fifty-seven men, giving 21 grains daily in two divided doses for three weeks, and found that the cure rate was twice that of a two months' course of quinine. The total alkaloids are therefore more efficacious in benign tertian infections. It was obvious from this that there was some alkaloid in cinchona bark other than quinine, which gave this enhanced cure rate. We were able to eliminate the amorphous alkaloids known as "quinoidine," as all cases relapsed and parasites were found in the blood of some of the patients during treatment. Of the crystalline alkaloids, cinchonine was too toxic, and eight of the fourteen cases tested relapsed. The two alkaloids—cinchonidine and quinidine—were tested on 46 and 62 cases respectively, and both gave a cure rate of over 60 per cent. with a short course of three weeks. I may here mention that many medical men have unknowingly used quinidine in the treatment of malarial fevers. Messrs. Howard of Ilford inform me that they sell several thousand ounces of this alkaloid yearly. The majority of it is exported to the East, probably to adulterate quinine. Sir David Prain told me that Howard's quinine, owing to its purity, commands a good price, but was often adulterated in India, the pure quinine being scooped out of the bottle and the cavity filled with the cheaper alkaloid. MacGilchrist on clinical and experimental tests (1915) considered that hydroquinine was better than quinine. The ethylation of the vinyl group ($CH:CH_2$) renders these alkaloids more stable and so less easily oxidized by permanganate; theoretically we would expect these hydro-alkaloids to resist the oxidizing effect of the tissue, and so resist being broken down into inert decomposition products. The hydro-alkaloids are easily prepared by bubbling hydrogen through an alkaloidal solution in the presence of an electrode of platinum or Kelver's nickel. Dr. Blagden, D.Sc., of Messrs. Howard's, is kindly preparing a sufficient quantity of these hydro-alkaloids for further tests. In the present state of our knowledge the alkaloids recommended in the treatment of malaria are hydroquinine for malignant tertian, and quinidine, or possibly hydroquinidine, for benign tertian infections. Dr. H. H. Dale has pointed out to me that, as I had not tested quinidine on malignant tertian infections, quinidine may have a higher cure rate than quinine in this infection.

The Salt to Employ.

The sulphate of quinidine is soluble in 1 in 108 at 10° C. as compared with quinine sulphate in 1 in 720 at 25° C. The sulphate is the cheapest salt and is therefore commonly used. The acid sulphate and bihydrochloride are more soluble, and are used for tablets or injections. The most suitable dose for an adult is 10 grains given twice a day after food. We know that small doses of quinine (1 to 3 grains) are insufficient to control fever, whilst large doses (45 to 90 grains a day) do not increase the cure rate. These large doses only upset the digestion and produce diarrhoea, consequently a large amount of the alkaloid is not absorbed.

CONCLUSIONS.

(*a*) Recommendations for the treatment of malarial fever:

1. *The alkaloid.* Hydroquinine in malignant tertian infections, and quinidine in benign tertian infections. The hydroquinidine has not been tested.
2. The oral is the simplest and most practical method for giving these alkaloids. The intravenous method is the most rapid and should be reserved for pernicious cases. The intramuscular method should only be used when there is vomiting or no absorption.
3. Treatment should be continuous; 10 grains of the alkaloid administered twice daily.
4. The treatment should extend over a month in malignant tertian infections, and from six weeks to two months in benign tertian infections.

(*b*) The employment of an alkaloid other than quinine opens a new line of research in the treatment of malarial fevers. The use of quinidine will lead to:

1. Greater efficiency; as the higher cure rate of quinidine will prevent these relapses.
2. Economy: as benign tertian infections constitute about 50 per cent. of the malarial infections in India, the more extended use of quinidine should decrease the demand for quinine and lower the present inflated market price of this alkaloid.
3. The possibility of India supplying the whole of the need of the British Empire for these alkaloids. The Java *C. ledgeriana* is cultivated with difficulty in India, but has a very high quinine yield, 8 to 12 per cent. The yellow bark *C. calisaya* has also a high quinine content. The crown bark *C. officinalis*, which produces about 6 per cent. of alkaloids, of which 4½ per cent. is quinine and 1½ per cent. quinidine, grows well in India. The red bark *C. succirubra*, which produces about 4½ per cent. of quinidine and 1½ per cent. of other alkaloids, grows luxuriantly in India. For the amount of quinine extracted from Indian barks five times that amount of quinidine could be obtained yearly.

I must finally express my indebtedness to Dr. H. H. Dale, F.R.S., for the very material help and advice he has given me whilst working at the National Research Institute, and to Mr. H. King, M.Sc., for his expert help a[illegible] instructions in the chemistry of these alkaloids. Distinctions are invidious, but one cannot help contrasting the ever-ready help and advice that one obtained in any difficulty from the staff of the National Research Institute to that of the suspicious and hindering attitude adopted by many officials whose appalling want of appreciation unconsciously hinders for a time important advances in prevention and treatment.

Sir ARCHIBALD E. GARROD, K.C.M.G., F.R.S.,

Regius Professor of Medicine, University of Oxford.

MY experience during the war led me to regard cold as the most potent influence in provoking blackwater attacks in patients with malignant malaria. The attacks began with the onset of colder weather, and some followed winter bathing contrary to rules. In a few cases there was evidence that quinine contributed to the causation of an attack. A number of patients were treated by the intramuscular injection of gr. x, apparently with benefit, but in one case such a dose caused a slight recurrence of haemoglobinuria. In another case an attack followed an intravenous injection. As all our patients had been treated with quinine there was no opportunity of excluding its influence, but patients who had been treated with very large doses did not seem to be more liable than others. My general impression was that quinine was *not* the essential factor in the causation of the attacks, but that it must be regarded as one of the contributory causes in some instances.

T. S. HELE, M.A., M.D.,

Fellow of Emmanuel College, Cambridge.

The excretion rate of quinine in health shows no great fall from the second to the twelfth hour after a dose by the mouth, from the fourth to the eighteenth hour after an intramuscular dose (after an initial delay), and from the second to the twelfth hour after an intravenous dose. If the excretion rate is any measure of the rate of change of quinine concentration in the blood, these figures give an indication as to time for which quinine is efficacious after administration by the several routes.

The excretion of quinine in blackwater fever is not different from that in health if the kidney is secreting a sufficient volume of urine (6 cases). Of course, in other instances the excretion may be entirely suppressed.

Professor Ramsden's observation that the percentage of quinine excreted on high dosage is very much less than that on low dosage is of considerable interest. In other words, a greater proportional amount of quinine is metabolized on a high dosage. A similar phenomenon may be observed in the dog after the administration of some aromatic drugs—for example, guaiacol. If under normal conditions the pterols excreted free in the urine amount to 40 mg. daily, and the phenols excreted in combination with sulphuric and glycuronic acids to 20 mg. daily, after high dosage with guaiacol the phenols excreted free amount to only 120 mg., while those in combination amount to 600 mg. That is to say, the administered guaiacol produces only a threefold increase in the free phenols excreted, but a thirty-fold increase in the combined phenols excreted. Smaller doses give intermediate figures. The amount of the phenols excreted in combination rises disproportionately to the amount of the guaiacol administered. The reactions involved are complex, but if we regard these syntheses as the ultimate stages in the detoxication of the administered drug, it follows that there may be an optimum effective dose for drugs of this character. Similarly, if quinine itself, and not a metabolic product of quinine, is the active curative agent, perhaps there is an optimum effective dose for this substance.

Lieut.-Colonel Sir LEONARD ROGERS, C.I.E., F.R.S.,

Professor of Pathology, Medical College, Calcutta.

SOME experiments I made showed that the acid hydrobromide of quinine was the least toxic of the soluble quinine salts when given intravenously, for which purpose it is the most suitable salt. I found cinchonine bihydrochloride had the same toxicity intravenously as the corresponding quinine salt, but when given subcutaneously or intramuscularly the cinchonine salt produced cinchonism, which quinine never does by this method of administration. I therefore did some experiments by injecting the acid hydrochlorides of quinine and cinchonine intramuscularly in the gluteal muscles of rabbits, and after killing them at different intervals I estimated the amount of the salts remaining unabsorbed in the muscle and the amount of absorbed alkaloid in the internal organs. The results showed that the cinchonine salt was absorbed three times as rapidly and three times as completely as the quinine salt. I therefore advise intravenous quinine in very severe and dangerous infections. In less severe but relapsing cases, or those in whom quinine causes sickness, I advise 7½ to 15 grains of cinchonine bihydrochloride intramuscularly on four successive days, followed by quinine by the mouth in 20 to 30 grains a day for three or four weeks, and then 10 grains a day for four to six months to prevent relapses and complete the cure.

Dr. M. NIERENSTEIN.

PROFESSOR DIXON has kindly made several references to my report on the excretion of quinine in the urine, it is therefore only necessary for me to emphasize two points.

1. I wish to draw attention to the much lower excretion of euquinine and quinine lactate. I found that whereas quinine and its other salts are excreted to the extent of about 50 per cent., the excretion of euquinine is about 30 per cent., and that of quinine lactate about 40 per cent. I should be glad to see these results confirmed by other workers. They seem to me very important, and suggest many theoretical considerations. In the case of euquinine this is not due to passage through the alimentary canal, since I only found traces of quinine in the faeces.

2. As regards haemoquinic acid, I would like to point out that all we know at present is:

(i) That the organism produces from quinine a substance which I have provisionally named haemoquinic acid.
(ii) That this substance possesses haemolytic properties.
(iii) That this substance is present in larger amounts in blackwater urines than in malarial urines.
(iv) That this suggests, but does not prove, a relationship between quinine, haemoquinic acid, and blackwater fever.

Sir David Bruce, in a letter to me some time ago, referred to blackwater fever as a conundrum. Haemoquinic acid does not solve this riddle; it only indicates some lines on which it may possibly be solved. I believe, however, that it will be worth while to follow up the haemoquinic acid clue; I have therefore started a series of experiments on the oxidation of quinine *in vitro*, but so far all my results have only yielded quitenine. It is, however, possible that quinetoxin will give haemoquinic acid on oxidation, since it contains the CO group in place of CH.OH present in quinine. Here again I am influenced by my provisional formula for haemoquinic acid.

J. C. McWALTER, LL.D., M.D.,

Dublin.

EVERY soldier has been dosed with quinine and therefore it is impossible to say what the effect would have been if he had got none. We had sent over 100,000 soldiers into malarial districts in the East under the belief that we would prevent the onset of malaria by the use of quinine. At least 80 per cent. of these soldiers who were sent to Lake Doiran and 70 per cent. of those in the Jordan Valley had got malaria. Each of these cases costs the State £1,000—between pensions, hospital treatment and other expenses; probably the cost of malaria in the army was now £50,000,000 a year, and this had mostly arisen because of the supposition that quinine was a prophylactic. One result was that adequate mosquito netting, in the earlier days of the war at least, was not relied upon more exclusively. Quinine had perhaps some influence on the incidence of benign tertian malaria, but it came and went whether quinine was used or not. The problem was malignant tertian malaria and quinine had proved a failure in most cases. In Egypt some gave it in combination with arsenic and iron—when it seemed less useless.

Dr. C. M. WENYON, C.M.G., C.B.E.

DURING the war very few new facts as to the treatment of malaria by quinine were discovered. Towards the end of the war the tendency was to come back to the pre-war methods of quinine administration. Perhaps our knowledge of the intramuscular use of quinine has extended; in spite of the necrotic effects on the muscles the good results are most marked. The necrosis which has been produced in thousands of cases has only in a very small minority produced any ill effects; the good results obtained in the method of treatment quite outweigh any ill effects resulting.

Little is known as to how quinine acts. It either acts directly as a toxin or on the tissues by stimulating them to produce a substance which kills the parasites, or it renders the red blood corpuscles unsuitable as food for the parasite. Quinine when administered produces in the next few hours signs of degeneration in the parasites; cultures of the malarial parasites cannot be obtained from the blood of patients who are taking quinine. The red blood cells must contain quinine or some other substance which prevents the parasites growing. In connexion with Major Acton's reference to the different action of quinine in malignant malaria and benign tertian, the failure of quinine to act in the malaria of birds is worthy of consideration and investigation. When quinine is given prophylactically it is generally supposed that it kills the sporozoites when injected by the mosquito. There is no evidence of this; it may be that in spite of the quinine the sporozoites do still enter the red blood corpuscles, and that quinine acts by killing the early stages in the red blood corpuscle. Experiments conducted by me in Macedonia showed that quinine affects the gametocytes of benign tertian malaria more than those of malignant tertian. Mosquitos were readily infected from cases of malignant tertian malaria taking quinine, whereas they were rarely infected from cases of benign tertian malaria if they were being treated with quinine. On the other hand, cases of benign tertian not taking quinine readily infected mosquitos. Blackwater fever in Macedonia most usually occurred directly after a dose of quinine, but a certain percentage of cases were not initiated by a dose of the drug.

DISCUSSION.

Sir **Leonard Rogers**, in reply to Dr. McWalter's statement that quinine was of very little use in malaria, drew attention to the historical evidence, and pointed out that in India, during the first half of the nineteenth century, cinchona bark, and later quinine, were not given in malaria until the temperature had fallen to normal. In 1849 Dr. Hare advocated full doses of quinine during fever, and cured bad cerebral cases which had previously always died. He was given an opportunity of trying his method in the European Hospital in Calcutta, and reduced the fever mortality in one year to one-twelfth of the previous rate. That was conclusive evidence of the value of quinine in malaria, which would hold its place until something better was discovered.

Professor **J. A. Gunn**, D.Sc., M.D.Oxford, confirmed an observation made by Sir Leonard Rogers to the effect that it was important to give an intravenous injection of quinine slowly and in high dilution. He had found experimentally in rabbits that there was a considerable difference in the minimum lethal dose of quinine according as it was given slowly and in dilution or rapidly and in concentration. This was usually true of intravenous injections of other drugs as well. He mentioned some results he had obtained with two new alkaloids, harmaline and harmine; he had found that both had pharmacological actions similar to quinine. Experiments *in vitro* showed that there was a considerable difference in the resistance of the adult organisms to the alkaloid; he drew the conclusion that relapses in protozoal diseases after treatment might be due to survival of adult organisms, and not necessarily in every case merely to the persistence of spore forms. The alkaloids harmaline and harmine were not found to be so good in acute malaria as quinine, but the latter alkaloid had proved very successful in relapsing malaria and had succeeded where quinine failed. The number of cases was not sufficient to make this certain, but the results so far obtained were encouraging.

Dr. **H. H. Dale**, F.R.S., speaking as an outside observer in this question, wished to mention one or two points which had struck him in the course of the debate. Referring to Dr. Wenyon's inclination to regard the action of quinine as direct and specific on the parasite, on account of its failure to act on the closely related blood parasite of birds, Dr. Dale suggested that the argument cut both ways. Mr. Dobell and he had succeeded in transferring to a kitten a strain of *Entamoeba histolytica* from a patient who was subsequently cured without difficulty by an ordinary course of emetine. On the same strain of the parasite in the kitten emetine had no effect whatever in any dose. The ineffectiveness of quinine on the bird parasite might be due to difference of host rather than difference of parasite. He emphasized also the importance, from the practical point of view, of Major Acton's evidence as to the value of quinidine. Even if it were only as effective as quinine, the fact might mean a revolution in the policy of planting cinchona, which had hitherto aimed at producing a bark giving a maximum yield of quinine, and had resulted in the breeding of strains which were, on the whole, unsuitable for cultivation in India. If quinidine were even as good as quinine, the supply of alkaloid, as Major Acton had said, could be obtained from *Cinchona succirubra*, which grew with great readiness over large areas in India. Borrowing an Americanism, which in this connexion had a ludicrous appropriateness, Dr. Dale said that there was clearly a possibility that the world-policy of cinchona-planting had been "barking up the wrong tree."

Lieut.-Colonel **McCarrison**, I.M.S., with reference to the intravenous injection of quinine, said that he had recently found, in collaboration with Colonel Cornwall, I.M.S., that whereas a medicinal dose of quinine introduced into the venous circulation of sheep might cause in one animal an alarming and even fatal fall of blood pressure, such a pronounced fall did not occur in other sheep of the same weight. The risk of a fatal fall of blood pressure was likely to be greater the lower the initial blood pressure of the animal. It was found that the addition of 2 or 3 drops of a 1 in 1,000 solution of adrenalin to the solution before injection counteracted this fall. It was a point, therefore, of some practical importance that when in the human subject the initial blood pressure was low the precaution should be taken of adding to the solution a protective dose of adrenalin. In the course of further investigations Colonel Cornwall found that the continued intravenous use of quinine led to a condition of circumscribed necrosis of the adrenal cortex.

Dr. **Bodman** (Bristol) asked whether good results had been obtained from the administration of plain saline injections (rectal or subcutaneous) in conjunction with the various forms of quinine. In malignant cerebral cases the capillaries of the organs were filled with infected corpuscles which were not reached by quinine in the circulating blood. If the fluidity of the blood could be increased so as to flush out these capillaries the parasites would be brought into contact with the quinine circulating in the blood. In a few cases which he had been able to treat in this way in Salonica good results appeared to follow, but the cases were too few to justify any generalities.

Dr. **C. M. Wenyon**, in reply to Dr. McWalter, admitted that the prophylactic use of quinine in Macedonia was undoubtedly a disappointment; but though numbers of men got infected in spite of 10, 20, or 30 grains a day, still there was evidence that a certain, perhaps small, percentage were nevertheless protected. It had been said that it was impossible to judge of what would have happened if no quinine had been taken; such an experiment did take place in the Caucasus: 305 men were exposed for four weeks to infection without nets or quinine—within two months 303 men had gone down with malaria. It was, he thought, inconceivable that all these would have been infected if prophylactic quinine had been taken. The percentage of infections in this case was practically 100, which was higher than in any of the worst spots in Macedonia.

Professor **Dixon**, in bringing the discussion to a conclusion, said that though it had not very closely followed the lines he had suggested in his opening remarks, it had been highly interesting and useful.

BLACKWATER FEVER IN MACEDONIA.[*]

BY

J. F. GASKELL, M.D., F.R.C.P.,

PHYSICIAN TO ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

(From the 41st General Hospital, Salonica.)

THE nature of blackwater fever is at present undecided, but the work of the majority of recent observers may be summed up in the following conclusions stated by the Panama Canal Commission. Blackwater fever only occurs when a population not immune to malaria becomes exposed to extensive infection by it, when relapse and reinfection are therefore common, and owing to unfavourable conditions proper quinine treatment has not always been obtainable. It has also been found by many observers that quinine is in a very high percentage of cases the determining cause of an attack. When attacks have occurred under observation in hospital, the antecedent administration of quinine has been practically universal. The conditions quoted above were all present among the Allied Forces in the Balkan campaign from 1915 to 1918, and blackwater fever duly appeared. Conditions were especially favourable in the Serbian army, for not only was malaria a comparatively rare disease in Serbia, but also the army became highly infected when training in Salonica in 1916, and owing to various causes proper treatment could not be given.

The 41st General Hospital acted as base hospital to the Serbian army from August, 1916. During the autumn and winter of 1917–18, blackwater fever appeared in the Serbian army, and was treated both by us in this hospital and also by Parsons and Forbes[1] in two other base hospitals attached to the Serbian army.

The question of the existence of a quinine haemoglobinuria separable from true blackwater fever is answered in the negative by these observers, and experience at the 41st General Hospital confirmed this: both mild and severe attacks of haemoglobinuria occurred as a direct result of the administration of quinine, some of the latter proving rapidly fatal. The only possible differentiation would appear to lie in the severity of the attack, a severity which can undoubtedly be influenced by the treatment given. Experience in Macedonia, therefore, gave no justification for any such differentiation.

The relationship of malaria to blackwater fever was always close. By the beginning of August, 1916, when British base hospitals were first provided, the Serbian army had become widely infected with malaria; and the great number of patients admitted during the autumn were suffering from the disease, often in a very severe form. Nevertheless, though thousands of cases of malaria passed through the hospital during the winter, no cases of blackwater fever occurred. The latter disease did not appear till the autumn and winter of 1917–18, when the Serbian army had passed through two severe malarial seasons, and was heavily infected with chronic malaria. If blackwater fever is an independent disease, it is very remarkable that it did not appear in the winter of 1916–17, as the ground then occupied was practically the same as in the following year, and the conditions of existence in the second year were much improved.

The incidence can, however, be explained if the view be taken that blackwater fever only occurs in patients suffering from chronic malaria. The Serbian army was first extensively infected with malaria in 1916, so that the disease was not sufficiently chronic in the winter of 1916–17 for blackwater fever to appear. Evidence of chronic malaria was present in all cases that occurred at the 41st General Hospital.

The nature of the malaria parasite, whether benign or malignant, and the severity of the malarial attack for which quinine was given, did not appear to be of importance. It has been claimed that blackwater fever is only connected with the malignant form of malaria; but cases occurred in which the administration of quinine for a proved benign attack was followed by blackwater fever. It must be remembered that scarcity or absence of parasites in the peripheral blood cannot be taken as evidence that the infection is a malignant one, for both the administration of quinine and the attack of blackwater fever itself cause rapid disappearance of the benign parasite. Some of the cases contracting blackwater fever did not show any great degree of malarial cachexia such as is usually found in the malignant type. Blackwater fever may therefore be associated also with a mild benign tertian infection.

All the cases in the hospital as well as most of those of Parsons and Forbes occurred between October, 1917, and April, 1918; no further cases were seen between April, 1918, and August, 1918; it was therefore a winter disease. The common sequence was a chill followed by malarial relapse, with which blackwater fever was associated.

The relationship of quinine administration to the attack was very definite. Eight attacks of blackwater fever occurred in patients who were already in hospital, and all rapidly followed the beginning of a course of quinine treatment. One attack was of especial interest:

The patient had already been treated for an attack of blackwater fever, but his temperature still remained irregularly raised. Although repeated examinations of the blood failed to demonstrate any parasites, it was thought possible that the condition was malarial in nature, so a further course of quinine was decided upon. On the second day of this course an attack of blackwater fever again took place. Shortly afterwards an abscess declared itself at the site of a subcutaneous saline injection, which had been given in treating the first attack, and the patient was also suffering from pyorrhoea. Subsequent malarial attacks proved to be benign tertian in nature, and parasites were easily found. It is therefore probable that the raised temperature was due to the abscess and the pyorrhoea, and was not malarial in nature. On this hypothesis, the administration of quinine was alone responsible for the attack of blackwater fever—that is to say, quinine can produce an attack in a patient with chronic malaria, though no malarial relapse is present.

The routine method of quinine administration was either 30 grains daily by mouth or 20 grains intramuscularly morning and evening. It was found that the amount of quinine administered before an attack of blackwater fever took place varied in different patients. From this the idea arose that each patient had a critical dose, and that amounts below this could be tolerated successfully. This was tested in three cases who had subsequent malarial attacks.

In one of these, the second known attack followed the administration of 30 grains of quinine by mouth within twenty-four hours. As a result of a theory that intramuscular quinine might be better tolerated than oral quinine, an attack of benign tertian malaria, which followed nineteen days later, was treated with 20 grains intramuscularly on the first day and 10 grains on the following morning. Blackwater fever again occurred. Two subsequent attacks of malaria were successfully treated with doses of 10 grains per day, given in the first instance intramuscularly and in the second orally.

The other two cases were also successfully treated for subsequent malarial attacks with doses below the critical dose. The occurrence of blackwater fever in a case of malaria does not, therefore, contraindicate treatment by quinine for further malarial relapses, if the critical dose is known, for doses smaller than this can be safely given. In a case known to have had blackwater fever, but whose critical dose is unknown, cautious administration of quinine is also justifiable for a malarial relapse, if careful watch is kept for the first signs of blackwater fever; for energetic treatment in the earliest stages, on lines to be given later, should avert the chief dangers of this complication.

The effects of continued administration of quinine, when blackwater fever has declared itself, were in every case very serious.

In one of the early cases a full course of quinine was continued after blackwater fever had occurred. This case died exactly one week later from a further attack, so acute that haemoglobin was only present in the tubules of the kidney and had not yet reached the bladder. In two other cases the administration of quinine for a period of twenty-four hours after the attack had begun caused suppression of urine, which reached a maximum in five days, and was, in one case, complete and fatal, in the other almost complete and only recovered from after a long and severe illness. Two other cases were even more rapidly fatal.

Continued administration of quinine would, therefore, appear to be most dangerous.

The course of the illness varied considerably, but in practically all cases the general condition of the patient on the first day did not appear dangerous. In the severe cases mental confusion and drowsiness became marked on the second day, often accompanied by an increase of the vomiting which had usually begun on the first day. A rapidly increasing jaundice was present in all cases, accompanied in the more severe by marked collapse with a feeble and rapid pulse.

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[*] Abstract of a paper published in the *Annals of Tropical Medicine and Parasitology*, vol. xiv, No. 1, p. 3.

The excretion of haemoglobin did not last many days even when suppression was present. In the later cases where treatment was given early and energetically haemoglobin disappeared within twenty-four hours. Even in the case with marked suppression haemoglobin disappeared in four days. If it be allowed that haemoglobinuria is due to the excretion of the products of haemolysis the latter must therefore be complete within a comparatively short time, even when the clinical condition is severe, and whether quinine is continued or not; for in the case already quoted, in which a full course of quinine was given, haemoglobinuria ceased in forty-eight hours. In this case, however, a continued administration of quinine rapidly again built up haemolytic conditions, for another attack within a week was immediately fatal.

The excretion of albumin always continued after haemoglobinuria had ceased; its duration varied from four days to no less than sixty days in the case with marked suppression. Death appeared to be brought about in two ways: either (1) by toxic poisoning in the early stages of the attack on the second or third day, or (2) by suppression of urine.

The histological changes found in the kidneys of a series of cases all showed that suppression was due to a coagulation of excreted haemoglobin-containing material mainly in the region of the loops of Henle. The first convoluted tubules above the point of obstruction were widely dilated, but their epithelium was normal, cilia even being demonstrable. The cause of suppression is thus a mechanical obstruction.

Treatment should be directed to the prevention of this mechanical blocking, and also to the combating of toxic effects and collapse. The maintenance of blood pressure is of extreme importance from both these points of view; collapse should be combated with brandy and strychnine and other general methods commonly used. The most important line of treatment is, however, the administration of fluids in quantity by every possible path in order to dilute the products of excretion sufficiently to prevent coagulation, and also to dilute toxic products in the circulation. Not only should fluid be taken in quantity by mouth, but rectal salines should be given and continuous subcutaneous saline injections. This treatment should be started immediately the signs of blackwater fever are discovered; it is too late to apply them only when signs of suppression appear, for coagulation in the kidney has then already taken place.

In conclusion, blackwater fever is held to be due to a sudden haemolysis in the blood stream brought about in certain cases of chronic malaria by the administration of quinine; exposure or exhaustion is often a contributory factor. The haemolysis is chemical in nature and completed in a short time. The haemoglobin liberated can be successfully excreted by the kidney if not too highly concentrated; if too concentrated coagulation takes place in the loops of Henle and suppression follows. Quinine should be stopped at once; its further administration is both dangerous and unnecessary, for the blackwater fever attack itself destroys the malarial parasites. In any particular patient a critical dose of quinine is necessary to produce an attack of blackwater fever. Malarial attacks in such a patient can be successfully treated by doses below this limit.

REFERENCE.

[1] Parsons, L. G., and Forbes, J. G.: Observations on a Transient Form of Haemoglobinuria occurring amongst the Troops in Macedonia. *Journal of the Royal Army Medical Corps*, vol. xxxii, p. 373, May, 1919.

NUMEROUS preparations which have been sold in Austria as neo-salvarsan have been found on examination to consist of lead or potassium chromate, plaster-of-Paris, and heavy spar, without a trace of salvarsan.

ACCORDING to *Paris Médical* (May 29th), the association of French medical journalists has unanimously passed a resolution protesting against the description under German names, in the Supplement to the *Codex Medicamentarius*, of drugs of French origin. The appearance of hexamine under the name urotropine is a case in point.

ON THE TREATMENT OF LUPUS VULGARIS BY THE LIQUID ACID NITRATE OF MERCURY.

BY

H. G. ADAMSON, M.D., F.R.C.P.,
PHYSICIAN FOR DISEASES OF THE SKIN TO ST. BARTHOLOMEW'S HOSPITAL.

ONE of the most difficult therapeutic problems in the out-patient department of a hospital for diseases of the skin is that of the treatment of lupus vulgaris. Of the newer methods of treatment: Tuberculin has proved disappointing—even dangerous; *x*-ray applications have but a limited field and are used only for healing ulcerated surfaces or for destroying the warty condition in lupus verrucosus; Finsen light can, indeed, claim excellent cures in selected cases, but it is impracticable in the very numerous examples of lupus of the nose and deep tissues adjacent, in crusted and ulcerated lupus, or where very large areas are involved. In the majority of cases of lupus vulgaris we are obliged still to rely upon the older methods of caustic applications, either with or without previous scraping.

The so-called "selective caustics" play a large part in the modern treatment of lupus. The term "selective caustic" refers to a caustic which picks out the lupus nodules without damaging the healthy skin. In my own practice I have made prolonged trials of a number of selective caustics—namely, of caustic potash, of arsenical pastes, of chloride of zinc, of nitrate of silver, of trichloracetic acid, of potassium permanganate, of salicylic and pyrogallic acids, and of Dr. Ellis's recently introduced "brass ointment." The term "selective caustic" has a relative not an absolute meaning, for whether a particular caustic is selective or not depends upon the length and strength of its application. Caustic potash, for example, has, when first applied, a remarkably selective action on the lupus nodules, but it very soon finds its way into the surrounding healthy tissues, unless applied sparingly and with very great care. Chloride of zinc, contrary to what one might expect, can, on the other hand, be freely applied in a deliquescent state without much destruction of healthy tissue, and is a valuable agent for use after scraping. With nitrate of silver, however freely it be used, one generally fails to destroy even the whole of the lupus tissue. Arsenical paste, salicylic acid, and pyrogallic acid have a distinctly selective action on the lupus nodules, but a too prolonged application of either of these may lead to some sloughing of the surrounding tissues. The selective action of "brass ointment" upon lupus nodules is even more striking than that of any of the other caustics mentioned, for it picks out each lupus nodule, leaving a sharply punched-out ulcer. But a long experience of the use of this medicament has led me to regard it as of use only as a preliminary application, since it fails completely to destroy the lupus infiltration, and the nodules remain on the healing of the ulcers.

Until recently, in my own experience, chloride of zinc and pyrogallic acid have proved to be the most manageable and the most effectual, and my routine treatment of lupus vulgaris has been either:

(1) Scraping with the Volkmann spoon followed by free application of deliquescent chloride of zinc; or (2) repeated applications of pyrogallic acid, either in the form of Boeck's paste—

Acid. pyrogallic. Resorcin Acid. salicylic.	āā partes 5
Gelanthi Talc	āā partes 7

Ft pasta moll.

or as an ointment according to the method of Jadassohn—

Acid. pyrogallic.	10 to 20
Vaselin.	100

The pyrogallic acid method consists in applying the paste or ointment, spread upon lint, and bound to the affected part by strapping. When the dressing is removed after twenty-four to forty-eight hours, the lupus nodules are found to have been "picked out" by the acid and partially destroyed by ulceration. The process is repeated with ointments of diminishing strength until the ulceration heals under their application.

In a small proportion of cases cures have been effected after a few applications, but in many others the improvement has ceased after reaching a certain stage and has progressed no further in spite of repeated treatments.

Quite recently I have employed in the treatment of a large number of cases the liquid acid nitrate of mercury and believe to have found in this application a remedy of the selective caustic type which far surpasses any other method of treating lupus in its efficacy and in its rapidity of action.

The liquid acid nitrate of mercury has been for long known as a potent remedy for certain tertiary syphilitic sores and fungating syphilitic granulomata, but it seems never to have been widely used in the treatment of lupus. Most of the textbooks mention this caustic in a perfunctory manner or "damn with faint praise." In the medical journals I have been able to discover only two definite statements as to its real value in lupus. In the *Medical Times and Gazette*, 1855, vol. i, p. 9, is the following account:

> A solution of the nitrate of mercury in strong nitric acid is in very common use at the Hospital for Cutaneous Diseases, and constitutes a very convenient form of caustic. Its formula is—
>
> ℞ Hydrargyri ... ... ℥j
> Acid. nitrici (sp. gr. 1 50) ... ... ℥ij
> Solve.
>
> The solution produced is a clear, colourless fluid.

Its usefulness and methods of employment in carbuncle, in acne, in boils, in lupus, for sloughing ulcers, and in moles, naevi, etc., is then related in detail.

> "*In Lupus.*—The acid nitrate is one of the most efficient and convenient forms of caustic in this disease. Mr. Startin does not, however, employ it solely, but uses also the biniodide of mercury and a paste of which arsenic is the principal ingredient. (See page 11, for July 1.) The acid nitrate is chiefly used in indolent tubercles, and to indurated patches not actually ulcerated. After ulceration has occurred the arsenical paste is preferred."

The second reference is to be found in the *British Journal of Dermatology*, vol. viii, 1896, p. 44, and is as follows:

> "Mr. Marmaduke Sheild showed a case of lupus vulgaris of the nose treated by acid nitrate of mercury. The patient was a delicate-looking woman, aged 27. She had suffered from lupus vulgaris of the nose for over four years, and had undergone so many scapings 'that she could not remember them.' The pure acid nitrate of mercury was applied on six occasions, the parts being previously well soaked with 20 per cent. cocaine. The parts affected were the tip and alae of the nose, the septum, and a portion of the lip. The parts had now soundly healed over, and no trace of lupoid tissue could be seen. It was intended to keep the case under observation, and apply the same remedy to any recurrent nodules of the disease that might present; so far as one could judge a definite cure seemed likely to result."

My own experience of the treatment of lupus with acid nitrate of mercury covers only a period of some nine months, but the results obtained have been so successful that one wonders why this already known remedy should have remained neglected.

The cases which have been treated by this method in the skin department at St. Bartholomew's Hospital may be arranged in four classes:

1. Single patches of non-ulcerated lupus of the size of a shilling to that of half a crown, and which have received no previous treatment.
2. Old cases of lupus which have been treated by other methods, but in which lupus nodules still remain in the scars.
3. Ulcerated lupus, often of large extent and with much surrounding inflammatory infiltration.
4. The common type of lupus of the nose, involving frequently also the nasal septum, the palate, the upper lip, the cheek, and sometimes the lacrymal sac and skin over and around, a type very difficult to deal with by Finsen light or by scraping.

The liquid acid nitrate of mercury is applied by means of a small swab of wool tightly twisted round the ends of a finely pointed pair of forceps. It is painted on to the affected areas freely and with firm pressure for one to two minutes, taking care to limit the application exactly to the lupus patches, to isolated nodules, or to ulcerated surfaces. In the case of isolated nodules or non ulcerated lupus patches the effect of the application is after a minute or so to change the semi-translucent reddish-brown "apple jelly" lupus tissue, so that it takes a dry yellowish white opaque appearance. No dressing is applied and the patient is seen again in a week. The yellowish white opaque appearance has then given place to a thin brownish crust, which falls in a few days and leaves the affected area sometimes completely healed, sometimes as a shallow ulcer which heals in a few days. In many instances a single application has been sufficient to replace the lupus by a smooth healthy scar without any remaining lupus nodules. In other cases isolated nodules have remained in the scar and it has been necessary to repeat the application one or more times. The application is only slightly painful at the time, but is followed by more severe pain for several hours.

In the case of ulcerated lupus, after removing all crusts, the solution is freely painted on to the ulcerated surface. This causes considerable pain, but if a not too large area be done at one sitting it is easily borne by most patients. The after-effect upon ulcerated surfaces is rather different from that upon non-ulcerated lupus. The surface of the ulcer becomes dry yellowish-white, but in a few days much serous exudation gives rise to a thick heaping up of crust. At the end of a week the crusts are picked off, or bathed off, and there is then an ulceration with purulent surface, and a margin of pink healthy epidermis which heals in the course of a week or so. The number of applications required in an ulcerated lupus depends upon the extent of the disease and the depth of the inflammatory infiltration which often accompanies these ulcerations.

In those cases where the nose is involved the treatment by Finsen light or scraping is rendered difficult owing to the deep involvement of tissues other than the skin. The disease, which usually starts in the mucous membrane of the anterior part of the septum and spreads hence through the whole thickness of the nose to appear as nodules in the skin of the nose, sometimes also perforates or destroys the cartilaginous septum, spreads upwards to involve the lacrymal sac, downwards to the upper lip, backwards to the hard and soft palates, and along the lymphatics to appear upon the skin of the cheek midway between the nose and the ear. But even in these difficult cases where much of the disease would seem to be out of the reach of a local caustic application, the liquid acid nitrate of mercury has produced far more rapid improvement than any previously adopted method of treatment. A lacrymal abscess may be swabbed with the solution. The solution may be carefully painted on to lesions in the nose or on mucous membranes, and all nodules or ulcerations on the skin surface similarly dealt with. In extensive cases all this may be done at one "sitting" under a general anaesthetic; but it can also be carried out gradually without any anaesthetic by applying the acid little by little to different parts at different visits. No complete cure can as yet be claimed in an extensive case of lupus. The period of employment of this remedy has not yet been sufficiently long. But the good results already obtained seem to justify a more general use of the acid nitrate of mercury in the treatment of lupus.

HEALING OF A TROPHIC ULCER OF THE GREAT TOE IN AN AGED GLYCOSURIC PATIENT.

BY

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PHYSICIAN TO THE LINCOLN COUNTY HOSPITAL.

THE complete healing and treatment of a large trophic ulcer under circumstances so adverse appear to be worth recording.

The patient, an old lady aged 82, has the following remarkable family history: Her mother died aged 86, and her father aged 75; four brothers lived to 86, and one to 84; one sister lived to 89, one to 86, one to 85, and two to 84.

She was first seen by me in March, 1919, when she was suffering from bronchitis and a failing heart. She stated that she had suffered from diabetes for twenty years; that when this was first discovered she was strictly dieted, and that the diet had been gradually relaxed, she having kept fairly free from symptoms for some years. She did not take any sugar and very little starchy food. She had been more or less blind, due to double cataract, for fifteen years. She was physically very feeble, and had a good deal of adipose tissue; her muscles were very flabby, as was also her heart, and there was a good deal of bronchitis. Mentally she was remarkably bright and vigorous. The urine contained a considerable amount of sugar; she was passing 100 to 125 grams a day; there was no acetone nor diacetic acid present. With rest in bed, expectorants, and cardiac stimulants the bronchitis cleared up, her heart became stronger, and she was able to get up at the end of a month and remain up for several hours a day. Her diet was fairly varied, but sugar and very starchy foods were forbidden. She took a drachm and a half of sodium bicarbonate every day. The amount of sugar in the urine dropped to 24 grams a day.

During the summer and autumn of 1919 she kept fairly well, and was able to get about the house and garden, but at times complained of pain in her legs due to peripheral neuritis.

In December the pains became more severe, and she had increasing difficulty in walking, and her general health was failing. About December 29th the pain became most severe in the right leg and foot, and there appeared a bulla 1 in. in diameter at the base of the right great toe on the outer side; there was no history of any injury; the bulla was full of dark sanious fluid; the cuticle gave way in a few hours, leaving a raw unhealthy surface. In two days there was a typical trophic ulcer surrounded by a zone of inflammatory oedema. The ulcer slowly increased in area and depth, and the inflammatory redness and oedema spread up to the middle of the dorsum of the foot. The urine contained from 125 to 150 grams of sugar a day; the prognosis was anything but hopeful.

She was kept in bed, and the carbohydrate intake was gradually reduced to a minimum, and fats were also limited; alkalis and nux vomica were prescribed. She complained much of pain in the toe and foot at night; for this she took one or two tablets of omnopon ⅓ gr. which gave her great relief. At the onset the whole of the foot was most thoroughly cleaned and painted all over with picric acid 24 gr. to ℥j in methylated spirit, and was then powdered with boric acid powder; the ulcer was dressed with sterilized gauze, and pieces of gauze were kept between all the toes; the whole foot and leg were enveloped in gamgee and kept slightly raised.

The ulcer continued to increase; small ones appeared on the heel and between the second and third toes, but quickly healed. By the beginning of February the ulcer had spread round and involved the base of the second toe, covering in all an area of two square inches and extending almost to the bone and upwards in the interdigital space for a full inch. The patient's general health, however, had improved, and the urine only contained 20 grams of sugar a day.

From February 14th the whole foot was cleaned twice a day with methylated spirit, and the greatest care was taken in removing every particle of necrosed tissue from the ulcer, which was then freely swabbed with spirit and filled in with a paste of bismuth carbonate and liquid paraffin, which was removed and fresh used at each dressing.

After a month of this treatment the ulcer ceased to spread, and all the inflammatory reaction around had disappeared; at the end of six weeks slow healing commenced, and continued uninterruptedly until, by the middle of May, the site of the ulcer was completely covered by sound scar tissue and the whole foot was sound. The symptoms of neuritis were much less in evidence.

The patient is now (June 3rd) able to be up most of the day and walk from room to room and go out in the garden. She was fortunate in having a particularly efficient and painstaking nurse; this I think was more than half the battle.

A NOTE ON
A METHOD OF TREATING HAY FEVER AND PAROXYSMAL RHINORRHOEA.

BY

MORLEY AGAR, M.R.C.S., L.R.C.P.,

LONDON.

DURING the past four years my attention has been concentrated on the treatment of hay fever, paroxysmal rhinorrhoea and allied conditions. The results which are being obtained at the present time lead me to believe that great relief can be given to the majority of patients.

The method employed, which so far as I am aware has not been used previously, consists essentially in treating the vestibule of the nose. The vestibule, that is to say, the in-turned skin of the nostrils, is carefully examined for any fissures or sore spots and a note made of their whereabouts; it is then rubbed with an astringent lotion, silver nitrate gr. xxx to the ounce being the solution I generally use. The rubbing is carried out thoroughly and systematically; particular attention is paid to two spots, the first is high up on the outer wall and the second is the floor about half to three-quarters of an inch back from the orifice. No part of the vestibule must be missed, and the nostril must be stretched to open up the folds. I make no application to the mucous membrane, I do not touch it if I can help it, but it is possible that some of the solution goes in further than I intend.

The results up to the present show that all cases of nasal rhinorrhoea treated by this method have been cured; that condition appears the easiest to treat.

Good results are obtained also with patients suffering from hay fever. This year seven patients were treated about a month before the symptoms were due and have practically escaped. It is true there have been occasional slight "reminders," which, however, merely serve to show that they have not outgrown the complaint. All seven regard themselves as cured.

Some cases of asthma have also been treated, but the results have been less satisfactory, although some improvement has been obtained. In all cases of paroxysmal sneezing and asthma the external auditory meati should be inspected for impacted cerumen, dermatitis, etc. In what may be called extreme cases of hay fever I do not use the silver nitrate at first, but apply an anaesthetic solution to the vestibule and a wide area around.

℞ Acidi carbolici ... ... ♏ ij
Olei menth. pip. ... ... ♏ vj
Sp. vini rect. ... ... ʒ iv
Misce. Fiat pigmentum.

After a few minutes lotio calaminae (U.C.H.P.) should be applied to an even wider area of the face. I should like to draw attention to the manner in which the application of this anaesthetic solution to the nasal vestibule relieves the eye sensations in hay fever and clears up the occasional blurring of vision of which many people complain although they are not subject to hay fever. I believe that the efficacy of the treatment depends upon diminishing the abnormal sensitiveness of the skin.

If a normal person paint the vestibule with the silver nitrate solution he will not experience the slightest irritation nor will any reaction follow. If, on the other hand, the person is subject to one of the diseases mentioned above a reaction of varying intensity will follow. His eyes will water, he will sneeze a few or many times, and both nostrils will run copiously, a milky fluid coming away, and in some cases a cough and temporary feeling of tightness of the chest will occur. The reaction lasts from half an hour to twelve hours.

This convinces me that our aim in treatment must be to lessen the hyperaesthesia of the skin of the vestibule.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

MONILIAL GASTRITIS.

A RATHER anaemic woman, aged 42, had suffered for years from ulcer of the stomach, which about three months before seeing me was so bad that her doctor sent her to bed for a month on strict diet. Great relief followed, and soon after she was sent to the seaside for a month. Improvement was steady, and she was now on the way back, staying with relatives till fit for duty. Feeling uncomfortable the day before, she resumed strict diet and called on me. A simple alkaline mixture was prescribed, the diet approved, and rest advised during most of the day.

A few days later I was called in and found that, though only Benger's food was taken, about two hours after there was belching and vomiting of sour matter. Not much was made out by palpation except that there was little or no tenderness. The patient was thin. The mouth was in good order, and the bowels were regular. A little of the vomit taken for examination soon settled into an opalescent fluid with a flocculent sediment. Under the microscope a trace of sediment showed food débris with considerable numbers of yeast cells and moderate numbers of sarcinae and *B. geniculatus*. The last, being presumptive evidence of malignant disease, was quite unexpected, and its association with the other two suggested the transition stage. Even so, after months of careful diet and weeks in which the stomach was not obstructed, it was difficult to account for all this yeast. On getting it in pure culture the yeast proved to be a fermenter of maltose, but not of saccharose—practically conclusive evidence that it was the common thrush fungus in yeast form.[1] Further examination proved that it was *Monilia albicans*, and capable of producing thrush.

In approximately healthy mouths traces of thrush fungus are common enough, and are the sources of infection for sucklings, but mouth contamination could not account for the multitude of yeast cells in this vomit (which was examined within an hour).

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[1] BRITISH MEDICAL JOURNAL, 1913, ii, p. 1460.

Vomiting was rather troublesome for twenty-four hours, during which she remained in bed, and was treated with sips of hot water containing sodium bicarbonate, and only hot milk with water was taken. Then a period of comparative comfort followed, proving that there was no organic obstruction. This suggested that, if growth in the stomach is equal to that often seen in the mouth, the thrush fungus is capable of causing obstruction at the pylorus, partly due to fungal growth and partly to gastritis. Moreover, monilial gastritis probably occurs apart from malignant disease, for yeasts are common in the stomach in various conditions, and their identity is seldom investigated.

I have already reported[2] a monilial infection of the bowels in a child apart from any evidence of stomatitis. It may have been a complication of some other affection (the child is now in good health), but it is a mistake to suppose that monilial infections are confined to the tropics.

In conclusion, I may state that in a few weeks the woman showed evident signs of malignant disease of the stomach, and died in a few months.

Ealing, W. ROBERT CRAIK, M.D.(Glas.).

DISLOCATION OF HUMERUS BY MUSCULAR ACTION.

ON June 20th an epileptic, J. S., aged 16, was seen to get into bed; ten minutes later his mother in the next room heard him making a noise, and, coming into his room, found him lying on his *right* side in bed, and still in the clonic stage of a fit. Ten minutes later, on recovering consciousness, he complained of his *left* shoulder, which was then seen to be deformed. On my arrival twenty minutes later I found subcoracoid dislocation of the humerus, which was reduced with ease. The shoulder was normal before, and no fall could have taken place during the fit, so muscular action must have caused the dislocation. He had never dislocated his shoulder before. This complication of an epileptic fit is mentioned by Sir Frederick Taylor in his *Practice of Medicine*, but it must be very rare.

Teignmouth. F. W. MORTON PALMER, M.D., B.Ch.

Reports of Societies.

HERPES AND CHICKEN-POX.

AT a meeting of the Edinburgh Medico-Chirurgical Society held on July 7th, Dr. R. FLEMING presiding, Dr. CLAUDE B. KER discussed the possible relationship of herpes and chicken-pox. Cases suggesting this had been reported, especially by Le Feuvre in Rhodesia, Kay, and Parkes Weber. There were various clinical groups:—(1) Cases of herpes followed by chicken-pox in another individual, but within the limits of the incubation period of the latter. This was the most numerous group, and many of the cases were difficult to explain as coincidences; though the possibility of error of diagnosis, and a distribution of chicken-pox modified by local irritation, must be remembered. (2) Cases of chicken-pox followed by herpes in another individual. (3) Herpes and chicken-pox occurring simultaneously in one person. (4) Herpes and chicken-pox occurring simultaneously in two persons. After making full allowance for other possibilities, there remained in group 1 cases that were difficult to explain except on the theory of some connexion between herpes and chicken-pox, and the theory of identity could not be repudiated until a prolonged collective investigation had been carried out by general practitioners.

Dr. A. GOODALL said that the difference in severity between herpes and chicken-pox was against the theory. Dr. J. S. FOWLER said that the great frequency of chicken-pox might explain its occasionally following herpes, and he emphasized the great difficulty in tracing the source of infection in these diseases.

Prognosis in Heart Affections.

Dr. W. T. RITCHIE emphasized the importance of prognosis in heart disease. It depended, he said, upon a full examination, clinical and instrumental, and accurate diagnosis, and upon the consideration of such extra-cardiac factors as the condition of vessels, kidneys and lungs. He then specially considered prognosis in four clinical conditions: (1) Dilatation, following overstrain, very seldom occurred in a healthy heart. If at an age when arterio-sclerosis was present, prognosis should be guarded, and permanent disability often remained. In dilatation due to acute infectious disease the occurrence of a murmur at the apex suggested endocarditis. Where the murmur was not accompanied by displacement of the apex, nor by a forcible apex beat, the prospect of recovery was good, although postponed for one or two years. (2) Disordered action of the heart was frequent not only in military but also in civil life. The prognosis was good if proper treatment were carried out. This consisted in restoring the patient's confidence; in getting him out of bed; in passive and then in graduated active exercises. Drugs, including digitalis, were generally superfluous. Cure was obtained in 69 per cent. of military cases. Results were not quite so good in civil life where neurasthenics were intractable cases. (3) In extra-systoles the prognosis was good in young adults with healthy hearts where the cause was emotional excess or tobacco; also in the aged. But in persons over 40 it might be grave because of commencing coronary arterio-sclerosis, and if pulsus alternans was present it presaged death in one or two years. Ventricular extra-systoles were better than auricular or nodal. Multiple extra-systoles were worse than single. (4) Auricular fibrillation was generally the last act in the drama. It was least grave where the pulse was relatively slow, the ventricles not dilated, and oedema absent, and where the response to digitalis was good. When associated with chronic nephritis it indicated impending death.

Myopia.

Dr. H. M. TRAQUAIR gave notes of 11 cases of low grade myopia where the complaint was of near vision only and not of distant vision, as in the majority of myopes. In the series, 8 were females and 3 males, and the average age was 20.6 years, the extremes 8 and 30. All were engaged in near work. The myopia present averaged 0.95 dioptre, the extremes being 0.25 and 2.0 dioptres. No cases with any astigmatism, or with anisometropia of more than 0.25 dioptre were included. No case showed heterophoria. All were ordered a full correction to be worn for all purposes, and the symptoms were relieved in every case, mostly very rapidly. Thus relief of "eyestrain" was obtained by causing the ciliary muscle to do more work, and thus to restore the relationship between accommodation and convergence, a very slight disturbance of which can produce discomfort in certain individuals. The danger of over-correction of myopia in young persons by examination without atropine is greatly exaggerated. A full correction should be advised to be worn for near work as well as for distant vision.

Blackwater Fever.

Dr. A. GOODALL described the chief clinical features of 14 cases of blackwater fever in Salonica. There was in the great majority a history of previous malaria, and in 11 parasites were found in the blood. There were two deaths, and a notable feature of the autopsies was the presence of blood in the collecting tubules and in the ascending limb of Henle's loops in the kidneys. The treatment was immediate and massive doses of quinine, given, if the patient's condition permitted, intravenously. The speaker deduced from the above cases that blackwater fever was a phase of malaria, determined by exposure to cold. It was objected that blackwater fever was rare in malarious districts, but in his view blackwater fever was often overlooked, while the different seasonal incidence could be explained on the assumption that cold was a determining factor. He referred to experimental haemolysis in animals by such agents as phenylhydrazine, where blood cells and blood pigment were found in the kidneys, especially in the collecting tubes and ascending limbs of Henle's loops; and deduced an analogous action of the malarial parasite in blackwater fever.

AT a meeting of the London Association of the Medical Women's Federation held on June 15th at 11, Chandos Street, W., with the President, Mrs. FLEMMING, M.D., in the chair, Dr. JANET CAMPBELL read a paper on the

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[2] BRITISH MEDICAL JOURNAL, 1915, ii, p. 1205.

Ministry of Health. She first briefly outlined the history of public health legislation from the beginning of the reign of Queen Victoria, and then discussed the reasons for the establishment of a central health department. The general functions and duties of the Ministry were then described, with particular reference to the medical organization of the health services. A discussion followed, in which Dr. DOBBIE, Dr. JEVONS, Dr. JOHNSTONE, Dr. BOYLE, Dr. IREDELL, Dr. SHEPPARD, and others took part.

Reviews.

HEAD'S STUDIES IN NEUROLOGY.

DR. HEAD's well known work which carries on the lamp lighted by Hughlings Jackson, and is complementary to Professor Sherrington's *Integrative Function of the Nervous System*, is now brought together in a readily available form in his two volumes of *Studies in Neurology*.[1] With some modifications and additions, made for the convenience of the reader, the contents are reprints of seven papers from *Brain* between 1905 and 1918, and present the results of eighteen years' patient investigation carried out with an infinite capacity for taking pains. Each of the papers originally contained an account of the methods employed in testing sensation; and to minimize repetition these separate descriptions have now been combined into a single chapter which follows the introduction. There is an epilogue on the common aims underlying this study of function in man by clinical methods, and an appendix dealing with some of the most serious criticisms of the views expressed by the author and his collaborators about the functions of the peripheral nervous system. The originally separate monographs are now arranged in an orderly sequence, extending from the peripheral nervous system to the receptive centres in the brain, and are grouped into four parts: (1) Introductory remarks and the methods of examining sensation, with an account of their clinical application; (2) the peripheral nervous system; (3) the spinal cord; and (4) the brain. Probably many readers will be disappointed to find that Dr. Head has not thought it advisable to include his early papers (1893, 1894) "On disturbances of sensation, with especial reference to the pain of visceral disease."

The section on the peripheral nervous system opens with "The afferent nervous system from a new aspect," being the substance of the Marshall Hall Address before the Royal Medical and Chirurgical Society of London in 1905; it outlines the detailed results of the two following contributions—namely, an elaborate account of the consequences of injuries to the peripheral nerves, written with Mr. JAMES SHERREN (1905) and based on examination of numerous patients at the London Hospital since 1901, and "A human experiment in nerve division," giving the observations made with Dr. RIVERS on the sensory phenomena following division of the radial and external cutaneous nerves in Dr. Head's left arm on April 25th, 1903. The observations, carried out under the strictest precautions, were continued until December 13th, 1907, and the full paper, published the next year, further established the classical division of the afferent fibres in the peripheral nerves into the three systems: (1) Of deep sensibility, conducting impulses produced by pressure and running mainly with the muscular nerves and so not destroyed by section of all the sensory nerves to the skin; (2) termed protopathic and responding to painful cutaneous stimuli and to the more extreme degrees of heat and cold; this form of sensibility is due to specific end organs gathered together in the skin to form sensory spots, the spaces between being devoid of this sensibility; and (3) called epicritic, to the skin only, subserving the function of cutaneous localization, the discrimination of the two points of a compass and the finer grades of temperature. The internal organs are endowed with the first two afferent systems. These three peripheral systems in all probability develop at different phylogenetic periods, each system reacting differently to the mass-stimuli of daily life. To the criticisms brought against this conception Dr. Head now replies, and to those brought by von Frey and by Boring with considerable vigour.

Part III contains two monographs, that on the grouping of the afferent impulses within the spinal cord, written in collaboration with Dr. THEODORE THOMPSON in 1906, and the much more recent (1917) contribution, with Dr. G. RIDDOCH, "on the automatic bladder, excessive sweating, and some other reflex conditions in gross injuries of the spinal cord." Comparison of the loss of sensation produced by division of the peripheral nerves with that resulting from injury or disease of the spinal cord shows that there are fundamental differences, and that as soon as a sensory impulse reaches its first junction in the spinal cord it becomes shunted into tracts devoted to the conduction of impulses grouped in a manner different from that found in the peripheral nerves. Thus the impulses started by cutaneous painful stimulation, and travelling by the protopathic fibres, and those due to painful pressure and arriving by the deep system of nerves, become combined and separated from all other sensory impulses that may have accompanied them in the peripheral paths. This process of transmutation and recombination takes place on the same side of the spinal cord as that on which the impulses enter.

The research undertaken with Dr. Riddoch, noticed in our issue of April 20th, 1918, illustrates Dr. Head's aphorism that "clinical diagnosis is a by-product of scientific investigation," for while the authors set out to elucidate the physiological principles underlying the symptoms in paraplegia their observations have a very practical bearing on the vesical disorders. After complete section of the spinal cord there is, instead of the normal discriminative reflex in response to a stimulus, a "mass-reflex" with overflow of energy into distant channels resulting, for example, in evacuation of the bladder and rectum and sweating. This mass-reflex is a revival of the primitive method of response which cannot occur under normal conditions of higher neural control, and is an example of the law laid down more than fifty years ago by Hughlings Jackson that in lesions of the nervous system positive symptoms are usually the result of the removal of the control normally exerted by the higher over the lower centres.

In the section dealing with the brain there are two monographs: the first, on sensory disturbances from cerebral lesions, in collaboration with Dr. GORDON HOLMES, provided the matter for the Croonian Lectures of 1911 before the Royal College of Physicians, and gives a general conception of the mechanism underlying sensation. The observations were made on human subjects in whom disease, accident, or surgical interference had produced some stationary lesion, the general health being otherwise perfect; there were twenty-four patients with clinical evidence of disease of the optic thalamus, sixteen with localized lesions of the surface of the brain, and others. There are two great sensory centres in which afferent impulses end to evoke the state called a sensation; these are the optic thalamus and a considerable part of the cerebral cortex. All the secondary paths of sensation terminate in the optic thalamus, where sensory impulses are grouped afresh and redistributed either to the cortex or to a mass of grey matter in the optic thalamus, which is the centre for certain fundamental elements of sensation—namely, pleasure, discomfort, and consciousness of a change in state. The lateral zone of the optic thalamus is the organ by which the cortex controls the essential thalamic centre; and the excessive response to peripheral stimuli, or Roussy's *syndrome thalamique*, which is characteristic of a lesion of the lateral zone, is due to removal of the inhibitory influences of the cortex, following destruction of the cortico-thalamic paths, and not, as has been widely assumed, to irritation. The nature of the sensory activity of the cortex dealt with in the first monograph is further elaborated in Dr. Head's recent paper in *Brain* (see also BRITISH MEDICAL JOURNAL, February 1st, 1919) on "Sensation and the cerebral cortex." The sensory activity of the cortex is not associated with the crude recognition of touch, pain, heat, and cold, but it endows sensation with the three following discriminative faculties: the recognition of spacial relations, a graduated response to stimuli of different intensity, and the appreciation of similarity and difference in external objects brought into contact with the surface of the body.

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[1] *Studies in Neurology*. By Henry Head, M.D., F.R.S., in conjunction with W. H. R. Rivers, M.D., F.R.S., Gordon Holmes, C.M.G., M.D., James Sherren, F.R.C.S., Theodore Thompson, M.D., and George Riddoch, M.D. Two volumes, pp. 862; 182 figures. Published by the Joint Committee of Henry Frowde and Hodder and Stoughton. 1920. (£3 3s.)

In conclusion, these *Studies* command our sincere admiration for the enormous amount of patient and rigidly controlled research, for these new and extremely important conceptions on the mechanism of sensation, and for the broad philosophic lines on which these epoch-making investigations have been directed.

ORTHOPAEDICS, PAST AND PRESENT.

DR. OSCAR VULPIUS of Heidelberg is well known in and beyond the borders of Germany as an orthopaedic surgeon of distinction, so that his pamphlet[2] on his twenty-five years' experience is sure to arouse interest.

It is divided into twelve chapters, the first five of which deal with the development and methods of the specialty, and each of the remaining seven is devoted to consideration of some one of the more important maladies that come generally under the care of the orthopaedic surgeon. The struggle in the early part of the nineteenth century between the advocates of the mechanical and the dynamical methods, the first relying almost entirely on instruments and the second upon massage and exercises, ended in a compromise. Then came the era of tenotomy and other operative methods. Antiseptics revolutionized practice for a time and bade fair to lead to the extinction of the specialty, as it caused the disappearance of many orthopaedic institutions in Germany. After a struggle, however, the necessity of the specialty was proved by the good results obtained by those who devoted themselves to the treatment of deformities. The need for early treatment of the results of injuries coming under the industrial insurance scheme had something to do with this. Later on the institutional treatment of tuberculosis of the bones and joints became of great importance as a part of the general schemes for the care of cripples.

Dr. Vulpius claims that the treatment of fractures and injuries of joints and of amputation stumps belongs to the realm of orthopaedics, as well as chronic diseases of bones and joints, and all diseases and injuries (including paralysis) of the soft parts which tend to result in contraction and deformity. He insists on the necessity for orthopaedic hospitals and clinics, where all the latest appliances are available for treatment of patients. Many cases must be treated as in-patients. In considering mechanical (or instrumental) orthopaedics Dr. Vulpius deals with the difficulties which arise when the attempt is made to give sufficient support or fixation to the affected part or limb, without impairing the already imperfect nutrition by constriction and pressure, and without overburdening the already weakened muscles. The complete solution of the problem is impossible, but the cry of "Away with apparatus!" is expressive of a widely-felt objection to instruments. Among the lessons to be learnt from war experience of artificial limbs one, according to Vulpius, is the necessity of early treatment of leg stumps and the early use of provisional prostheses. Another is that the old peg leg and the kneeling leg are obsolete. Different types of limbs are advisable for hand-workers and for head-workers. For those belonging to the latter class the author thinks that the fibre leg with solid felt foot which is made in the workshop of his clinic is the most suitable form as regards lightness, strength, simplicity, and appearance. Similar difficulties have been met in Germany, in the provision of artificial arms, to those encountered in this country. They have not yet been overcome, and the attempts made to do so are not unlike our own. Dr. Vulpius is very cautious in expressing any opinion on the prospects of kinematization of stumps. This prudent restraint is in strong contrast to the exaggerated statements of Sauerbruch and his school.

Among orthopaedic surgical proceedings operations on tendons have an important place; Vulpius states that he has quite given up simple transverse tenotomy in favour of his sliding method (Rutschenlassens) applied to the junction of tendon and muscle-belly. When a defect has to be supplied he prefers transplantation of tendon or fascia to artificial silk tendons. Other questions concerning tendon, nerve and joint orthopaedics are discussed, but he maintains that operations are only the preliminary stages of treatment, which to be successful must be followed by after-treatment of various kinds. The right lines on which to treat congenital club-foot, static flat-foot, congenital hip dislocation, infantile palsy, scoliosis and bone and joint tuberculosis are briefly laid down. Compressed into these eighty pages is to be found the fruit of much labour and the ripe experience of an accomplished surgeon, which will well repay perusal by those who read German.

NOTES ON BOOKS.

The Industrial Clinic,[3] in which nine authors deal with various branches of industrial medicine, will be found extremely useful by factory medical officers and by welfare workers, for both of whom the editor, Dr. EDGAR COLLIS, in his introduction, states that it is intended. In the preparation of this manual the co-operation has been secured both of those who have long been concerned with this branch of medicine and of others who during the war were led to apply to the problems of industrial health methods and ideas which were the fruit of experience gained in other fields. In two of the most interesting sections Mr. B. Muscio, M.A., gives an account of modern scientific methods of choosing, testing, and placing the worker, and Dr. H. M. Vernon has collected many early and recent experimental observations (made both by himself and by others) in connexion with the causation and prevention of industrial fatigue, of which accounts have been given in our columns. Dr. Lucy Cripps contributes a practical and up-to-date account of the individual hygiene of the employed. Dr. Leonard Hill deals concisely with food values in relation to occupation, and Mr. M. J. Hall gives an admirable account of canteen factories. Dr. W. F. Dearden describes the work of the certifying factory surgeon, and Dr. H. B. Adamson writes of factory clinics for women. The manual embodies much important material taken from Government publications issued during the last decade, and hitherto not accessible in collected or convenient form; it contains adequate lists of references and a useful index.

The second part of the first volume of the Spanish archives of phthisiology,[4] a periodical appearing thrice yearly, contains five original papers, a "doctrinal work" on hilum tuberculosis in infancy giving a summary of the subject, and notes on various topics of importance to those interested in pulmonary tuberculosis. Among the original articles is an interesting paper by Dr. Rodés of Barcelona, in which good reason is shown for believing that a loud venous hum noted about the right upper chest and back of a phthisical man of 31, continuous but louder during systole and on deep inspiration, was due to pressure on the vena azygos near its termination. The volume before us is very well printed and got up, and the character of the matter it contains affords striking evidence of the vigour with which medical science is being pursued in Spain.

A Roll of Honour of past and present teachers, students, sisters, nurses, clerks, and employees of St. Thomas's Hospital has been compiled by Mr. Robert S. Hopkins, who is known to generations of St. Thomas's men. The list includes 1,481 names of those who served in the great war; of these, 71 old students, one nurse, and 9 employees gave their lives. Of the medical members 582, and of the nursing staff 92 received honours and awards. The roll of honour has been made complete up to April, 1920. It is well printed on good paper, and has as frontispiece an excellent view of the hospital from Westminster Bridge. It may be obtained for 3s. 6d., including postage, from Mr. R. S. Hopkins, Central Hall, St. Thomas's Hospital, S.E.1.

IN an introductory note to the last number of the *Cambridge Bulletin* (a list of books published by the Cambridge University Press) it is stated that there is evidence of a revival of interest in English literature in certain foreign countries. A special exhibition of English books was held recently in Sweden, and arrangements have been made by the Syndics of the Press for the sale of its books in the United States and Canada through the Macmillan Companies in New York and Toronto.

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[2] *Aus 25 Jahren Orthopädischer Arbeit.* Eine therapeutische Orientierung für den praktischen Arzt. Von Professor Dr. Oscar Vulpius, Heidelberg. Berlin and Vienna: Urban and Schwarzenberg. 1920. (Cr. 8vo, pp. 80. M. 12.)

[3] *The Industrial Clinic: A Handbook dealing with Health in Work.* By several writers, edited by E. L. Collis, M.D., M.R.C.P. Modern Clinic Manuals. London: J. Bale, Sons, and Danielsson, Ltd. 1920. (Demy 8vo, pp. 247; 9 plates; 2 figures. 10s. 6d. net.)

[4] *Archivos Españoles de Tisiología.* Publicados por el Dr. Luis Sayé (Barcelona). No. 2, vol. i, May, 1920. Barcelona: Sociedad General de Publicaciones. 1920. (Double roy. 16mo, pp. 169-352; illustrated. In Spain, 25 pesetas per year; abroad, 30 pesetas per year; numero suelto, 10 pesetas per year.)

PRESENTATION TO DR. J. A. MACDONALD.

THE following appeal is made to all members of the British Medical Association. It is signed by the President, Sir T. Clifford Allbutt, the Chairman of Representative Meetings, Dr. T. W. H. Garstang, the Treasurer, Dr. G. E. Haslip, and by past chairmen of Representative Meetings.

Dr. J. A. Macdonald, the Chairman of Council of the Association, retired from that position at the end of the Annual Representative Meeting, 1920, after serving for the record period of ten years, and the members of Council invite the members of the Association to join with them in recognizing the distinguished services of one of the most popular and most respected of our members, and one who has given unsparingly of his best to the Association.

Dr. Macdonald became Chairman of Representative Meetings in 1906, retiring in 1909. He has been chairman of some of the most important committees of the Association and a member of all. He visited, at the request of the Association, the New Zealand, Australian, and some of the Far Eastern Branches in 1914, and is going on a similar errand to South Africa in October next. He has been a Direct Representative of the profession on the General Medical Council since 1911. In short, for the last seventeen years, whenever the Association has required exceptional services demanding sound judgement, devotion to the interests of the Association, and a commanding personality, it has called on Dr. Macdonald, and never in vain.

Dr. Macdonald is a general practitioner in a single-handed practice. To those who have any conception of the demands made on a man filling the posts enumerated above, no further words are required to indicate the sacrifices that Dr. Macdonald has made on behalf of the Association. The Council believes that the members of the Association will desire to show their gratitude to Dr. Macdonald in a fitting and adequate manner. It is proposed that the presentation shall take the form of a personal gift to Dr. Macdonald, and also, if the response justifies it, that some permanent memorial of his work for the Association shall be established—possibly in the form of a medal or prize.

Subscriptions of any amount will be welcomed, but no individual subscription may exceed five guineas. Cheques should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, W.C.2. The subscriptions will be acknowledged in the BRITISH MEDICAL JOURNAL, and further notice will be given of the exact form of the gift and the time and place of its presentation.

The following subscriptions have been received up to and including the first post on Monday, July 19th:

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The appeal, which has been issued to all members in the United Kingdom, has not been issued to members resident overseas, it being the intention to make the appeal to such members through the secretaries of the Overseas Divisions and Branches. A communication to Overseas Divisions and Branches is being issued.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee 13 cases were considered and £138 voted to 10 of the applicants. The following is a summary of three of the cases relieved:

Widow, aged 77, of M.D. Lond. who died in 1899. Has two daughters, aged 51 and 38; the elder attends to the home, and the younger is an invalid. Income from leasehold property £170 per annum, a large portion of which goes on repairs. The lease of two houses will fall through in four years. Rent £17, and rates on one house £26. Have had to sell one house during the last twelve months to meet the expenses of dilapidations and repairs. High cost of living is making it impossible to make ends meet. Voted £18 in twelve instalments.

Daughter, aged 63, of M.R.C.S.Eng. who died in 1877. Only income about £25 from investments. Has acted for many years as housekeeper, receiving board and lodging for her services. Suffers from ill health. Relieved five times, £60. Voted £12 in twelve instalments.

Daughter, aged 81, of M.R.C.S.Eng. who died in 1859. She suffers from ill health, and is now losing the sight of one eye. She receives about £78 from friends, and £30 from another charity. Relieved eight times, £111. Voted £20 in twelve instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

British Medical Journal.

SATURDAY, JULY 24TH, 1920.

THE FIRST YEAR OF THE MINISTRY OF HEALTH.

THE Ministry of Health passed its first milestone on July 15th, when a vote for seventeen millions and a half—the total expenditure is estimated to be ten millions more—was taken in the course of the debate in supply. The vote afforded Dr. Addison the opportunity of making his first annual statement. It fell into two parts, which met with very different receptions. The first part dealt with housing, the second with the direct preventive work of the Ministry. Under the second head he referred to the success which had attended the measures taken to exclude typhus fever and plague. The prevalence of the former disease in Poland and adjacent countries during the last two years has been widespread, and the medical officers of the Ministry are to be congratulated on their share in preventing the extension of the epidemic to Western Europe. The danger is not over, and the unfortunate war now in progress, by aggravating the misery and poverty of the inhabitants of Poland, is likely to render the disease more inveterate there. But to protect this country to-day from typhus fever is a comparatively simple matter, our mode of life having advanced to a stage little congenial to the particular circumstances of the infection, and the same may with some confidence be asserted of plague. But Dr. Addison made a much bolder claim when he hinted that our freedom from an extensive epidemic of influenza last year was in large part due to the exertions of the group of experts constantly in session to devise means for warding off the danger, and to the distribution of vaccine; influenza has a way of falsifying prophecies, and though he made none the implication was obvious, and his compliment to the weather unconvincing. His reference to tuberculosis was more guarded, and the position is, indeed, discouraging. The Minister spoke with justifiable pride of the way in which the outbreak of rabies has been controlled, and of the fact that no person treated after being bitten has so far developed the disease. Again, his satisfaction with the evidence that patients are increasingly disposed to take advantage of the venereal centres was justified, as was his invitation to the advocates of different methods to fall to instead of falling out.

Perhaps the most hopeful of all his statements was with regard to infant mortality. Most hopeful because the decline of the infantile death rate from 150 twenty years ago to 78 in the year ending March last seems to prove that the efforts of the last fifty years have not been thrown away; the main credit for this great achievement belongs in about equal proportions to the officers of the municipal public health service and to the educational propaganda carried on by voluntary workers in the face of indifference, and often obstruction. But the credit of the initiative belongs to the medical profession, for in the early days it supplied the majority of these workers and all the facts. At the meeting in Bristol the other day to consider the Report of the Medical Consultative Council the President of the Bath and Bristol Branch, Dr. Watson-Williams, very appropriately recalled the early action of the British Medical Association. At its annual meeting in 1867 a resolution was adopted, at the instance of Dr. H. W. Rumsey of Cheltenham, which foreshadowed the appointment everywhere of medical officers of health, and indicated the need for drastic amendments of the public health law. The Association appointed a committee, which associated itself with another appointed by the Social Science Association; in the following year the joint committee made strong representations to the Secretary of State and the Chancellor of the Exchequer, and in that year also the need for the establishment of a Ministry of Health was urged in our columns. Year by year afterwards the Association hammered away at the subject, and finally in 1918 the Representative Meeting—and this time with success—urged upon the Government the importance of immediately establishing a Ministry of Health. Dr. Addison said no word of the history of the efforts the medical profession so persistently made to induce Parliament to recognize its duty to provide means for the prevention of disease. The first annual review of the work of the Ministry of Health would have been an appropriate occasion to inform the House of Commons and the public, for memories are short. Perhaps at some future time he will find opportunity to repair the omission.

Members cheered the sketch Dr. Addison gave of the medical research work subsidized by Parliament, and of the results already obtained in some directions. The fact is significant, for well within the memory of many now living the epigram of a Chancellor of the Exchequer that the endowment of research spelt perambulators was vociferously applauded by a House of Commons still obsessed by the mediaeval idea of the celibate clerk. Dr. Addison told the House that the money it had expended had proved a very good investment, and the implication was that the system was economically sound. We take leave to say that it is not; it is profitable to the State, but is unfair to the individual, and therefore unsound. The House of Commons must cease to regard research as a side track and its results as by-products. No man engages in medical research with the idea of becoming rich, but he must have a living wage, and that includes provision for old age. Medical research and teaching interdigitate, and a solution may be found along this line, for it is urgent to review the conditions under which professors, lecturers, and demonstrators now hold their appointments.

Through all these parts of his statement Dr. Addison passed unscathed, but he had to stand a running fire of criticism of what he said about housing. Undoubtedly the results are most disappointing, but Sir Donald Maclean's criticism was two-edged. He complained that not only had no accumulated war arrears been touched, but that the arrears of last year had not nearly been met. This is true, but he ought to have added that the arrears of house-building had begun to accumulate years before the war, and that no party in Parliament had taken effective means to tackle the question. We are not called upon to assess the exact amount of truth in Mr. Austin Hopkinson's vigorous indictment of Parliament, wherein he alleged that by allowing the Ministry of Health to impede private building enterprise it is aggravating the dearth of houses, with all that that means in disease and misery. It is for building and financial experts to decide. The public is rightly irritated, and is inclined to use the argument of the Queen of Hearts "that if something wasn't done about it in less than no time, she'd have everybody executed all round."

SOME RECENT ADVANCES IN PHARMACOLOGY.

Two very interesting addresses dealing with recent developments in pharmacology have lately been delivered. The one is the address, printed at page 113, with which Professor W. E. Dixon opened the discussion upon quinine and its substitutes in the Section of Physiology and Pharmacology at the meeting of the British Medical Association at Cambridge. The other is the presidential address delivered by Mr. C. A. Hill to the meeting of the British Pharmaceutical Conference in Liverpool this week.

The importance of modern synthetic drugs is very generally recognized, but less attention has been paid to the advances made in the pharmacology of the active principles of the old-established vegetable drugs. During the last century many vegetable drugs have been abandoned, and very few new ones of first-rate importance have been introduced, but our knowledge concerning the active principles of the old drugs has steadily advanced, although at times the advance has been of a rather spiral nature.

As Mr. Hill pointed out, the advance in the pharmacology of the majority of the really important vegetable drugs has followed certain general lines: at the commencement of last century, the therapeutic uses of various crude drugs that had been used in medicine since the dawn of history were known, but nothing had been ascertained about their chemistry; then, during the first half of last century, the active principles of these drugs were discovered, and it was soon found that the action of the crude drugs was due almost entirely to these active principles; finally, prolonged research revealed the chemical constitution of these principles, and in some cases methods were discovered by which they might be synthesized.

The chief advance made by recent research has, however, been along two fresh lines: first, it was doubtful, in some cases, whether the pure alkaloid was a completely satisfactory substitute for the old crude preparations, and careful researches were undertaken to see whether the other active principles present in the crude drug, hitherto more or less ignored, might not be of importance, either on account of some action of their own, or by virtue of their adjuvant action in increasing the potency of the principal alkaloid. Moreover, the pharmacologist was not satisfied with assuming that the particular chemical compounds present in plants were of necessity the best possible chemical compounds for clinical use; therefore, with the assistance of the organic chemist, he endeavoured to produce new modifications of the old well-established drugs.

The case of the cinchona alkaloids illustrates in a particularly interesting manner the important recent advances that have been made by research along these lines. Until quite recently, cinchona would have served as an example of a drug that had been almost completely superseded by one of its active principles. For cinchona preparations are very little used, whilst quinine is used in enormous quantities, and may well be considered the most important drug in the pharmacopoeia. As long ago as 1866 other alkaloids of the cinchona bark—namely, cinchonine, cinchonidine, and quinidine—were tested upon 1,200 cases of malaria in India, and were found to exert a curative effect, but no notice was taken of this discovery. During the past few years, however, Major H. W. Acton has shown that the alkaloids cinchonidine and quinidine are actually more effective than quinine in curing cases of benign tertian malaria.

This conclusion is of immense practical significance, since to secure a supply of an efficient remedy for malaria is a matter of great imperial importance. Pure quinine can only be obtained in large quantities from the plantations in the Dutch East Indies, yet a variety of cinchona tree the bark of which yields a high percentage of quinidine grows luxuriantly in India, and if this drug proves a satisfactory substitute for quinine, the needs of the whole empire could without any great difficulty be supplied by India.

Thus, in the case of cinchona bark, research has led us along the spiral course already mentioned: first came the introduction of the bark in the sixteenth century, then the isolation of the alkaloid quinine in 1820 and the replacement of the crude preparations by the one alkaloid, and now the most recent research showing that quinine is only an imperfect substitute for the crude preparations. Research, however, has not been stopped at this stage, for we now know which of the other alkaloids of the bark are of particular value, and we even know which alkaloid is of greatest value for each of the different types of malaria.

These, however, are only part of the results obtained by recent researches upon the alkaloids of the cinchona bark, for attempts also have been made to produce from the naturally occurring alkaloids substitution products of greater activity than the naturally occurring forms, a subject to which Professor Dixon devoted much of his address. Hydroquinine, a reduction product of quinine, is considered by Major Acton to be more efficacious than quinine for the treatment of malignant tertian malaria. Moreover, several derivatives of hydroquinine possessing most interesting pharmacological properties have been prepared. Ethyl-hydrocupreine is perhaps the most interesting of these bodies; this substance will kill pneumococci at a very low concentration, and it has been found possible to cure animals of pneumococcal septicaemia by its intravenous injection; no clinical results of well-established value have yet been obtained with this drug, but obviously there are here great possibilities for the future. Other quinine derivatives have been shown to possess very interesting powers as local anaesthetics and antiseptics.

These results of the researches upon the derivatives of the cinchona alkaloids indicate the lines upon which some of the most important future developments of pharmacology are likely to proceed. Nature supplies a series of alkaloids, most of which we cannot at present synthesize; the possibilities of these naturally occurring alkaloids have not yet been fully exploited, but research is not confined to the naturally occurring forms, for the organic chemist can furnish the pharmacologist with long series of substitution products.

The work of testing such series must of necessity be long and consist very largely of a series of disappointments, for the therapeutic action of a drug depends upon a balance of chemical and physical properties about which we know scarcely anything; hence the only practicable method is to sort out the few useful forms from the majority of useless ones by means of extensive trials upon animals, and then to pass on to the clinician the few selected substances.

The clinical testing of such drugs is perhaps the most difficult step in the whole process, for the human mind is always over-optimistic, and only a rigidly critical observer, working with most carefully arranged controls, will avoid raising false hopes continually. The opportunities for such work have till now been deplorably scanty in England, but the future holds more promise. Even when all the conditions necessary for the testing of new drugs have been obtained, a very great amount of work is required to produce the smallest real advance, but the practice of therapeutics, advancing on these lines, although it may advance slowly, is at least keeping on a firm foundation, and it will not drift to and fro with every change of the currents of fashion, as one irrational craze succeeds another, returning at the end to its starting-point without having gained any new knowledge, as has so often happened in the past. The number of new facts that careful research has brought to light concerning drugs like the cinchona alkaloids, whose action was thought to be fairly fully understood, should at any rate convince everyone that there are unlimited possibilities of advance in therapeutics, if only the right methods of research are applied.

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LISTER MEMORIAL FUND.

At a public meeting held at the Mansion House in October, 1912, it was decided to commemorate the work of Lord Lister by placing a tablet with medallion and inscription in Westminster Abbey, by erecting a monument in a public place in London, and by the establishment of an International Lister Memorial Fund for the advancement of surgery, from which either grants in aid of researches bearing on surgery or awards in recognition of distinguished contributions to surgical science should be made, irrespective of nationality. At a meeting of the general committee held in the rooms of the Royal Society on Monday last, the chairman, Sir Archibald Geikie, stated that the sums received in respect of subscriptions from the British Empire and foreign countries amounted to £11,846 5s. 10d. Expenses incurred in printing, stationery, postage, advertising, etc., amounted to £390. The report stated that delay had necessarily occurred in carrying out all the proposals adopted at the Mansion House meeting, but that a memorial tablet, executed by Sir Thomas Brock, had been unveiled in Westminster Abbey on November 1st, 1915, and steps were being taken for the erection of a monument in a public place in London. In order to carry out the scheme for the establishment of the Memorial Fund it was resolved to award a sum of £500, together with a bronze medal, every three years, in recognition of distinguished contributions to surgical science, the recipient being required to give an address in London under the auspices of the Royal College of Surgeons of England. The award will be made by a committee consisting of members nominated by the Royal Society, the Royal College of Surgeons of England, the Royal College of Surgeons in Ireland, the University of Edinburgh, and the University of Glasgow. Any surplus income of the general fund after providing for the erection of a monument, and after defraying administrative expenses, will be devoted either to the furtherance of surgical science by means of grants or invested to increase the capital of the fund. The continued carrying out of this scheme in future years will require the provision of some permanent and adequate machinery, as the Lister Memorial Committee cannot, in view of its constitution, be itself permanent; it has therefore been arranged that the Royal College of Surgeons of England shall become the trustees and administrators of the Lister Fund. The subscription list is still open, and the honorary treasurer of the fund is Sir Watson Cheyne, Bt., to whom donations may be addressed at the Royal Society, Burlington House, London, W.1.

THE INTERNATIONAL SOCIETY OF SURGERY.

The International Society of Surgery, in the foundation of which Professor Depage had so large a part, held its first three biennial meetings in Brussels, and its fourth in New York in April, 1914. Professor W. W. Keen of Philadelphia was then elected president of the fifth meeting, which it had been arranged to hold in Paris in 1916. He opened this meeting in Paris on Monday last by an address in which he said that those present at the meeting in New York little dreamt that within three months the dogs of war would be loosed on faithful Belgium and heroic France, and that, when Britain's honour was touched, she too would spring to arms in defence of the rights of humanity. The heart of the people of America was with the Allies then as it is now. When finally the Americans were allowed to come to the aid of the Allies they sprang exultantly to their help. Professor Keen then touched briefly on various points of immediate interest. He referred to the great triumphs of medical science in the war, and how the experimenter in the laboratory and the clinician in the hospital had been wedded at the bedside. Institutions of research in all countries and the new Red Cross Laboratories at Geneva gave assurance that the wonderful work would be developed. The medical profession, he said, must never lower the high standard which distinguished it from a trade; a new remedy, a new splint, or a new method of treatment should be free, so that a device made in Philadelphia should be as available in Paris, in Tokio, in Capetown, or in Buenos Aires as in America. Speaking of what had been done during the war to check venereal disease, he said that after all the only sure and permanent deterrent must be a change of moral atmosphere. There should be a single standard of sexual morality for both sexes. Eleven of the forty-eight United States had passed laws to safeguard the community; the requirements varied from a medical certificate after a physical examination to a mere affidavit of one or both parties that they were free from any communicable disease. It was too soon to know what the result of this legislation would be. In the unselfish devotion to the welfare of the community, in the fight for pure water and pure milk, and wholesome housing, the medical profession was always the leader. After referring to what had been done in the prevention of typhoid and yellow fever in particular, Dr. Keen appealed to the medical profession to lend its support to the crusade for the prohibition of alcoholic beverages. The results so far in the United States, although prohibition had not yet been rigidly enforced, was a largely decreased number of admissions to hospitals, houses of correction, and common lodging houses. Whatever the claims of scientific experiment on the effect of alcohol might be, the huge experiment on the millions of human beings in the United States was, in his opinion, conclusive; total abstention from alcohol resulted in less poverty, less crime, less disease, fewer accidents, and smaller expense to the city and the State. In conclusion, he paid a tribute to the courage doctors had shown, not only in the war, but in combating pestilences, such as plague, typhus fever, cholera, and yellow fever.

INTESTINAL PATHOLOGY IN THE PSYCHOSES.

Cotton, Draper, and Lynch, impressed by the fact that 75 per cent. of patients grouped in the functional psychoses over a period of eighteen months were fit for discharge after treatment of local infective foci in teeth, tonsils, stomach and cervix, have made further search for possible sources of infection in the lower intestinal tract. Chronic intestinal invalidism was evident in these cases from previous histories and from the presence of sallow face, indented tongue, unilateral tenderness over the right hypogastrium, with toneless muscles and evidence of caecal dilatation. In twelve chronic cases *x* rays confirmed the physical signs, and on exploratory laparotomy a great variety of intestinal lesions were invariably found; operation in more recent cases, which had failed to respond to the routine treatment of teeth, tonsils, etc., showed without exception similar pathological conditions of the lower intestinal tract. In a preliminary report[1] the authors insist on the importance of bacteriological and histological investigations. They cultivated various strains of streptococci and colon bacilli from the enlarged mesenteric glands; the presence of these bacteria in the walls and tissues of the intestine showed the part played by infection in producing toxaemias associated with mental disorder, and explained the reason why treatment directed towards the intestinal lumen only may not be effective. When the area of intestine and mesenteric glands infected is too extensive for surgical removal reliance has to be placed upon serum and vaccine therapy. From the great variety of lesions found there can be no operation of choice, the mode of procedure often having to be determined after the abdomen is opened. Operations to correct abnormal positions or to relieve pressure are useless; an operation directed against infection is alone justified; laparotomy should not be undertaken until all other foci of infection have been removed. The cases fell into two groups, those requiring developmental reconstruction of the colon, resection of the terminal ileum, caecum, ascending and part of the transverse colon, and, in a few, resection of the descending colon and sigmoid, and those requiring only appendectomy because of a limited infection. The results show the frequency with which such intra-abdominal pathological conditions are present in the insane, and point to the necessity for their early recognition, for the authors believe that if these conditions had been recognized and relieved years before many of these cases might never have been sent to asylums.

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[1] *New York Medical Record*, May 1st, 1920.

INCOME TAX AND POST-GRADUATE COURSES.

We have received inquiries as to whether the cost of a post-graduate course is an admissible expense for income-tax purposes. The question is not free from difficulty and cannot be answered categorically. The principle involved is that of discriminating between capital expenditure and current or revenue expenditure; the former would include outlay on improvements, the latter the cost of maintaining the standard at an existing level. This principle is seen most clearly in connexion with manufacturing equipment; the expenses of the installation of an additional machine represents capital expenditure incurred to improve the output, the cost of replacing an existing machine by another of similar capacity is a current expense fairly chargeable against income. In which class is the expense of a post-graduate course to be placed? We entertain no doubt on general principles of equity that payment of fees for a post-graduate course is current or revenue expenditure and a proper deduction, but equity and statute law sometimes conflict, and we can imagine an Inland Revenue official arguing that if attendance on such a course improves the individual's capacity as a practitioner the expenditure is to be regarded as an outlay of capital nature similar to an earlier outlay on the ordinary medical curriculum preceding qualification. To this we would reply that attendance on a post-graduate course serves the purpose of merely maintaining the old standard of knowledge and training relatively to the progress of medicine. That being so, we submit that the Inland Revenue should regard the expenditure as analogous to that incurred by a manufacturer who spends money in improving the organization of his factory by, for instance, taking out an obsolete machine and replacing it by a more modern one better to serve the same purpose. We conceive that it is only by the application of this principle that the question can be determined; at the same time it would be possible for the Inland Revenue to argue that attendance at a post-graduate course serves both purposes. We suggest, therefore, that this is one of those questions which should be dealt with in a spirit of reasonable compromise, and not without losing sight of the fact that the nature of the expenditure is such as to put the State under a moral obligation to refrain from discouraging any practitioner from incurring it. In view of the progress of medical science in recent years, it may be suggested that for the greater part the courses are provided for the "renewal" of earlier training; if that be granted, then it follows that a corresponding proportion of the cost should be allowed for income tax purposes.

MEDICAL ASPECTS OF WORKMEN'S COMPENSATION.

The Departmental Committee on Workmen's Compensation, which was appointed in May of last year and includes among its members Dr. Farquharson, M.P., has presented a compendious report in sixteen parts, making in all eighty-six closely printed pages. After recommending that the present system of insurance should be continued subject to certain modifications and with compulsory powers, the Committee recommends a number of changes in the definitions and administrations of the scheme. Several of these alterations would affect the medical provisions. It is suggested, for example, that the powers of the medical referee should be enlarged so as to authorize him not only to decide the matter referred to him on appeal, but also to pronounce on the actual condition of the workman at the time of his examination. It is recommended that any medical and surgical aid necessary in addition to the medical treatment already available under the National Insurance Act should be provided for the injured workman at the cost of the employer under a comprehensive scheme to be worked out by a Commissioner in co-operation with the Ministry of Health; this would be only one of the duties of the proposed Commissioner. The Committee considers it of great importance to the satisfactory working of the Act that the fullest use should be made of the services of the medical referees in any dispute as to the extent and cause of the workman's incapacity; the statistics and evidence before the Committee is said to have made it clear that this is not secured under present conditions. It is therefore advised that Schedule 1 (15) be extended so that the registrar of the county court, on application by either party, may, after hearing the parties, and subject to a right of appeal from his decision to the judge, refer the matter to a medical referee. Either party, it is recommended, should have the right to obtain a summons for the referee to sit as assessor with the judge, the referee to be given the right of asking the witnesses questions through the judge. The possibility that the whole-time medical officers proposed to be appointed by the Ministry of Health under the National Insurance Act may undertake the work of the medical referees under the Workmen's Compensation Act as part of their official duties, can, the Committee considers, well be explored when the Ministry's scheme has reached a more mature stage.

EDUCATION OF STAMMERING CHILDREN.

A report presented lately to the Education Committee of the London County Council states that medical inspection has afforded data justifying the estimate that there are about 1,200 stammering children in the London schools, and that boy stammerers outnumber girl stammerers in at least the proportion of three to one. The actual number notified was 914, of whom 682 were boys and 232 girls. Five classes, of twenty children each, were first formed and kept under observation by the school medical officer, who reported that out of 76 children 34 were discharged cured at the end of the first term, and that 32 others had improved and should receive further training. Careful investigation in the case of each child from the medical point of view showed that there were two distinct sets of cases. In one the stammering came on together with the development of speech; these cases were the more difficult to cure. In the other the stammering came on later after a period during which the child spoke normally. Frights of various kinds were frequent causes; air raids during the war played a part. Night terrors and nightmare were associated with many of these cases. The majority of the children were found at the outset to possess very poor chest development with marked rigidity and spasmodic breathing. Part of the training was accordingly directed towards the improvement of the condition of the chest, with the object particularly of inducing relaxation. In the case of one class held in Brixton, the medical officer found that, out of twelve children in whom the stammering was first noticed at or before the sixth year of age, only three were cured by the end of the course, whereas out of seven children in whom the stammering developed after the age of six, six were cured. In two of these seven children the stammer was ascribed to the effects of fright (one by air raid, the other by a dog), two were imitative cases, and two were ascribed to rheumatic fever. The most noticeable feature about the aspect of a class of stammerers at the beginning was the strained and anxious look they collectively presented. It was amazing how this improved during the course, as the children found more confidence in themselves and entertained solid hope of cure. It was considered by the medical officers that it was a disadvantage to have older boys and girls together in the same class, as the children appeared to be more self-conscious in the presence of those of the other sex, and an exaggerated self-consciousness is, of course, a special feature of the mental state of the stammering child. As a result of a recent reorganization the classes now consist of twelve children only, and boys and girls are instructed separately. The teachers are specialists in speech training who have had experience, under medical direction in hospital departments, of dealing with speech defects. The method used is purely educational or re-educational, and has for its basis the intensive assistance to and direction of the pupil's own efforts to overcome his fear and want of confidence. Graded exercises of progressive difficulty are given and every kind of accessory help is utilized—in particular the development of breathing capacity and muscular control and relaxation. It is expected that the arrears will be overtaken in a few years; younger children will then be admitted in larger proportions. As it will be difficult for such children to travel alone the attendance at the classes, it is expected, will fall off, and the centres will then be moved outwards towards the county boundaries. When this happens the Council will be able to offer to co-operate with extra-metropolitan authorities within whose areas the number of stammering children is too small for local classes.

MATERNAL SYPHILIS AND FETAL MORTALITY.

In his presidential address to the American Association for the Prevention of Infantile Mortality, in 1915, Dr. J. Whitridge Williams developed the idea that the recognition and treatment of syphilis early in pregnancy constituted the most fruitful field for the reduction of fetal mortality. His address was based on a clinical study of 700 fetal deaths occurring in 10,000 consecutive deliveries in the obstetrical section of the Johns Hopkins Hospital: syphilis was found to be responsible for 26 per cent. of these deaths, of which it caused many more than were due to any other single factor, the toxaemias of pregnancy not excepted. Dr. Whitridge Williams has now[1] recorded a fresh series of 4,000 deliveries (with 302 fetal deaths) investigated from April, 1916, to December, 1919. During this period every woman attending the clinic, in addition to examination for clinical signs of syphilis and to careful inquiries regarding medical history, was made the subject of a Wassermann test of the serum. Every placenta was examined histologically, and every child born dead or dying after delivery was submitted to an autopsy in which particular attention was given to the recognition of syphilitic lesions and the demonstration of the presence of spirochaetes. All patients giving a positive Wassermann reaction were treated and "followed up" by social workers. Of the 4,000 patients, 1,839 were white and 2,161 black women, and the Wassermann reaction was positive in 2.48 and 16.29 per cent. respectively (397 cases altogether). In addition there were 105 Wassermann negative cases, in 44 of whom a serum test had shown evidence of syphilis during antecedent pregnancies, but in whom the reaction had become negative after treatment; in the remaining 61 cases autopsy revealed spirochaetes in the fetus, or the live child showed clinical signs of hereditary syphilis, or the placenta showed characteristic histological lesions. Of 302 dead babies, 89, or 34.44 per cent., were proved to be syphilitic. For purposes of comparison the proportions of other causes of death are quoted; they are: Toxaemia, 11.55 per cent.; prematurity, 10.59 per cent.; placenta praevia and premature separation, 5.28 per cent.; fetal deformity, 3.64 per cent.; unknown and unclassified causes, 19.3 per cent.; and dystocia (including disproportion between fetal and maternal measurements, birth injuries, prolapse of the cord, etc.) 15.2 per cent. Syphilis may have been a causative factor in some of the deaths ascribed to prematurity. It is admitted that this unusually high incidence of syphilis was partly attributable to the large number of black women included among the mothers. Nevertheless, even when the white patients only were considered, syphilis was the etiological factor concerned in 12.12 per cent. of 99 infant deaths, and was responsible for more deaths than were caused by pregnancy toxaemia, and almost as many deaths as were due to dystocia. It is clear that by encouraging expectant mothers to attend, in the early months of their pregnancy, pre-natal clinics where Wassermann tests are performed as a routine and where antisyphilitic treatment is given when required, a large number of fetal deaths may be prevented. Dr. Whitridge Williams classified 421 patients with positive Wassermann reactions according as they received (1) no treatment; (2) inefficient treatment (two or three injections of salvarsan and no after-treatment); or (3) satisfactory treatment (four to six salvarsan injections followed by a course of mercurial treatment) with the result that the Wassermann test became negative. Of the 157 mothers of Group (1), 52 per cent. gave birth to children born dead or presenting some evidence of syphilis, as compared with 37 per cent. among 103 mothers of Group (2), and 7.4 per cent. among 163 mothers of Group (3).

Dr. F. W. Edridge-Green has been appointed a special examiner in colour vision and eyesight by the Board of Trade.

Sir James Mackenzie has been appointed an Honorary Physician to His Majesty in Scotland, in the place of Sir Thomas Fraser, who died on January 4th last.

Medical Notes in Parliament.

Work of the Ministry of Health.

Dr. Addison's Review of the First Year.

The first estimates of the Ministry of Health were presented on July 15th, when Dr. Addison gave a lengthy review of the working of the department during the year. He mentioned that within this period various services had been brought within the Ministry, including those relating to the Insurance Department, the Registrar-General, the work of the Board of Education, in regard to school medical services and prospective mothers, the work of the Home Office under the Children Act, and the Board of Control, which dealt with the whole question of lunacy and mental deficiency. In the same period the Ministry had been able to pass over, in accordance with the provisions of the Act, to other departments a number of services which were foreign to its interests, such as those affecting transport or appertaining more properly to the Board of Education. After paying a warm tribute to Sir Robert Morant, whose death was so greatly deplored, Dr. Addison said that the Ministry had not to any considerable degree incurred the charge of making a permanent increase in the staff. Four sections of the work had required the employment of a large number of people on a temporary basis. The first was the postponed valuation of the approved societies; it would be completed by the end of the year or thereabouts, and would show the soundness of the financial operations of the scheme: in many societies there would be a surplus for disposal in additional benefits. He was glad also to be able to say as regards routine administration the audits were for the first time in the records of local government up to date. An efficient preventive health service must depend on an adequate supply of trained persons and at present many branches were seriously deficient. A sufficient number of nurses, midwives, etc., could not be produced in the course of a year, and to proceed without a well-thought-out scheme, administered by people who knew what they were wanting to do, would be to spend time and money in vain. Again, any systematic preventive scheme of service must offer fairly full facilities for dealing with early disability, and means for scientific research must at all times be available. The preventive services in this country, so far as they related to the surroundings of individuals, had reached a state of development beyond that of any other. It was largely owing to sanitary service that the health of the people, of whom many dwelt in most pestilential places, was as good as it was.

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[1] *Bulletin of the Johns Hopkins Hospital*, May, 1920.

Housing.

Dealing with the housing question, Dr. Addison said that over 2,000 new houses were inhabited and that another 5,000 or more would be completed within the next month or two. He alluded in some detail to the financial and industrial difficulties which handicapped progress, and then returned to the subject of the prevention of disease.

Typhus, Plague, and Influenza.

One of the first duties of the Ministry of Health at the time of the demobilization of the troops was to organize a sanitary cordon round this country against the introduction of diseases which were devastating Europe. So far the efforts had been remarkably successful. Arrangements had been made with the Treasury to grant to the port sanitary authorities 50 per cent. of their expenses for carrying out this work. As an illustration of the kind of work done, he said that certain cases on board a ship which called at Plymouth were reported as influenza. Fifty persons went on shore and were distributed all over the country. When the vessel reached London the medical officer of the port suspected plague. The trouble started as plague generally did on a ship, amongst the men who had to do with the food. Special arrangements for unloading were made and the cargo was disinfected and isolated. All the crew were inoculated, none having conscientious objections. All the fifty people who had got into the country were traced and no spread of the disease occurred. In the first quarter of 1919 no fewer than 37,000 people, mostly adults in the prime of life, died of influenza—a more severe visitation than for hundreds of years. To guard against the recurrence his department arranged with the Foreign Office to obtain all information from abroad, and organized the experts of other departments, who prepared documents giving information to encourage the people to protect themselves. The Ministry provided also a protective vaccine, of which large numbers of people took advantage. Thanks to the weather and good fortune this country escaped an epidemic last year. Similarly the department took steps, under the advice of Sir David Semple, to deal with cases of rabies that appeared to threaten an epidemic.

Tuberculosis.

More than 2,000 beds had been added to tuberculosis sanatoriums during the year, and grants had been made to 1,000 places for training the men. The treatment of tuberculosis must begin in the home and end in recreating as far as possible a useful unit in the community under healthy conditions, or it would be largely wasteful. A dispensary system had been developed to a certain extent, but nothing would be successful in preventing tubercle, and no sanatorium would wipe out the disease, whilst people had to live crowded in unhealthy dwellings. Inappropriate or insufficient food and bad conditions of life and work were all part of the tuberculosis problem. Training centres must be maintained in connexion with sanatoriums, but although a man might be taught in a sanatorium to be, say, a joiner, it was useless to expect him to enter that occupation as a competitive worker in the ordinary way. Hence had grown up in some places the village colony, and there were one or two standing illustrations, notably in Cambridgeshire, of the successful application of that principle. The men worked at trade union rates of pay and very largely supported themselves. A survey was made of places suitable for village colonies, and the reports were under consideration.

Venereal Disease.

Dr. Addison referred next to what was being done to combat venereal disease, remarking parenthetically that there was no branch of service in which it was more necessary to have a trained personnel. Colonel Harrison, who did brilliant work in the war, and others of experience had joined the staff of the Ministry to help in organizing the service. The number of persons attending the centres had gone up from 460,000 in the first year to 843,000. This meant that people were beginning to recognize the necessity of going to the centres early. The scheme was so far only at the beginning. There was a tendency among certain protagonists to fall upon one another in dealing with the disease. He exhorted them to fall on the disease; in some branches of social work the best efforts were thwarted by the quarrelling of people who had the same objects in view. He hoped that those willing to help in the campaign would not commit this cardinal error. In giving instructions to the centres as to what they had to do, they had to be careful not to recommend something that could not be applied; otherwise there would be disappointment and the whole enterprise would be stultified. It was essential to recognize that what could be done with 1,000 men under strict military control could not be done with the whole population under no control at all. The conditions were entirely different, and it was necessary to proceed carefully. In anything said or in any instructions given the most private, personal, and intimate concerns of the people were touched. The people were more and more appreciating the centres.

The war had shown that they could cut short a great number of cases that otherwise would develop into mental defect of a permanent kind; and it was necessary in working out plans for the future to provide arrangements to deal with mental cases at an early stage.

Insanity and Mental Deficiency.

The Board of Control, which was now a part of the Ministry, was trying to secure the development of a system for the early treatment of mental disorders, which might make many asylums unnecessary. To develop the work to this end post-graduate courses for medical men had been arranged under various authorities and courses of training for nurses and attendants were being instituted.

Infant Mortality.

In no matter was it more important to have trained personnel than in questions affecting the charge of mothers, hence the importance of maternity and infant welfare homes. The Board of Education had arranged last year to give additional grants for training health visitors, midwives, etc. At present 700 midwives were training. The number of centres had increased from 1,400 to 1,600, and the proportion of the population now reached by these services had been increased during the past year from 55 to 61 per cent.—a substantial increase in the case of the rural population. As to the saving of infantile life Dr. Addison gave some striking figures. At the beginning of this century the infant death rate was about one hundred and fifty (154 in 1900 and 1901). A fall began in 1906, when the rate was 132. In the year 1918 it dropped to 97, and last year to 89. The rates for the last completed year—that was, for the last three-quarters of last year and the first quarter of this year—were only 78, or about half what obtained twenty years ago. These are only index figures, for the children who survived were better nourished; the child death rate for the five-year periods up to 1915 showed a fall from 57 to 37, and this was still going on. It had not, however, yet sufficiently made itself felt in the children who went to school. Of the first 750,000 children examined in the schools last year, 40 per cent. were physically defective. That percentage would drop as the diminished infant mortality rate made itself felt. He was glad to say that the facilities for treatment had improved, and that 69 per cent. of these children had received treatment.

Hospitals.

Dr. Addison went on to speak of the reports of the Medical Advisory Council under Lord Dawson, but was reminded by the Deputy Chairman that he must not discuss in Committee any proposals which involved legislation. Dr. Addison said he appreciated this, and went on to say that the position of voluntary hospitals was a cause of great anxiety. More than half of the hospitals in this country were under the Poor Law. It was necessary that the Ministry should be fully informed on the financial side, and should have a medical and scientific survey of services which were available now, and might be made more available. The position of the voluntary hospitals had been brought to his attention on many occasions. He had met those responsible for their direction, and the present King Edward's Fund had set aside a quarter of a million for the necessities of the hospitals in London. Other proposals were being worked out. The representatives of the voluntary hospitals who came to the Ministry of Health for conference at first seemed to think that the department was greedy to take hold of these institutions for some purpose of its own. But that was not so. The Ministry had enough responsibility to save it from any temptation of that sort. Many of these institutions were pioneers of efficient service, and it would be a mistake of the first order to seek to interfere with that efficiency. Any scheme the Ministry had put forward would be designed to promote the public utility of these institutions.

Statistics.

In another matter the Ministry had consolidated services which were of an associative character by making the department of the Registrar-General part of the Ministry of Health services, thus combining all the vital statistics work.

Research.

Finally, Dr. Addison touched on the provision of scientific and medical research, for which the Treasury had made a grant of £125,000, compared with less than £60,000 a few years ago. As an illustration of the value of such work he mentioned that a grant made for research for the prevention of T.N.T. poisoning had practically abolished it. Thus for a few hundred pounds the payment of thousands a week compensation money had been saved. In the Eastern Command work in connexion with heart cases showed a saving of £57,000 in one year. In closing his review Dr. Addison claimed for the department that it was striving to secure a scientific and well directed health service.

Lieut.-Colonel Raw, after referring with pleasure to the prospect that more money would be given to medical research, expressed the hope that Dr. Addison would, by combining and retaining the great voluntary hospitals, and in some way associating the Poor Law infirmaries, many of which were empty and not required by Poor Law patients, be enabled to provide a national scheme of hospitals. He rejoiced at the Minister's statement that they should at all costs encourage the voluntary hospitals, and in no way interfere with their efficiency, but he was quite sure that financial support would have to be given by the State if they were to continue their excellent work, provided on a national basis, and patients might be enabled to pay for what they received. Facilities for the treatment of persons afflicted with temporary mental disorders without certification might save a very large number of people. The suggested treatment should be given in hospitals totally unconnected with a lunatic asylum. He believed that the action that was being taken by the Ministry would enormously limit the amount of tuberculosis. He trusted that Dr. Addison would keep in close association with the Ministry of Agriculture regarding the effort to stamp out tuberculosis among dairy cows, and that the two Ministers would formulate a scheme to provide the public with perfectly pure milk. Sanatorium treatment could not be expected to effect any cures after a few weeks' or months' residence. Permanent centres were wanted where those affected would receive sanatorium treatment and be taught some occupation, and possibly have their wives and children near them. No fewer than 35,000 soldiers and sailors were affected by tuberculosis, and it was a matter of extreme urgency to give these men treatment.

Mr. Grundy referred to the recommendation of the International Conference at Washington last autumn, that "a working woman should not be permitted to work during six weeks following her confinement, that she should have the right to leave her work if she produced a medical certificate stating that her confinement would probably take place within six weeks; and that while she was absent from her work she should be paid benefit sufficient for the full and healthy maintenance of herself and child, either out of public funds or through a system of insurance." Dr. Addison had stated, in reply to a question, that the British official representatives at the Conference had refrained from voting on this question; and that these matters largely affected insurance questions, and were being carefully considered. He wished to know what the Minister proposed to do.

Mr. Barnes stated that the reason the British delegates at the Washington Conference did not vote on the resolution mentioned by the previous speaker was that they had no mandate on the subject.

Mr. Myers said that under the regulations for maternity and infant welfare, if, in the opinion of a health visitor or midwife, a case visited was difficult, she was entitled to call in a doctor. The general opinion was that when a doctor was called in by the official of a local authority, he sent in his bill to the local authority. In the experience of the speaker, the local authority had readily paid, but he was told that in some parts of the country not only did the local authorities refuse to pay, but they called upon the person who had the service to pay, and they had actually gone to the length of appointing an official to go round and collect weekly payments from these people until the responsibility was discharged. If that were so he hoped that the regulations would be insisted upon. Urging the importance of an adequate supply of midwives, Mr. Myers said he understood that since midwives had been required to have the certificate of the Central Midwives Board, and that those who did not hold the certificate should not practise, the number of midwives available had decreased considerably. In conclusion, Mr. Myers urged that dental clinics should be increased, that there should be greater facilities for minor surgical operations, and that the hospitals now under the Poor Law authorities should be brought under other public authorities, and the voluntary hospitals co-ordinated.

Lieut.-Colonel Fremantle drew attention to the great importance of co-ordinating the public health service of London. He was describing its circumstances and various recommendations made, when, under the 11 o'clock rule, the discussion stood adjourned.

Small-pox in Glasgow.—In reply to Mr. R. Young, on July 14th, Mr. Munro gave the following return of cases of small-pox admitted to Belvedere Hospital, Glasgow, since the beginning of the outbreak:

Age Period.	Unvaccinated.		Vaccinated.	
	Cases.	Deaths.	Cases.	Deaths.
Under 10 years	71	16	8	Nil.
Over 10, under 20 ...	12	4	74	2
Over 20	5	1	182	29
Totals	88	21	264	31

Total cases admitted to Belvedere Hospital ...	352
Total deaths	52

Of the vaccinated cases, 15 had been revaccinated since infancy. Two of these were said to have been revaccinated in 1916, but there was no visible evidence of this.

Excess Profits Duty: Concession as to Charitable Gifts.—In Committee on the Finance Bill, on July 16th, Mr. Chamberlain was pressed to allow a remission of income tax and excess profits duty in respect of gifts to charitable objects, to an amount not exceeding 5 per cent. of the total income of the claimant. It was, said Lieut.-Colonel Guinness, better to concede this than to risk the great danger that the whole cost of many services now performed voluntarily should be thrown on the State. If no other solution were found, the State would have to take over the hospitals. Mr. Chamberlain, in reply, said he could not entertain the request as regards either income tax or super-tax, but he recognized that the excess profits duty was different. That was abnormal and temporary, and might be said to come in direct competition with charitable appeals. He was willing, therefore, to throw a sprat to catch a whale, and to abate something in the hope that it might encourage the great trading concerns to recognize their corporate liability to the communities in which they lived, and might enable directors to persuade their shareholders adequately to recognize the growing responsibility of these great bodies. He should be willing, therefore, to move later a new clause in the following terms: Where, out of the profits of a trade or business, any contribution has been made after the 16th day of July, 1920, to any trust, society, or body of persons in the United Kingdom established solely for the purpose of the relief of the poor, or the sick, or for the advancement of education, or for scientific research, there shall, for the purposes of excess profits duty, be allowed in the computation of the profits of the trade or business arising in the accounting period within which such contribution was made, a deduction in respect of such contribution of an amount not exceeding 5 per cent. of those profits as calculated for the purposes of excess profits duty (before adjustment for increased or decreased capital and before making any deductions under this section), and not exceeding 20 per cent. of the amount of such contribution.

Third London General Hospital.—Mr. Godfrey Locker-Lampson asked, on July 14th, whether, in view of the treatment urgently required for ex-military and other local tuberculous patients, the London County Council was desirous of taking over the completely equipped wards in the ground at the base of the 3rd London General Hospital on their vacation by the military authorities at the end of July; whether the London County Council were prevented from doing so by provisions of the Defence of the Realm Act, under which it was obligatory that these huts should be dismantled and broken up; whether the erection of similar wards elsewhere would cost a sum of not less than £150,000, and what action the Minister of Health proposed to take. Dr. Addison replied that he appreciated very fully the importance of preserving these buildings for the treatment of the civilian population, and he was in communication with the London County Council on the subject.

The Financial Position of the Hospitals.—In a written answer to a question by Major Godfrey Palmer, Dr. Addison said, on July 15th: I have for some time past been giving the most serious consideration to the future of the voluntary hospitals. The situation in London has been relieved by the recent emergency distribution of £250,000 by the King Edward Fund, and the position of the provincial hospitals is generally less serious than in London. The question of State assistance makes many difficult issues, and I am anxious to avoid any precipitate measures which might prejudice the voluntary principle, to the maintenance of which I attach the greatest importance.

The University of London Site.—In a written reply to a question by Mr. Gilbert, Mr. Fisher, on July 14th, stated that the Government's offer of a site of 11½ acres behind the British Museum for new buildings was still under the consideration of the University of London. As the purchase had not yet been actually completed, he was not yet in a position to speak as to the price proposed to be paid for it. The Government had intimated that, when the time came for King's College to move from the Strand to Bloomsbury, it would seek authority to purchase at a fair valuation the buildings at present occupied by King's College in the Strand, and the price so paid would be available towards the cost of the new buildings to be erected for King's College on the Bloomsbury site.

Inebriates in Scotland.—On July 13th Mr. Munro said there was in Scotland one certified inebriate reformatory to which female prisoners might be committed under Section 24 of the Act of 1898. An habitual drunkard might on conviction under that section be detained in a certified inebriate reformatory for a term not exceeding three years. No certified inebriate reformatory for male patients exists at present in Scotland.

Supply of Artificial Limbs.—On the report stage of the War Pensions Bill, which was taken late on July 15th, Mr. Macpherson objected to a proposal to decentralize the arrangements for the supply of artificial limbs. Mainly on the ground that from 30,000 to 40,000 duplicate limbs had to be supplied, and that afterwards the yearly output would be from 7,000 to 8,000. Repairs, however, were being decentralized. The Ministry was at present standardizing limbs, and he trusted that there would be no further delay in the distribution. A new clause moved by Mr. Graham to define the functions of joint disablement committees was negatived on the assurance by Mr. Macpherson that the powers of the disablement committees would be defined by him as soon as possible.

Death from Anthrax in Southwark.—Sir John Baird (Under-Secretary for the Home Department) informed Mr. Gilbert on July 14th that the existing rules as to the employment of men in dealing with hides and skins are to be brought up to date and to be made to apply to all premises under the Factory Act. The matter was raised in the Commons on the verdict of a coroner's jury in the case of a man in Southwark who died from anthrax. He was engaged in a building which was being used temporarily as a warehouse. The precautions recommended by the Home Office were not being observed in this building, though they were being observed in the main building belonging to the firm.

Disabled Men's Outlook.—Major Cope asked, on July 13th, whether the Minister of Labour was aware that there was a large number of men being discharged from hospital with a thirty to forty per cent. disability pension, and certified as fit for light work, who were unable to find employment. Dr. Macnamara replied that he was aware that in a number of cases the physical disabilities of disabled men made it extremely ifficult to place them in employment. The national scheme, owever, depended upon employers being prepared to make acrifices in the interests of disabled men by employing men hey might not in ordinary circumstances think physically uitable; he hoped that with the extension of the King's oll many of these disabled men might be absorbed into ndustry. Up to the present the Ministry had trained 23,640 isabled men; they had in training 24,048; and on their aiting list 22,445. In training men the department always ept in view the prospect of employment.

Casualties in Russia.—In reply to Commander Kenworthy, on uly 13th, Mr. Churchill stated the total British and Imperial asualties in North Russia from the date of the armistice with ermany (November 11th, 1918) to the final evacuation. The gures covered the Regular army, Territorial Forces, Canadians, ustralians, and Royal Marine Light Infantry. They were as llows: Killed in action and died of wounds, 31 officers and 47 of other ranks; wounded, 44 officers and 361 of other ranks; issing, 14 officers and 51 of other ranks; total, 89 officers and 59 of other ranks. Of the missing, 13 officers and 60 of other nks had been reported prisoners. One of these had died. he others had been released. The total casualties in all parts the former Russian Empire, from the date of the armistice ntil now, occurring within the categories previously named ere: Killed in action and died of wounds, 31 officers and 149 her ranks; wounded, 45 officers and 362 other ranks; missing, officers and 90 other ranks; total, 104 officers and 601 other nks.

Black Sea Hospital Ships.—Replying to Commander Ken-orthy, on July 14th, Mr. Long stated that His Majesty's aplane carrier *Ark Royal* was used in the Black Sea on one casion for carrying refugees suffering from typhus. Sixteen ses of typhus occurred among the crew and two died. The ly hospital ship was not available when the *Ark Royal* was ed, and the urgency of evacuation necessitated the use of all ailable craft. Mr. Long offered assurance as to the present ne that the Government had done all in its power to secure at there should be a hospital ship in attendance.

ost of Poor Law Patients.—Dr. Addison has stated that in the ar 1918–19 the average weekly cost per person in receipt of ief in England and Wales was approximately as follows: In irmaries, 34s. 1d.; in separate schools and other institutions children, 18s. 2d.; in general institutions, 20s.; domiciliary ief, 5s. 1d.

England and Wales.

THE WELSH TUBERCULOSIS SCHEME.

THE primary object of the visit of the King and Queen to Wales last week was to open two sanatoriums—the one for women and children and the other for men—established by the King Edward VII Welsh National Memorial Association. The first to be visited was the North Wales Sanatorium for Women and Children at Llangwyfan on the slopes of the Vale of Clwyd, a few miles from Denbigh. It consists of fourteen separate blocks providing accommodation for 240 patients. The administrative block in the centre provides offices, a dining hall and kitchen, and reading and writing rooms. There is a children's pavilion and also a surgical block. The plan of the latter—the gift of Miss Davies, daughter of Sir D. S. Davies, M.P., of Denbigh—was settled in consultation with Sir Robert Jones. The block contains three open-air wards, sun room, anaesthetic room, *x*-ray room, operating theatre, plaster room, etc.

Major David Davies, M.P., President of the Association, in an address to Their Majesties, said that the object of the Association, to which the King had granted a Royal Charter in 1912, was the prevention and treatment, and it was hoped eventually the abolition of tuberculosis. Over a quarter of a million sterling in cash and kind had been voluntarily subscribed by the people of Wales, and the movement had enjoyed the generous assistance of the Welsh county councils and Insurance Committees, all of which were represented on the governing body. The King in his reply congratulated Wales on having so well planned an institution amidst such beautiful scenery. The second institution opened was at Pontywal, Talgarth, on an almost equally good site sloping towards the south. It contains 304 beds in eighteen buildings, and for married men bungalow cottages are provided, each containing a living room, parlour, and three bedrooms, with bathroom, etc.

The Royal visit to Wales ended on July 19th, when the King laid the foundation stone of Swansea University College. The King, in reply to an address from the court of governors, said that it was satisfactory to see evidence in Swansea, no less clearly than in other parts of Wales, of the desire for higher education. The scheme for the University College was firmly rooted in the people's earnest desire for education of the highest type. It was not enough for a university to open its doors wide, it must bring opportunities for serious studies to the doors of the people. The realization of the well conceived scheme which had been evolved in Swansea would give the college a genuine university atmosphere. From its first beginning the university movement in Wales had been a popular movement, and the persistence which had brought it through great difficulties to a successful issue was derived from its strong hold upon the imagination of the people of Wales.

LIVERPOOL HOSPITAL FOR CHILDREN.

An interesting pamphlet on the Hospital for the Treatment of Surgical Tuberculosis at Leasowe, in Cheshire, has recently been published. The inception of the scheme is due to the Council of the Invalid Children's Association, which issued a report showing the number of children within the city of Liverpool who were suffering from various forms of surgical tuberculosis, and for whom no hospital accommodation was forthcoming. This report was forwarded in 1912 to the Board of Education, with the result that a hospital-school for children suffering from all forms of tuberculosis other than pulmonary was erected at Leasowe. On July 21st, 1914, the first 100 beds were open for the reception of patients in the institution, which had been brought into existence by a happy combination of voluntary enterprise and State aid. The site of 25 acres is close to the estuary of the Mersey, and abundantly exposed to sunshine and vigorous breezes as they sweep across the Irish sea. The construction of the hospital has been based on the experience of similar institutions elsewhere, and especially on the principles that have guided the erection of the Maritime Hospital, Berck-sur-Mer. All the wards face due south and open on to roomy sun balconies by suitable doors glazed in the upper segment.

The general arrangements were described in our columns by Dr. Hartley Martin, the senior medical officer, on November 22nd last. The institution now has 200 beds.

A most important feature in the treatment is the combination of school work with the measures adopted for restoration of health. The three and a half hours' tuition has been of great benefit in combating that fretfulness and depression of spirits inseparable from enforced recumbency and restriction of movement. The statistics of the work of the hospital from the date of its opening in July, 1914, to the end of 1919, show that spinal cases were most numerous and that tuberculous disease of the hip-joint follows closely in the number of cases. The percentage of cases of tuberculosis affecting the spine, hip, knee, bones, glands, and peritoneum, in which the disease was arrested and the patients discharged was 78.3 in 1919. The deaths in 1919 were due to amyloid disease in 3 cases, to meningitis in 4, to general tuberculosis in 2, and to zymotic disease in 1. In conclusion, it may be added that the pamphlet sets forth admirably the work that is being carried out in the treatment of surgical tuberculosis, and shows that every endeavour is being made to combat the disease and to add to the comfort and mental health of the children.

Scotland.

Edenhall Hospital for the Limbless.

Probably Great Britain is the only country among the late belligerents in which the task of fitting artificial limbs was undertaken by voluntary agencies, for all of the chief limb-fitting hospitals in England, Scotland and Wales were started and supported by benevolent private persons. Roehampton Hospital in England, Edenhall and Erskine House in Scotland, and the Prince of Wales Hospital at Cardiff, have conferred great benefits upon the wounded soldier. The final report of Edenhall Hostel, which is now before us, summarizes the good work done between June 1915 and August 1919, and records the winding-up of the undertaking and the transfer of the hostel to the British Red Cross Society for the use of the Ministry of Pensions. The hostel was at first established at Edenhall near Kelso, and afterwards transferred to Musselburgh near Edinburgh. Under the direction of Colonel Cathcart and his assistant medical officers, 1,581 patients have been fitted with artificial limbs of the best available types. These men came at first from all parts of the country, but latterly the hostel was set aside by the War Office for the service of sailors and soldiers domiciled in the east of Scotland.

Decrease in Insanity.

The sixth annual report of the General Board of Control for Scotland, recently issued, shows that on January 1st, 1920, there were 17,580 insane persons of whom the Board had official cognizance. This total is exclusive of insane persons maintained at home, but includes the inmates of training schools for imbecile children not certified under the Mental Deficiency Act. The number of certified persons on January 1st, 1916, was 18,842. The decrease has been continuous since that year; between 1916 and 1917 there was a decrease of 181; between 1917 and 1918 of 536, between 1918 and 1919 of 524, and between 1919 and 1920 of 169. The relatively smaller decrease last year compared with that of the war years seems to indicate that the lesser prevalence of insanity is not going to be maintained. The figures for the last five quinquennial periods are:

Years	Average number of Registered patients.
1896-1900	14,498
1901-1905	16,146
1906-1910	17,391
1911-1915	18,537
1916-1920	18,132

The average increase for the first four quinquennia was 1,346, but in the last there was a decrease of 405. It may be assumed that but for the war the figures for 1916-1920 would, therefore, have been at least 19,883, instead of 18,132.

The total number of patients admitted to establishments, excluding transfers, during 1919 was 3,619: 855 private patients and 2,764 pauper patients, which is 226 more than in the previous year, and 65 more than the average for 1910-1914. The admission rate, which began to decline at the beginning of the war, appears to be resuming its usual rate of increase. Of the admissions, 2,791 were admitted for the first time, which is 219 more than in the preceding year.

Private patients discharged recovered during 1919 numbered 318, which is 66 more than in the previous year. The number of pauper patients discharged recovered was 955, which is 145 more than in the preceding year. The number discharged unrecovered (excluding transfers) amounted to 187 private patients and 282 pauper patients. This is in excess of the average 1910–1914 for private patients, but below the average for pauper patients. The death-rate for private and pauper patients in establishments was 12.1, as compared with 14.6 in the previous year. This decrease is in large measure due to the absence of epidemics, such as influenza, but is still above the average for the five years 1910–1914.

The reports of the Medical Commissioners on their inspection of different establishments show that while economy has been carefully kept in view, the diet is ample and varied. The boarding-out system is a useful adjunct to the care of the insane in institutions: it presents obvious financial advantages, and in suitable cases conduces to the greater happiness of the patients. Local authorities have responded to an appeal to increase the aliment paid for these cases; but there has in fact been a decrease in the number of lunatics in private dwellings.

The number of mental defectives on the Board's register was 1,778, of whom 1,223 were in institutions and 555 under guardianship in private dwellings. By a recent Act the limitation to £20,000 of the Government grant to local authorities for mental defectives has been removed, and in future one-half of the cost of maintenance will be paid from imperial funds. There is need for additional institutional accommodation, and the Board hopes to meet it in part by the combination of district boards of control.

Death of a Medical Centenarian.

In our issue of May 15th it was announced that Dr. James Scarth Spence Logie, the doyen of the medical profession in the British Isles, celebrated his centenary on May 11th, and in the following week we gave a brief note of his career and of the many messages of congratulation that had been sent to him from public bodies and persons, including a congratulatory resolution passed by the Council of the British Medical Association on May 19th. At its meeting on June 28th at Cambridge the Council received from Dr. Logie's family a letter conveying warmest thanks and appreciation to the Council for its congratulations. We much regret to announce that Dr. Logie died at Kirkwall on July 17th. He was by far the oldest medical graduate of the University of Edinburgh, having obtained his M.D. degree in 1842 at the early age of 22, and he settled in practice at Kirkwall seventy-five years ago. His practice extended over the whole of the Orkney Isles, and was conducted under primitive conditions of locomotion that would have worn out any ordinary man, including winter journeys on horseback over rough hill tracks by night and day, and frequent visits to the islands in small sailing boats.

Ireland.

Certification Fees for Sickness Benefits under the Insurance Act.

A deputation from the Irish Medical Committee, consisting of Dr. J. M. Day, Dr. W. W. Murphy, Dr. R. J. Rowlette, Dr. Hennessy, Irish Medical Secretary, and Mr. C. H. Gick, has on two recent occasions interviewed the Irish Insurance Commissioners with regard to the inadequacy of the remuneration for medical certification of sickness benefits under the Insurance Act in Ireland. At the first interview Sir Joseph Glynn, Chairman of the Irish Insurance Commission, informed the deputation that the Treasury was prepared to increase the grant for medical certification by 25 per cent. on the existing rates in the different insurance areas. The deputation was unanimously of opinion that an increase of 25 per cent. was too small, and would not be accepted by the profession. The deputation urged that an increase proportionate to that given to the panel doctors in Great Britain should be provided for medical certification in Ireland. The Commission undertook to make a further representation to the Treasury for a substantial increase on the amount already offered, and at the second interview the Commission informed the deputation that the Treasury, on further consideration, was now prepared to increase the original grant by 40 per cent., to take effect, as urged by the deputation, from

January 1st, 1920. The Commissioners complained that the Local Medical Committees, with few exceptions, gave them very little assistance when investigating complaints against medical certifiers. The Commission reminded the deputation that it was at the request of the doctors and in their interests that many matters of a medical character were delegated to the committees for investigation in the first instance; and if the Medical Committees persisted in neglecting to discharge the duties agreed to on their behalf by the Irish Medical Committee it would unavoidably mean that, in many instances, complaints should go before the General Medical Council for its decision. The Irish Medical Committee is aware that the Local Medical Committees have failed in most cases to meet regularly to discharge their functions, and fully recognize the consequences to the profession of such neglect. The increased cost of travelling may be urged as an excuse for the serious omissions of the Local Medical Committees. With the object of avoiding unnecessary travelling expenses the deputation suggested to the Commission that the Local Medical Committees should be permitted to appoint subcommittees of three or five members, conveniently resident in each county as regards travelling, to deal with all complaints in the first instance. The Commission stated it was ready to accept the suggestion of the deputation and expressed the hope that the subcommittees would meet when required and deal expeditiously with all complaints. The Commission also expressed the opinion that it would facilitate investigations if the Irish Medical Committee would recommend that the subcommittees should permit officials of approved societies to give evidence at the inquiries. The deputation considered the Commission's request very reasonable and undertook to recommend its adoption by the Irish Medical Committee.

SALARIES OF POOR LAW MEDICAL OFFICERS.

In connexion with the refusal of the Local Government Board to sanction a higher maximal salary than £300 in certain unions, letters have been addressed by their medical officers to the Thomastown (co. Kilkenny) and Balrothery (co. Dublin) boards of guardians. The Thomastown medical officers in their letter to their board stated:

> We keenly appreciate your kindness in inviting our observations on the letter of the Local Government Board, refusing to sanction the increase in our salaries voted by your board. But first we must heartily thank you for your kindness and sense of justice in granting our modest demands in full. For many years we have been notoriously underpaid, yet during all these years the Local Government Board must admit that we discharged our laborious duties faithfully and well. At last, when driven by necessity, and following the example of workers all over the world, we made application to you for something near a living wage, and when you, the representatives of the ratepayers, who are the chief contributors, after due consideration, granted our moderate demands, the Local Government Board comes in and refused to sanction these paltry increases. This is a great hardship. They do not, as far as we know, advance any reason for their decision, and in the absence of any reason we can only look upon their action as a purely arbitrary decision, dictated by a puerile inclination to display their authority, and quite unworthy of any public body. If your board would ask them to reconsider their decision we would be still more indebted to you and, if possible, more grateful.

Dr. May, on behalf of the Balrothery doctors, in his letter to his board said that they felt it a cause of justifiable dissatisfaction that the Local Government Board refused to sanction the scale of salaries granted them by the late board of guardians (reducing them to the scale salary of £250–£300), especially as the Local Government Board had sanctioned a temporary allowance of £50 a year over and above the scale salary of £250 to £300 per annum to medical officers of the Thurles, Trim, and other unions. The doctors cannot see why the scale sanctioned in the above unions should not at least be given to them, especially as the cost of living, always high from proximity to the metropolis, has increased by 25 per cent. since the date of their application (February, 1920). The medical officers appeal to the Local Government Board to treat them at least as well as the medical officers in the above unions.

THERE has recently been an increase in the number of cases of encephalitis lethargica in Amsterdam.

PROFESSOR MAX NEUBURGER of Vienna has been elected an honorary member of the Society of Medical History of Chicago.

Correspondence.

THE BETTER TREATMENT OF FRACTURES.

SIR,—A colleague said to me, "What is the good of going to the B.M.A. meeting?" I replied, "To get an eye-opener." It has been a most enjoyable meeting. The polished grace of Cambridge society, set amidst the delightful old college buildings, will ever remain a treasured memory. It was a privilege to listen to the erudite address of our beloved President, and thinking of his many years of strenuous work one could hardly marvel more at the wisdom of his words than at his wonderful physical vigour. I listened with great interest to Dr. Charles Mayo, to Sir Berkeley Moynihan, to Sir William Thorburn, and to other leaders in surgical thought; but it was Major Sinclair that gave me my eye-opener.

For over twenty years I have from time to time pondered on the problems presented by fractures and I have wondered at the inadequacy of our methods—methods handed down from a past generation to surgeons whose minds were occupied with the development of abdominal surgery and the attainment of aseptic technique. Students of my day were not well instructed in the treatment of fractures. We received a few demonstrations on splints and bandaging on an uninjured subject; and it all seemed so easy. What a contrast is the reality as met with in works and colliery practice—to say nothing of war! In my student days we seldom saw fractures in the wards; they were regarded as uninteresting cases, and were shunted to infirmaries after first aid had been rendered.

A little later it was my duty to report on claimants for compensation for accidents, and I saw many cases of fractured limbs every year that had been treated by competent practitioners; I watched their progress, and I saw the end results. The end results were often far from satisfactory. My experience led me to think that fractures were serious injuries, difficult to treat, and likely to lead to much permanent disability.

As honorary surgeon to a hospital in a large industrial area, where we get very many fractures, I have had the opportunity of testing the efficacy of the textbook methods of treating fractures without operation, and I have spent much time assisting my house-surgeons in the application of these methods. I have not been satisfied with the results; I have been very far from satisfied.

Having read the conclusions of the committee appointed by the British Medical Association to report on the ultimate results obtained in the treatment of fractures with or without operation, and having regard to my own experience, I was persuaded to adopt Lane's methods in 1914. Latterly I have been trying Albee's methods. I am glad to be able to say that hitherto the methods of Lane and of Albee have been followed in my practice without any serious accident. But my feeling is that the methods of Lane and of Albee are much too dangerous and much too expensive for general application. Such methods can only be carried out in a well-equipped operating theatre with a well-trained staff; they are utterly impossible of general application.

Methods of treating fractures are required that can be applied by the general practitioner with safety to the patient and with a prospect of attaining better functional results than hitherto have been attained by the non-operative methods as taught in many medical schools. Even if it were considered advisable to treat all cases of fracture by the methods of Lane or of Albee, it would not be possible with present hospital accommodation so to treat more than a small minority. Operative methods of treating fractures are not suitable for general application. As a *tour de force* by a highly skilled surgeon operating under favourable conditions such methods excite admiration, but they are not for the many.

On the other hand, fractures are so very common and the disabilities caused by fractures are so very great, and the economic consequences of fractures are so very far-reaching, that I think we should in the future pay more attention to the study of fractures than we have in the last twenty or thirty years. The treatment of fractures is one of the most important branches of surgery.

Major Sinclair has made me think thus, his demonstration at Cambridge has focussed many of my random thoughts. The long-neglected methods of that genius, Hugh Owen Thomas, preserved and brought to the light of day by one of the ablest of modern surgeons, Sir Robert Jones, have been elaborated under the stress of war by Major Sinclair, who can teach us how to use the Thomas splint. The Thomas splint is cheap, it is almost universally applicable, and if we know how to use it, it is highly efficient. But there's the rub! How many of us do know how to use the Thomas splint? I thought I did, until I attended Major Sinclair's demonstration at Cambridge; then I got an eye-opener!

I am so firmly convinced of the potential value from both the surgical and the economic point of view of Major Sinclair's work that I venture to suggest that means should be provided whereby Major Sinclair could tour the provinces for the purpose of giving instruction in the treatment of fractures. Further, I should like to see an account of his work and a description of the details of his methods published in the form of a monograph at an early date.

Major Sinclair's work has opened up the possibility of attaining far better functional results by non-operative methods than have been attained by the non-operative methods usually taught and practised in the past. Major Sinclair's methods are not reactionary, they are progressive, and his methods will save many a patient from undergoing the ordeal of a serious and possibly dangerous operation. His methods should be learned; they can be learned, and they can be applied by any practitioner. His methods are eminently suitable for works and colliery practice, and, if they are adopted by the profession, I venture to predict that they will effect a very considerable reduction in the economic loss due annually to fractures.—I am, etc.,

Swansea, July 11th. WILLIAM L. GRIFFITHS.

FUTURE PROVISION OF MEDICAL SERVICES.

The Poor Law Medical Service.

SIR,—Modern thought in the carrying out of the art and science of medicine and surgery is inclining in some directions towards whole-time service, both in voluntarily supported hospitals and Government ordered institutions.

A. The medical profession is encouraging the whole-time service method by its adoption of team work in voluntary hospitals. The heads of the teams, surgical and medical, with their subordinates, are paid fixed salaries consistent with their relinquishing private practice and giving their whole time to their hospital.

B. Boards of guardians, without interference from the Ministry of Health, are increasing the number of their infirmary resident whole-time medical officers, and giving them duties of outdoor home attendances—work hitherto done by local district medical officers. For example, half the work of the large Lambeth Union (that is, its first four relief districts) is performed by resident infirmary medical officers. In Fulham the north district is worked from the infirmary; as also is one of the four districts in Shoreditch. In Paddington a scheme has been suggested to dismiss the present four district medical officers for above like purposes. The loophole through which these adverse schemes are being introduced is that many district medical officers have accepted temporary appointments while even whole-life tenure appointments nowadays are less safe than is just. The advantage to be gained, and the success of this line of action, is doubtful, for two reasons at least:

(1) The present areas are so irregular and extensive—for example, Lambeth, from Newington Butts to the Crystal Palace—that the distances to be travelled by any of the infirmary resident medical officers would be enormous in the aggregate, and so would the time occupied unless motor cars and drivers were available both day and night.

(2) The expense would be much heavier than at present, to which ratepayers might well object. The extraordinary economic blindness of some authorities seems wilful. While they refuse fair payment to part time medical officers, they are ready to pay that which, though right, is yet an increased expense, in order to carry out their pet scheme of whole-time work.

C. Poor Law infirmaries are being opened to the general public for universal use, which, if local medical officers are not watchful, may lead to patients being taken out of their care and treatment. Half the beds—that is, 90,000—in the country are in Poor Law institutions; of this total, 30,000 could be spared for use as general hospitals.

We must oppose this general rush to the infirmary for treatment by the resident staff. The distance to be travelled by the sick to reach this infirmary centre would be an unreasonable tax on them. The part-time medical officer, living in his allotted district, who is not a bird of passage such as whole-time residents generally are, but who gets to know the families around his house in health and sickness, is the ideal custodian of the public health from preventive, actual, and prospective points of view.

How the Poor Law may be Adapted to Present Requirements.

There is, however, a possibility of useful adaptation. The present dispensaries where the district medical officers see their patients daily should be elaborated—*x*-ray apparatus for diagnosis, conveniences for minor surgery, etc., corresponding to the *out-patient* department of hospitals, should be provided for all the sick of a certain area, who should be attended by the local practitioners of that area. Of course, where there are no dispensary buildings, other buildings must be obtained and adapted or new ones built.

Just as there are centres for the treatment of school children so there should be for adults. National Insurance and the present Poor Law work may become one eventually. The *nucleus* for both is already provided by the present Poor Law dispensaries, around which larger activities can be grouped, and by the infirmaries for *indoor* medical treatment. The public will always demand their option to have and pay for their own private practitioner. The part-time Government medical officer will be able to meet their requirements. After minor ailments have been attended to and sifted out at the dispensaries, the severely ill and complicated cases can be sent to the infirmary, where they can be attended by their own district medical officers after consultation with the chief infirmary medical officers and after mutual agreement. The economic question of payment does not affect my present argument.

The further sifting of the different classes of cases is left to the infirmary medical superintendent.

The large circles of recommendations found in the report of the Consultative Medical Council may take years for their accomplishment, but in this adaptation there is a small commencing circle already to hand.

The Ministry of Health will not guide nor take any initiative up to the present. The result is that affairs are getting into confusion, and, as a rule, medical men are the last to be considered and the worst treated by boards of guardians, different plans being adopted in different parts of the country. There are still Poor Law medical officers who have received no war bonus at all, and there are others with bonuses short of the Government-granted standard. This is partly their own fault, as one district medical officer writes to me that his colleagues are lethargic and immovable; they may possibly wake up when it is too late.

At the annual meeting of the Poor Law Medical Officers' Association, held on July 15th, at 429, Strand, with our President, Major-General Sir George J. H. Evatt, K.C.B., in the chair, and a good attendance, the following resolution was proposed and carried unanimously, with instructions to the honorary secretary that it should be sent to the Ministry of Health and to all boards of guardians in England and Wales:

> We, the Poor Law Medical Officers' Association of England and Wales, view with alarm the attempt now being made in some quarters to eliminate *district* medical officers, to the disadvantage, we maintain, of the sick poor, and to place Poor Law treatment into the hands of *whole time resident* medical officers in the various infirmaries. We consider it inadvisable that changes of this description be made till such time as the whole subject has been carefully considered and the best scheme for the general welfare has been decided upon.

I hope the above will be an eye opener to some comatose Poor Law medicos; also that no one will waste pen and paper by criticizing my omissions, which are circumferential and purposive, but that all will find in my adaptation of dispensaries (Poor Law and charitable) and of infirmaries backed up by cottage, special, and general hospitals, an open pathway for advance out of the confusion of waste and incompleteness into graduated order and enveloping efficiency.—I am, etc.,

A. WITHERS GREEN,
Honorary Secretary, Poor Law Medical Officers' Association.

34, Copthall Avenue, E.C.
July 19th.

PROFESSIONAL SECRECY.

SIR,—I ask the courtesy of your columns for the purpose of comment on one aspect of professional secrecy arising out of the discussion at the annual meeting, and reported in the SUPPLEMENT of July 3rd. The subject is of interest not only to the profession but to the public in general, and, as you state, it has attracted a great deal of attention in the newspapers.

It appears, from your editorial on page 2, the Council went fully into the question in 1915, and

> was advised that, apart from State officials . . . the only classes of persons recognized by the law courts as competent to claim to hold statements made to them, involving matters of criminal import or otherwise, as absolutely inviolable from obligation to disclose were solicitors and barristers and ministers of religion.

The Portsmouth resolution, which was lost, embodied the view that the medical profession should be placed on the same footing as to professional secrecy with clergy, barristers, and solicitors. The Solicitor to the Association is reported as saying

> that protection, so far as professional secrecy was concerned, was practically confined to the Law and the Church. So far as the Church was concerned, the privilege appeared to have gained recognition on sentimental grounds, which were respected by the courts.

It is of first importance, therefore, to inquire into the *quantum* of this protection and privilege which the courts of England are alleged to give to the Law and the Church, and to deny to the profession of medicine. A reference to textbooks on Evidence by writers of repute, and to the *dicta* of the court in reported cases shows that in the case of the Church protection from disclosure is non-existent, and in the case of the Law exists only to a very limited extent.

Perhaps the best exposition on the rule of the court is to be found in the judgement of Jessel, M.R., in Wheeler *v.* Le Marchant [1881], 17 Ch. D. 675, at p. 681:

> The principle protecting confidential communications is of a very limited character. It does not protect all confidential communications which a man must necessarily make in order to obtain advice, even when needed for the protection of his life, or of his honour, or of his fortune. There are many communications which, though absolutely necessary because without them the ordinary business of life cannot be carried on, still are not privileged. The communications made to a medical man whose advice is sought by a patient with respect to the probable origin of the disease as to which he is consulted, and which must necessarily be made in order to enable the medical man to advise or to prescribe for the patient, are not protected. Communications made to a priest in the confessional on matters perhaps considered by the penitent to be more important even than his life or his fortune, are not protected. Communications made to a friend with respect to matters of the most delicate nature, on which advice is sought with respect to a man's honour or reputation, are not protected. Therefore it must not be supposed that there is any principle which says that every confidential communication which it is necessary to make in order to carry on the ordinary business of life is protected. The protection is of a very limited character, and in this country is restricted to the obtaining the assistance of lawyers as regards the conduct of litigation or the rights of property. It has never gone beyond the obtaining legal advice and assistance, and all things reasonably necessary in the shape of communication to the legal advisers are protected from production or discovery in order that that legal advice may be obtained safely and sufficiently.

It should be particularly noticed that the privilege is not that of the solicitor, but that of the client himself, who can waive it and consent to the disclosure (Wilson *v.* Rastall, 4 T.R. 754), and further that the privilege extends only to those communications between solicitor and client which are made in the legitimate course of professional employment of the solicitor. Communications made in furtherance of any criminal or fraudulent purpose are not privileged. Thus, in R. *v.* Cox and Railton [1884], L.R. 14, Q.B.D., 153, a solicitor was compelled to disclose what passed between the prisoners and himself on an occasion when they consulted him with reference to drawing up a bill of sale which was alleged to be fraudulent.

So far as the law of England is concerned, medical men are to-day on the same footing as ministers of religion with regard to privilege from disclosure, in any judicial proceeding, of confidential information, though on a less favoured footing than legal advisers. The interest of the State must always be paramount to that of the individual—*salus populi, suprema lex.* Is it desirable on grounds of general or public policy that the privilege of medical advisers should be coextensive with that of legal advisers? In this direction legislation in the British oversea dominions has outstripped the mother country. To give one instance: the State of Victoria (Australia), by Section 28 of the Evidence Act, 1915 (re-enacting provisions of earlier legislation), extends, in wider terms, the privilege of the legal adviser in England to medical practitioners of the State.

> No physician or surgeon shall, without the consent of his patient, divulge in any civil suit, action or proceeding (unless the sanity of the patient is the matter in dispute), any information which he has acquired in attending the patient, and which was necessary to enable him to act for the patient.

It has been held by the Supreme Court of Victoria that "information" includes not merely communication, but knowledge acquired through professional observation and examination. Two cases on the enactment are reported, and in each judicial criticism is not wanting. Both were causes on policies of life insurance, and in both the section prevented the insurers producing evidence in support of their defence contesting the claim under the policy.

In the course of the judgement in one case (Warnecke *v.* Equitable Life Assurance Society [1906], V.L.R., 482), the Chief Justice observes:

> The point successfully raised in this case gives new and dangerous effect to the section as an obstruction to the administration of justice . . . evidence most important in cases of testamentary or other mental incapacity, in the Divorce Court as to physical condition proving infidelity . . . could not be given in future. For these reasons it seems to me that repeal or amendment of the section is urgently called for in the interests of justice.

—I am, etc., ARTHUR W. PEAKE.

South Lodge, Stoke Bishop, Bristol.
July 5th.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

SIR,—In connexion with Irish medical affairs there is one matter which requires elucidation and public professional criticism. The point I raise is an explanation as to the reason why candidates for the position of vice-president of the Irish College of Surgeons are allowed to nominate themselves. This is not the system adopted in other colleges, and why it should exist in the Dublin college is more than I can understand. The result is distinctly disappointing, because many of the best and most experienced surgeons in Ireland never get a look in for one of the few distinctions of real value open to the Irish medical, or rather surgical, profession. The duty of nomination should lie, as in England and Scotland, with the Council of the College. Under the present rule aspiring candidates canvass for the position in the most active manner, and are said to go outside their profession and solicit the help of lay friends. If this be true surely it is entirely wrong, and should be rectified without delay. The Fellows of the College cannot have considered this matter carefully, or they would long since have instructed their Council to take immediate steps to remedy a grievance the perpetuation of which has become a scandal. The Council of the College itself requires a little broadening, because it hardly ever opens its doors to anyone living outside the sacred precincts of Dublin.—I am, etc.,

Omagh, July 3rd. EDWARD THOMPSON, F.R.C.S.I.

SIR CLIFFORD ALLBUTT'S PORTRAIT.

SIR,—It has been arranged to issue 100 artist's signed proofs of the mezzotint engraving of the portrait of our President (Sir Clifford Allbutt) at £5 5s. each and the ordinary copies at £1 1s.

They will be ready within the next month, and I shall be glad if members and subscribers requiring a copy will kindly send their names with the necessary remittance to the Financial Secretary, 429, Strand, without delay.—I am, etc.,

G. E. HASLIP,
Treasurer of the Fund.

London, July 19th.

PUBLIC HEALTH SALARIES.

SIR,—In your issue of July 17th, p. 94, Dr. W. Henderson Davison calls attention to what he calls my "fratricidal utterance" on the above subject at the Representative Meeting. The report of what I said is not quite complete, and perhaps if I amplify it Dr. Davison will see that the mark of Cain with which he seeks to brand my words is not applicable.

I think it is deplorable that a large number of men after five to ten years' practice should find themselves in receipt of £500 a year, and accordingly I voted for an increase. I should, however, have liked to see the Representative Body taking some step to prevent the indefinite multiplication of such whole-time junior posts—posts which have nothing to commend them beyond the shelter of a fixed income. The man who takes such a post on becoming qualified adopts the narrowest form of specialism, and cuts himself off from the experience which his studies have just placed him in a position to appreciate. The bulk of the clinical work undertaken by junior public health medical officers could be done better by part-time officers.

Undoubtedly some whole-time men are needed—chiefly as administrators, and the pay of such officials at present is not at all commensurate with the importance of their duties. They should receive better pay, be independent of the local authorities, and should not feel impelled from considerations of self-preservation to encourage blind-alley schemes which have little but their cheapness to commend them.—I am, etc.,

Liverpool, July 20th.

F. STRONG HEANEY.

The Services.

INDIAN MEDICAL SERVICE.

THE following is the text of the press communiqué issued from the India Office on July 5th; the text of the letter sent to the British Medical Association on June 22nd is added.

The Secretary of State for India, after consultation with the Government of India, announces the following increased rates of pay for regular officers of the Indian Medical Service, which take effect from 1st January, 1920. The combined rates of basic pay and overseas allowance apply to all officers who were in the permanent service on 1st December, 1918, and to all British officers who have joined or may join the service after that date.

Indian officers who have joined or may join the service after 1st December, 1918, will draw as from 1st January, 1920, pay in accordance with the basic scale set forth below, unless they are already drawing pay at a higher rate, in which case they will continue to enjoy the benefit of that rate for so long as they would otherwise have done; but they will not receive any further increment until it is due to them under the basic scale.

The arrangements affecting Indians who join the service after 1st December, 1918, are provisional. Exchange compensation allowance will not be admissible.

Rank.	Year of Service.	Basic Pay.	Overseas Allowance.	Total Basic Pay and Overseas Allowance.
		Rs.	Rs.	Rs.
Lieutenant	1	500	150	650
"	2	500	150	650
"	3	500	150	650
Captain	4	650	150	800
"	5	650	150	800
"	6	650	150	800
"	7	750	200	950
"	8	750	200	950
"	9	750	200	950
"	10	850	200	1,050
"	11	850	200	1,050
"	12	850	200	1,050
Major	13	950	250	1,200
"	14	950	250	1,200
"	15	950	250	1,200
"	16	1,100	250	1,350
"	17	1,100	250	1,350
"	18	1,100	250	1,350
"	19	1,250	250	1,500
"	20	1,250	250	1,500
Lieutenant-Colonel	21	1,500	250	1,750
" ...	22	1,500	250	1,750
" ...	23	1,500	250	1,750
" ...	24	1,600	250	1,850
" ...	25	1,600	250	1,850
" ...	over 25	1,700	250	1,950
" ...	on selected list	1,850	250	2,100

Charge allowances and second-in-command allowances for station hospitals will be admissible in addition to the above rates of pay at the following rates:

(a) Charge Allowance.

	Rs. per mensem.
1st class hospitals	240
2nd class hospitals	180
3rd class hospitals	120
4th and 5th class hospitals	*nil*

(b) Second-in-Command Allowance.

1st class hospitals	120
2nd class hospitals	90

Dated 5th July, 1920.

The following is the letter referred to:

India Office, Whitehall, S.W.1.
22nd June, 1920.

Sir,

In continuation of this Department's letter of the 5th instant, No. M.4784, I am directed to address you on certain questions affecting the Indian Medical Service. The Secretary of State understands that in the course of interviews which have taken place between the Medical Adviser at the India Office, on the one hand, and the Chairman of the Naval and Military Committee of the Association and the Editor of the BRITISH MEDICAL JOURNAL on the other, the following proposals were put forward on behalf of the service:

(1) *Pay.*—The pay of officers to be calculated on the pre-war scale for charge of a regiment, but to be approximately 50 per cent. in excess of that.

(2) *Allowances.*
- (a) Allowances to be granted for the charge of Indian station hospitals.
- (b) Allowances not to be reckoned as part of the 50 per cent. increase, but as additional to it.
- (c) All existing general allowances paid to holders of professorial and bacteriological appointments, and certain other special classes of appointments on the civil side to be maintained.

(3) *Pensions.*—The same relative consideration to be given to officers of the Indian Medical Service as to combatant officers of the Indian Army. (The maximum for the Director-General, Indian Medical Services, being £1,150 a year.)

(4) *Passages.*—Officers of the Indian Medical Service in military employ to receive the same concessions in the matter of passages as combatant officers of the Indian Army. Officers of the Indian Medical Sevice in civil employ to receive the same treatment as officers of other Civil Services in India.

(5) *Status of the Director-General and Surgeons-General.* These officers to have the same rights as the Secretary to the Government in the matter of:
- (a) Direct access to the Viceroy or Governor, as the case may be.
- (b) Access to documents, and opportunity of forwarding their views to the Viceroy or the Governor, as the case may be.

(6) *Leave Reserve.* The cadre of the Indian Medical Service to have a reserve of 25 per cent. for furlough, and 2½ per cent. for study leave, whenever this may be practicable.

Points (1) to (3) above have already been disposed of in this Department's letter of the 5th June cited above, and the Secretary of State is about to make a public announcement, communicating the reorganization of the pay of the Service.

As regards pensions, I am to refer you to the memorandum dated 3rd instant issued by this Office, communicating the revised rates of pension for officers of the Indian Army and of the Indian Medical Service.

As regards passages, there has as yet been no decision on the question of passages for combatant officers, but the Secretary of State is willing to undertake that officers of the Indian Medical Service in Military employ will receive the same advantage as those officers, and that those in civil employ will receive such concessions, if any, as may be granted to other officers in civil employ.

The Government of India reported in a dispatch dated 26th February, that they had already agreed to the principle that the Director-General and Surgeons-General with provincial Governments should have the right to place their views direct before the Viceroy or Governor when necessary, and that they were then considering the best means of giving effect to that decision. In the meantime, the Secretary of State accepts point (5).

The Secretary of State undertakes to carry into effect the proposals for a 25 per cent. leave for furlough, and 2½ per cent. reserve for study leave, as soon as the strength of the Service permits. I am, etc.,

(Sd.) S. F. STEWART,
Deputy Secretary, Military Department.

The Medical Secretary,
British Medical Association, 429, Strand, W.C.2.

SPECIAL GRANTS COMMITTEE: MINISTRY OF PENSIONS.

THE Minister of Pensions announces that the Regulations of the Special Grants Committee have been extended and revised, and that the committee is now in a position to consider applications for supplementary and other allowances from:

1. Officers disabled in the great war (a) in respect of their

wives, up to a maximum of £50 a year; (*b*) in respect of their children up to a maximum of £36 per annum for each child.

2. The widows and dependants of deceased officers of the great war.

3. Nurses belonging to the Imperial Military Nursing Services or other nursing services who have served in the great war and in respect of whom the award of pension has been entrusted to the Minister of Pensions.

The conditions governing the grant of these allowances are shown in the Regulations, which will shortly be on sale and obtainable at any of H.M. Stationery Offices, price 1d. Applications should be addressed to the Secretary, Special Grants Committee (Officers' Section), Millbank House, Westminster, S.W.1.

HONOURS.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following medical officers:

Territorial Force R.A.M.C.—Lieut.-Colonels John W. Leitch, D.S.O. (1st Lowland Field Ambulance) and Matthew Dunning, D.S.O. (2nd Lowland Field Ambulance). Majors Gordon W. Fitzgerald, O.B.E. (1st East Lancs Field Ambulance), Alexander W. French (3rd London (City of London) Field Ambulance), William G. Sutcliffe, O.B.E. (attached 3rd Home Counties Brigade, R.F.A.), John Leach (Highland Mounted Brigade Field Ambulance), Henry G. F. Dawson (attached Welsh Divisional Engineers) and Brownlow Riddell, O.B.E. (3rd Scottish General Hospital). Captain Leonard B. Cane (attached Inns of Court O.T.C.).

Territorial Force Reserve—Army Medical Service.—Colonel William H. Bull, V.D., K.H.S.

FOREIGN DECORATIONS.

The following decorations and medals have been awarded to medical officers by the allied powers for distinguished services rendered during the course of the campaign:

By the President of the French Republic.

Médaille des Epidémies "d'Or": Majors George H. J. Brown, D.S.O., R.A.M.C., George P. A. Bracken, R.A.M.C.; Captains Hyman Lighstone, D.S.O., M.C., R.A.M.C.(T.F.), David Mackie, M.C., R.A.M.C. (S.R.), Charles J. L. Patch, M.C., I.M.S; Temporary Captains John F. Broughton, M.C., R.A.M.C., Arthur G. Whitehorne-Cole, R.A.M.C., Alexander W. Young, M.C., R.A.M.C.

Medaille des Epidemies "en Bronze": Temporary Captains Harold R. Dew, R.A.M.C., James E. Paterson, R.A.M.C.; Temporary Lieutenant William S. Baird, R.A.M.C.

By the King of Serbia.

Order of St. Sava (4th Class): Major George Ashton, T.D., R.A.M.C.(T.F.).; Temporary Captain Patrick Black, R.A.M.C.

Temporary Captain John Marsters, R.A.M.C., has been appointed O.B.E. (Military Division) in recognition of valuable services in connexion with military operations in South Russia.

The names of the following medical officers have been brought to the notice of the Secretary of State for War for distinguished services rendered with the British military mission in South Russia: Temporary Captain J. M. Mitchell, R.A.M.C., Captain G. P. N. Richardson, R.A.M.C.(S.R.), and Captain (temporary Major) F. C. Tibbs, R.A.M.C.

Among the officers mentioned in dispatches published in a Supplement to the *London Gazette* (June 12th) are Flight Lieutenant Jack Garland Skeet, M.R.C.S., L.R.C.P. (Somaliland), and Wing Commander William Tyrrell, D.S.O., M.C., M.B. (Somaliland).

Dame Maud McCarthy, G.B.E., R.R.C., who was Matron-in-Chief of the British Armies in France throughout the war, has been appointed Matron-in-Chief of the Territorial Force Nursing Service.

DEATHS IN THE SERVICES.

COLONEL ARTHUR WILLIAM PATRICK INMAN, A.M.S. (retired), died at Kingstown on June 17th, aged 66. He was born at Clonmel on May 20th, 1854, the youngest son of the late Captain John Inman, 74th Foot, and educated at Trinity College, Dublin, where he graduated M.B. and Ch.B. in 1878. Entering the army as surgeon on March 6th, 1880, he reached the administrative grade in July, 1905, went on half-pay in August, 1907, and retired in January, 1909, but rejoined on April 1st, 1915, for service in the late war. From August, 1899, to October, 1902, he filled the post of physician and surgeon to the Royal Hospital at Kilmainham.

Lieutenant-Colonel **JOHN LANCASTER**, Madras Medical Service (retired), died at Streatham on June 9th, aged 70. He was born at Madras on July 5th, 1849, the son of John Lancaster, of Madras. He was educated at Madras University, where he graduated M.B. in 1873. He went to Europe, and took the L.R.C.P. and S.Edin. the same year. He entered the Indian Medical Service as surgeon on March 31st, 1874, became surgeon lieutenant-colonel after twenty years' service, and retired, with an extra compensation pension, on April 1st, 1904. Most of his service was spent in civil employ; for many years he held the civil surgeoncy of Vellore, North Arcot district.

Universities and Colleges.

UNIVERSITY OF OXFORD.

A **THEODORE WILLIAMS** Scholarship in Pathology has been awarded to D. G. T. K. Cross, St. John's College. The scholarship is tenable for two years, and is of the annual value of £60.

The Gilchrist Studentship for the ensuing year has been awarded to Constance M. Ottley, to assist her in continuing her medical studies in London.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 19th the following medical degrees were conferred:

M.D.—N. Gray, J. R. Rees.
M.B.—E. R. Stone.

The following medical degrees were conferred on July 16th:

M.D.—E. M. Brown.
M.B., B.CH.—G. E. Dyas, C. E. Kindersley, C. J. Scholtz.
B.CH.—W. F. R. Castle, Pao T. Liang, B. K. Merson, W. G. Verniquet.

UNIVERSITY OF LONDON.

AT a meeting of the Senate, held on June 23rd, Dr. S. Russell Wells was re-elected Vice-Chancellor for 1920–21.

Appointments.

Mr. H. J. Waring has been elected chairman of the Committee of Medical Members of the Senate for 1920–21.

Dr. S. G. Luker was recognized as a teacher of midwifery and diseases of women at the London Hospital Medical College. Professor B. J. Collingwood was appointed as from September 1st, 1920, to the University chair of Physiology at St. Mary's Hospital Medical School. The title of Professor of Bacteriology in the University of London has been conferred upon Dr. J. C. G. Ledingham, of the Lister Institute of Preventive Medicine.

It was resolved to institute a University chair of Experimental Pathology tenable at Middlesex Hospital Medical School, and a University readership in Physiological Chemistry at University College.

Regulations for First M.B.

It was resolved that internal students who completed the first examination for medical degrees in March, 1920, should be permitted to present themselves for the second examination, Part I, to be held in July, 1920, provided that they shall have attended approved courses therefor of the prescribed length and otherwise complied with the regulations. Candidates who completed the first examination for medical degrees in March, 1919, or March, 1920, will be permitted to enter respectively for the second examination, Part II, in July, 1920, or July, 1921, as external students, provided that they shall have attended courses of study for the second examination for medical degrees, extending over not less than five terms, and on complying with the regulations in other respects.

Physiological Laboratory.

The annual report of the Physiological Laboratory Committee for the year 1919 was presented. It indicated the scope of the work done, and included a list of papers published.

Brown Institution.

The report of the Superintendent of the Brown Animal Sanatory Institution for 1919 showed that during the year 3,695 animals—including 1,716 dogs, 1,520 cats, and 248 horses—were brought to the institution. The lectures required under the will of the late Mr. Brown were delivered at the Royal College of Surgeons by the Superintendent, who selected as the subject the work of the Base Laboratory, Salonica, in 1916. A number of experiments on influenza had been and were still being carried out in the laboratories for the Medical Research Council. Mr. F. W. Twort was reappointed Superintendent of the Institution for one year as from June 1st, 1920.

Fellowship and Prize.

Applications for the William Julius Mickle Fellowship of the value of at least £200, awarded annually by the Senate, must reach the Principal Officer not later than the first post on October 1st. The award is made to the man or woman who, being resident in London and a graduate of the university, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit.

Provided there be a candidate of sufficient merit, a Paul Philip Reitlinger prize of £30 will be awarded on December 3rd, 1920, for the best essay embodying the result of some research work on a medical subject carried out by the candidate. Full particulars can be obtained on application to the Academic Registrar.

Chair of Radiology.

Applications for the University Chair of Radiology, tenable at Middlesex Hospital Medical School (salary £1,000 a year), must be received by the Academic Registrar not later than the first post on September 23rd, 1920.

Course in Mental Deficiency.

Owing to the impossibility of providing accommodation to all applicants for admission to the post-graduate course in mental deficiency, held from May 31st to June 5th, the course will be repeated in the week October 18th to 23rd, 1920.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

B Sc. IN PUBLIC HEALTH. E. N. Ramsbottom.

D P.H.—*Part II:* W. Ash, Sybil Bailey, J. C. Beckitt, Hilda K. Brade-Birks, J. P. Charnock, W. J. McIvor, C. G. Magee, Kathleen O'Donnell, W. J. A. Quine, A. Renshaw, L. S. Robertson.

UNIVERSITY OF GLASGOW.

THE following were among the degrees conferred on July 19th:

M.D.—*J. G. Wilson, A. B. Hughes, D. MacK. MacRae, J. Young.

M.B., CH.B.—†J. Wyllie, †J. L. Halliday, *W. J. Ferguson, *R. D. Gillespie, *J. L. Anderson, *Helen F. Wingate, *A. G. Smith, *Elsie F. Farquharson, *Margaret L. Johnston, *W. J. Payne, *G Paterson, Marion B. Armstrong, J. Baird, Annie Barlow, Lillias E. B. Buchanan, A. Campbell, J. G. Campbell, Edith Chalmers, J. L. Cowan, Edith M. Davidson, Simonne Denil (Mrs. Thompson), C. M. Fleming, J. Frew, R. MacI. Gardner, J. A. M. Hall, J. Hurwich, Elizabeth S. Inglis, Isabel E. R. Jeffrey, Anna T. Kellock, W. M. Knox, J. Lavelle, Jane C. Macdonald, R. MacK. M'Kean, Alexandrena M. Maclennan, P. M'Luskie, J. P. M'Millan, P. Macmurray, C. Melville, Janet D. Montgomery, J. Orr, J. Paterson, T. N. Ray, W. H. Scott, J. Smart, D. C. Smith, Mary Steven, Margaret M. Stuart, Helen B. Sutherland, J. N. Tennent, J. R. Turner, Mary C. Walker, D. M. Watson, Mary L. Wilson, Agnes H. N. Young.

* With commendation. † With honours.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Jurisprudence and Hygiene, Pathology and Bacteriology:* *I. G. Sacks, *C. T. de M. Villet, T. de Bruijn, Olive V. Fair, J. Hofman, R. E. Faussett, M. Elion, I. Cornick, Alice E. Lawlor, May E. Powell, A. Agranat, Ruth F. Flavelle, G. Kirker, Alida C. Burt. *Pathology—completing examination:* P. J. Healy, A. H. N. Todd, T. G. Warham, J. D. Thompson.

PART II.—*Medicine (M.B.):* *E. H. C. Allen, *M. Nurock, W. J. A. Russell, Janie M. Cummins, Olive Baile, F. Z. van der Merwe, Eileen H. Dowse, Doris L. Graham, Essie S. Smyth, W. B. Fox, E. H. Frazer, J. C. Coetzee, F. W. Pienaar, W. R. Burns, F. W. Shegog. *Surgery (B.Ch.):* *E. H. C. Allen, *W. T. Micks, *H. V. Exner, *F. V. Small, *A. J. L. Snyman, *F. Z. van der Merwe, J. H. B. Crosbie, W. J. A. Russell, P. Jabkovitz, J. C. Coetzee, E. H. Frazer, J. P. de Villiers, Moira M. Brown, W. B. J. Pemberton, J. B. Maguire, B. Moshal, M. E. McBrien, F. W. Pienaar. *Midwifery (B.A.O.):* Elinor D. Stopford, T. F. L. Cary, W. B. Briggs, F. W. Shegog, C. W. Parr, F. Y. Pratt, E. C. Smith, J. D. Leahy, P. I. Levitt, F. W. Pienaar, R. W. Power, D. V. Latham, M. E. McBrien, Constance McIlrath, Nora Griffith, P. J. Healy, D. J. Browne, J. A. Smith. *Master in Surgery (M.Ch.):* I. W. Corkey.

D.P.H., PART I.—*Bacteriology, Chemistry, Physics, and Meteorology:* Anna M. K. O'Halloran, R. M. Gordon, E. Lipman, J. P. Quinn, Eileen G. Gwynn, J. W. McKinney, Jessie Gilbert, R. E. Tottenham.

PART II.—*Sanitary Engineering, Sanitary Inspection and Report, Hygiene, Epidemiology, Vital Statistics, Public Health Law:* C. H. Comerford, P. Rock, M. J. Graham, A. H. Price, J. F. Gaba, R. M. Gordon, J. W. McKinney, R. E. Tottenham, C. E. Pengelley, C. Kelly.

* Passed on high marks.

Obituary.

SIR JAMES NICHOLAS DICK, K.C.B., Inspector-General of Hospitals and Fleets, R.N. (retired), died at Bembridge, Isle of Wight, on July 12th, aged 89. He was the son of the late George Dick, and took the diploma L.R.C.S.Ed. in 1853. In 1878 he became a licentiate and in the following year a member of the Royal College of Physicians of Ireland. He entered the Royal Navy as assistant surgeon in 1854, and became deputy inspector general in 1882, when he served as senior officer at the Royal Naval Hospital at Malta. On February 7th, 1884, he was promoted to I. G., and placed in charge of the Royal Naval Hospital at Haslar, and four years later, in 1888, was appointed Director General of the Medical Department of the Royal Navy. This post he held for ten years, retiring in 1898. He served in the Crimean war of 1854-56, and in the Abyssinian war in 1868, receiving the medals for these campaigns. He was made K.C.B. on May 25th, 1895, honorary surgeon to the King in 1901, and received a good service pension on January 12th, 1905; and was also a Knight of Grace of the Order of St. John.

YET another Mutiny veteran has passed away. Deputy Surgeon General WILLIAM ARNOLD SMITH-WYNNE, Madras Medical Service (retired), died at St. Olave's Priory, Suffolk, on July 1st, aged 85. He was born on February 24th, 1835, the son of the late Frederick Parsons Smith, of Aylsham, Norfolk; the late Deputy Surgeon-General Charles Edward Smith, R.A.M.C., who retired in 1886, and died in 1890, was his younger brother. He was educated at St. Bartholomew's Hospital, took the M.D., St. Andrews, and the M.R.C.S. in 1856, and entered the I.M.S. as assistant surgeon on January 29th, 1857. He attained the rank of surgeon-major on July 1st, 1873, and retired on March 21st, 1878, with an honorary step of rank. He took the name of Smith-Wynne soon after. He served in the Indian Mutiny in 1857-58, in the Sagar and Narbada Field Force, in the pursuit of the Bundelcund rebels, and received the medal with clasp. He died suddenly of heart failure while in Herringfleet church, of which he had been warden for over forty years. Deputy Surgeon-General Smith-Wynne's death leaves only two officers of the I.M.S. still living, or shown to be living in the list of retired officers in the *Indian Army List*, who served in the Mutiny, Deputy Surgeons-Generals C. T. Paske and P. W. Sutherland. The *War Office Army List* shows several Crimea and Mutiny veterans of the R.A.M.C. as still living. Sir R. W. Jackson and A. E. T. Longhurst served in both the Crimea and the Mutiny; A. D. Gulland and W. C. Roe in the Crimea; and Sir A. F. Bradshaw, W. G. Don, I. Hoysted, and F. Collins in the Mutiny. Probably there are a few others still alive who served in one or both of these campaigns, and left the army early soon after, so that their names no longer appear in the *Army List*. Obituary notices of two such officers, R. R. Scott and R. G. Burton, have appeared in the JOURNAL within the last few weeks; the names of both had disappeared from the *Army List* about half a century ago.

LIEUT.-COLONEL PHILIP RHYS GRIFFITHS, R.A.M.C. (T.F.), died suddenly at Cardiff railway station on July 13th, aged 63. He was educated at University College Hospital, and took the M.R.C.S. in 1880, and the M.B. and B.S. London in 1881, after which he settled at Cardiff. He was appointed house-surgeon to Cardiff Infirmary, now the King Edward VII Hospital, in 1882, and, after holding that post for two years, went into practice in Cardiff. In 1886 he became assistant surgeon to the hospital, and gradually rose to be senior surgeon, retiring from the regular staff in 1919, when he was appointed consulting surgeon. He was for some years lecturer in physiology and hygiene to University College, Cardiff. He was also consulting surgeon to the Mountain Ash Workmen's Hospital, and to the Great Western Railway, and medical referee to Court Circuit No. 32. He was an ex-president of the Cardiff Medical Society, and a member of the British Medical Association. At the Annual Meeting in 1903 he was vice-president of the Section of Diseases of Children. He was also a member and past-president of the Cardiff Naturalists' Society, and a member of the Cardiff Cymmrodorion Society. In December, 1908, he took a commission as Major in the 3rd Western General Hospital, R.A.M.C. (T.F.), and on June 12th, 1915, was promoted to Lieut.-Colonel.

Medical News.

AMONG the names of the representative women added to the Commission of the Peace on the recommendation of the committee of women appointed by the Lord Chancellor are those of the following medical women: Dr. Ethel Bentham (London), Dr. Janet Lane-Claypon (London), Dr. Mary Scharlieb, C.B.E. (London), Dr. Louisa Martindale (Brighton), and Dr. Helen Mary Wilson (Sheffield).

PROFESSOR SIR JOHN CADMAN, K.C.M.G., D.Sc., University of Birmingham, Mr. W. B. Hardy, Secretary of the Royal Society, and Professor Sydney Young, F.R.S., Trinity College, Dublin, have been appointed members of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research.

WE regret to record the death of Sir Alexander Dempsey, M.D., senior consulting physician and gynaecologist to the Mater Infirmorum Hospital, Belfast, and ex-president of the North of Ireland Branch of the British Medical Association.

A VACATION course of [illegible] tions at the Post-Graduate College, West London Hospital, Hammersmith, will commence on Tuesday, August 2nd, and terminate on Saturday, August [illegible]. The fee for the course, including one month's hospital practice, is [illegible], or fourteen days [illegible], or one week [illegible]. Further particulars can be obtained on application to the Dean at the college.

THE KING OF THE BELGIANS has conferred upon Dr. Francis J. Allan, Medical Officer of Health for Westminster, the Medaille du Roi Albert in recognition of valued services rendered to the Belgian cause during the war.

DR. MUTHU, chief physician of the Mendip Hills Sanatorium, was entertained by some of his old patients at a dinner at the Holborn Restaurant on July [illegible], in recognition of his completion of twenty-one years of sanatorium work. They also presented him with an antique silver inkstand as a mark of respect and appreciation.

IN a Chadwick lecture on health conditions in Eastern Europe, Dr. F. Norman White, C.I.E., a medical officer of the Ministry of Health who is acting as a medical commissioner on the Typhus Commission of the League of Nations, said that every country in the world had a very real concern in the conditions of Poland and Russia for economic quite apart from humanitarian reasons. The outbreak of war in 1914 was quickly followed by outbreaks of epidemic disease in Latvia, Esthonia, Lithuania, and the Ukraine, as well as in Poland. Health conditions went from bad to worse, and in 1917 the death rate exceeded the birth rate in every town and district of Poland. Since the armistice there had been little if any amelioration. The strenuous efforts made by Poland to work out her own sanitary salvation entitled her to special consideration.

IT is announced that Dr. Breinl, who has been Director of the Townsville Institute of Tropical Medicine, Queensland, for the last ten years, has resigned the appointment. The committee has recommended the Federal Cabinet to increase the staff of the institute, and to open experimental stations at Port Moresby, Papua, and Rabaul.

THE Royal Statistical Society has opened a register of the names of persons eligible for statistical posts. The Secretary (9, Adelphi Terrace, W.C.2) will be glad to furnish information.

A HUSTLING campaign against tuberculosis is at present being carried on in Finland, where, it is estimated, every hour in the year a human being dies of this disease. The first of March has been chosen as Finland's yearly Tuberculosis Day. This year the church bells were rung to summon the nation to fight "our most devastating national enemy." The press has published numerous articles and notices, and many lectures have been given throughout the country. Students, artists, and many other classes have engaged in most vigorous propaganda, and this year there was not a house in Helsingfors which was not visited by students selling tickets for a lottery by which, with the help of theatrical performances, concerts, balls, and other entertainments, it is hoped to provide the sinews of war.

A CIVIL list pension of £85 has been awarded to Mrs. Goring, the widow of Dr. Charles Goring, author of *The English Convict: A Statistical Study*, which excited wide interest at the time of its publication in 1913.

AN American philanthropist, Mr. Douglas Flattery, has recently presented 100,000 francs to the Bacteriological Institute of Lyons, to endow an annual scholarship to enable a pupil of Lyons University to devote his time to laboratory work on infectious diseases.

ON the initiative of Forssner, Forssel, Holmgren, Key, Quensel and Petren a Swedish Association of Medical Sciences has been established at Stockholm; it has 169 members.

DR. ELIZABETH D. A. COHEN, the first medical woman in New Orleans, has recently celebrated her 100th birthday.

FIVE persons died in Chicago during April and May from anthrax contracted in a curled hair factory.

THE twelfth National Congress of Hydrology, Climatology, and Physical Therapy of the Italian Medical Association will be held at Perugia on October 4th to 8th.

THE Medical School of Guayaquil (Ecuador) has offered a prize of 100 piastres to the schoolmaster who succeeds in training the largest number of ambidextrous pupils.

THE Heubner Prize for the best work on paediatrics has been given to Dr. Arvo Ylppö of Helsingfors, assistant at the Kaiserin Augusta Viktoria Haus at Charlottenburg.

TWO cases of rabies occurred in Holland last March, both in the province of Overijssel.

Letters, Notes, and Answers.

[illegible] *Tuesday*, [illegible] Monday.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the EDITOR at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

SENEX inquires [illegible] 1920-21.

** The position is as follows:

		£	s.	d.
1. [illegible]		[illegible]	[illegible]	[illegible]
[illegible]	£			
Abatement ...	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
		[illegible]	[illegible]	[illegible]
Tax [illegible]		[illegible]		
2. [illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
Tax [illegible]		[illegible]	[illegible]	[illegible]
Tax [illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]

It is perhaps doubtful whether it is worth our correspondent's time to prepare the claim for [illegible], but it may be advisable to preserve the papers so that the claim can be made in the future with the claim for 1920-21 [illegible]. We assume that he has reckoned the estimated [illegible] on the correct basis—that is, at the [illegible].

H. M. C. F. paid income tax during the war on his army pay and on practice [illegible] combined. Is this correct?

** No. The army pay was assessed once and for all as for the year for which it was received, and there is no legal ground for bringing it into the computation of [illegible] his present earnings. If the practice was kept in being during the war he is assessable on the average income during the past three years; if it definitely ceased and was recommenced, he is assessable on the income of the first year [illegible] recommencement.

TAXATION inquires whether the Revenue authorities are correct in refusing to accept the basis of cash receipts [illegible] tax assessment; he was demobilized in March, [illegible], and has made his statement on the basis of the cash receipts for the year to March 1920.

** It is fairly safe to assume that [illegible] year would not sufficiently [illegible] year's [illegible] and [illegible] the [illegible] in [illegible] for bad debts and of course [illegible]. "Taxation" does not state whether when he was in the army he paid tax on cash [illegible]; if he did th[illegible] the cash basis principle now that the circumstances have reversed its application.

C. A. P. bought a practice in October, 1919, and [illegible] has incurred heavy expenditure on the purchase of [illegible]; he sold his former car when he was called up in August, 1914. When should his return be made and what can he deduct for motor car expenses?

** His liability to income tax for 1920-21 is determined primarily on the basis of the average profits of the practice for

1917, 1918, and 1919, subject to his right to claim an adjustment of the assessment at the end of 1920 if the profits have fallen off from some specific cause since or by reason of his taking over the practice. Accordingly, he should in fact make a return, on an estimate if necessary, on the three-year basis and is not entitled to defer the return for twelve months from the date of taking over. With regard to the motor-car expenditure we consider that he is entitled to deduct, as an expense of the year in which the purchase was made, the then cost of a car of similar power and quality to that which he had formerly, less the £250 which he received when he sold it.

LETTERS, NOTES, ETC.

PROFESSOR W. J. SIMPSON, C.M.G., who was one of the pall bearers at the funeral service of General Gorgas in St. Paul's Cathedral, should have been described in our report as President of the Royal Society of Tropical Medicine and Hygiene.

VENEREAL DISEASES AMONG SEAMEN.

THE International Labour Conference established under the Treaty of Peace, which has been sitting for the past three weeks at Genoa for the purpose of improving by national legislation based on international agreements the lot of the seafaring man, was chiefly concerned with the question of the eight-hour day for seamen. The delegates (who represent the governments, shipowners, and seamen of a score of countries) found time, however, to give attention to the question of the prevention and treatment of venereal diseases. As a result of a meeting arranged by the National Council for Combating Venereal Disease, Mr. C. Hipwood (Assistant Secretary, Board of Trade), one of the British Government delegates, wrote to M. Albert Thomas, Director of the International Labour Office, stating that a strong hope had been expressed that the Conference would take some definite action, and adding that a small committee of representatives of the National Council, seamen, shipowners, and governments had prepared a resolution which an unofficial report states has been adopted by the Conference. It affirmed the importance of active international measures being taken for the prevention and treatment of venereal diseases in the mercantile marine, and recommended:

1. The provision of adequate facilities for the prevention and treatment of venereal diseases at all the principal ports;
2. The inclusion of venereal diseases among the conditions for which "free" drugs and treatment are provided for members of the mercantile marine;
3. The dissemination of appropriate information on the subject to seafarers, especially to those at training establishments; and
4. The provision of adequate facilities for recreation at all large ports, under the administration of joint organizations representative of owners and seafarers.

Special importance was attached to this fourth recommendation.

THE TREATMENT OF MENTAL DISORDER.

DR. HELEN WEBB (London) writes: In a recent short letter which you were kind enough to insert for me in your issue of June 19th, I fear that I did not make myself sufficiently clear. Those for whom detention is necessary and permissible are defined in Section 74 of the Lunacy Act of 1890, as those who can be proved to be "dangerous or unfit to be at large," and according to that Act only the "certified" are under the jurisdiction of the Board of Control. It has lately been proposed to provide homes for "uncertifiable" nervous cases, which shall be run with the co-operation and advice of the Lunacy Board. Such an arrangement will, I contend, be likely to interfere seriously with the prospective usefulness of such homes of recovery. The only class of patients they are meant to benefit are just those who will fear to enter them lest they may later lose their liberty. Homes, on the other hand, free from all connexion with lunacy administration, and from any possibility of detention will inspire confidence in such patients, and be the beginning of a new era in mental therapeutics. Instead of fear and apprehension, such an atmosphere will give that peace of mind which constitutes so large an element in restoring the balance of the patients for whom they will be intended.

PITUITARY EXTRACT IN OBSTETRICS.

DR. ALECK W. BOURNE (London, W.) writes: Will you kindly allow me space to state that in the case of rupture of the uterus recently reported in the BRITISH MEDICAL JOURNAL from a paper I read before the Obstetrical Section of the Royal Society of Medicine I wrongly used the word "pituitrin" to designate the extract of pituitary gland which was employed. It has been pointed out to me that "pituitrin" is the name exclusively used for the product prepared by Parke, Davis and Co., and in this particular case it was not the preparation of this firm which was administered.

JUDGING BABIES.

A CORRESPONDENT inquires as to the different points for which marks should be given in judging infants at baby shows. We learn that the National Baby Week Council, 27A, Cavendish Square, London, W.1, has issued leaflets on this subject, including an article on baby shows and how to judge babies, by Dr. Eric Pritchard, reprinted from *National Health*, and obtainable at the National League for Health, 4, Tavistock Square, W.C.1. Two alternative forms of score sheets for judging babies at mothercraft competitions have also been drawn up by Dr. Pritchard, and copies of these may be obtained by medical practitioners on application to the Secretary of the Council.

THE MEDICAL PROFESSION AND CO-OPERATION.

DR. FERDINAND REES writes: Last week I attended the annual meeting of the Motor Petrol Association, started some years before the war to supply petrol on a co-operative basis. Many members of the profession joined it under the idea that it might be the means of helping them to get out of the clutches of the petrol monopolist. The advent of the war destroyed all our hopes. But, furthermore, the lack of provincial organization rendered the Motor Petrol Association of slight value to doctors living out of London. If only the Wholesale Co-operative Society could have got hold of the Motor Petrol Association and worked it through its retail organization, immense benefits would have accrued to the medical profession. Our hospitals find it very hard to make both ends meet, but no attempt is made by co-operation to supply themselves cheaply with the instruments, drugs, and hospital fittings they require. The public pour in subscriptions, but there is a good deal subtracted by the other hand from that which is given by the one. The Hospitals Association might do more in the way of co-operation than it does at present. The profession needs to learn the lessons of co-operation; in fact, it must if it is to apply the lessons of the Mayo clinic to an organization of healing. That is the great need of the future. "Surgical work in private practice does not pay." Co-operation, especially in country practice, could alter that and keep up the interest in scientific medical work.

LONGEVITY IN SOMERSET.

DR. W. EDELSTEN BRACEY (Wedmore, Somerset) writes: It is somewhat refreshing in these days of hustle and strain to come across long-lived families. I was recently called to a confinement, and in the absence of a nurse my principal assistant was the great-grandmother, ably seconded by the grandmother, the mother having an excellent time in being delivered of a fine healthy boy. Within a few hours I was called to a similar case quite close to the first, this case going even one better, for the midwife in attendance proved to be the baby's great aunt, and was assisted by the grandmother, the great-great-grandfather being packed off to bed out of the way, while the husband and grandfather were despatched by the great aunt to fetch me! It is a matter of some regret to me that the absence in America of the great-grandmother broke the sequence of generations under a single roof that would otherwise have constituted, I fancy, very nearly a record.

ENGINE STARTING.

DR. E. BIDDLE, who writes to us from Guy's Hospital, has, like other drivers, sometimes encountered difficulty in starting a cold engine even in the summer months; since fitting to his car an attachment called the Feuente Starter, which he obtained from Messrs. Prestons of High Holborn, he has always succeeded at the first attempt.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36, 37, and 38.

THE Home Secretary gives notice that he proposes to appoint two additional Medical Referees under the Workmen's Compensation Act, 1906, who must possess surgical qualifications, for the Sheriffdom of Lanark. Applications to the Under Secretary for Scotland, Scottish Office, Whitehall, S.W.1, by August 7th.

THE appointment of certifying factory surgeon at Yarmouth (Norfolk) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE. It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.
Sir HUMPHRY D. ROLLESTON, K.C.B., M.D., F.R.C.P., President.

DISCUSSION ON THE PRESENT POSITION OF VITAMINES IN CLINICAL MEDICINE.

OPENING PAPER

BY

F. GOWLAND HOPKINS, F.R.S., D.Sc., F.R.C.P.,
Professor of Biochemistry, University of Cambridge.

THE discussion of this morning is to deal with the effects of certain forms of malnutrition from their clinical aspect, and it is perhaps desirable that as little time as possible should be spent upon reference to the results of experiments upon animals. But though I have been allowed the privilege of opening the discussion, my clinical experience has been extremely small, and I conceive that I am here with a special function. I must perforce speak more or less from the standpoint of an experimentalist.

I regret this necessity the less because I am anxious, before deficiency diseases, as clinical entities, are discussed in detail, to put certain general considerations before you concerning what may be called qualitative under-feeding, considerations which I think may prove of some importance in the more technical discussion.

VITAMINES.

The modern conception of a deficiency disease is not of course based wholly upon a belief in the existence of vitamines. There may be quite other factors of deficiency in a diet which may produce symptoms to be observed clinically; but the hypothesis of vitamine deficiency plays a large part in current views concerning the chief examples of the conditions to be discussed.

The idea of the existence of such substances as those we now call vitamines arose quite inevitably from the fresh facts concerning nutrition which were gathered by means of experiment and observation at about the beginning of the present decade.

There should have been, as I have always maintained, nothing particularly startling about these new facts. It was always an assumption that proteins, fats, carbohydrates, and certain minerals represented the whole nutritional demands of the animal. Directly these constituents of food were fed really pure, it was shown they were not. The only matter for surprise was that certain substances, produced like all others by the plant, should prove so important, though present in so small an amount.

In what I am about to say I refuse to speak of the vitamine "hypothesis." Vitamines, though still of unknown nature in the chemical sense, are not merely hypothetical. In nearly every case that we are to consider, it is, I admit, still a hypothesis that the particular disease depends upon vitamine deficiency, but in respect to the broad aspects of nutrition as a whole, the importance of these factors is proven.

But I have found that there is at the present moment some scepticism concerning the whole question, particularly perhaps among certain members of the medical profession. The fact that I have met it lately in high quarters accounts for the particular direction I am giving to my opening remarks which may seem unnecessarily defensive.

Some of this scepticism has been stimulated by, or is a protest against, quackery—the quackery which always dogs the footsteps of honest scientific work and sound views concerning human nutrition. It is well indeed that the subject we are to discuss should just now be approached critically; but disbelief in the very great importance of qualitative deficiencies in the diet (quantitatively of small moment) in the production of nutritional errors is to be deprecated.

Not long ago, in a professional discussion, a physician whom we all greatly respect and whose authority in such matters is of the highest, spoke of the "vitamine *stunt*." To be just, he was probably applying that much-abused word only to a vitamine hypothesis in the etiology of a particular disease. It was here, according to him, a "stunt," succeeding other stunts which had failed. I felt at the time, however, perhaps wrongly, that the implication was more general. Now, whether deficiency diseases are many or few, and even if it were ultimately shown that in the strictest sense there are none, the conception of vitamines is no stunt. It is based upon experiments as conclusive and as carefully controlled as any in biological science.

Experimental Evidence.

I would like, indeed, to feel that before this discussion proceeds on its more proper lines that some experimental evidence of clear and unequivocal kind should be before the clinical members of this Section, for admonition as it were: evidence which, if they accept the bearings of animal experiments at all, should remove any mere *a priori* disbelief in the importance of small qualitative errors in the food supply. I might do this by presenting a synopsis of a very big literature, but I would prefer to take an illustrative case in the form of some results just obtained in my own laboratory. The particular experiments I refer to were not concerned with any point which is altogether new. They have dealt with the conditions which affect the stability of the so-called fat-soluble vitamine, and the results show definitely that oxidation plays a much larger part in the conditions which destroy it than does temperature. I choose these experiments among the many I might put before you because they illustrate how definite may be the results when the effect of varying a single factor in the diet is studied under fully controlled conditions.

The curves before you represent average body-weight changes in two strictly comparable groups of animals. The two groups were fed side by side upon a dietary absolutely identical in every particular save one. In the food of one set the fat was butter which had been heated for four hours to 120° C.; but heated without aeration. The fat given to the other set was the same butter heated in exactly the same way, but during the heating a stream of air was bubbled through the melted fat. Now, as the curves show, growth in the first set was perfectly normal, while in the case of the second set, though the animals consumed the food satisfactorily, growth continued but for a short time and the animals then steadily lost weight. Shortly after the end of the period covered by the curves (some sixty days) while the first set of animals remained in perfect health all those in the second set were dead. It is easy to show that nothing toxic develops in such aërated fat. Animals taking it in their food after a relatively small amount of normal untreated butter has been mixed with it are maintained in health, and if half of it has been replaced by normal butter they grow well. The butter fat itself is so little altered by the aëration that even the "iodine value" is unchanged. Clearly the treatment has produced some deficiency. That it is legitimate to speak of the effect as one involving a destruction of the fat-soluble vitamine is shown by the fact that the animals fed on the altered butter show just those appearances which are peculiar to others fed upon such vegetable fats as are believed to be free from that substance. This is particularly illustrated by the development of the keratomalacia to which I shall later refer. The crosses placed against the second curve mark the days upon which individual rats developed this eye trouble so characteristic of this particular deficiency. The curves of body weight in the case of individual animals are also before you—it will be seen how little they depart from the mean. The suggestion of the experiments is that the vitamine has considerable heat stability but that it is easily oxidized, a point of some practical importance.

The animals yielding these very definite experimental results were rats. I ought not to have to defend here the use of that material, though one always has to do so before a lay audience. All students of nutrition have to recognize differences of detail in the response of different species to this or that circumstance, and, like the clinician, they meet with differences even in individuals. But any circumstance which involves absolute failure in the fundamental nutrition of one kind of mammal will most certainly be liable to produce untoward results of some kind in the case of any other mammal. For a biologist to doubt this seems to me almost stupid. Nutritional phenomena are basal phenomena. They differ in detail, but fundamentally they are the same in all animals.

Those who believe in vitamines will doubtless be in a stronger position when the chemical nature of these substances is known, and when they can be administered in a pure condition. Short of that, however, the existence of these accessory factors in nutrition—factors which we can already sufficiently define—is now sure, and needs no further evidence.

While intruding these experimental results upon your notice I do not ask that you should apply them in a discussion of the etiology of any particular disease. I feel only that they, and countless other results of similar import, should remove from any discussion prejudices based merely upon *a priori* disbelief. If small qualitative deficiencies in food can, under any circumstances, produce such startling results, then, assuming that such deficiencies can occur in the food supply of human communities, any preconceptions with regard to their possible causal relations to disease should involve expectancy rather than the reverse. Better of course that the evidence should be viewed without preconceptions, but I find that they unfortunately exist.

General Considerations.

Before dealing with the details I should like to call your attention to still other general considerations.

In connexion with clinical evidence we can seldom expect such clear-cut manifestations as are seen in experiments where only one factor is varied and all others controlled. This consideration is recognized freely enough in connexion with most forms of disease, but somehow it appears to need emphasizing when deficiency diseases are under discussion.

In practice there will be, for instance, only very occasionally, complete absence of any one factor from the diet. Usually the deficiency will be partial only, and often this partial deficiency may involve more than one factor. In conditions such as now exist in Central Europe and the Near East the issues must be considerably confused; specific qualitative deficiencies may be superimposed upon general and quantitative deficiency, and the syndromes thereby altered.

It is most important, indeed, to remember that the absence of a specific factor from the food produces results very different from those that follow actual starvation. In the latter case the energy requirements and other demands are met from the tissues, and there is rigid economy of effort and material. Some harmony, too, among all the processes is secured. But when an individual's diet is deficient in, say, a vitamine, he may still be dealing with large quantities of total food. The metabolic machinery may be working at full pressure while nevertheless deprived of some essential wheel or cog.

Another aspect of these same relations is illustrated in the experimental fact that the necessary vitamine supply is quantitatively not independent of the amount of diet as a whole, nor even of its character. Many possibilities will here occur to the mind of those accustomed to think in terms of metabolism. An excess of carbohydrate in the food, for instance, may apparently exaggerate the effect of a deficiency in the fat soluble vitamine: not from any added toxic effect, but because it reduces the consumption of body-fat and therefore the mobilization of the store of vitamine which exists in the fat dépôts. This store, if more rapidly mobilized, would secure delay for a time in the effects of the deficiency in the food. On the other hand, the stimulus to metabolism which is brought about by excess of protein might exert in certain cases an influence in the opposite sense. I must not stop to deal with these considerations any further, but I would like to say that to insist upon them as important in connexion with deficiency manifestations is not camouflage but common sense.

Scurvy.

If there be one clinical condition in which the influence of a deficiency seems obvious, direct, and but little complicated, it is certainly scurvy. The manifestations of scurvy seem to me to provide a bridge between the unequivocal results of experiment and the conditions, more complicated and more difficult of interpretation, which must be admitted to exist in some other cases. For surely the evidence that scurvy is a deficiency disease in the strictest sense seems to be wellnigh unequivocal. The historic certainty that it was intimately related to diet only took on a more definite form when the general idea of accessory foodstuffs arose. This extended the conception of specific functions in nutrition: functions which are independent of energy supply. It brought the antiscorbutic factor into a class. Experiment, which has always the advantage over clinical observation in introducing quantitative methods and permitting of controls, has certainly strengthened the evidence. True, one experimenter thought for a while that his results pointed in another direction; but his case has gone, and I gather that he is himself a convert to the more general view. I do not know any more striking evidence to show that the antiscorbutic substance (if there be only one) is of a special nature, coming under the definition (admittedly incomplete, but not vague) of a vitamine, than the fact that while absent from dry grains it appears suddenly when the grains germinate. But evidence for the deficiency hypothesis has, in the case of scurvy, accumulated of late from the laboratory, from the ward, and from the camp. Some may still look to infection as at any rate a secondary factor in its etiology, but I cannot, as I read the evidence, see any reason for this—except an obsession that some sort of positive factor must be called into account for every disease. I take it that the chief evidence in favour of infection in scurvy is the occasional, if very rare, occurrence of what seem to be acute epidemic forms. It is to be hoped that this evidence will be discussed to-day.

Whether or not there are secondary factors in the etiology of the disease, there is, of course, no doubt about the prime importance of the food factor in treatment. Until laboratory investigations were undertaken, there was no satisfactory measure of the relative richness of various foods in the antiscorbutic substance. The recent quantitative studies at the Lister Institute have yielded results of extraordinary importance in this respect, and will put the therapeutics of scurvy upon a really scientific basis. I feel that every clinician should make himself fully familiar with these experimental results.

Beri-beri.

After scurvy, beri-beri is, I imagine, the disease most generally admitted to be due to a dietetic deficiency, though one reads many courageous struggles against the admission. Although I speak with all the grave disqualifications which attach to one who has never seen the disease, I would like to say a word or two concerning certain published discussions about its etiology. One of these happens to serve as well as any other, and I will refer alone to one which I have read with much respect. Major F. M. R. Walshe has written more than one interesting paper on the subject, but I will deal here with an article of his in the *British Journal of Children's Diseases*, vol. xv (1918). The main contention of the author, with which I have no immediate quarrel, is that, in beri-beri, whatever may be the importance of the vitamine deficiency, a disorder in carbohydrate metabolism, introducing a toxic factor, is certainly associated with the deficiency. This was Eijkman's original view, and it is supported by Funk, Braddon and Cooper, and others. It may be true. It is the character of the argument used in support of the contention (I have met the same argument elsewhere) and a certain aspect of the line of thought involved, which awakens my prejudices.

> "It may be asked," writes Major Walshe, "whether a purely *negative* factor such as the absence of a given good constituent or vitamine can be conceived as the sole direct and immediate *cause* of a disease, in which 'polyneuritis, to mention but a single aspect of the disease, is a predominating symptom.'" And again, "*absence* of vitamine cannot be an adequate *cause* of polyneuritis, which is clearly a positive reaction to a direct and positive cause. A carbohydrate metabolism disordered in consequence of this privation might, as we shall see later, conceivably provide this direct and positive cause.
>
> "The neglect of this principle is very evident in all writings on the deficiency theory of the origin of disease, and in the case of beri beri is the obstacle before which the theory is at present halted. Its application to all presumed deficiency diseases is no less worthy of consideration." (The italics are all in the text.)

I have heard this line of argument so used as to contain nothing but metaphysics, and bad metaphysics at that; but the author I am quoting only means, I think, to point out that an inflammatory tissue-change calls for an irritant. But is the evidence concerning the nerve lesions in beri-beri such as to show that they are not wholly degenerative? It would not be easy to distinguish a degeneration due to the fact that a tissue cell lacks something necessary to its normal nutritive equilibrium from the degeneration changes due to the chronic influence of a toxin. What is observed in the latter case is, after all, in its ultimate issue, a failure of nutrition. There may be a toxic factor even in typical uncomplicated beri-beri, but without direct evidence for it it seems unnecessary to drag it into etiology by the heels. There is with some, apparently, an inherent difficulty in believing that a "negative" factor in the environment can, in any case, induce a set of symptoms—a difficulty perhaps due to the fact that the study of "positive" causes has hitherto been the chief business of pathology.

XEROPHTHALMIA.

Before making reference to a case of greater clinical importance I would like to say a word or two about the so-called xerophthalmia (better called keratomalacia) which is seen in experimental deficiency feeding. It may have no clinical counterpart. I find that the experiences in Denmark of C. E. Bloch are not universally accepted by clinicians as evidence that it has. But the condition as seen in animals raises some points of general interest.

Two workers in my department, Miss M. Stephenson and Miss B. Clark, have recently studied the histology and bacteriology of the condition as displayed by the rat; and we have lately given it closer attention than before.

It is a late result of feeding animals upon food from which the fat-soluble accessory is absent, being usually delayed (in the rat) till about the fortieth or fiftieth day of the deprivation. Its onset is sudden and is first seen as a corneal opacity. The symptoms develop so rapidly that it is not easy to follow their sequence. Often within a few days from the moment when a small corneal change is first noted there is complete panophthalmitis; the cornea may perforate and the lens extrude.

Caught at an early stage the whole process may, as Osborne and Mendel, E. V. McCollum, and others have stated, be wholly arrested by administering butter, cod-liver oil, or any preparation containing the fat-soluble accessory, though in no other kind of way. The cure is a certain and a striking phenomenon. Protection against the development of the condition is apparently given by a very small supply of the special substance; much less (in the rat) than is necessary to maintain growth. Assuming that there is any possibility of a condition with a similar origin occurring in human beings this last fact might account for its rarity.

While there is no doubt that bacterial invasion plays its part in producing the final condition of panophthalmitis, cultures made from the eyes give no suggestion of a specific infection. The eye trouble never occurs in animals normally fed, nor in others suffering from other kinds of food deficiency, even though they are kept in close contact with animals displaying the condition. There is certainly no doubt that the first and essential stage in the whole process is the appearance of abnormality in the corneal tissue, and everything points to the fact that we have before us an instance of a particular tissue showing an exceptionally low resistance to a specific deficiency. Remembering that the corneal tissue, like cartilage, is non-vascular and lymph-fed, I cannot deny myself a belief in the possibility (though it may be remote) that the facts have some bearing upon the etiology of rickets.

The eye symptoms under discussion may begin so suddenly in a group of animals that, were the circumstances unknown, an epidemic due to specific infection would be suspected. There seems no need to suppose, to judge from the phenomena here observed, that the effect of a food deficiency need be (at least so far as observable symptoms are concerned) a slow and continuous process. The visible failure in this or that tissue may occur suddenly at some critical moment, and in a group of individuals similarly fed it may show itself in many at the same time. This should not be forgotten when the occasional occurrence of what seems an epidemic form is used as evidence that a disease cannot be due to deficiency.

RICKETS.

If I now speak of rickets it is with some hesitation and with a sense that the time is not quite ripe for the renewal of a discussion which has so recently been acute. But rickets will doubtless receive attention to-day. Those who believe in the prime importance of defective hygiene in its etiology, and those who at the moment are narrowing down the older dietetic hypothesis to one of a vitamine deficiency, seem both imbued with a firm faith.

Nearly fifteen years ago I myself acquired a bias in favour of a dietetic factor by observing the disease in Venice, where it seemed so frequent in families which, so far as one could discover, never even saw dairy products of any kind. I remain a firm believer in the influence of a specific diet deficiency, at least in experimental rickets as displayed by dogs, because in Dr. and Mrs. Mellanby's experiments I have seen carefully controlled observations showing unequivocal results.

Clinical observations, or, better, so far as they are legitimate, clinical experiments, must doubtless be the final test, and it is clear that great weight must be attached to the recently published work of Drs. Hess and Unger (*Journ. Amer. Med. Assoc.*, 74, 217, 1920), which seem to show that deficiency in the fat-soluble vitamine has little to do with rickets. I trust I have read the account of these experiments without bias. I feel, at any rate, that, though of considerable importance, they fail to set the question at rest. I have not yet seen the results in the statistical form, which would be helpful, and I am struck with the very exceptional constitution of the diet upon which infants were placed when it was intended to create a vitamine deficiency. In respect of the infants developing rickets when upon an apparently normal fat supply no full analysis of the cases is given. A couple of cases only are mentioned in detail. The most striking of these, one in which the child developed rickets upon a very full supply of whole milk, showed at the same time some added abnormality because the generous milk diet (with the addition of spinach) failed to produce growth. It is surely noteworthy that the rickets was cured and growth became normal when at the thirteenth month cod-liver oil was added.

The five children, on the other hand, who did not develop rickets, although their food was presumed to be highly deficient in the fat-soluble vitamine, were given a diet of an extremely high total calorific value, containing, together with a vegetable fat, a very large daily ration of a skim-milk powder. To contrast the nutritive effects of skim milk, fortified with vegetable fat, with those of whole milk, is doubtless a legitimate method of testing the influence of the fat-soluble vitamine so long as both milks are administered in normal amounts. But skim milk is by no means free from the so-called fat-soluble substance. I have experimental evidence to show that highly separated milk contains an amount decidedly in excess of what the residual fat would seem to indicate. When, then, so large an amount as 180 grams of a milk powder, equal to nearly two litres of the original milk, is daily administered, as in Hess and Unger's experiments, to infants aged from four to nine months, the supply of the fat-soluble vitamine is far from being negligible. Valuable as this clinical study may be, I do not think it brings evidence that is final. That more than one factor is concerned in the causation of rickets seems sure. Their relative importance remains yet to be determined.

I find I must not stop to refer to other conditions which are now more or less under suspicion of being deficiency diseases. Others will doubtless discuss them.

Nothing could be more hopeful at the present time than knowledge as to how exactly a given food deficiency acts upon individual tissues, and it is to be hoped that we are to hear, at first hand, some account of Colonel McCarrison's interesting observations. Concerning them I would myself only remark that it would seem to be important to compare the effect of different deficiencies in order to learn what is peculiar to any one.

I have myself seen in animals given a full vitamine supply but deprived of a particular amino-acid—tryptophane, for instance—some effects, especially in the case of various glands, strikingly like those described by Colonel McCarrison.

SIR JAMES BARR, M.D., LL.D., F.R.C.P., F.R.S.E.

FOR anyone in the present day to deliberately say that he does not believe in "vitamines" is tantamount to pronouncing his own anathema maranatha. Be that as it may, I feel that I must approach this subject in a sceptical frame of mind. I believe in accessory food factors, substances which are essential to nutrition and even to life itself, though they have no intrinsic food value of their own. The chemical constitution and physiological effects of such substances are well known, whereas "vitamines," so far as their composition is concerned, seem to be a figment of the imagination.

Sydney Ringer was among the first to discover some of the accessory food factors which are absolutely essential, not only to the maintenance but to the very inception of life. Between 1882 and 1890[1] he performed a series of classic experiments on the physiological effects of the various inorganic constituents of the blood. He showed that for the continuous contraction of the ventricles of the frog's heart the presence of a minute quantity of a calcium salt was absolutely essential. Calcium increases the efficiency of the beat, but delays dilatation.

> The effects produced by lime salts in dilatation, and even the persistent spasm induced by the alkaline preparations, are completely removed by a minute trace of a potassium salt, 1 in 10,000 to 15,000.

The ventricles continued to beat perfectly when supplied with a neutral normal saline solution containing minute quantities of calcium and potassium chloride, and therefore alkalinity of the circulating fluid is not necessary for contractility. The alkaline reaction of the blood is no doubt necessary indirectly for contractility, for muscular contractions develop acidity, and this must give an acid reaction to a neutral fluid, and the heart cannot contract when supplied with an acid circulating fluid.

> Sodium bicarbonate added to normal saline broadens the beat and rounds its summit, and slightly prolongs both contraction and dilatation. Owing to the increased breadth of the beat, if the contractions be frequent, there occurs partial fusion of the beats. Sodium bicarbonate also induces some persistent spasm (contracture) if the contractions be frequent. All these effects of sodium bicarbonate are obviated by a physiological quantity of potassium chloride.

He showed the antagonism between the potassium and calcium salts, and that the presence of both in proper proportions was necessary for regular and efficient cardiac systoles. He also showed that this antagonism between calcium and potassium existed even in toxic doses, though the antagonism was somewhat modified by temperature, as hot weather caused much tonic contraction which was not entirely obviated by the effects of potassium in hastening dilatation. He found that sodium bicarbonate accelerated dilatation without sustaining the contractility of the ventricle, and of the calcium salts the phosphate was the most efficient. He experimented on fishes, and found that the presence of lime in the water was necessary for the maintenance of life.

> I draw attention to the interesting fact that those lime salts most efficacious in sustaining function of cardiac tissue are those best adapted to sustain life in ova and tadpoles; phosphate of lime being far more efficacious than sulphate, and the sulphate somewhat more efficacious than the chloride. It would appear that those salts of lime in which the lime atom is least saturated by the acid are the most capable of sustaining function.

Dr. Ringer, in association with Dr. Dudley Buxton, showed that the effects of the salts of sodium, potassium and calcium on skeletal muscles are somewhat different from their effects on the heart. The contractility of skeletal muscles perfused with normal saline solution lasts longer, but when exhausted there is a great delay in relaxation. The contractions are strengthened and the relaxation delayed by potassium salts; on the other hand, the lime salts accelerate both contraction and relaxation. Personally I have mostly found that patients liable to cramp, especially of the calf muscles, had a deficiency of free calcium ions in their blood, and thus the remainder contraction, so apt to occur in exhausted muscles, is not counteracted by a sufficiency of calcium.

In the present day, when the effects of sodium chloride in the causation of dropsy is so widely recognized, it is worth remembering that Dr. Ringer made experiments on the swelling of laminaria when immersed in water. He found that sodium and potassium chloride retarded but did not lessen the amount of fluid taken up; on the other hand, even minute traces of the chloride or other soluble salt of calcium greatly and persistently restricted the swelling of laminaria. In the treatment of dropsy there should not only be an exclusion of sodium chloride, but a substitution of calcium salts.

The amount of lime salts required for effective cardiac contractions is very small, but the salts must be in free ionizable forms. The more alkaline the blood the less free lime it will hold, and insoluble combinations, such as the carbonate, are readily thrown out of the circulation into the tissues or eliminated by the bowel and kidneys. One of the earliest signs of pneumonia is the great diminution of lime salts in the urine. In cases of advanced arterio-sclerosis I have seen the free lime increased in the blood by putting the patient on a calcium-free diet and administering large doses of phosphoric acid, which set the calcium in the tissues free. There is often an unnecessary quantity of lime salts—you can call them "vitamines" if you prefer—swallowed in drink and food, but fortunately much of this is in insoluble forms, or forms insoluble soaps which are carried off with the faeces. There is also a marvellous provision in Nature whereby the blood does not take up much more than it requires.

In cow's milk there is a huge amount of lime, but fortunately most of it is fixed, and in citrated milk it is not in an ionizable form. On the other hand, in human milk there is not much fixed lime, but there is a relatively large proportion of free ionizable calcium. Long ago I came to the conclusion that it is the fixed lime which is concerned in the viscosity and in the coagulation of the blood; and the free calcium ions are used in muscular contraction. When there is an excess of free calcium ions in the blood the cardiac contractions are apt to become infrequent, slow, but effective, and the left ventricle, owing to its greater muscularity, becomes less irritable than the right; while the rhythmicity of the latter being greater it tends to act in advance, hence we get irregularities, extra-systoles, and intermissions. Of course the potassium and sodium salts play their part.

I would like here to refer to the work of Ralph Mines, whose premature death was a sad blow to scientific medicine. He showed that

> the chlorides, nitrates, and sulphates of lanthanum, cerium, and yttrium (unlike those of aluminium) form neutral aqueous solutions. Such solutions added to Ringer's solution made up without alkali will, when perfused through the frog's heart, stop it in diastole when the mixture contains only a hundred-thousandth, or even a millionth gram molecule of the rare earth in a litre. The effect is very slowly removed by washing out with a neutral Ringer's solution, but the beat is instantly restored by the addition of a little alkali. The close parallel between the action of acids and of the salts of the rare earths on an artificial membrane, and their actions on the living heart seem to have a special significance in view of the strong probability that the rhythmic activity of the heart depends on the relations which obtain between the ions within and without the cells.

I saw an experiment in his laboratory where, on cutting the calcium salts out of the nutritive fluid supplied to the isolated heart, the electric variation preceded the contraction of both the auricles and ventricles, and whether the cause or not of the contraction it began the sequence of events, and therefore could not be the result of the contraction.

Dr. Mellanby firmly adheres to the necessity of the fat-soluble A vitamine for the prevention of rickets, and Mrs. Mellanby thinks it necessary for the development of the teeth. Miss Hume seems to hold similar views. Dr. Mellanby found that the deprivation of this factor could not produce rickets in dogs more than four or five months old; carbohydrates appeared to accentuate the rachitic tendency, while proteins and exercise diminished it. In 1914 Braddon and Cooper, and also Funk, published experiments which showed that when fowls or pigeons are fed on polished rice or starch, with or without a fixed amount of the antineuritic "vitamines," polyneuritis comes on sooner if the proportion of carbohydrates in the food be increased.

All these observations are easily explained without invoking any recondite influence of "vitamines." The acid fermentation of an excess of carbohydrates will saturate the free calcium ions, and even dissolve the calcium already deposited in the tissues. On the other hand, proteins will readily take up a large amount of free acids, and exercise increases calcium metabolism.

In my work on rheumatoid arthritis I showed that an excessive amount of acid, whether taken by the mouth or generated by fermentation of carbohydrates in the stomach, would extract the lime salts from the bones, cartilages, fibrous tissues, and nerves. I have experimentally made my own joints ache and my nerves [illegible] with a free administration of phosphoric acid. In 1913 Professor W. E. Dixon drew my attention to an article on the pathology of chronic fluorine poisoning, by Dr. Fritz Schwyzer. The enormous increase in the output of calcium could be shown directly in man through the analysis of the urine and faeces, and in animals by determining the specific gravity of the bones.

At a discussion on alimentary toxaemia at the Royal Society of Medicine (May 10th, 1913) Professor Dixon said:

> It is true that under certain conditions a kind of toxaemia may be induced from carbohydrate metabolism; for example, in certain conditions of the bowel an excess of lactic acid may be found, leading to an excess of ammonium salts in the urine and some four or five times the normal excretion of calcium; the result may be calcium starvation, of which one symptom is probably joint trouble.

The water-soluble B vitamine in rice polishings is very stable and not easily destroyed by heat, and it should not be more difficult to isolate this "vitamine" from rice polishings than, say, radium from pitchblende. I am not a professional chemist, but I tried to find this vitamine. Working in a small way, the only difference which I detected between polished and unpolished rice was that the latter contained a considerable amount of a soluble phosphate of calcium, which would be much more than sufficient for neuro-muscular activity if the free calcium ions were not destroyed by acid fermentation; the potassium and sodium salts would come from other sources.

It is a long time since I first recognized the value of calcium salts in health and disease. Many years ago I pointed out that you can have too much of a good thing, and, while calcium is essential for neuro-muscular activity, if you wish to think quickly, speak quickly, and act quickly, you should not have too much fixed lime in your constitution. On account of the enormous amount of lime contained in milk I have condemned the too free use of that article of diet except for babes and sucklings.

Dr. McCarrison is quite ready to upset a good many of our cherished ideas. He says:

> The oedema of inanition and beri-beri is believed to be initiated by the increased intracapillary pressure which results from the increased production of adrenalin acting in association with malnutrition of the tissues.

If there be one fact better established than another, it is that adrenalin acts on unstriped muscular fibre innervated by the sympathetic. In the capillaries the unstriped muscular fibre and the sympathetic, if present at all, are at the vanishing point, but the arterioles are well supplied both with muscle and nerves. When the arterioles over a large area are contracted the arterial blood pressure is raised, but in the affected arterioles and their capillaries the lateral pressure is diminished and the velocity increased. In such cases there is a rapid fall in the pressure gradient from the arteries to the veins, and the capillary transudate necessarily diminished. On the other hand, in vasomotor paresis, which is supposed to accompany the neuritis of beri-beri—the existence of which Dr. McCarrison seems inclined to deny—there is a gradual fall in the pressure gradient from the aorta to the vena cava, and consequently a high intracapillary pressure with an increased transudate. The greater the intracapillary pressure the greater the amount of the transudate, but the less its density; hence in anasarca the tissue fluid is of a low specific gravity, but in any exudate, such as chilblains, or an inflammatory effusion, the density of the effusion is high.

The late Dr. George Oliver, in his classic work on the tissue lymph circulation published in 1904, described in scientific language the effects of many auxiliary food factors. He arrived at the following conclusions:

> 1. That the food constituents themselves (proteins, fats, and carbohydrates) do not possess the power of starting the mechanism by which lymph is dispensed to the tissues through the body.
>
> 2. That Nature, however, associates with our foodstuff small quantities of very active substances which bring into play that mechanism, though these substances themselves are practically devoid of food value, and that man frequently increases this natural lymph by the use of salt, and beverages containing bodies which also incite the flow of lymph. Such bodies as uric acid, creatin, creatinin, xanthin, glycogen, and sodium chloride, perform a very important function in health, for among [illegible] distributors of lymph [illegible] an office which the nutrient constituents themselves (proteins, fats, and carbohydrates) are incapable of discharging.

His description of lymph distributors, which were termed by Heidenhain lymphagogues, would answer very well for "vitamines." Lymphagogues are very numerous, very widely distributed, and include all the ionizable salts of calcium, potassium, and sodium. Iodine is the best stimulant of the thyroid, and on this account alone may be termed a vitamine. The same may be said of HCl, which leads to the formation of secretogen and consequent stimulation of the pancreas. The majority of the endocrine glands would come under this category.

I have a very vivid recollection of a Sunday in June, 1892, which my friend, the late Sir Benjamin Ward Richardson, spent with me in Liverpool. We discussed many food factors, including alcohol. Needless to say, Richardson did not consider the latter an essential. It happened that we were both then working at the subject of hydration. I had previously shown that the precipitation of albumin and other colloids was a matter of dehydration, and the greater the dehydration the greater the difficulty in getting the colloid back into solution. Richardson[2] got Mr. Conroy, of Messrs. Evans, Lescher, and Webb, to carry out some experiments on brain and muscle which he was unable to get done in London. He submitted brain and muscle to a pressure of 2½ tons to the square inch, and found that they were both, like water, practically incompressible. On the other hand, when 4 lb. of fresh muscle from the ox were intimately mixed with 4 oz. of common salt and the whole subjected to the same hydraulic pressure the effect was entirely different: "A reddish fluid percolated easily through the cylinder, and 18 oz. of fluid were extracted without difficulty, leaving behind a compact mass of tough, partially dried or compressed, muscular fibre. The fluid or muscular juice contained 10 per cent. of albumin and, on filtration, allowed almost all the saline substance, with some of the albumin, to pass through the filter."

Richardson came to the conclusion that only for the presence of urea and other soluble salts in the blood it would be impossible to have any excretion of urine. He looked upon the water in the blood and tissues as held in loose combination with the colloids, and the crystalloids were the main factors in causing dehydration; just as Oliver showed their influence in lymph distribution.

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[1] *Journal of Physiology*, vols. iii, iv, v, vi, vii, viii, and xi. [2] *The Asclepiad*, 1892.

HARRIETTE CHICK, D.Sc.,

Lister Institute,

As a laboratory worker I should in any case feel very diffident about addressing an audience such as this, and feel even more humble for the reason that, during the last nine months in Vienna, I have seen something of practical medicine and have acquired a very wholesome respect for clinical work and investigation. I have discovered for myself that laboratory research is a comparatively simple and easy matter when compared with clinical investigation. And in our present endeavour to discover the part played by accessory factors in clinical medicine, I feel sure we shall need the best united efforts of both the clinician and the laboratory investigator, working together with mutual forbearance and unlimited goodwill.

I propose to leave to my colleague, Dr. Elsie Dalyell, any description of our clinical experiences in Vienna, but it would perhaps be helpful to the discussion if I stated the general principles of nutrition, gleaned from the results of laboratory work with animals, which we took with us as a guide when we set out to study hunger and deficiency diseases in Austria. We considered it to be a proved fact that for satisfactory nutrition of animals the diet must have an adequate calorie value and must contain a sufficient amount of the following constituents:

1. Mineral salts.
2. Carbohydrates.
3. Fats.
4. Protein, adequate in amount and of suitable nature.

5. Water-soluble or antineuritic (anti-beriberi) accessory factor or "vitamine."
6. Fat-soluble accessory factor.
7. Antiscorbutic accessory factor.

We believed that in the young growing mammal growth could be checked by a deficiency in any one of these seven constituents, although an ample supply of the other six were present. We also had evidence showing that definite "deficiency" diseases could be developed in both young and adult after prolonged deprivation of any one of the constituents 4, 5, 6, or 7. Thus, after deprivation of No. 4 we might expect something like pellagra to develop; after deprivation of No. 5, tropical beri-beri or perhaps some other nervous disorder; after deprivation of No. 6, rickets, osteomalacia, hemeralopia, or keratomalacia in infants; after deprivation of No. 7, scurvy.

I must admit that all this is a diagrammatic representation of the facts, and that our clinical observations during the last few months have not grouped themselves with the exactness of the scheme as I have drawn it. But it is true to say that very often our cases did fall naturally into the places we had prepared for them.

There was another general conception we took with us from the laboratory, and this proved to be perhaps the most valuable guide we had. It was the importance of *quantity* when dealing with accessory factors in nutrition. This idea helped us to a solution of many difficult points encountered in our clinical observations. It is not enough, for example, to know that the "fat soluble" accessory factor is present in a diet; there must be enough of it. This factor can be presented in many different animal and vegetable fats, and to obtain an adequate amount of the vitamine the amounts of these fats would have to be different. Almost any fresh vegetable or fruit can be employed as antiscorbutic in a diet, but the minimal amounts necessary for protection from scurvy will be different. May I quote an example? Some children in our charge were getting 50 grams daily of raw apple juice as an antiscorbutic, and to our surprise began to show symptoms of a kind which we had learned to associate with the first onset of scurvy. We had no exact experimental data as to the antiscorbutic value of raw apple juice; we only knew that it was much inferior to the juice of lemons and many other fruits. We substituted 10 grams daily of raw neutralized lemon juice with excellent results.

Our observations in Vienna, then, confirm us in the belief that foodstuffs must not be labelled as containing, or not containing, these factors, but as containing them in different degrees. This is little understood. Even a physician will assure you that an infant gets "plenty of antiscorbutic" material in its diet of cow's milk, but will be unable to say for how long or to what temperature the milk is being heated. You will be told that a child is getting "plenty of milk fat" in its diet, but be unable to ascertain whether it is receiving 20, 30, or 40 grams daily. Our experience during the last few months has led us to believe that a difference between, say, 25 and 30 grams daily may have an important bearing upon the growth and development of an infant.

In Vienna we found large numbers of abnormal and diseased infants and young children, suffering from scurvy, rickets, and delayed growth and development. There was no deterioration in general hygienic conditions to account for this fact, and we attribute it to malnutrition caused by the state of partial famine obtaining in Vienna. The same state of things prevailed in children at home and also in institutions, where no lack of calories could be detected in the diets provided, but a great deficiency in accessory factors. Shortage of animal and other fats was, perhaps, the most marked defect in the diet of the pregnant and nursing mothers. As regards artificially-fed infants, disorganized transport, necessitating the heating of milk once or even twice before delivery, reduced the antiscorbutic value of the fresh milk available, while partial substitution of milk by sugar and cereals caused a diminution of both "fat soluble" and antiscorbutic accessories in the diet. Severe infantile scurvy was a common occurrence at all times of the year, and rickets was almost universal in infants of nine months and upwards. I will leave Dr. Dalyell to describe some of our attempts to prevent and cure these conditions by supplying accessory factors to the diets.

ELSIE J. DALYELL, M.B. (Beit Memorial Fellow),
Sydney, Australia.

IN our recent work among children in Vienna the following were among the most important features from a medical point of view:

1. An unusual frequency of infantile scurvy, or "Barlow's disease" as it is called in Central Europe. This disorder occurred at all times of the year and in all stages of severity. There were cases showing the severe characteristic symptoms described in all textbooks, as well as many showing no definite symptoms at all beyond general ill health and failure to grow and develop. In these cases the only method of diagnosis lay in observing the effect of adding antiscorbutic material to the diet.

2. Great prevalence of rickets in both breast-fed and artificially-fed children. Marked stigmata of rickets were to be observed at a much earlier age than is usual. In one community, which included many breast-fed infants, rickets was diagnosed in 50 per cent. of the infants at 5 months and in 100 per cent. at 9 months. Accompanying this great increase in general incidence of rickets there was much dwarfism and severe deformity in older children.

3. Marked delay in growth and general development, either with or without the definite appearances of rickets or scurvy.

We confined our attention principally to children in certain institutions where, as the result of much devoted effort, the authorities had succeeded in providing a diet containing adequate calorie value. In these institutions, according to the admirable system still maintained in spite of present difficulties, accurate records are kept of medical history, of the diet, and of the general development of the little inmates. In many cases a study of these records suggested that deficiency of accessory factors in the diet of the child (or of the mother in case of breast-fed infants) might be, at least in part, responsible for the condition. With the co-operation of the authorities we were permitted to try the effect of enriching the diet with accessory factors in cases where it appeared desirable, and we wish to record our thanks to Professor Clemens von Pirquet, University Kinderklinik; to Director Dr. Riether, Landes Zentral Kinderheim, and to Dozent Dr. Moll, Reichsanstalt für Saüglinge, for the facilities afforded us in the institutions under their respective control. The following charts (shown on the screen) illustrate six typical instances selected from a large number, showing the result of adding to the diet antiscorbutic and fat-soluble accessory factors alone or in combination.

Chart 1.—A weight chart showing marked improvement in growth and development of a breast-fed child after addition of 30 grams raw turnip juice and 50 grams of butter daily to the mother's diet. When the treatment was begun the child was 6 weeks old, and had put on only 100 grams in weight since birth. There was no increase in the amount of milk secreted by the mother.

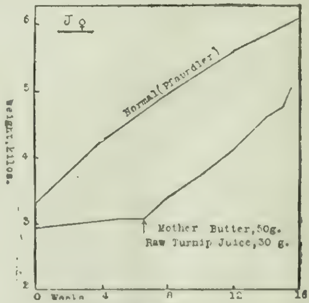

CHART 1.

Chart 2.—A weight chart showing similar improvement after addition of 20 grams of cod liver oil daily to the mother's diet. In this case an increase in the mother's milk presumably caused an increase in calories in the child's food. Treatment began when the child was 5 weeks old and weighed less than 3 kilos, having put on no weight since birth. At 22 weeks, after seventeen weeks' treatment, including also some direct administration of cod-liver oil to the child, it weighed 5.7 kilos, the normal weight for this age being about 6.2 kilos.

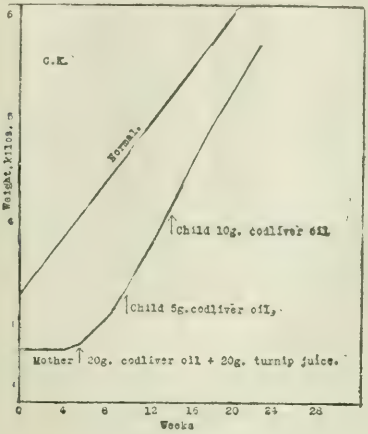

CHART 2.

Chart 3.—The weight chart of an artificially-fed infant of 6 months weighing 3 kilos (4 kilos below the normal), showing great improvement after addition to the diet of 10 grams raw turnip juice and 10 grams (later increased to 20 grams) of butter daily. In this case, owing to other changes in the diet, the child was receiving actually less calories after, than before, the change. After four months of treatment the child weighed 7½ kilos, and was only 2 kilos below the normal for its age.

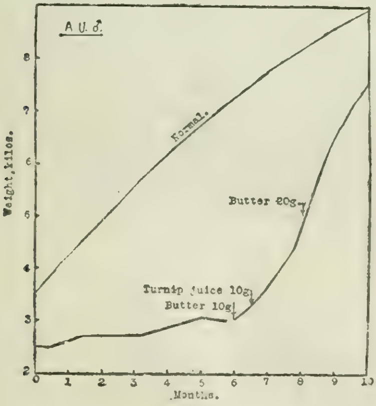

CHART 3.

Chart 4 shows the weight curves of twins who at 8 months were much below normal development and weighed only 4.2 kilos and 3.5 kilos respectively. Both children had been receiving a diet deficient in milk fat. They improved immediately after addition to the diet of butter and cod-liver oil. The diet of the girl contained previously only 10 to 15 grams daily of milk fat. She was a miserable specimen, undersized, lethargic and pallid (haemoglobin 38 per cent.). At the point marked "Eye" on the curve she developed severe keratomalacia of the left eye, similar to that described by Bloch in Copenhagen. After five days, during which the symptoms became progressively worse in spite of local treatment, she received 10 grams of cod-liver oil emulsion and 20 grams of butter daily, raising her daily fat intake to 35 to 40 grams. She promptly began to improve and to put on weight; in fourteen days the eye was normal, and she had put on 300 grams in weight. She remained under observation for two and a half months, and at the end of the period was a jolly rosy infant weighing 5.6 kilos. The haemoglobin had risen to 70 per cent. At the time the treatment was begun the condition of the boy was rather less miserable. He weighed a little more than the girl, and the fat deprivation in his diet had been less severe. There were no eye symptoms. His general improvement after his diet had been adjusted was, if anything, more striking. After two and a half months he had put on 2.8 kilograms and weighed 6.8 kilos. The anaemia had greatly improved. In both cases the additions to the diet involved an increase in calorics.

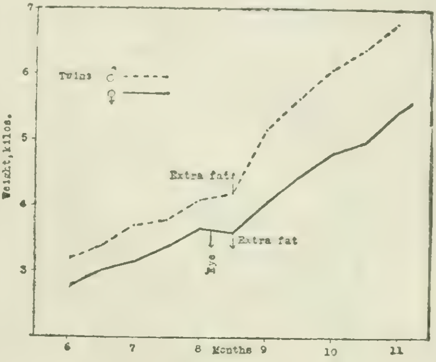

CHART 4.

Chart 5.—The weight curves of twins of 2½ years showing the favourable condition of the girl who had received abundant antiscorbutic and fat-soluble vitamine additions to diet during six months, compared with the ill-developed and rachitic state of the boy whose diet had not been so enriched. (This was further illustrated by photographs.) The treated child in this case showed, in addition to the actual increase in weight, the great improvement in general development, intelligence, muscular tone, and texture of the skin which characterized all the previous cases. In this instance lack of antiscorbutic in the diet seems to have been the important factor in retarding growth. The girl had shown definite symptoms of Barlow's disease at 8 months and again at 12 months (at points marked B. ♀ on the curve); at 13 months antiscorbutic material was given as raw milk and growth began. At 22 months (at AS 2) more intensive treatment was started by giving raw lemon juice or raw turnip juice, together with butter (10 grams, and later 20 grams), and at 26 months 10 grams cod-liver oil was given as well. The boy had shown definite scurvy at 9 months, and the symptoms had persisted until 18 months, treatment with raw milk proving slow and

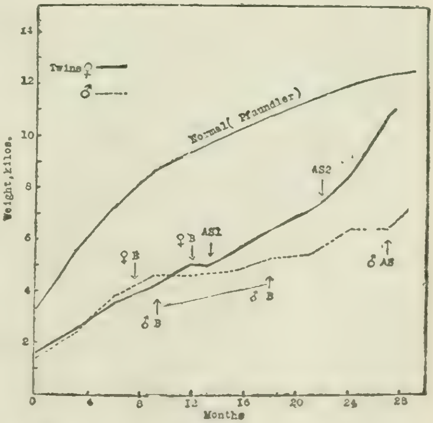

CHART 5.

ineffective in clearing up the condition; during this period of nine months the child had put on only 1 kilo in weight. The upward kick in his weight-curve at the 27th month corresponded to the addition of lemon juice to the diet.

Chart 6 gives the weight chart of a little girl who at 14 months weighed only 5 kilos. The rate of growth had become progressively slower since birth, and from the 6th to the 14th month the increase was only 500 grams. At this point symptoms of scurvy were apparent, and antiscorbutic was introduced into the diet as raw milk. An immediate improvement took place, indicating that the delay in growth during the previous months was to be attributed to lack of antiscorbutic. Raw milk was continued till the 17th month, when the child had put on nearly 2 kilos, and was sufficiently advanced to take a mixed diet.

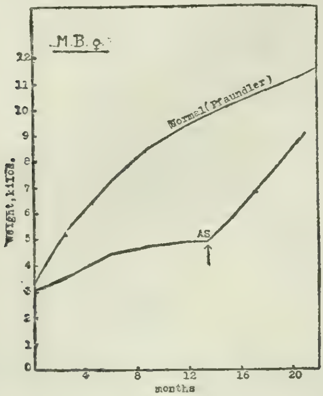

CHART 6.

R. McCARRISON, M.D., D.Sc., Lieut.-Colonel I.M.S.

BEFORE I proceed to relate my own findings I wish to refer to the subject of keratomalacia mentioned by previous speakers. This affection is common in the Madras Presidency amongst ill-fed Indians whose diet is made up of polished rice, vegetable oils and condiments. I recently saw a number of these cases at the Madras Ophthalmic Hospital where Colonel Kirkpatrick, who has been studying the malady, showed me his beautiful paintings of its various stages. He tells me that his treatment consists in the administration of cod-liver oil, attention to the hygiene of the eye, and a more liberal dietary. So that so far as South India is concerned keratomalacia is not negligible clinically.

Sir James Barr has taken me to task with regard to the explanation of oedema production which I gave in one of my earlier papers on the pathogenesis of deficiency disease. I ventured to offer this explanation in consequence of the observation that oedema in pigeons fed on a rice diet was constantly associated with enlargement of the adrenal glands and a corresponding increase of their adrenalin content. He has taken me to task rightly. I was in error, as more extended observation has taught me. My error consisted not in the statement that enlargement with increased adrenalin content of the adrenals occurs in oedematous pigeons fed on autoclaved rice, but in my explanation of the mechanism of oedema production. Yesterday at the Tropical Diseases Section I withdrew this explanation. I do so again. I would crave your indulgence for my error. One must stumble often before one learns to walk.

Yesterday, at the Tropical Diseases Section, I drew attention to the fact that dietetic deficiencies have profound effects on endocrine activity. To-day I have to direct attention to a no less important truth—namely, that "dietetic deficiencies have a profound effect on the digestive organs." Yesterday I emphasized the fact that the effects on the endocrine organs when polished rice formed the basis of the dietaries were due to the action of four factors acting in varying combinations, according to the quality of the deficient food. These factors are:

1. Deficiency of vitamines.
2. Deficiency of suitable protein.
3. Disproportionate values of starch or fat or both.
4. The fortuitous occurrence of pathogenic agents in the body.

To-day I would again emphasize the same fact. When, for example, a dietary such as one composed of autoclaved rice, butter, and onions is used, it is deficient in B vitamine, in suitable protein, and disproportionately rich in starch and fats. The effects of this dietary are thus due not to one defect alone but to three, and there is often superadded to these the action of such pathogenic saprophytes as may happen to be inhabiting the gastro-intestinal tract at the time of the experiment. Now, such a dietary as I have just mentioned is comparable in its composition, and therefore in its effects, to one used largely in this country—namely, a dietary of white bread, margarine, and jam, with a paucity of meat and fresh vegetables. I hold, then, that the effects I have observed in wild monkeys under experimental conditions are applicable in kind if not in degree to the human subject subsisting on such deficient and ill-balanced foods. With your permission, Sir, I shall illustrate these effects on the screen.

[Colonel McCarrison then demonstrated a number of slides on the screen, including those in the special plate published on June 19th last to illustrate his British Medical Association lecture on deficiency disease.] In general, he continued, the symptomatic manifestations of dietetic deficiencies are: (1) Dilatation of the stomach; (2) indigestion; (3) deficient action of the liver and pancreas; (4) air-locks in the small intestine; (5) impairment of the neuro-muscular control of the gastro-intestinal tract; (6) a tendency to intussusception and to the formation of gastric ulcer; and (7), above all, colitis (which in the presence of the specific organism may be a true dysentery). Let me remind you that not every case will present all these symptoms at one and the same time; one part of the digestive apparatus may be more severely affected than another, and thus the predominant symptoms will be those of the organ most seriously affected.

The evidence I have to present is of such a character as to convince me that we have in it an indication of the causation of that great mass of ill-defined gastro-intestinal disorder which throngs our clinics, and concerning which we have hitherto known little or nothing. Clinical experience alone can decide how far I am justified in this belief. I submit that such of my findings as are applicable to the prevention of disease and to the relief of human suffering may forthwith be applied to these ends, while those that may prove to be inapplicable may be discarded.

Professor A. F. HESS, M.D.,
New York.

IT is a great pleasure and privilege to participate in a discussion with so many who have, during the past few years, contributed largely to our knowledge of the vitamines. I was extremely interested to learn from Professor Hopkins's paper that the fat-soluble vitamine is destroyed or greatly diminished by oxidation. Recent experiments with the antiscorbutic vitamine seem to show that this factor also is lessened by oxidation. If milk or neutralized canned tomato juice is shaken for about half an hour, it will be found that it is not as potent as similar material which has not been shaken. This fact may well have practical and clinical importance. In the course of some observations made a few years ago, it was evident that milk pasteurized by simple heating had not lost its potency to nearly the same extent as milk which had been commercially pasteurized for the same length of time and to the same degree. The commercially pasteurized milk undergoes considerable "handling"—it frequently courses through a long series of pipes, is thus agitated while warm, and exposed in a thin surface to the air. A distinction must therefore be drawn between the pasteurization or heating of milk and pasteurized milk; the difference must be borne in mind in interpreting laboratory experiments of this kind. The fact that scurvy made its appearance in France and in Switzerland only when the so called *lait fixe* or *homogenisé* was introduced—milk which was warmed and then forced rapidly between metal plates, in order to break up its fat globules—is instructive in this connexion, as illustrating how readily this tissue is damaged by handling.

Dried Milk.

I should like to say a few words concerning dried milk as it is used so extensively in this country, and because I am not quite in accord on this question with some of my English colleagues. In my experience milk may be dried by the well-established Just-Hatmaker process, and nevertheless lose almost none of its antiscorbutic vitamine. As shown years ago by Barlow, one pint of raw cow's milk is required daily to prevent the development of scurvy in an infant. It may be added that about the same amount of human milk from a woman on a liberal and varied diet is needed. In regard to dried milk, Dr. Nuger and myself some time ago cured two cases of scurvy with 3 oz. a day, the equivalent of 24 oz. of fluid milk, and kept the infants on this diet for several months without any recurrence of symptoms. Recently we have cured an infant of scurvy with 2 oz. of dried milk a day, the equivalent of one pint of fluid milk, and this milk has been dried and canned for over six months. The result depends upon the kind of milk used, not only on the process of desiccation but on the nature of milk employed and the manner in which it has been handled. The milk must have been obtained from cows receiving a liberal ration of antiscorbutic fodder, it must have been dried quickly (soon after it was obtained), and then have been well sealed, preferably hermetically. The same individual distinction should be made between dried milks as between other antiscorbutic foods. For example, a vegetable may be rich or poor in the antiscorbutic factor according to whether it is old or young, whether it has been recently plucked or allowed to age. Recent tests have shown that even the degree of maturation is not immaterial—that ripe tomatoes contain more of this vitamine than those which are not completely ripe. It may well be that the soil upon which vegetables grow is also a factor. It is clear, therefore, that it will lead to error if we regard foodstuffs as chemical entities from the standpoint of their vitamine content. The potency of dried milk is of particular interest from a theoretical viewpoint. As you know, the antiscorbutic vitamine is peculiarly susceptible to physical and chemical influences—to heat, drying, ageing, alkalization. But in this instance we find that despite the heating, drying and ageing—in a medium which is neutral or slightly alkaline—the vitamine suffers little deterioration, thus demonstrating that we cannot generalize as to the effect of desiccation or other processes on these elusive unidentified factors.

Rickets and Scurvy.

In turning to the question of rickets, I wish to preface my remarks by stating that the amount of dried skimmed milk employed by Dr. Nuger and myself in the tests cited by the Chairman was 40 to 50 grams, and not 180 grams. I am sorry there should have been an error in this particular. The milk was given diluted ten-fold, which would have made the daily amount 1,800 c.cm. had 180 grams been given, a volume which babies three to six months of age obviously could not consume.

Cases of rickets are rarely diagnosed as scurvy, but I fear that the reverse does not hold true, and that many instances of mild subacute scurvy are regarded as rickets. This is due largely to the fact that beading of the ribs, the well-known "rosary," has been, and is, regarded as a pathognomonic sign of rickets. In point of fact, this sign occurs with great frequency in early scurvy. That the beading, in fact, is scorbutic is evidenced by its yielding to antiscorbutic but not to antirachitic therapy. We have the counterpart of this lesion in guinea-pigs in the so-called "pseudo-rachitic" beading, which has been described so frequently.

One of the most important questions is: What constitutes a rachitic diet; on what food do infants develop rickets? Recently I followed the welfare of a group of institutional infants who for many months received exclusively sweetened condensed milk, averaging about 4 oz. a day, the older children being given cereal in addition. They were about 3 to 12 months of age, were examined carefully each month, radiographed at the same intervals, were weighed daily, and measured every two months. Much to my surprise this supposedly typical rachitic diet produced almost no rickets. In the light of this experience it is difficult to interpret the current opinion as to the rachitic effect of condensed milk. It is quite possible that the changes which in this connexion have been taken for rickets have been those of mild scurvy. Perhaps condensed milk (just as dried milk) may vary in its constituents, and must not be regarded as a uniform product.

The diet which has led to rickets most regularly in the infants under my observation has been "protein milk" (orange juice also being included in the dietary). This milk has been prepared by precipitating the curd from buttermilk by means of heat and then reuniting it with some of the whey, so that the final mixture contains about two parts of curd to one of whey. To this mixture 4 oz. of 20 per cent. cream is added and carbohydrate in the form of a dextrin and malt preparation. This "protein milk" has led to rickets in about 75 per cent. of the babies, as shown by *x*-ray and clinical examinations. The food contains about 3.5 per cent. protein of good quality, 2.6 fat, and 7 per cent. carbohydrate. Its total ash lies midway between that of human and of cow's milk, as does its calcium and its phosphorus content. Its sodium content is even higher than that of cow's milk; its fat-soluble vitamine is sufficient to protect rats, its water-soluble vitamine is low. Further series of tests will be required in order to interpret the underlying cause of this peculiar reaction.

It seems evident from the experiments of Mellanby that the fat-soluble vitamine plays a part in the pathogenesis of rickets, but its part is not as predominant or specific as that of the antiscorbutic vitamine in relation to scurvy. Nor does a lack of adequate protein or an excessive amount of carbohydrate in the dietary explain this difference. There are other important factors which determine whether or not rickets will develop. The inter-relation of the salts seems to play an important rôle. That, however, rickets is primarily a dietetic disorder I firmly believe.

Happily we possess an excellent prophylactic and curative remedy for rickets in cod-liver oil, so that we do not need to stand still but can go straight ahead and protect or cure infants, as if we understood the etiology of the disorder. Cod-liver oil—given in full dosage and not rendered impotent by excessive refining or various additions—is almost a specific. Even at the present time stations can be established in conjunction with child welfare centres, where cod-liver oil can be dispensed, especially in the large industrial cities where this disorder is so rife.

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MEDICINE is indebted to biochemistry (and may I couple therewith the name of Professor Hopkins?) for the extremely important conceptions of the vitamine as an essential factor of health. That certain diseases are due to particular deficiencies in the food has been common knowledge amongst clinicians for at least thirty years. Writing thirty-one years ago Sir Thomas Barlow stated categorically that the cause of infantile scurvy was "a deprivation of fresh food"—in modern phraseology, that it was "a deficiency disease," and he insisted on the need for fresh milk, potato, orange juice, and green vegetables in its treatment, and in regard to adults the same was known much earlier. With reference to rickets, the late Dr. W. B. Cheadle wrote as long ago as 1897: "Of the three elements of food the imperfect supply of which is found to be associated with rickets, fat is probably the most frequently, if not invariably, deficient." The "deficiency disease," therefore, is no new idea, but what is new is the conception that there exists a group of hitherto unrecognized constituents in food—the vitamines—that these play an important part in nutrition, and that certain diseases are due to deficiency of these constituents. Obviously, these propositions are intimately related to clinical medicine, and I believe the biochemists would be the first to admit that their investigation might be greatly helped by the closer co-operation of the clinician.

Perhaps even the problems which the clinician can propound may have value for the laboratory investigator, and I shall venture to mention some in connexion with a disease which has specially interested me, namely, infantile scurvy.

There is an obvious difficulty which meets the clinician constantly in connexion with the etiology of scurvy. An infant is brought with severe scurvy; he has been fed upon a particular patent food for several months, and it is pointed out to the mother that the patent food has produced this condition. Her immediate reply is, "But I have fed my other children on exactly the same food, and they were perfectly healthy."

Assuming the facts are correct—and so far as I have been able to ascertain they are—what is the explanation? I have none to offer.

Does the infant start with a certain capital, so to speak, of vitamines inherited from his mother—a capital which can be replaced or supplemented only by further introduction of ready-made vitamine from the diet, so that failing any such income the infant lives on its capital and keeps up appearances for a time, but sooner or later becomes bankrupt so far as vitamines are concerned? There would be strict analogy in the behaviour of the thyroidless cretin, who shows no evidence of cretinism at birth, but begins to show symptoms only when he has used up the thyroid secretion which he has inherited with his mother's blood, and this may not be until some months after birth.

If this were so one would expect that when the mother has been taking during pregnancy an ordinary diet containing the average amount of vitamine, a certain more or less fixed period would elapse before symptoms of scurvy would appear in the infant, however scorbutic his diet; and it would be conceivable that if the pregnant mother had lived on a diet very deficient in vitamines—a rare occurrence in this country—her infant fed on a scorbutic diet might develop scurvy at an earlier date than we usually see.

Amongst 116 cases of infantile scurvy which have been under my own observation, the earliest onset was at the age of 5½ months, and there were only three others in which the symptoms appeared as early as 6 months. Out of 100 cases in which the onset could be accurately dated, 80 began between the ages of 6 and 10 months, and 45 began in the eighth or ninth month. Of the 4 cases which began so early as 5½ to 6 months of age, 3 had been fed from birth upon a patent food or condensed milk, and the remaining one had been fed for a few weeks upon a milk mixture, and the remainder of the time upon humanized milk sterilized by superheating.

But I could quote many other cases in which, although the feeding was from birth apparently just as scorbutic, the symptoms of scurvy did not appear till 8, 9, or 10 months of age; and I could mention others again, with feeding equally scorbutic, in which scurvy did not develop at all. Have these infants inherited an unusually liberal supply of vitamines from their mothers? or is it possible that individuals vary so largely in their vitamine requirement that one can eke out a given quantity of capital much longer than another? That there is some such variation of individual requirement of vitamines is suggested by clinical observations on the prophylaxis of infantile scurvy. Professor C. J. Martin states that, according to clinicians, 1 drachm of fruit juice (he is speaking of lemon juice) per diem is "not more than a minimum" prophylactic dose for an infant of 6 months. Amongst my cases of scurvy were several in which much more fruit juice than this had been given regularly for months without preventing the appearance of scurvy. For instance, an infant who had been fed on a patent food (one consisting of dried milk combined with completely malted cereal and prepared by mixing with water) had 3 teaspoonfuls of grape juice daily from the age of 2 months, and at 10 months old developed pronounced scurvy. Another who at the age of 6½ months showed scurvy, had been fed on a highly scorbutic patent food (one consisting of partially malted cereal combined with an active digestive ferment and prepared by mixing with milk and water), and in addition had had the juice of half an orange, estimated by the mother at nearly 1 oz. daily, since the age of 3 months. Another who at the age of 9½ months developed scurvy, also on a highly scorbutic food, had been having regularly for months the juice of half an orange one day and ½ oz. of raw meat juice instead on the following day.

Such cases no doubt are exceptional, but I have notes of others like them, and they suggest that some individuals require a larger intake of vitamines than others for the preservation of health.

There is, however, an obvious criticism of this suggestion—namely, that the variation may be in the degree of vitamine deficiency in the diet supplied rather than in the individual receiving it. At present this can only be answered in a general way by the clinical observation of large numbers of cases, which has shown that certain foods figure much more frequently in the history of infantile scurvy than do others; and upon a given food of what I will call "high scorbuticity" one infant will not develop scurvy if a drachm or two of fruit juice is given daily, whereas another on the same food develops scurvy when three or four times this quantity of fruit juice is given. But along with the statement that one to two drachms of fruit juice daily has apparently prevented the onset of scurvy it should be remembered that some infants on an equally scorbutic diet for an equal period do not develop scurvy at all in spite of having no fruit juice or other antiscorbutic.

At present one waits on the biochemist for the possibility of stating the exact value of any particular food in units of vitamine; when we are able to do this we shall have a means of exact clinical investigation and treatment which at present we lack.

There is another possible variant—namely, in the prophylactic itself: are fruit juices or vegetables always equally rich in vitamine? May not the kind of orange, for instance, or its degree of ripeness, or possibly even the soil in which the potato was grown, have some influence on its vitamine content? If vitamines are contained in the blood, and in cattle as well as in man vary in quantity according to the feeding, may not raw meat juice, may not fresh milk itself, vary considerably in its vitamine value? These are all questions to which we clinicians urgently ask for an answer.

There can be little doubt that the degree of scorbuticity—or, if you will, the vitamine deficiency—differs greatly in different infant foods. Judging from clinical experience one would say that some patent foods which are given mixed with fresh milk produce a mixture actually more deficient in vitamines than a dried food which is simply mixed with water. There are, for instance, two well known foods which consist of partially malted cereal and an active ferment, and on being mixed with warm milk the ferment comes into action, so that a digestive process takes place in the preparation of the food; such foods are especially productive of scurvy, although fresh milk is used in the preparation.

Professor Hopkins mentions the destructive effect of oxygenation on vitamines—clinical evidence of this was recognized years ago, when so-called "buddized milk" was introduced. The milk (according to Dr. G. S. Fowler of Edinburgh) was warmed to 122° F., with hydrogen peroxide added: the result being oxygenation of the milk and destruction of bacteria. It was found that milk treated in this way was scorbutic.

The heating of milk just to the boiling point, without prolonging the heating, may diminish but does not apparently altogether destroy its antiscorbutic vitamine so far as can be judged from the fact that although boiled milk is one of the most frequently used foods for infants it figures only rarely in the diet of scurvy (only twice in 64 cases).

It has been generally supposed that the antiscorbutic vitamine is easily destroyed by heat; in curious apparent contradiction of this view is the powerful antiscorbutic effect of potato after being thoroughly cooked. One of the most rapid cures for infantile scurvy is floury baked potato, which is given beaten up with the infant's food. If there is a difference between foods in this respect it may, I would suggest, depend not merely on the amount of vitamine present, but upon the manner in which the vitamine is contained in the food; one can imagine, for instance, that the vitamine may, to borrow a chemical phrase, be in looser combination in one food than in another, and so may be more exposed to destruction by heat.

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IT is very difficult to discuss with patience the views of those—so gently referred to by the opener—who hold that a deficiency cannot give rise to disease. I am neither so patient nor so polite as Dr. Hopkins, and I have no hesitation in saying that such an attitude is both stupid and ignorant. Stupid because it displays a complete lack of imagination, and ignorant because it ignores ascertained and demonstrable facts. Is not myxoedema a deficiency disease, and Froelich's syndrome, and many another? That the *minus* in these cases happens to be an endocrine *minus* instead of a dietetic, makes no difference to the general principle that the lack of defensive essence is just as potent a producer of disease as the presence of an invading toxin. I am indeed here to carry this argument a step further by declaring that all disease—or nearly all—depends not so much upon the presence of a *plus* as upon the absence of the *minus;* to contend that were it not for the poverty of the soil in defensive essences the weeds of disease would never grow. That these defensive essences are supplied by the vitamines, whether acting directly upon metabolism or indirectly as hormones, I cannot see any reason to doubt.

Let us take a broad view of the question and state the problem in some such terms as these: Here is a community of civilized individuals whose members to the extent of about 85 per cent. suffer chronically, from the cradle to the grave, from diseases and disorders of the bucco-gastro-intestinal tract. They suffer from dental caries, adenoids and tonsils, dyspepsias, pancreatic and hepatic disorders, appendicitis and constipation, and the long tract is dotted and punctuated with malignant disease. What is the cause? Now, if I were to state this problem to anyone present or to anyone with any scientific training I venture to say that his instant reply would be "Inquire into the dietetic habits of this community, and correct some error which must be staring you in the face."

Now, I said that the community was civilized, and I want to emphasize that word. I ought perhaps to say hypercivilized. At any rate the community has travelled far from its primitive state, the state in which it knew not the cooking stove, the state in which it subsisted upon fruits and roots and herbs in their natural conditions, the state of animal and physiological efficiency which enabled it to evolve from brute beasts which had no understanding to the condition of being possessors of the earth and everything that's in it.

Now if we know anything of vitamines we know them to be contained in uncooked foods and absent relatively from cooked. And we know, too, that our community lives upon a diet from which uncooked foods are carefully excluded. They boil their milk, they steam their vegetables, they stew their fruits. And they do these things from a combination of fear and pleasure. Against the pleasure side of the account I have nothing to say. I confess to eating cooked foods, but I eat cooked foods for the same reason that I imbibe alcoholic drinks and smoke tobacco—namely, because I am base and material and vulgar enough to enjoy them. But I am not so foolish as to suppose that any of these things do me good. The best I can expect from them is that they shall do me no harm. When they have done me the harm which I have deserved I return with prayer and fasting to primitive methods, and in sackcloth and ashes I live for a period on dairy produce and uncooked vitamine-containing fruits and vegetables.

Fear is always a stupid counsellor, and when it masquerades as a scientific gent it is dangerous as well as stupid. The present dietetic scheme of our community has been dictated by fear and furbished by stupidity. The fear is the fear of the microbe. Now, it is obvious to any one who will trouble to give the matter a moment's thought that the microbe becomes formidable only when he is furnished with a soil which is favourable to his development. If we offer him a soil which is inimical he will languish and die. He may put up a fight and cause us the inconvenience of an acute disease, but so long as our soil is really inimical he cannot cause us a chronic disease. The most favourable soil for his purposes is the soil which is deprived of vitaminous foods. If you will carry your mind back you will realize that we seldom heard of rickets, and never of adenoids and appendicitis, until we began boiling our children's milk and opposed our puny wisdom to the ingestion of raw fruits and vegetables. It is now admitted that a large part of the digestive processes are performed by bacteria. If all the bacteria are destroyed by cooking in a holocaust of brutal impartiality, where are the reinforcements of our effectives to come from? It is therefore not only our vitamines which are destroyed by cooking, but our other vitalizers. In our insane fear of our enemies we slaughter our best friends.

Now this intensive vitamine dietary, the exclusion, that is, of all cooked foods and drinks, is extraordinary efficacious therapeutically. It not only assists other forms of treatment by improving the soil and reinforcing the defences, but it is of itself positively curative in most forms of chronic disease. The wonders which it works in what for want of a better name I may call the rheumatics, or middle-aged arthritis, are no less wonderful than the wonders of thyroid extract in myxoedema. In diseases and disorders of the intestinal tract, including gastric and duodenal ulcer, its results equal anything in therapeutics with which I am acquainted. Under its influence constipation and intestinal stasis completely disappear, and with them the host of maladies and symptoms to which Arbuthnot Lane has called attention. If I may argue from two cases, one of twenty years' standing and one of five, it not only causes the complete disappearance of sugar from the urine, but the re-establishment of seemingly perfect health, objective and subjective.

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DR. CORRY MANN said that his contribution to the discussion concerned "rickets." For some seven years prior to the war he had been watching the swinging effects produced upon the diet of working-class families by variations in wages in a district where casual labour was constantly present. In 1914 he was asked to undertake work for the Medical Research Committee in the form of a study upon the relationship of environment and rickets. A preliminary report was sent in bearing upon 330 cases which had been collected during the years 1908 to 1914, and so far as the work had then proceeded dietetic factors seemed to be more important causes than those of housing. The work was discontinued owing to the war, and in the meantime the interesting report of the Glasgow workers, headed by Professor Noël Paton and Dr. Leonard Findlay, appeared (Special Report No. 20, Medical Research Committee), and also the stimulating and conscientious work of Dr. Edward Mellanby at Cambridge.

Dr. Corry Mann has now taken up the work again in London, and 1,000 cases of rickets, with 250 controls of healthy children living in the same district, are being collected. In view of the importance attributed in Glasgow to housing factors, every home is studied with great care, and complete details of home conditions, wages, occupation, married women's labour, casual labour, locality, number, size, and situation of rooms are noted and confirmed by expert visitors. The cases are being collected during eighteen months, in order that wage and housing factors may remain constant as far as is possible, and the clinical progress of the cases is noted during that time.

About 400 cases of rickets and 100 controls have been collected so far from the out patient departments of the Evelina and Guy's Hospital, and from several infant welfare centres, mostly situated in the South London riverside districts. So far as the investigation has proceeded, housing factors do not appear to be of primary importance. Controls and rachitic children are living side by side under the same conditions. Very little "moving house" has occurred.

The cases of rickets fall into the following groups:

	Per cent.
1. Fat deficiency and fat deficiency with carbohydrate excess	44
2. Breast feeding. Poor breast milk; prolonged breast feeding, mother receiving [illegible] or poor food, for a variety of causes	16
3. Finance.—Casual labour factors, married women's labour, unemployment; [illegible] wages to meet increasing size of family, etc.	13
4. Diathesis.—Evidence of rickets, well marked, still obvious in one or both parents. These cases do not seem to be influenced by the presence of adequate animal fat in the dietary	8
5. Carbohydrate excess	6
6. Premature children	4
7. Gastro-intestinal catarrh, recurrent or chronic ...	4
8. Queries. Causes as yet unexplained	3
9. Post-infective malnutrition	2

It is worthy of note that during the fall of last year (1919) when the price of fresh milk rose from 8d. to a shilling per quart, at least 50 per cent. of the families under observation stopped buying fresh milk. The investigation is proceeding.

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My contribution to this discussion will be limited to the deficiency diseases scurvy and beri-beri. The present position of vitamines in clinical medicine appears to call for the following considerations:

I. Are the animal experiments which have been so carefully and exhaustively worked out to be admitted as applicable to man?

II. Has the theory of the importance of vitamines or accessory food factors in a daily dietary been conclusively proved by clinical observations on a sufficiently large number of patients suffering from diseases due to a definitely proved absence of these accessory food factors?

III. Has the theory been established from the point of view of the prevention of deficiency diseases by the addition to the dietary of vitamine-containing articles where previously, owing to their absence, these diseases had occurred?

IV. What are the applications of the vitamine theory in clinical medicine?

I.

It will, I think, be generally admitted that, as regards animal experiments, the causation of scurvy or symptoms analogous to it in guinea-pigs, monkeys, etc., are applicable to man with certain reservations as regards the degree of susceptibility to scurvy of the type of animal experimented upon. Likewise with regard to beri-beri the causation of polyneuritis in pigeons, fowls, rats, etc., by dietaries deficient in the water-soluble B factor are applicable to beri-beri in man with similar reservations. The animal experiments in question have been of the greatest value in placing the etiological causes of scurvy and beri-beri on a scientific and quantitative foundation, and it must be added that similar animal experiments where not the causation of the disease but its prevention or cure by the addition of certain articles containing the necessary vitamines have been of equal value in furnishing a scientific proof.

II.

The proof that scurvy and beri-beri are definitely caused in man by diets consumed over a long period which are deficient in the necessary vitamines must be admitted as having been conclusively established.

Scurvy.

The interesting records of the British navy, of Polar expeditions, and of recorded long voyages at sea—accounts of some of which are given in the admirable Report of the Medical Research Committee, No. 38—furnish, in the light of present-day knowledge, proof of this. The history of the war furnishes perhaps the most conclusive proof. The Mesopotamian campaign was one in which scurvy and beri-beri occurred to greater extent than in any other. Owing to the intense heat and to the difficulties of transport in that country the provision of supply of fresh vegetables or fruits to the troops in the fighting area was impossible during a long period. As a consequence a most serious outbreak of scurvy occurred in the Indian troops in 1915 and 1916. In 1916 from July 1st to December 31st over 11,000 cases occurred. These men were having a ration which, as regards calorie value and protein, fat, carbohydrate, and mineral salts content, was more than adequate, but which was entirely free from antiscorbutic vitamines. As a result of this scurvy developed in alarming degree. The characteristic symptoms of anaemia, depression, debility, hyperplastic haemorrhagic changes in the gums, haemorrhages into muscles, oedema, subperiosteal haemorrhages, scorbutic diarrhoea, and other symptoms occurred in a large number of men.

As soon as it was possible to issue in the daily ration articles containing the necessary accessory food factors, such as fresh vegetables and fruits, the epidemic of scurvy rapidly disappeared. A similar result occurred in hospital cases of scurvy where the defect in dietary deficiency could be remedied. British troops were practically exempt from scurvy in consequence of a liberal allowance of fresh meat, which Indian troops, in consequence of racial prejudices, could not avail themselves of. Another reason was that the British arrived in the country well protected against scurvy, while Indians often arrived in Mesopotamia on the borderland of scurvy.

In Northern Russia scurvy likewise occurred amongst the Russian prisoners and civil population in 1919, due to the same causes.

Isolated epidemics occurred amongst native labour corps in France from similar causes.

Beri-beri.

It has been conclusively proved on numerous occasions that epidemics of beri-beri have occurred in rice-eating peoples, where the dietary has consisted mainly of polished rice from the grains of which the germ and aleurone layer have been removed, these constituents being the vitamine-containing portion of the grain.

In Mesopotamia the British troops were supplied with white flour which was deficient in necessary vitamine in consequence of the removal of the germ and aleurone layer in the milling of the flour. As a consequence of this cases of beri-beri occurred. During 1915 and the first half of 1916 the diet of the British soldier was generous as regards protein fat and carbohydrate content and mineral salts and calorie value. It was, however, greatly deficient in substances containing the water-soluble B factor, or anti-beri-beri vitamine, and, in consequence, cases of beri-beri appeared, particularly in men exposed to hardship and heavy work.

The Indian soldier remained immune from beri-beri since the main part of his dietary consisted of "atta," a coarsely ground wheat flour containing the germ and aleurone layer of the grain, and therefore rich in the necessary accessory food factor. A further source of the water-soluble B factor was the daily allowance of 4 oz. dhall (small lentils either whole or split).

Beri-beri was manifested by muscular weakness, multiple neuritis, and symptoms of cardiac dilatation, such as dyspnoea, swelling of the legs, etc.; they formed a characteristic clinical picture.

In the case of both scurvy and beri-beri it has often been observed that, given a certain vitamine deficiency, excessive hardship and fatigue will act as additional predisposing causes and accelerate the onset of the deficiency disease. In the treatment of patients suffering from some disease, such as enteric, dysentery, or jaundice, requiring a liquid diet, should the diet consist of sterilized foods, such as tinned milk, bovril, etc., as was often the case in Mesopotamia and the Dardanelles during the war, it was remarkable how quickly the early signs of scurvy or beri-beri might develop. Such dietaries always need supplementing with articles containing the necessary vitamine—for example, fresh orange juice, fresh lemon juice, raw egg, marmite, etc.

III.

The proof that deficiency diseases, when occurring amongst men on a ration scale deficient in necessary vitamines, can be prevented by the addition of articles containing these vitamines, must be regarded as definitely established. The history of epidemics of scurvy and beri-beri during the war affords conclusive evidence. For example:

In Mesopotamia scurvy was quickly stamped out from the army when the regular issue of fresh vegetables, fruit, and fresh meat became possible for all troops. Likewise beri-beri in British troops ceased to exist when the ration scale contained such articles as oatmeal, lentils, marmite (extract of yeast), and bread made with a certain proportion of whole-meal wheat flour or atta.

IV.

The Application of the Vitamine Theory to Clinical Medicine.

Since a dietary in which the necessary vitamines are practically absent will, if consumed over a long period, produce the grave symptoms associated with scurvy or beri-beri, so it may be confidently assumed that diets deficient to a certain degree may be followed by clinical symptoms of illness.

The extremely interesting and important researches of Lieut.-Colonel R. McCarrison have shed quite a new light on the influence of vitamines in nutrition, and our conception of the action of these accessory food factors has become greatly enlarged in consequence. It appears that vitamines have a wide-reaching influence on all the organs of the body, and that the functions of the endocrine glands, of the gastro-intestinal tract, the heart and nervous system, etc., are powerfully affected. Absence of vitamines in the dietary of an animal causes marked changes in practically all the bodily organs; thus, colitis, entero-colitis may be early symptoms, and marked changes may occur in the suprarenal glands, for example, if the dietary is deficient in antiscorbutic or antiberi-beri vitamines.

It seems certain that these views are applicable to clinical medicine in man. In cases of malnutrition, whether due to a defective diet or to some chronic disease, such as sprue, chronic colitis, dysentery, etc., it is most important that the dietary should be most liberal as regards vitamine content, and the articles of the dietary should be specially selected from the point of view of high vitamine value. Also it should be borne in mind that in such cases, since the secretions of important organs such as the pancreas and liver are often profoundly affected, the addition of appropriate remedies to the dietary, such as pancreatic extract, liver soup, etc., will often materially benefit the patient. It must be remembered that vitamines have not only an important action on the general nutrition of the body but they also have a reaction on the functions of the important secretory glands, and when these functions are impaired, due probably to actual pathological changes, a diet rich in vitamines will have a markedly beneficial effect in stimulating the repair of the damaged organs and their impaired functions.

In the diet of infants or of patients of any age suffering from diseases associated with malnutrition, such as colitis, chronic dysentery, sprue, coeliac disease, chronic diarrhoea, and gastro-intestinal diseases generally, the best clinical results will be obtained by a judicious selection of a diet which is not only suitable for ready absorption in the individual case but which is rich in all the important accessory food factors. Success has already been achieved in the production of certain preparations rich in vitamines which may conveniently be added to the dietaries of the sick—for example, marmite; extracts of rice germ and polishings, as used in the Philippines; extract of raw egg yolk; fresh juices of raw fruit and vegetables (for example, fresh lemon juice or turnip juice), and other preparations containing antiscorbutic vitamines.

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RECENT laboratory and clinical experiments suggest that both deficiency of certain food elements as well as excess of others may both lead to conditions of malnutrition. There was to my mind at one time a serious risk of the deficiency diseases overshadowing the excess diseases. It certainly has been my clinical experience that a larger number of cases of malnutrition are due to excess, and can be cured by cutting down, than to deficiencies which can be corrected by supplementary supplies. In the first enthusiasm of the vitamine movement there was a great danger that the fundamental principles of dietetics, supply and demand, and the conservation of energy would be relegated to a secondary position of importance not only in the feeding of infants, but also in the feeding of adults. Even at the present time there are many individuals who ought to know better who believe that vitamines are a source of energy and that the more carrots they eat the stronger will they become; on the other hand, it seems to me that the vitaminists are getting away further and further from their original claim that the so-called deficiency diseases are solely due to the deficiency of some particular vitamine. This is more particularly true of rickets. The original claim was that rickets was due to a deficiency of the fat-soluble A accessory food factor; they now admit that excess of carbohydrate, a deficiency of protein, want of opportunity for exercise, want of fresh air, and all the old familiar hygienic factors also play important parts in the etiology; they leave us, in fact, *in statu quo* with respect to the causation of rickets, except that more emphasis is laid on the importance of fat than was paid by the old clinicians. So far from explaining the causation of rickets, I think that the vitaminists have drawn a herring across the trail by labelling one of their will-o'-the-wisp discoveries the antirachitic vitamine. Such an explanation of rickets takes a very narrow view of the protean etiology of the disease. It seems to me to be a libel on an almost universal disease in childhood to claim that it is caused in all cases by the want of what is an almost universal element in the food of infants. If their claim is true, a disease which is commonly regarded to be the complex result of civilization will be banished from civilization by the distribution of small rations of cod-liver oil. Personally, I am convinced that all forms of malnutrition, whether due to deficiencies, or to excesses, or to want of fresh air, exercise, or to the effects of chronic infections, all lead to the same goal—namely, rickets, if they are sufficiently long continued. And I believe that they lead to this goal for the reason that a demand for calcium is created in the body which overrides the claims of the growing cartilage. The two salient factors which we find in rickets, from whatsoever cause engendered, are a deficiency of calcium in growing bone, and an excess of calcium in the excretions from the body. All the common etiological factors of rickets lead to the defective oxidation of the food consumed and to the production of acid bodies of large molecular size. If these acids were not neutralized by available bases, there would be a serious disturbance of the hydrogen-ion concentration of the blood; in other words, an acidosis. No doubt, in accordance with the principles of physiological expediency, the cheapest bases, such as sodium and ammonium, are first drawn upon for the purposes of neutralization, but the time ultimately arrives when the more expensive bases, such as calcium and iron, are also pressed into service. I willingly admit that the want of the fat-soluble A vitamine is one of the causes of rickets, but not a bit more so than the want of the antiscorbutic vitamine. I believe, however, that far commoner causes of rickets are want of muscular exercise and excess—that is to say, relative excess—of the energy value of the food supplied. All these causes, however, lead to defective calcification of bone, which is pathognomonic of rickets through one common pathological route—namely, the creation of a demand for calcium which is even greater than the demand of developing bone, this demand being the claims for neutralization of the semi-oxidized products of combustion.

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London.

I SUPPOSE that, as indicated by Professor Hopkins in his opening remarks, this discussion will be mainly concerned with the nature and extent of the various forms of disease which we now have reason for associating with absence, in greater or lesser degree, from a dietary, of one or more of the food accessory factors known as vitamines.

But if I may be permitted, I desire, on the other hand, to direct attention to the possibility of exerting some useful therapeutic effect by the *purposeful* restriction of the amount of the A and B growth accessory factors in a dietary otherwise well balanced and of varied and appetizing character.

In view of the divergent results obtained by Professor Hopkins on feeding young or older animals on a diet of chemically purified constituents, I suggested to him, some eight years ago, that he should investigate the results of a similar dietary on mice or rats suffering from cancerous tumours—of spontaneous origin if possible—in order to see if any differential effect could be observed between the growth of the tumour cells, which presumably require for their continued increase and multiplication considerable store of the vitamines in question, and of the general tissue cells of the adult body, to which they are apparently not so indispensable. In May, 1912, Professor Hopkins wrote to me saying that he thought it might be worth while carrying out such an experiment, and asking me to put him in touch with Dr. Bashford, then Director of the Imperial Cancer Research Laboratories, in order that he might obtain the necessary material. This I did, and in a paper read by him about eighteen months later Professor Hopkins stated that when, after a given period, he examined the tumours in the (chemically pure) dieted animals and in the controls respectively, he found that the average weight of tumour substance in the former was only about one-quarter of that in the controls. Unfortunately, no one, so far as I am aware, has carried out an experiment on precisely similar lines in which rats or mice suffering from tumours of spontaneous origin were employed.

About this same time, however, as I stated in the discussion on a paper by Sir Thomas Horder at the Royal Society of Medicine in January, 1913, a few patients in one of the metropolitan infirmaries had been treated with a dietary which was intended to be deficient in the growth accessory factors, but great difficulty was experienced in preparing it, as it then appeared necessary to autoclave the various constituents, with the consequence that the dietary was neither varied nor appetizing. Nevertheless, results sufficiently encouraging were obtained in one or two instances to make it seem worth while to continue the work, which, however, was interrupted by the outbreak of war in 1914. Early in the present year, however, the investigation was recommenced, under the auspices of the Ministry of Health, in view especially of the fact that the Registrar-General's statistics indicated that during 1918, the year during which rationing of food was general, there had been some diminution in the number of deaths from cancer, both in males and females—much more marked for London than for the country generally.

Moreover, thanks in large part to the investigations of Miss Chick and others at the Lister Institute, it is now possible to construct a varied and sufficing dietary practically free from growth accessory factors. At the present time a considerable number of patients in certain of the metropolitan infirmaries are living on such a dietary. Some of them have been under treatment since February last, yet in none of these patients have any symptoms indicative of beri-beri, for instance, been observed—a fact of considerable interest and importance as indicating that when the diet is well balanced, varied and appetizing, the fairly complete absence of these vitamines is perhaps of less importance, in the adult, than Lieut.-Colonel McCarrison's work on monkeys would appear to indicate.

That, under certain circumstances, this may be so in the adult is, I think, indicated by the curve on the chart exhibited, which shows that the patient's weight, instead of falling, has slowly but steadily increased week by week. The general condition, moreover, has improved *pari passu*, with the result that whereas, when treatment was commenced, an opiate was being given every night, nothing in the way of a hypnotic is now required.

GENERAL DISCUSSION.

Dr. R. L. **Mackenzie Wallis** (London) said the chief point brought out in the discussion had been the merit of a well balanced diet, and in addition the use of fresh foods instead of what might be called "stale" foods. In an investigation of metabolism in the insane, which he had carried out some years ago, he had found that the diet was deficient, and in only one instance was the individual in nitrogenous equilibrium. It would appear that the adoption of a well balanced diet containing the necessary accessory food factors will produce valuable results. During an investigation of the food value of the ground nut (monkey nut) he had proved conclusively its valuable properties in the prevention and treatment of beri-beri. Another disease which he considered a deficiency disease was coeliac disease. In cases treated with a balanced diet and rich in vitamines the results had been almost magical in that the stools rapidly assumed their normal colour and consistency, the weight of the patient increased, and the girth of the abdomen decreased. In epidemic diarrhoea of infants he had obtained results identical with those described by Lieut.-Colonel McCarrison, and particularly the characteristic changes in the pancreas. This subject was now being pursued along these lines.

Dr. J. C. **Drummond** (London) gave an account of the effect produced on the progeny of experimental animals fed on diets deficient in various essential elements of the nature of vitamines. He pointed out that slight dietary inadequacies of this nature produced a great tendency, in experimental animals, to the incidence of intercurrent diseases of all sorts. He also quoted experiments that went to prove that it was not practically possible to restrict the growth of experimental cancers by limitation or selection of diets. Starvation of such new growths was apparently impossible without the starvation of the host.

Dr. C. **Muthu** (Mendip Hills Sanatorium) said he agreed with Dr. Leonard Williams that all diseases could be more or less attributed to some food deficiency. Some experiments on fresh and stale vegetables and fruit were conducted at the sanatorium with the aid of a galvanometer, as recommended by Baines and A. W. Robertson. The results showed that both vegetable and animal life contain a well defined electrical system, and that phenomena of life could be best explained in terms of electro-motive force of the cell organism. The fresher the food the more fully its electric potential was maintained. The more stale the fruit or vegetable, the greater its diffusion of electricity, and when it was rotten it was electrically dead. Civilization meant stale and cooked food, tinned and frozen food, artificial and adulterated food, in all of which, the vitamine and enzymic content being low, man becomes a prey to diseased conditions. In conclusion, Dr. Muthu said that he was firmly convinced that tuberculosis was a deficiency disease.

Dr. **John Brown** (Blackpool) said that in dealing with the subject of vitamines—for which a less misleading term would be "vitaids"—the trend of recent researches, together with his own clinical observations, compelled him to draw the following conclusions: The general public, and above all the Government, need to be taught that there was literally a vital difference between fresh food and preserved food, between natural and artificially prepared foods. "Ice age" refrigeration methods were preventing the public from having fresh food and offered instead "stale" food. Mankind was not called upon to eat raw food exclusively, but it was well to bear in mind that even the animals which do not actually try to swallow living prey always try to obtain living tissue. From his own experience and observation, the allotment holders consuming their own fresh-cut vegetables and picked legumes, which were *live cellular* foods, fought influenza much more easily. The high mortality during and since the war from influenza and pneumonia had in part, he believed, been due to the reduced power of resisting disease resulting from the increased use of refrigerated meat and preserved food. He advocated more frequent resort to salads.

SECTION OF SURGERY.

Sir George H. Makins, G.C.M.G., C.B., P.R.C.S.,
President.

THE TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

BY

FRANK KIDD, F.R.C.S.,
Surgeon to the London Hospital.

Stones impacted in the pelvic portion of the ureter are usually solitary stones, ovoid in shape, consisting of calcium oxalate and calcium phosphate, crystalline and opaque to the x rays. Jeanbrau,[1] quoted by Geraghty, states that in 204 cases collected from the literature 96 per cent. of the stones were unilateral, and in 90 per cent. of the cases only one stone was present in the urinary tract. These facts are of considerable practical importance in regard to treatment. Stones casting giant shadows are usually associated with congenital malformation of the lower end of the ureter.[2]

The wall of the ureter at the site of impaction undergoes fibrosis and stenosis. The ureter above the stone becomes dilated, and sooner or later bacteria filtering from the blood through the kidneys infect the kidney and ureter. In the last stages an abscess may form round the stone, which bursts into neighbouring organs, such as the rectum and vagina, or on to the skin; so that a fistula arises through which the stone may be discharged on to the surface of the body.

Ureteric stones may for years cause no symptoms. Symptoms when they arise differ in no essential particular from the symptoms caused by renal calculi. Usually there are attacks of pain which may bear the character of a fixed renal ache or of a moving renal colic. Haematuria is common, but is by no means invariable. On the other hand, if there is no microscopic evidence of blood in the urine in a case suspected of ureteric calculus, it is probable that the symptoms are caused by something other than calculus. Pyuria and fever mark the later stages of the trouble. At times these cases become urgent through the development of calculous anuria.

Diagnosis.

In no other type of case is it more important to make an accurate diagnosis before considering the question of treatment. Mistakes in treatment are usually due to errors in diagnosis.

Diagnosis of Ureteric or Renal Colic due to Stone from other Causes of Ureteric and Renal Colic.

Renal colic may be caused by a stone or by blood clot, and rarely by the presence of tuberculous curds, masses of growth, or hydatid cysts passing down the ureter. It may also be caused by stricture in the wall of the ureter, congenital or acquired from stone or tuberculosis. It may also be caused by abnormal renal blood vessels, by congenital kinks of the ureter, by movable kidney, and by tumours or adhesions obstructing the ureter from the outside. Ureteric pain has to be distinguished from other causes of abdominal pain, such as the various colics, intestinal obstructions, twists, haemorrhages, accidents to blood vessels, peritonitis from bacterial invasion or from gross rupture of a viscus, also from acute inflammations of the kidney and from the crises of tabes, acute pleurisies, and diseases of the spine. Up to 1909 Jeanbrau could only collect from the literature 172 cases operated on; this was before the universal use of the *x* rays in diagnosis. The progress of radiography has increased the detection of shadows in the pelvic portion of the ureter, but even now Geraghty[3] states that 22 per cent. of stones present in the ureter are missed by the *x* rays. I think this statement errs on the large side. In the course of routine *x*-ray examination of the pelvis it is not unusual to observe in the region of the pelvic ureter shadows not cast by stones. More often than not these shadows are cast by extra-ureteric concretions. The commonest cause of these shadows is the phlebolith.[4] Other shadows that cause confusion are those cast by calcareous glands, appendix concretions, intestinal contents, and calcareous arteries.

Before a decision is made that an *x*-ray shadow in the pelvis is due to a stone in the ureter it is absolutely essential to employ special methods of differentiation. One method is to pass up the ureter a bougie opaque to the *x* rays and take another *x*-ray picture. In many cases the shadow of the tip of the bougie can be seen touching the doubtful shadow, but sometimes the evidence thus obtained is not conclusive. Another method is to inject 20 per cent. colloid silver into the ureter through an ordinary ureteric catheter and then to take an *x*-ray picture. If a stone is present there will be seen the shadow of a dilated ureter above the stone shadow, which will appear to be lying at the site of a narrowed portion of the ureter; such evidence, if it can be obtained, is conclusive that the doubtful shadow is cast by a stone. Another method is to pass wax-tipped bougies up the ureter, when scratches can be detected on the wax.

The practical point remains that no operation should be undertaken on the ureter for the removal of stone until supplementary *x*-ray methods have been employed in addition to ordinary *x*-ray methods.

Treatment.

The great progress made in the last ten years in the treatment of ureteric stones should be chiefly associated with the name of Bransford Lewis.[5] Many surgeons still appear to be under the delusion that directly a shadow of a stone in the lower ureter has been shown by *x*-ray examination they should immediately cut down and try to remove the stone. Nothing is more fallacious than this idea, which has led to many disasters. When faced with a ureteric calculus, the first point for the surgeon to decide is as to whether any surgical interference is needed at all, as in many cases it is not. The second point to decide is, if surgical interference is needed, what form shall that interference take?

Through improvements in the operating cystoscope it is now possible to persuade stones down the ureter by means of the cystoscope working across the bladder, so that the patient is saved from a major surgical operation not without danger to life and risks of mutilating complications. I do not think this fact has been at all widely appreciated by the general surgeon. When faced, then, with a shadow that may be a shadow cast by a ureteric stone, make doubly and trebly sure that it is a stone shadow. Then make up your mind how much harm it is doing to the patient's mind in the way of painful stimuli, and how much harm it is doing to the patient's kidneys and ureters.

How long may a ureteric stone take to pass naturally? I have recently seen a case in which a patient passed a ureteric stone naturally after eight years of intermittent colics. It seems clear to me that no time limit can be given after which we can state that a patient will not pass his stone. Each case must be judged on its merits. It is better to give Nature sufficient grace rather than to be in a hurry to operate.

Experimental work on animals to determine how long a stone can lie in the ureter before damaging the corresponding kidney irreparably suggests that six months to a year is the longest time during which a stone ought to be allowed to obstruct the ureter. But from clinical evidence I am convinced that such experimental work does not reveal the whole truth. In the first place, stones rarely block the ureter completely, so that natural conditions differ from many of the experimental conditions. In the second place, clinical evidence suggests that the kidney may recover sufficiently to do much useful work, even if the ureter has been partially blocked for many years by a stone (as long as twenty years in some cases I have encountered). Provided, then, that there are no imperative indications for operative interference, I think it advisable always to give the patient at least one to two years in which to pass a ureteric stone naturally, aiding Nature by minor cystoscopic manipulative measures, and employing flushing treatment and urinary antiseptics by the mouth.

Operative interference may be said to be *imperative* if there is bacterial infection of the kidney and ureter above the stone, as is shown by the presence of pyuria, fever and wasting; if there is calculous anuria; and if stones are bilateral (as they are in only 4 per cent. of the cases).

Operative interference will be *advisable* if the stone is clearly too large to pass, and if the patient is suffering from long-continued, severe and fixed pains which are undermining the health.

In the ordinary cases which have only presented symptoms for a year or two, where symptoms are only occasionally present and not severe, and the pain is lower down after each attack, efforts should be made to coax the stone down the ureter by the help of "drink cures" and the more recent methods of operative cystoscopy. This will be granted if the mortality and complications of an open operation are considered. Israels[6] reports 60 cases operated on by himself, with, as far as I can gather, 7 deaths. Tenney[7] states that the mortality of open operation is somewhere between 15 per cent. and 20 per cent., from haemorrhage, shock, sepsis and peritonitis. Other complications of the operation are fistula, failure to find the stone, destruction of the ureter, thrombosis, dilated stomach, and pulmonary embolism.

Methods for Coaxing a Stone Down the Ureter.

In the first place the patient should be flooded with diuretic waters, and should take regularly every day urinary antiseptics by the mouth with the object of preventing bacterial infection if it has not already arisen. A cystoscope should be passed and various methods of cystoscopic extraction tried. These methods are, briefly, as follows:

1. Injection of sterile paroleine through a ureteric catheter around the stone may induce a stone to pass a few days later. I report 4 cases where I have obtained success in this manner.
2. Recently it has been suggested by Geraghty and by Walther[8] to inject 5 c.cm. of a 4 per cent. solution of papaverine sulphate locally into the ureter through a catheter. This alkaloid causes direct relaxation of unstriped muscle fibre. It causes relaxation of the ureteric muscle in the region of the stone, and has been successful in causing stones to pass naturally.
3. With the operating cystoscope and the special scissors of Bransford Lewis it is possible to cut up the superior wall of the mouth of the ureter, starting from the mouth of the ureter and cutting it up through the wall of the bladder for at least three-quarters of an inch. After this minor operation has been done it is possible to try and pull the stone down with forceps or to dilate the ureter with a probang through the cystoscope. So far I have failed to catch a stone with forceps after this operation and pull it down, but in nine cases the stone has been passed naturally within a few days after I have cut the mouth of the ureter in this manner. In some cases I have been able to observe the slit some months afterwards. It appears to heal up soundly without stricture formation and causes no bad

after-result. The lower end of the ureter is often very narrow in these cases and appears to be the main cause which prevents the stone from passing naturally. This method appears to be a triumph of manipulative surgery when we can thus get a stone to pass and save the patient from a major operation. Progress in surgery consists in substituting minor surgical procedures for major surgical operations. The treatment of villous growths of the bladder by fulguration through the cystoscope is another good instance.[9] Surgeons are still very slow to adopt these methods and to give up more spectacular and more dangerous procedures.

4. It is possible to cut the mouth of the ureter in similar fashion, using the insulated copper and platinum electrode through a cystoscope attached to a diathermy machine. I know of several cases where this has been done successfully, but I prefer the scissors method.

5. Finally, it has been suggested to pass a ureteric catheter, with a small dilatable bag attached, as far as the stone. The bag is dilated with air, and traction is made so as to dilate the ureter below the stone. The principle is similar to that of the bag used in midwifery for dilating the mouth of the uterus.

The methods briefly mentioned should be given a fair trial before an open operation is performed. Those, then, who wish to deal with these cases should make themselves familiar with the technique of operative cystoscopy.

Open Operation.

Finally, if the surgeon decides on open operation, he has to consider the best method of approach for the removal of stones in the lower portion of the ureter. I need not discuss the numerous methods of approach, which are now merely of historical interest. For practical purposes the routes of approach to the pelvic ureter have been narrowed down to two. One is by means of a small muscle-splitting incision in the inguinal region, such as I have described in the *Lancet*, June 7th, 1913. The other is to use the middle line, through which to expose fully the bladder and lower ends of the ureters. This latter incision is needless when a stone in one ureter is being dealt with, that is to say, in 96 per cent. of the cases, as it is liable to be followed by hernia. It should be employed only when there are stones in both ureters to be removed, as thereby it is possible without much difficulty to expose both ureters throughout their pelvic course, the operation being similar to that for partial cystectomy. In the majority of cases the incision I have described is to be preferred, as it eliminates the risk of hernia. That the operation done through this incision is a very safe one in practised hands will be shown by the figures I can bring forward. Since 1910 I have operated on twenty-eight cases through this incision. Two of these cases were suffering from calculous anuria. I have only lost one patient, a very fat subject in which there was great difficulty in getting down to the stone. The operation was prolonged, and the patient developed a dilated stomach which defied all remedies and led to a fatal issue. In one case I failed to find the stone, as the operation was done under great difficulties in a bad light in the country in the patient's own home. The ureter was left open and a fistula formed, through which the stone was subsequently discharged, and then the wound healed up satisfactorily. In all the other cases the wounds have healed up by first intention, except for the hole through which the rubber drain emerged, and most of them have been able to rise from bed on the tenth day and leave the hospital or home on the fourteenth day. In one case an impermeable stricture developed in the ureter after the operation, and I had to remove the kidney, which had been rendered useless as it had been blocked for years.

I think these figures prove that there is no need for the large and extensive incisions described by Israels,[6] and that the ureter may be very satisfactorily exposed extraperitoneally through a small muscle splitting incision with very little risk to the patient and with few complications. The operation should be performed extraperitoneally if possible, but in exceptional cases it is permissible to open the peritoneum if anything can be gained thereby.

There are one or two points I would like to mention before closing. It must not be forgotten that a stone apparently impacted in the lower end of the ureter may suddenly get displaced and run backwards up the dilated ureter into the kidney. The mere passage of a ureteric bougie may effect this, or the placing of the patient in a head-down position. It is always advisable, therefore, to have an x-ray picture taken a very short time before the operation. Another point is that there should be no hurry to make a diagnosis of ureteric calculus unless microscopic blood is present in the urine.

In all cases Nature should be given a fair chance, and if Nature is to be aided by artificial means, let minor methods be adopted first and major operations left to the very last. It is far better that the patient should pass the stone naturally than that he should be interfered with too soon by the surgeon. In a series of 20 consecutive cases a ureteric stone was passed naturally in 15 cases, and in only 5 was surgical interference needed.

In a small number of cases trouble will arise after the stone has been removed. The ureter may become so narrowed at the site that the kidney becomes dilated, infected, and painful. If it is feasible, measures designed to dilate the stricture of the ureter through the cystoscope should be taken. If this fails the functional value of both kidneys should be estimated, and if the affected kidney is clearly of little functional worth it should be removed. Stricture only arises in cases in which the ureter has been impacted for many years—that is, in cases where the kidney has already been destroyed by intermittent back pressure and bacterial infection. In one of my 28 operated cases I had to remove the kidney after operating on the ureter, and in one case I removed stones from the kidney successfully after a successful operation on the pelvic ureter.

Summing up, I would lay down these golden rules: Be careful not to mistake the shadow for the substance. Always give Nature a chance and do not be in a hurry to perform a major operation. Train yourselves to employ minor surgical methods, which is the line of safety for the patient.

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DISCUSSION.

MR. J. S. JOLY, F.R.C.S.Lond., said that in performing the open operation he preferred the median incision, as he could with ease expose to view the whole length of the ureter, the route being specially useful in those cases in which the stone had a tendency to slip up the ureter, as certainly happened. There were three landmarks that could be used as guides in reaching the pelvic ureter through the median incision:

1. By tracing the internal iliac artery to its bifurcation the ureter was felt under the finger.
2. To reach the middle portion the spine of the ischium should be felt for and the finger moved a quarter of an inch towards the middle line.
3. The extreme lower end was reached by following the vas deferens.

The choice between operative cystoscopy and open operation depended on various circumstances, the chief of which was the size of the stone. He could not agree that it was wise to wait indefinitely before operating to remove the stone; there was every chance of distension and dilatation being set up, especially if the stone were septic. If a shadow as large as a sixpenny piece were proved to be a stone, manipulation could rarely remove it, and open operation was required. Stones below that size were a troublesome problem, and those about the size of the pip of an orange were difficult to decide upon. Below that size they should have a chance of finding their way into the bladder. The question of sepsis or asepsis played a large part: if the ureter were infected it was safer to operate early; if the urine was aseptic it might be proper to wait till another attack of colic took place and have another x-ray photograph taken. By repeated photographs it could be seen whether the stone was tending to pass down or not. A stone smaller than an orange pip which had no tendency to movement downward should be operated on. The mortality statistics for the open operation given by Mr. Kidd were rather gloomy. He (the speaker) might have been lucky, but out of 23 open operations by middle line incision he had had no operation mortality.

Mr. GREY TURNER (Newcastle) pointed out the necessity of differentiating the symptoms of stone in the lower part of the ureter from those associated with the appendix. It was important to make certain, before making a diagnosis of stone in the ureter, that small quantities of blood could be seen in the urine. He was very chary about operating on small stones in the lower end of the ureter. He emphasized, further, the necessity for rectal or vaginal examinations, and also maintained that it was advantageous to open the peritoneal cavity simply for the purpose of locating the stone by exploring the ureter with the finger.

Mr. R. P. ROWLANDS (London) said: I congratulate Mr. Kidd very sincerely on his excellent and instructive paper. My experience of the *x*-ray method of diagnosis is not so fortunate as his. I have removed stones from the ureter in at least fifteen cases during the last ten years when radiographic experts had failed to reveal any stone. Stones rarely form in the ureter, but descend into it while still small from the kidney. Patients who suffer from them are often middle-aged and stout, and many of the stones are either too small or too translucent to cast a shadow with the *x* rays. Therefore the diagnosis has often to be made in spite of a negative *x*-ray report. In these circumstances I have found cystoscopy, after injecting two grains of indigo-carmine intramuscularly, a very valuable and simple method of determining if the ureter is or is not obstructed. Within fifteen to twenty minutes the pigment can be seen issuing freely from the normal ureter, whereas none or very little may escape from the obstructed ureter. This serves to determine the side and degree of obstruction. The method is quite safe, and it is much simpler and easier to adopt than ureteral catheterization. It does not necessarily follow that the obstruction is due to a stone;[*] it may, for instance, be caused by an abnormal artery pressing upon the ureter, or the formation of a valve at the junction of the ureter and pelvis of the kidney, but it is just as essential to relieve the obstruction, whatever may be the cause of it.

Treatment.—Although ureteral calculi should be given a good opportunity to pass spontaneously, as Mr. Kidd advises, I do not agree with him that it is safe to leave them for two years, for they may irretrievably damage or even destroy the kidney. A stone completely blocking the ureter may permanently destroy the kidney in a few weeks even without any evidence of inflammation or hydronephrosis. It is true, however, that ureteral calculi do not often continue to obstruct the ureter completely for a long time. If the stone cannot be shown to be moving downwards on repeated *x*-ray examination during some six months, I think it wise to remove it in order to restore the kidney to its natural function, and to save it from the mechanical and infective changes which are bound to follow. It is specially important when the stone appears to be of a large size, for an operation becomes urgent when the signs of infective changes or hydronephrosis or anuria develop. I think the statistics quoted by Mr. Kidd are far too gloomy, and probably date back some years. I have not lost a single patient after the removal of a stone in the ureter, and in only one instance have I had to perform secondary nephrectomy, owing to intractable changes in the ureter and secondary destructive changes in the kidney. I have used the incision advocated by Mr. Kidd, but I do not altogether like it, because it does not give a very good access to the very lower end of the ureter. For this reason I generally adopt a long paramedian valvular extraperitoneal incision, displacing the rectus and peritoneum inwards. This gives splendid access without any risk of hernia following. I do not like any form of intraperitoneal operation for the removal of a stone from the ureter, for the urine in these cases is generally septic, and drainage is usually necessary. As instances of some of the troubles which may arise from stones in the ureter I briefly mention two cases:

Case 1.—A nurse, aged 50, had calculous anuria of six days' duration, and was very ill, unconscious, and vomiting. Cystoscopy revealed muco-pus at the orifice of the left ureter. The right ureteral orifice was very small. A stone was rapidly removed from the left ureter a little below the kidney. The patient, after axillary saline infusion of four pints, passed seven pints of urine during the day. She regained consciousness three days later. Ten days later anuria returned, and a stone was then removed by the anterior paramedian incision mentioned above from the left ureter low down, and the patient recovered. Six years earlier she had had a severe attack of right renal colic, and the right kidney had become completely destroyed. I believe that this not uncommonly occurs, and that it is not often recognized when the obstruction is unilateral. Ligation of the ureter will similarly destroy the kidney almost painlessly in the absence of sepsis.

Case 2.—A stout lady had left renal colic followed by high fever for two months. Bacilluria was diagnosed, and a vaccine was tried without relief. Cystoscopy revealed complete obstruction of the left ureter, but operation was declined for a month; the left kidney was then found to be in a condition of acute ascending nephritis with multiple abscesses. A small stone was removed from the left ureter a little below the kidney. Nephrectomy was considered inadvisable. It was hoped that the kidney would recover; it did recover, completely but slowly. Eight years later a calculus became impacted in the upper part of the right ureter, which it completely obstructed. Meanwhile over a pint of normal urine a day was passed by the left kidney. The stone was removed three days after impaction and the patient went home well three weeks later. The contrast between the results of the first and second operation in this case is very marked, showing the enormous value of prompt removal of a stone from the ureter. It may be added that the right pelvis was already full of pus at the time of the operation.

Sir HAMILTON BALLANCE (Norwich) thought it was unnecessary to risk opening the peritoneum in these cases, and he had a personal dislike to small incisions such as Mr. Kidd had described; his preference was for the lateral incision parallel to the iliac crest, this incision enabling him to deal satisfactorily with every part of the lower ureter in the pelvis. Hernia did not result from that long incision even when extended forward to the rectus. There was risk of infection of the cellular tissue, and he always employed a drain. So long as that incision gave him proper access to the stone he was disinclined to go through the peritoneum.

Dr. CHARLES MAYO (Rochester, U.S.A.) desired to commend the stand taken by Mr. Kidd in advocating the removal of stones from the lower part of the ureter by the method described, with which he was familiar and knew to be employed by Dr. Brash in the Mayo clinic. In his experience, however, the open operation was just as safe as the method by operative cystoscopy. If the patients had a history of passing many stones, then he thought that the waiting plan might be adopted, but, if otherwise, then operation ought to be performed. It appeared to him that some regard should be had to the method of formation of the stone. The stone was not formed in the ureter; it was due to bacterial action in the kidney. Two types of bacteria were required—one in the original situation of formation of the stone in the kidney, and the other acting secondarily with the addition of calcium salts in its passage down the ureter.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE OEDEMA OF THE LUNGS.

THE recent correspondence in the columns of the BRITISH MEDICAL JOURNAL on the subject of acute oedema of the lungs or acute suffocative catarrh has directed attention to an interesting type of case in which the etiology is obscure. The transudation of fluid from the blood in the pulmonary circulation to the alveolar spaces must be primarily due to either (1) greatly increased pressure in the pulmonary system, or (2) gross changes in the structure of the lung capillaries.

As Dr. McNaughton pointed out, the explanation usually given is that the condition is due to persistent action of the right heart, with failure of the left heart—that is, to (1) above. Acute oedema of the lung does not appear to have been attributed to sudden vaso-dilatation of the lung capillaries or physical changes in their walls, presumably because at present it is generally considered that the blood vessels of the lungs are almost entirely devoid of any vaso-dilator or vaso-constrictor nerves.

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[*] See *Guy's Hospital Gazette*, xxviii., 1914, pp. 191-6.

The notes on the 18 cases recently reported in the BRITISH MEDICAL JOURNAL unfortunately do not give information on the state of the patient's heart during an acute attack, and in some cases only has the state of the pulse been noted. On comparing the 18 cases, however, I am struck by two points which seem to favour an "angioneurotic" instead of a "cardiac" theory of the origin of this condition. (1) In two of the most typical cases (Dr. Gale's and Dr. Yellowlees's) the pulse was said to be "full, rapid, and bounding," and "strong and quick" respectively. (2) With one exception the only cases which did not end fatally were those treated with atropine and morphine, drugs which act directly or indirectly on the vegetative nervous system.

This therapeutic evidence appears to support the view that acute oedema of the lungs is not due to a gross defect in the action of the heart but to the reflex effect of a pathological stimulus acting through the vegetative nervous system in a vagotonic individual.

From the notes on several of the cases reported it seems probable that the attacks were originated by some toxic agent absorbed from the gastro-intestinal tract, in this respect closely resembling certain forms of asthma arising from errors in diet, which are recognized as typical examples of over-action of the vagus. This theory would also be supported by the result of the use of atropine in these cases. The effect of morphine, too, is quite compatible with such a view, as presumably this would act chiefly by depressing all the sensory cells throughout the body, thereby reducing or removing the effect of the irritant stimulus causing the reflex action.

Although the number of cases reported is too small to warrant any inference, the sex incidence is of interest, as only 6 out of the 18 cases were in females. The characteristics of the vagotonic person tend to be masculine in type and those of the sympathicotonic person feminine.

It is interesting to note that Laignel-Lavastine includes acute oedema of the lungs as one of the vegetative syndromes indicative of an endocrine disorder, and suggests that the gland at fault is the suprarenal (? deficiency). In the recent edition of *Diseases of the Nervous System* by Jelliffe and White the condition is referred to in the article on Angioneurotic Oedema, and it is said: "The view here tentatively adopted is that it is a neural reaction brought about through the vegetative nervous system, which controls reciprocal tension relations, or cellular chemical composition relations."

No definite evidence has been afforded by any of the cases recently reported in the BRITISH MEDICAL JOURNAL in favour of the view that the condition is due to disorganization of the cardiac action, and the alternative theory, that the condition is a reflex nervous phenomenon arising in certain vagotonic individuals from certain unknown causes, seems to be much more satisfactory. The question might be settled by making a careful note of the condition of the heart and circulatory system generally while the attack is actually in progress.

London, S.W. W. CAMERON DAVIDSON, M.B., Ch.B.

THE TREATMENT OF RINGWORM.

WITH reference to the note by Dr. W. P. Elford it is interesting to record that the treatment he advocates approximates closely to that carried out at the school clinic at Stoke-on-Trent since 1914. I have been unable to lay my hands on the exact number or to remember the name of the contributor, but this form of treatment was described in the BRITISH MEDICAL JOURNAL of that or the previous year.* The details are:—

1. The hair over and for a short distance round each patch is well shaved and afterwards thoroughly washed with soap and water and finally with ether to remove as much grease as possible.
2. The area is then painted with tincture of iodine.
3. *When thoroughly dry* the painted area is sprayed with ethyl chloride.

The active agent is of course the small amount of ethyl iodide formed.

The treatment is repeated twice a week. The average duration of treatment does not exceed a month for scalp cases, while in body cases it is even shorter.

ROBERT HUGHES, M.B. Lond.,
School Medical Officer, County Borough of Stoke on Trent.

POISONING WITH HYDROCHLORIC ACID: RECOVERY.

THE following case may be of interest, because, in spite of the large amount of acid swallowed, recovery occurred with comparatively little after-effects:

I was called one evening to a young man who had swallowed from a cup, as far as could be ascertained by careful investigation, about 3 oz. of fuming hydrochloric acid (spirits of salts). He had just previously had a heavy meal. He was found a few minutes after the occurrence and promptly given a tumblerful of hot water and mustard.

When I saw him he was lying on the floor in a state of extreme collapse, with very rapid pulse, dyspnoea, cold extremities, and intense abdominal pain. He had vomited and continued to do so, bringing up with much retching quantities of dark brown material with mucus and blood-stained froth. He was given at once morphine hypodermically (which was repeated), milk by the mouth, and within a few minutes sodium bicarbonate in water in fairly large quantities, which was mostly returned. He was also given strychnine and caffeine in large doses hypodermically, and put to bed with hot-water bottles. The following morning the temperature was 100°, pulse 128, and respirations 26. He complained of great pain in the epigastrium and of intense thirst. He was given ice to suck, Vichy water by the mouth, and nutrient enema with brandy.

Dr. Clive Riviere, who saw him in consultation later in the day, advised bismuth carbonate made into a paste with paraffin by the mouth, sodium bicarbonate in albumin and water by the mouth, and in the enemas in view of the possibility of acidaemia. The bismuth and paraffin, of which a drachm was given four-hourly, seemed to be very beneficial in easing pain and nausea. He slowly recovered without any serious complication beyond some left-sided dry pleurisy which subsided and some nocturnal delirium. The highest temperature was 101.8°. The back of the throat was white and corroded, but gradually cleared. When I last saw him, a month after the occurrence, he was up and had been out and was taking semi-solid food.

The fact that he had just taken a large meal and was immediately given an emetic, combined with his youth, accounts, I think, for his recovery. I have not seen him since, as he left the neighbourhood, but I have heard recently that he is much debilitated, can only take semi-solid food, and has to have a bougie passed daily.

London, W. HOWARD STRATFORD, F.R.C.S.Edin.

Reports of Societies.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE eleventh annual meeting of the Oxford Ophthalmological Congress was held at Oxford on July 14th, 15th, and 16th. The proceedings took place in the Department of Human Anatomy of the Museum, kindly lent for the purpose by Professor Arthur Thomson, whilst members once more enjoyed the hospitality of Keble College. The attendance was large and included a number from overseas, prominent amongst whom were Professor Harvey Cushing, Dr. Luther C. Peter (Philadelphia), Professor Van der Hoeve (Leyden), Professor Holth (Christiania), Dr. S. Lewis Ziegler (Philadelphia), and others. The chief features of the meeting were, on the first day a discussion on perimetric methods, and on the second day the Doyne Memorial Lecture.

Perimetric Methods.

The discussion was opened by Dr. LUTHER C. PETER, who limited his remarks to the newer methods of perimetry and the types of cases for which they were especially adapted. After pointing out the inefficiency of the ordinary perimeter in recording changes in the central zone, the opener proceeded to discuss the various modern instruments specially adapted for this purpose. Dr. Peter then urged a change in the nomenclature from linear measure in millimetres to angle subtended in degrees or minutes, and discussed the size of the test object, especially for colour studies. The size for the central zone should subtend an angle of half a degree and that for the peripheral zone one degree. The special methods required for the study of bilateral central scotomata were (*a*) by making use of muscle sense, and (*b*) by the speaker's method of combining perimeter and campimeter.

A good discussion followed, in which the following took part: Professor VAN DER HOEVE, Mr. A. H. SINCLAIR (Edinburgh), Dr. MARX (Leyden), Professor HARVEY CUSHING,

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* The reference appears to be to Dr. C. H. Foley's note in the JOURNAL of March 21st, 1914, p. 651. ED.

Professor S. HOLTH, Mr. E. H. E. STACK (Bristol), Lieut.-Colonel R. H. ELLIOT (London), Dr. A. MAITLAND RAMSAY (Glasgow), Major L. E. J. LISTER, I.M.S., Mr. T. HARRISON BUTLER (Leamington Spa), Mr. BURDON COOPER (Bath), Mr. E. E. MADDOX (Bournemouth), Mr. P. G. DOYNE (London).

Dr. MARX showed an ingenious test object for use with his perimeter, consisting of a small ball moved by an electro-magnet applied to the back of the screen, whilst Dr. HOLTH exhibited three patterns of a chord pocket perimeter of his own design.

The Doyne Memorial Lecture was delivered by Mr. F. RICHARDSON CROSS of Bristol, the subject being the nerve paths and centres concerned with sight. The lecturer, after paying a fitting tribute to the founder of the congress, the late Robert Walter Doyne, dealt in a comprehensive manner with the visual tracts and centres, comparing certain areas with the homologues in monkeys, birds, and reptiles, etc. A number of interesting slides were shown of the fields of vision in quadrantic hemianopia and cases of injury of the occipital cortex, bearing out the more recent views on the relationship between the peripheral visual fields and the centres in the occipital area. At the conclusion the Doyne Memorial Medal for 1920 was presented to Mr. Cross.

Papers were read by Mr. A. S. PERCIVAL (Newcastle-on-Tyne) on light sense, with some practical deductions drawn from its consideration; Professor VAN DER HOEVE on eye symptoms in tuberous sclerosis of the brain—an extremely interesting and valuable contribution to the present knowledge of the disease. Mr. MAURICE BARTON, an examination of the eyes of pit ponies, particularly with reference to miners' nystagmus. Mr. A. HUGH THOMPSON read a paper on physiological and glaucoma cups, in conjunction with one by Dr. RAYNER D. BATTEN, entitled "Premonitory symptoms of glaucoma: (1) Deep tension; (2) excavation of the optic disc." Dr. S. LEWIS ZIEGLER's paper on the ocular menace of wood alcohol poisoning, attracted considerable attention, as also did a fascinating contribution by Dr. LOUIS SAMBON, entitled "Ancient eye instruments." All the papers were discussed, though, owing to the length of the programme, less fully than the subjects merited.

On the afternoon of the second day the Congress adjourned to the Eye Hospital, where short papers were read on operations, new instruments and ophthalmic apparatus, as follows: Lieut.-Colonel H. HERBERT, on the indications of glaucoma operations, four illustrative cases being shown. Professor S. HOLTH described a new punch-forceps sclerectomy for glaucoma. Mr. N. C. RIDLEY showed a patient whose orbit he had successfully restored by a plastic operation, and who was consequently able to wear an artificial eye. Dr. RAYNER D. BATTEN demonstrated the hydrophthalmoscope on a patient, and indicated its value clinically. Mr. A. S. PERCIVAL showed some simple devices for estimating the light sense. All the contributions were freely discussed.

Instruments and Apparatus.

In the Scientific Museum, which was open during the Congress, Mr. E. H. E. Stack (Bristol) showed a simple and ingenious motor trephine which should prove of considerable aid in the operation of trephining. Mr. R. J. E. Hanson, O.B.E. (London), showed a well designed ophthalmic bureau and equipment for naval oculists serving at either a royal naval hospital, a dépôt, naval base, or fleet at sea, and also drawings and models of improvements in gun-sighting telescopes, theodolites, and microscopes. Mr. E. E. Maddox (Bournemouth) showed (1) an artificial epistaxis knife, (2) illuminated forceps, (3) the "V" test for astigmatism. Mr. N. C. Ridley showed a new cataract knife. In a separate room Professor Barr's optophone, which has recently attracted so much attention, was demonstrated to members. In the Commercial Museum instruments, apparatus, lenses, and books were on view during the meeting.

At the close of the proceedings on the first day a general meeting was held, after which members with their friends met at Queen's College for tea, the Rev. S. B. Cronshaw acting as host. The official dinner of the congress took place on Thursday evening, July 15th, in the hall of Keble College.

PATHOLOGY OF ACCIDENTAL HAEMORRHAGE.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine held on July 8th, with the President, Mr. J. D. M[illegible], in the chair, Mr. GORDON LEY read a paper on the pathology of accidental haemorrhage. The first part of his paper dealt with the literature of the subject, which he reviewed at some length. He next read pathological details of the uteri of three cases of accidental haemorrhage, of the kidneys of three cases, and of the liver of two cases. In order to prove his point he had used as controls five uteri removed, *ante* or *post mortem*, for rupture or for conditions apart from accidental haemorrhage causing death.

He found in all uteri leucocytic infiltration both of the decidua and of the myometrium; this was not greater in the cases of accidental haemorrhage than in the control uteri. Granules of fat in the interstitial cells of the connective tissue were not more numerous in the accidental haemorrhage cases than in the control cases. He found in the cases of accidental haemorrhage extensive albuminous oedema of the myometrium in the outer part of the wall, in the body, the lower uterine segment, and the cervix; in the control cases there was present an oedema of the stretched lower uterine segment only. In the cases of accidental haemorrhage there were, throughout the myometrium of the body, lower uterine segment, and cervix, focal areas of degeneration and necrosis and haemorrhage. The distribution of these areas of necrosis was such that they could not be attributed to the haemorrhage. In the control cases, save for a slight vacuolar degeneration of some cells in the myometrium, there was no degeneration and necrosis except in the stretched, oedematous, and haemorrhagic lower uterine segment; haemorrhage was confined entirely to the margin of ruptures and to the stretched, oedematous, and ruptured lower segment. He found in the liver and in the kidneys of the cases of accidental haemorrhage parenchymatous and fatty degenerations of varying degree and extent. In one of the control cases the uterus had been suddenly mechanically stretched by an extensive intrauterine haemorrhage, the result of a mechanical separation of a placenta praevia followed by the bringing down of a leg, which had prevented the blood appearing externally. In this case there was no haemorrhage or necrosis in the wall of the uterus; thus the occurrence of these phenomena in cases of accidental haemorrhage could not arise from the uterine distension.

The conclusions he formed were that accidental haemorrhage was the result of a toxaemia of the same nature and probably the same as that causing eclampsia. This toxaemia produced the focal necroses and the haemorrhages in the myometrium. The haemorrhage resulted in separation of an area of the placenta which in turn caused the opening up of uterine sinuses and copious intrauterine haemorrhage.

Dr. T. W. EDEN said that the mechanical theory of accidental haemorrhage could not be reconciled with the focal necroses found. The investigation threw a further light on the toxaemias of pregnancy, of which pernicious vomiting and eclampsia were accepted examples—to which accidental haemorrhage could apparently now be added. It was curious that women with accidental haemorrhage were not more ill.

Dr. HERBERT SPENCER congratulated Mr. Gordon Ley on his paper, but in view of the small number of cases described the title seemed somewhat ambitious. Albuminuria was not a constant symptom in accidental haemorrhage and decidual changes were known to be variable. He thought that more evidence was necessary before the toxaemia theory could be accepted.

Dr. BRIGGS had collected 32 cases; albuminuria was not a constant feature, and in many cases improvement followed without treatment for toxaemia.

In reply, Mr. GORDON LEY said that in a previous paper he had described a clinical investigation, in which 84 per cent. of cases were associated with albuminuria, and he had received from colleagues accounts in which the lowest percentage of this association was 60. He suggested that the bulk of cases without albuminuria were probably cases of lateral placenta praevia.

Dr. J. D. BARRIS showed a specimen of primary carcinoma of the Fallopian tube.

The patient was aged 55 years, and had had three children, the last thirty years ago. The menopause occurred two and a half years ago. She was well until November, 1919, since when she suffered from almost continual vaginal bleeding and some loss of weight. There was no history of watery discharge. Panhysterectomy was performed on May 18th, 1920. In the recent state the right tube measured 10 in. by 12 in., and contained altered blood and papillomatous growths. The uterus and cervix were healthy, but minute secondary nodules were scattered beneath the peritoneal surface in the anterior aspect of the uterus and at the junction of the left tube to the uterus. Microscopic section showed the tumour was a columnar-celled papillary carcinoma.

Dr. Herbert Spencer said that in addition to the four cases already published he had recently met with a fifth case of primary cancer of the Fallopian tube at the necropsy on a patient who died of multiple secondary growths in the peritoneum.

Mr. Alfred Richardson showed a specimen of a fibroma of ovary removed from a girl of 16. The tumour was accidentally discovered, the patient having no symptoms of its presence. Noteworthy features were the size of the tumour (5 in. by 4 in.) and its peculiarly warty surface, some of the papillomatous processes being separated from each other by fissures 1 in. to 1½ in. in depth.

Dr. Spencer had never seen such an extensive mass of fibrotic warts, nor removed an ovarian fibroma from such a young patient. In view of her age he would suggest that sections should be cut in several places in order to exclude sarcoma. The sections under the microscope certainly appeared to be those of a fibroma.

Reviews.

THE HEART BEAT.

The Mechanism and Graphic Registration of the Heart Beat,[1] which Dr. Thomas Lewis has just published, is nominally a second edition, but it is more—it is a new book with a new title. The outstanding features of this work are the thoroughness, the comprehensiveness, and the caution which Dr. Lewis has shown in all his statements. No theory is accepted which is not abundantly supported by facts. For the first time we have a complete and adequate presentation of the position by one of the greatest living authorities. The bibliography, which contains 801 references, is remarkably full, and is further evidence of the exhaustive care which characterizes all Dr. Lewis's work.

The value of graphic methods in the investigation of the mechanism of the heart is demonstrated in a remarkable manner. A very fine representative series of records, accurately reproduced on glazed paper, is one of the striking features. The series includes arterial and venous tracings and electro-cardiograms; in many instances the three are combined. The whole ground is covered. The general scheme is to correlate the clinical aspect of arrhythmia with purely experimental work. Much of what is set out is an epitome of work already published in detail in *Heart* and other journals.

Dr. Lewis deals first with the histology of the heart, and there is an excellent chapter on the minute structure of the sino-auricular node, the *a-v* node, and the Purkinje system. Then the electro cardiograph and polygraph are described and a valuable analysis is made of the curves obtained by these instruments. Fig. 10 would have been improved if it had been divided throughout into fifths of a second. This is the common standard time-marker used by most clinical investigators, and this diagram intended to represent the curves of pressure in the carotid, aorta, left ventricle, and right auricle, together with the jugular and electro cardiograph curves, would have been simplified and more easily brought into line with the ordinary records if, in addition, ordinates representing fifths of a second were inserted.

Chapter V is one of the most interesting. It is devoted to the normal pacemaker of the mammalian heart. The first portion of the heart to contract becomes relatively negative to every other portion. By utilizing this fact the site of the pacemaker was localized, and it was demonstrated that it was the sino auricular node. Further experiments of a different nature showed that it was the upper end of the node which was most active, and that the impulses originate in this region.

Chapters X, XI, and XII deal with the analysis of disordered mechanism as shown by the arterial, venous, and electrocardiograph curves. All students of cardiac arrhythmia will find great help from Chapter X, dealing with arterial pulse curves or arteriograms. The value of simple records taken from the radial or carotid artery is not yet adequately recognized, though Wenckebach showed in 1904, in his book on arrhythmia of the heart, how much could be gained by a careful analysis of radial records.

Lewis points out how to differentiate between curves showing a dominant rhythm and those in which the dominant rhythm is absent (auricular fibrillation). From a radial tracing alone it is usually possible to determine the site of the dominant rhythm whether at the normal pacemaker or some other point in the heart, and still further to recognize the nature of a transient or recurrent disturbance of this rhythm. The method employed is that of "spacing," and it is fully demonstrated in a series of records. This matter is one of great importance to practitioners, because it is not a matter of any difficulty to obtain a good tracing of the radial pulse—nor is it a long or tedious business—while the information which can be gained in this way may be of the greatest value.

The profession is slowly becoming familiar with the term "auricular fibrillation." A clear conception of the condition is essential in the management of heart disease. This subject is fully and adequately dealt with both from the clinical and from the experimental side. Its close relation to auricular flutter is pointed out. There is still no finality as to the essential nature of auricular flutter, but Dr. Lewis leans to the view that the simple "circus movement" is the true explanation of flutter, and he is inclined to accept the hypothesis advanced by Mines and Garrey, that fibrillation is not due to innumerable foci in the auricular wall giving many and irregular stimuli, a percentage of which reach the ventricle through the junctional tissues, but that the fundamental error is one of varying conducting power in the muscular fibres and strands of the auricular wall: "Whereby the excitation wave is broken up and travels along sinuous and varying paths, re-entering fibres through which it has already travelled." The result is an auricle in a state of passive diastole incapable of any co-ordinate systole. The wall is tremulous and flickering and without any driving power. Stimuli reach the ventricles irregularly and give rise to a disorderly rhythm.

The book contains several chapters on premature beats, auricular, ventricular, and nodal in type, and also on the various forms of paroxysmal tachycardia, but it is impossible to refer in detail to all the interesting problems discussed. There is a chapter on syncope, dealing with standstill of the entire heart, slowing of the heart with lowered blood pressure, heart-block, ventricular fibrillation, and syncope due to extreme acceleration of the ventricular rate. In another chapter Dr. Lewis deals with the heterogenetic contractions of the heart, in which he emphasizes the view that the heart is capable of originating contractions of two vitally different types, while admitting that this conception is at present lacking complete experimental proof.

To everyone in the habit of using either a polygraph or electrocardiograph this book is essential. It will more than repay careful study, and its perusal will act as a stimulus and an incentive to the further investigation of patients suffering from cardiac disorders. It is a book, however, to be read not only by the cardiologist, but by all who wish to be in touch with the solid progress in this branch of medicine which has been made during the last few years, with the result that prognosis has become more certain, diagnosis more sure, and treatment more sane.

SIR WILLIAM OSLER.

The second and third numbers of the second volume of the *Annals of Medical History*,[2] which are dated June and September, 1919, but were greatly delayed by the printers' strike in New York, have recently been published. The articles in the second number to which most readers will naturally turn first are those on the late Sir William Osler, and of these that on "William Osler the Man," by Professor Harvey Cushing, who has appropriately been chosen to write his life, is perhaps the most charming; this expression of personal knowledge and affection contains a number of letters from the late Regius Professor, and is an expansion of an obituary appreciation contributed to the Boston *Evening Transcript* of January 3rd, 1920. Dr. Howard Kelly's graceful tribute, Dr. Ruhräh's account of Osler's influence on medical libraries in the United States of America, and Dr. Fielding Garrison's kindly critique of Sir W. Osler's contributions to medical literature, were written before Sir William's death. Dr. Garrison's dictum that the main lesson thus conveyed to our profession may be summed up in the title of one of his earliest addresses, "Aequanimitas," will meet with general acceptance, as will his feeling that few have so fully lived up to the ideals of the Anglo-Saxon race. Dr. Garrison also contributes an appreciation of the late Dr. A. Jacobi, who died in July, 1919, on the verge of 90, and in addition to having "pressed the button which set the pediatric clinic in motion," is said to have invented and used a laryngoscope some time before the appearance of Garcia's instrument. Sir D'Arcy Power's article on the Oxford physic garden contains portraits of John Ward's friends, and there is an interesting account of Lord Lister, whose portrait appears on the cover, by his former house-surgeon, Sir StClair Thomson.

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[1] *The Mechanism and Graphic Registration of the Heart Beat.* By T. Lewis, M.D., F.R.S., F.R.C.P., D.Sc. London: Shaw and Sons. 1920. (Double cr. 8vo., pp. 462, 349 figures. 42s. 6d. net.)

[2] *Annals of Medical History*, 1919, vol. ii, Nos. 2 and 3. Edited by F. R. Packard, M.D. New York City: P. B. Hoeber.

The cover of the third number bears the portrait of Dr. W. P. C. Barton (1786-1856), a pioneer in American naval medicine, whose varied life is sketched by Captain F. L. Pleadwell, U.S.N.; this article also appeared earlier in the *Military Surgeon* for March of this year. Dr. Burr gives an interesting description of "J. P. Marat, Physician, Revolutionist and Paranoiac," of the political type who had delusions and was a megalomaniac. An article by Dr. J. Foote about "Ancient Poems on Infant Hygiene" is followed by Dr. J. Ruhräh's appreciation of "Walter Harris, a Seventeenth Century Pediatrist," which supplements the contribution to the Osler Anniversary Volume on "Some 17th Century Writings on Diseases of Children," by Dr. G. F. Still, who remarks that posterity has not confirmed Sydenham's high opinion of Harris's work. Dr. Roy Moodie provides some new observations on palaeopathology, and Dr. Rosenbloom writes on Dr. H. Bence Jones.

IMMUNITY.

THE life-work of the late Professor Metchnikoff, who died in the summer of 1916, was to establish the importance of phagocytosis in the natural reaction to infectious disease. The cellular theory of immunity was his child; he first wrote about it in 1882, published a short book on it in 1892, and in 1901 wrote an epoch-making account of it in a large and exhaustive work on immunity in infective diseases. The great importance of the cells of the body in the defence of the organism against infection was being overlooked, or perhaps rather we should say minimized, at that time by the loud-voiced German school of pathologists, who were committed to the humoral theory of immunity wherein the fluids of the body received all the credit that should properly have gone to the cells secreting them.

But the battle between the cellular and the humoral pathologists, important as it was in the closing decade of last century, is long over, and has gone in favour of the French school and its leader Metchnikoff; the importance of humoral pathology is duly recognized, but recognized to be subsidiary. Quite recently Professor BORDET of the Brussels Pasteur Institute has written an exhaustive account of the modern views of immunity and their development in his *Traité de l'Immunité dans les maladies infectieuses*.[8] No author better fitted by training and experience to write a book on immunity in infectious diseases could have been found; the subject is one at which he has been working from the experimental side for thirty years. Professor Bordet's object has been, as he says in his preface, to contribute to the popularization of the fundamental notions of immunity; he has reviewed the whole subject from a historical and synthetical point of view, and aims at being clear without being incomplete. Temperamentally he prefers facts to theories, and he displays great caution in theorizing and drawing general conclusions from data that are necessarily still incomplete. How wholly different a mental attitude from that inspiring Ehrlich's well known side-chain theory and its application to immunity—the theory that was to foresee and explain everything, yet now, having done no more than inspire a great deal of the experimental work that led to its undoing, has been very generally relegated to the limbo whither so many hasty generalizations by men of science have preceded it.

Professor Bordet's treatise is divided into four parts. The first of these gives a general review of infection and immunity, written on historical lines, and setting out the problems that nowadays present themselves for solution to the experimental bacteriologist or physiologist engaged in the study of immunity. The second part deals with cellular immunity; its successive chapters are concerned with such things as intracellular digestion, inflammation and phagocytosis, the phagocytosis of microbes, and the factors that aid or oppose the process of phagocytosis, particularly the influences exerted by the fluids of the body. This leads on to the discussion of humoral immunity; the facility with which the phenomena of humoral immunity can be investigated by slide and test tube is pointed out, as are the fallacies that often attend the transference of results obtained *in vitro* to the case of the living organism. In this section of the book will be found a full-dress account of toxins and antitoxins, antigens and antibodies, agglutinins, haemolysins, alexins, the disputed specificity of antibodies and their reactions, and some sixty pages on anaphylaxis, a word that at the present time takes the place of the blessed word Mesopotamia in medical literature more often than any other.

The fourth part of the book is given to the practical applications of modern theories of immunity. In it are discussed the reactions of the organism as a whole. Its first chapter summarizes the comparative values of the organism's methods of defence, the counter-attacks put up by pathogenic bacteria, the significance of incubation periods and late manifestations, and the duration of acquired immunity. The second chapter deals briefly with the immunity observed in various bacterial and other infective disorders, mainly in the case of man and including malignant disease.

Professor Bordet writes clearly and in a temperate spirit, with a fully adequate knowledge of the vast literature of the subjects with which he deals, and a highly judicial pen. His chapters teem with references to the practical applications of the science of immunity to medical and surgical questions of importance; herein they contrast not a little with the pages of Metchnikoff's great work, in which the observations recorded were rather those of a general biologist at work in a biological laboratory. Such a difference is natural, and illustrates the change in point of view that has come with the rapidly advancing knowledge and the generalization of experimental work in all civilized countries that have been so marked a feature of the last quarter of a century. Professor Bordet's book will long serve as a milestone to mark the present stage of our knowledge and the problems that seem at the moment most urgently in need of solution at the hands of the experimental pathologist and bacteriologist. It may be recommended very warmly to readers of this class; but it combines fullness with clearness of expression in so conspicuous a manner that it should reach a far wider circle of readers among scientific men and students.

NOTES ON BOOKS.

DR. FOX'S pamphlet on *The Care of Sane Epileptic Children*[4] gives an interesting account of the advantages presented by the colony system in their treatment, and is largely based on the author's experience as medical superintendent at Lingfield, where half the 330 patients are under the age of 16. Epileptic children are not accepted at this residential colony unless they are likely to benefit by the teaching provided, and a general sketch of this education is given. Dr. Fox concludes that the value of drugs, even of the bromides, in epilepsy is uncertain, and requires further investigation along agreed lines. This pamphlet contains many useful practical suggestions for those who have to deal directly with epileptic children.

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[8] *Traité de l'Immunité dans les maladies infectieuses.* By Dr. Jules Bordet, Directeur de l'Institut Pasteur de Bruxelles et Professeur à l'Université. Paris: Masson et Cie. 1920. (Roy. 8vo, pp. 728. Fr. 40 net.)

[4] *The Care of Sane Epileptic Children.* By J. Taylor Fox, M.A., M.D. London: J. Bale, Sons, and Danielsson, Ltd. 1920. (Demy 8vo, pp. 39. 1s. 5d. net.)

The value of a subtitle to a book is rarely so obvious as in the instance of the Rev. STEWART A. McDOWALL'S *Beauty and the Beast: An Essay in Evolutionary Aesthetic*;[5] for those attracted to it by a memory of Madame Villeneuvre's charming nursery story, *La Belle et le Bête*, may not only be disappointed but sorely puzzled what to make of this philosophic thesis. It is true that the first few lines of the introduction, "Are we to look at the beautiful with our feet firmly planted on the natural, or are we to look at the natural from the apparently precarious height of the beautiful? This, after all, is the dilemma of aesthetic, slow though men have been to realize it," will provide the casual reader with food for reflection, whether or not he is worthy. The author expands Croce's statement that beauty is expression in the following manner: "God is love; reality is love. Love is relationship. Beauty is the expression of that relationship." On the other hand, ugliness is the aesthetic or theoretical aspect of sin; in its practical aspect sin is uneconomic, unmoral.

A Corner-stone of Reconstruction,[6] by Four Chaplains to H.M. Forces, is a plea for social purity among men. It is a concisely worded handbook, written by men with a practical and sympathetic knowledge of humanity. It contains five short chapters and an appendix. The first chapter deals with a clear and able restatement of the moral standard. The second contains practical hints for those who wish to conduct social purity work; this chapter is the best in the book, and the authors have rendered mankind at large a very real service in writing it. The following chapter contains four specimen addresses, which were at various times delivered to large bodies of troops. These deal with the practical aspect and issues of social purity, the theme being developed on the usual lines. The discussion of the medical side of the question, in the fourth chapter, might have been omitted, especially as all necessary information on the subject is now provided by the State in a form easily understood. To sum up, this is a good book, sincerely and temperately written. It shows only those faults which appear inseparable from the ecclesiastical outlook on this subject.

Dr. JOHN O. TUNSTALL[7] has recently published a collection of short poems on various subjects, and so has joined the band of medical poets of whom the present Laureate is the outstanding example. Of these poems the most successful are those dealing with the country, particularly those about the English Lakes, which breathe a true love of nature. The longest is a sacred poem entitled "God's Plan," of which Part I only is given; three further parts in process of composition are reserved for future publication, when the whole story of man's creation and salvation will be told.

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[5] *Beauty and the Beast: An Essay in Evolutionary Aesthetic.* By Stewart A. McDowall, B.D., Chaplain and Assistant Master at Winchester College. Cambridge University Press. 1920. (Pp. 93. 7s. 6d.)

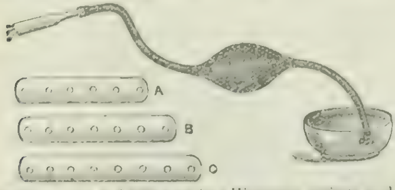
[6] *A Corner-stone of Reconstruction.* A Book on Working for Social Purity among Men. By Four Chaplains to the Forces. London: Society for Promoting Christian Knowledge; New York: The Macmillan Company. 1919. (Fcap. 8vo, pp. xi + 156. 3s. 6d. net.)

[7] *Poems.* By John O. Tunstall, M.D.Lond. Birmingham: Cornish Brothers, Ltd. 1920. (Cr. 8vo, pp. 121. 6s. net.)

APPLIANCES AND PREPARATIONS.

A Combined Throat Irrigator and Spatula.

WE have received from Miss Kathleen Taylor, Guy's Hospital District Nurses' Home, a specimen of a small appliance devised by her, and styled the "Barton combined throat irrigator and tongue depressor nozzle." It is made of



hollow glass, one end fitting on to a Higginson syringe and the other being perforated like the "rose" of a watering can. The object of this device is to allow the tongue to be depressed with the same instrument with which the throat is irrigated, and thus to afford a clear view of the affected part. It is made in three sizes, (a) infants, (b) children, and (c) adults, by the Surgical Manufacturing Company, Ltd., 85, Mortimer Street, W.1.

UNIVERSITY FINANCE.

PROSPECTS OF INCREASED GOVERNMENT AID.

A YEAR ago the Treasury appointed a University Grants Committee to inquire into the financial needs of university education in the United Kingdom and advise the Government as to the application of any grants that might be made by Parliament towards meeting them. The setting up of this committee gave concrete shape to the Government's recognition that provision for the aid of University education must be increased and consolidated, and that this could best be done on the advice of a single body. The constitution of the committee, of which Sir William McCormick is chairman, was stated in our issue of January 10th last at p. 54, where an account was given of the sums voted by Parliament for the financial year ending April, 1920.

Stated briefly, the annual recurrent vote for universities and colleges in the United Kingdom was raised to £1,000,000, and a special non-recurring vote of £500,000 was made for special grants in aid of certain universities, colleges, and medical schools, to assist them to re-establish their work on a basis of unimpaired efficiency after the war. The annual sums allocated to the different institutions take the form of inclusive block grants to be expended at the discretion of the governing bodies, the grants being made by the Treasury.

The Government has lately had under consideration the question of increasing these grants in aid of university institutions, and a memorandum on the subject was submitted to the Chancellor of the Exchequer by the University Grants Committee. In a letter to Sir William McCormick, dated July 16th, the Chancellor announces the Government's decision. While the Government recognizes the vital importance of the work of the universities in the national life, no supplementary grant within the present financial year will be considered; but in preparing the Budget estimates for 1921–1922, and "subject to overriding necessities of national finance," an increase of the present grants in aid from £1,000,000 to £1,500,000 will be considered. This Treasury grant will be applicable only to such activities as are clearly of a university character. In general, the object is to secure the present activities of the universities on a sound footing before aid is given towards extensions and developments. The Chancellor authorizes the University Grants Committee, in submitting recommendations for future grants, to take into account, on certain conditions, various elements of new local support provided during the past two years. In addition to the grant-in-aid the Chancellor is prepared to consider the advisability of a further non-recurrent grant to assist the universities in meeting the grievance of those of their senior members who are precluded from benefiting to the full by the universities superannuation scheme.

Before advising as to the distribution of the grant, the Committee will consider the claims of the various institutions and consult with their respective authorities.

The Government's proposals were outlined in the House of Lords on July 21st by the Earl of Crawford. He said that the proposed grant to meet the grievance of senior members in respect of superannuation, expressed the Government's desire to mitigate a real and tremendous personal hardship, with which they fully sympathized. The object of his main announcement, added Lord Crawford, was not merely to help the universities as such but to stimulate the benefactions of others. He expressed a statesmanlike belief in the need for preserving at all costs the special and intimate character of each university. Except in very rare instances he did not think uniformity desirable. In his opinion standardization was not democracy. There should be the greatest variation of methods, and indeed of ideals as well, in university life. The Marquess of Crewe, who followed, did not think the House need be too greatly alarmed by the use of the phrase "overriding financial necessities," which he took to represent the habitual caution proper to the Treasury.

THE Council of the University of Paris has approved of a proposal to grant two new diplomas within the Faculty of Medicine, one in puericulture and the other in radiology and radiotherapeutics.

THE OSLER MEMORIAL.

AT a meeting attended by a large number of representative members of the University of Oxford and of the medical profession, it was determined to raise a Fund to the memory of Sir William Osler, and it was resolved that in view of the intimate association of his life-work with the study of the origin and prevention of disease, the most appropriate form of memorial would be an Osler Institute of General Pathology and Preventive Medicine. A large General Committee has been formed and a smaller Executive Committee, consisting of the Very Rev. Sir T. B. Strong, Dean of Christ Church (now Bishop of Ripon), Chairman; Sir Herbert Warren, President of Magdalen College, Oxford, Vice-Chairman; Sir Archibald Garrod, Osler's successor as Regius Professor; Dr. Arthur Thomson, Professor of Human Anatomy, and Dr. C. S. Sherrington, Waynflete Professor of Physiology in the University of Oxford; together with the Honorary Treasurer, Mr. A. P. Dodds-Parker, Surgeon to the Radcliffe Infirmary; and the Honorary Secretary, Dr. J. A. Gunn, Professor of Pharmacology in the University. This Executive Committee has now issued the following appeal:

> At a public meeting held in Oxford on March 6 it was decided to issue an appeal for funds to erect an Osler Institute of General Pathology and Preventive Medicine, for the purpose of commemorating the distinguished services of the late Sir William Osler, Bart., Regius Professor of Medicine in the University of Oxford.
>
> Such a memorial would have been appreciated by Osler himself, for, beginning his life with his chief interests directed towards Pathology, he ended with an enthusiastic belief in the future of Preventive Medicine. It would be a fitting expression of the world's indebtedness to him alike as a physician, a teacher and an investigator, while it would at the same time be, what he himself would greatly have valued, of practical and daily utility to the advance of medical science.
>
> Osler was a great and good physician, but he was more than this, and for future generations of students there could be no better example. He recognized no breach between science and the humanities. His influence on the progress of medicine was profound, not only from his own contributions to knowledge, but from his genius in promoting, distributing, and organizing it. Combining with this a wide knowledge of human thought, a constant striving for the welfare of his fellow men, an unlimited capacity for friendship, a loftiness of ideal and a singular fortitude in his outlook on life, he justified the universality of those tributes paid to his memory which are still fresh in men's minds.
>
> A member of a distinguished Canadian family, he had the unique experience of exercising his wide and beneficent influence in Canada, in the United States, and in England, in each of which countries he was successively a professor of medicine; and few men can have done more to foster and consolidate friendship between them. This international character of his career and the range of his knowledge and sympathies merit a conspicuous and permanent tribute, for the remembrance of Osler's life-work is singularly fitted to bring home to the minds of all—whether our own undergraduates, Rhodes Scholars, or Foreign Students—the fact that knowledge knows no boundaries.
>
> For these reasons we believe that the proposed memorial, associated with the University in which for fifteen years Osler occupied such an honoured position, will do something more than carry on what was the central object of his life—the alleviation and prevention of disease; it will stand as a permanent tribute to nobility of character, breadth of sympathy, and greatness of achievement.
>
> The ultimate character of the memorial must, of course, depend on the amount and nature of the response to this appeal. The aims and objects set forth lead us to hope that it may be a generous one, and we earnestly solicit your help. Subscriptions should be sent to the Honorary Treasurer, Mr. A. P. Dodds-Parker, Holywell, Oxford, or to the National Provincial and Union Bank of England, 91, High Street, Oxford.

The patrons of the appeal are the Prince of Wales, the United States Ambassador in England and the British Ambassador at Washington, the High Commissioner for Canada, and Earl Curzon of Kedleston, Chancellor of the University of Oxford. We cannot reproduce the whole of the long list of the members of the General Committee; it will suffice to say that it contains representatives of all the universities of this country, as well as the Presidents of the Royal Colleges of Physicians and Surgeons of London and Edinburgh, of the Ministry of Health (Sir George Newman), of the Army Medical Service (the Director-General, Sir John Goodwin). Among other members are Sir Alfred Keogh, Rector of the Imperial College of Science and Technology, and such representatives of general culture as the Earl of Crawford, Sir Arthur Evans, and Mr. Rudyard Kipling. The British Medical Association is represented by its President, Sir Clifford Allbutt, its President-elect, Dr. David Drummond, and by an ex-President, Dr. William Collier.

HEALTH OF LONDON.

REPORT OF MEDICAL OFFICER TO THE LONDON COUNTY COUNCIL.

THE report for 1919 of Dr. W. H. Hamer, London County medical officer of health, which was issued last week, follows in general the lines of the previous reports, and includes the school medical officer's report; in addition, one-third of the volume is given to an appendix in which is submitted a report by Dr. F. N. Kay Menzies, on the treatment of tuberculosis in London.

Population of London.

The year under review was a period of transition from the war conditions of 1918 to almost normal conditions towards the end of 1919; by the middle of that year demobilization had so far counterbalanced repatriation of war refugees and of American and Colonial troops that there was a net addition to the London population of over 400,000. According to the Registrar-General's estimates, based on the National Register of 1915 and on information obtained in connexion with food rationing, it appears that the 1919 population of London was about 20,000 greater than that of 1914. Dr. Hamer remarks, however, that the estimate for 1914 is probably too low; reckoning on the basis of the children scheduled for elementary education in 1911 and 1914, he concludes that the total population in 1914 must have been about the same as the Registrar-General's estimate for 1919—namely, 4,540,062. If the food registration figures be taken to furnish an exact basis of calculation, the deduction of those on active service makes the resident population of the county about 80,000 less in the middle of 1919 than before the war. The scarcity of housing accommodation appears to be due not to increased population, but to diminution of building and to increase of marriages, which were 17,000 more from 1915–18 than from 1911–14. The estimated birth rate was 18.2 per 1,000 in 1919, as compared with 16.0 in 1918. The death rate was 13.6, or 5.6 less than that of 1918; in spite of 5,000 deaths attributable in 1919 to influenza, the total deaths, 59,114, were fewer than those in any previous year since 1856.

Infectious Diseases.

The prevalence of infectious disease, though still below the average, was not so exceptionally low as in the preceding three years. Several cases of small-pox appeared, but isolation of cases and contacts successfully limited the spread of infection. Diphtheria notifications exceeded those of any year since 1902. Scarlet fever has steadily increased since 1917, and Dr. Hamer remarks that there is every appearance of the approach of another period of greater prevalence of this disease.

In spite of the passage through London prior to demobilization of 400,000 persons drawn from all parts of Europe, typhoid fever showed in 1919 a still further decline; this accords with the prediction made in the annual report for 1914. While it is possible to ascribe to preventive inoculation the diminution in mortality among soldiers, such an explanation cannot hold in regard to that found among civilians. Dr. Hamer reviews the behaviour of typhoid fever in London since 1870; experience in this area indicates that

> first and foremost improvement of water supplies, and following upon that improvement of shellfish and fish supplies, have been the cause of the great decline of typhoid fever.

The outbreaks traceable to fish and shellfish are summarized, and evidence having epidemiological bearings is quoted from the Report of the Departmental Committee on Inshore Fisheries (1914). It is pointed out that as a result of the revival of the fishing industry there is likely to be an increased sale of fish and shellfish coming from remote and possibly polluted areas; inspection and control are called for, in order that typhoid may continue to be reduced. The report contains critical notes on the causation of typhoid fever and the epidemiological part played by Eberth's bacillus; and in his comments in the sections dealing with tuberculosis, and with influenza and cerebro-spinal fever, poliomyelitis and polioencephalitis (including encephalitis lethargica), Dr. Hamer again emphasizes "the need for a truer and more comprehensive epidemiology."

Administration of Midwives Acts.

Of 5,000 midwives having London addresses 450 to 500 only are in actual practice there. Infirmary cases being excluded, some 44,000, or 54 per cent. of the total births in London were attended by midwives. There were notified 26 slight, and 13 more serious infringements of the rules of the Central Midwives Board. Medical help was required by midwives in 5,347 cases, compared with 3,159 in 1917, and 2,738 in 1918; in part the increase is attributable to the fact that in January, 1919, the Council became responsible for the payment of the fee of the medical practitioner called in. During the year 2,034 approved claims were received from 368 doctors, amounting to £3,047 2s., an average of 30s. per case. Deaths from puerperal fever were 68 among 141 cases notified by medical practitioners, 35 among 112 cases notified by certified midwives, and 47 among 81 other cases. There were notified 856 cases of ophthalmia neonatorum, 464 apart from the practice of midwives; of 841 cases of inflammation of the eyes occurring in midwives' cases, 392 proved to be ophthalmia neonatorum. The Metropolitan Asylums Board have arranged for in-patient treatment at St. Margaret's Hospital, St. Pancras, of infants suffering from this disease.

In connexion with hospital clinics for venereal disease, new patients numbered 20,908 in 1919, compared with 12,538 in 1918. It is hoped to provide during the present year in-patient treatment for infected pregnant women and for female children suffering from gonorrhoea.

Medical Inspection of School Children.

During 1919, 49.5 per cent. of children were found to have sound teeth, compared with 44.7 in the previous years; but the need for dental attention at early ages is shown by the fact that 16.4 per cent. of entrants had four or more decayed milk teeth. In contrast with the steady improvement which had occurred during the war, some deterioration of nutrition was observed in 1919. Of all the children examined 5.5 per cent. were under-nourished in 1918, and 6.1 per cent. in 1919; the change was specially noticeable among entrants, of whom 4.7 (boys) and 4.4 (girls) were ill-nourished in 1918, as compared with 6.1 per cent. (boys) and 5.7 per cent. (girls) in 1919. The children with serious malnutrition increased from 0.5 per cent. to 1 per cent. during the same period. The report contains a comparison of the conditions of those examined as twelve-year-olds in 1919 with those found among the same children when examined as eight-year-olds in 1915. While there had been marked improvement in cleanliness and nutrition, and in the teeth and the condition of the throat and ears, the condition of the heart and the vision had deteriorated, and there was an increase in the amount of deformity present; the deterioration was in all three cases greater in girls than in boys, and in the last case, that of deformity, was confined to the girls.

Examinations were made during the year of juveniles between 14 and 18 in receipt of unemployment pay. Of 675 boys and 45 girls examined, 318 and 16 respectively, required treatment. Of the boys 33 per cent. and of the girls 7 per cent. needed dental attention, and the condition of the teeth was very distinctly worse than that of "school leavers." The remains of rickety deformities were discovered in 4.6 per cent., compared with 1.8 per cent. of "leavers"; the explanation was thought to be that a special class of boys was being dealt with, who had failed to obtain or to continue in employment in competition with others because of their poor physique. It is noteworthy that refusals of examination were negligible in number, and that both pupils and instructors welcomed the visits of the doctor. It is calculated that about 30,000 children in elementary schools require, for varying periods, open-air education. To the Council's two open-air schools and one tuberculosis open-air school, two schools of each kind have been added; in this way it has been decided to provide 4,000 places altogether. It is hoped to accommodate 8,000 in open-air classes in parks and playgrounds, and in time 4,000 younger children in nursery schools; the needs of the remaining 14,000 older children may be met by a period spent in a holiday camp or school similar to the King's Canadian Camp School at Bushey.

Tuberculosis in London.

The remaining sixty-eight pages of the report are given to a report in which Dr. F. N. Kay Menzies describes the present provision for tuberculosis in London, and indicates the extensions and modifications which seem to be desirable. Since 1914 the Council has defrayed half the net cost of the borough council tuberculosis dispensaries; in conjunction with Dr. J. E. Chapman, of the Ministry of Health, Dr. Menzies has examined the working of the thirty-three dispensaries in the London area. For a detailed account the report must be consulted; we give here some of the most important findings.

In any given year the dispensaries deal with half only of the new cases of pulmonary tuberculosis, and one-third only of non-pulmonary cases. Patients with pulmonary tuberculosis seen for the first time were 18 per cent. and 10 per cent. more numerous in 1918 than in 1917 among the insured and non-insured respectively; similar increases were anticipated for 1919. Provision of additional branch dispensaries is required in two areas, and the appointment of nine new tuberculosis officers is advisable. Co-operation with local practitioners has very greatly increased during recent years. In some dispensaries there was great congestion of patients, due to the numerous cases (especially children) who were retained in attendance for observation, but in whom definite diagnosis had not been made. By the more intensive study of new cases, effort being concentrated on the quick attainment of diagnosis, and by the less timorous discharge of patients not proven, after such study, to be tuberculous, this congestion may, it is said, be diminished.

> No doubt some of these discharged cases may ultimately break down from tuberculosis, but this unfortunate result will be more than counterbalanced by the increased efficiency which will result from the freeing of dispensaries from prolonged attendance of these observation cases. At present they overcrowd some dispensaries and render the observation either of themselves or others ineffective.

More extensive home visiting by dispensary doctors and nurses is recommended, and more complete co-ordination of the dispensary work and that of the borough public health departments is desirable. Dr. Menzies has surveyed the institutional accommodation available for resident treatment, and discusses the amount and character of the accommodation which should be provided for various classes of tuberculous patients. For cases requiring observation and for emergency cases (for example, those with haemoptysis or pleurisy) both diagnosis and treatment are preferably carried out in the large general hospitals; the provision is recommended of about 100 new beds. Many of the moderately advanced and chronic progressive cases have in the past either received no institutional treatment or occupied sanatorium beds, for which they were unsuitable; what to do with these cases forms one of the most difficult problems of the tuberculosis question. The view is here adopted that such patients must be given (1) a hygienic home; (2) suitable occupation, under medical supervision, in a factory or workshop; and (3) some means of supplementing their earning capacity during periods when they are undergoing institutional treatment; in areas where neither borough councils nor voluntary committees are able or willing to establish a factory or workshop under the supervision of the tuberculosis officer, the provision is foreshadowed of large institutions of a hospital-sanatorium type.

For advanced cases 250 beds are said to be immediately required; the problem is intimately bound up with that of existing Poor Law provisions.

> Until, therefore, the question of the future administration and control of the Poor Law infirmaries is settled, or at all events until it is definitely decided that the Council is responsible for all patients suffering from advanced tuberculosis because they are tuberculous, and not the Poor Law authorities because they are destitute as a result of tuberculosis), it is difficult to decide upon the best course to adopt.

For many reasons it is thought better to deal with these cases in large institutions, preferably those which receive also the moderately advanced and chronic cases. Arrangements of an entirely new character are judged to be necessary for cases of surgical tuberculosis in adults, for whom there is a serious dearth of accommodation.

THERE is at present an extraordinary increase in the number of medical students in Germany. Whereas in the summer term of 1907 there were 7,500 and in 1914 15,660, in 1919 their number exceeded 19,000. As the number of medical men in 1913 was 34,000, it may be calculated that there will be 48,000 in 1925. These figures do not include female students and practitioners, whose numbers are constantly increasing.

THE MEDICAL REGISTER: CHANGE OF ADDRESS.

Names of Practitioners who have not Responded to Inquiries.

AT the request of the General Medical Council we publish the following list of medical practitioners who have not responded to the inquiries of the Registrar of the General Medical Council made under Section 14 of the Medical Act, 1858. That Section imposes on the Registrars the duty to keep their respective registers correct. The following is the concluding portion of that Section:

> . . . and to enable the respective registrars duly to fulfil the duties imposed upon them it shall be lawful for the registrar to write a letter to any registered person, addressed to him according to his address on the *Register*, to inquire whether he has ceased to practise, or has changed his residence, and if no answer shall be returned to such letter within the period of six months from the sending of the letter, it shall be lawful to erase the name of such person from the *Register*, provided always that the same may be restored by direction of the General Council should they think fit to make an order to that effect.

It will be observed that Part I of the list contains the names of practitioners whose last known addresses were in the United Kingdom; this is divided into three sections: (*a*) Names of practitioners originally registered with the Registrar of the General Medical Council England and Wales); (*b*) practitioners registered in the Colonial List; (*c*) practitioners registered in the Foreign List. Part II is a list of the names of practitioners originally registered in Scotland; and Part III of the names of those originally registered in Ireland. The list of names, each with one qualification and last known address, is as follows:

PART I.

(*a*) PRACTITIONERS ORIGINALLY REGISTERED WITH THE REGISTRAR OF THE GENERAL MEDICAL COUNCIL (ENGLAND AND WALES).

(Communications in regard to Lists I (*a*), (*b*), and (*c*), should be sent to the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W. 1.)

Addinsell, Augustus Whiteborn, M.B.Edin. 1883, 10, Curzon St., W.1.
Alexander, Harold George, F.R.C.S. 1914, c/o Grindlay and Co.
Ash, James, L.S.A. 1898, Salcombe, Devon
Atkinson, John Lancelot, L.S.A. 1886, Stoke Newington Rd., N.

Baker, Henry Aitkens, M.R.C.S. 1878, Chipping Sodbury
Baker, Frederick Relland, M.R.C.S. 1899, Brighton
Bates, Howard James, M.R.C.S. 1913, Birmingham
Bawden, John Clemence, L.S.A. 1893, Brixton Rd., S.W.2
Baylis, Kathleen (Miss), L.M.S.S.A. 1910, Ormskirk, Lancs
Beale, Thomas Miles, M.R.C.S. 1885, Kew, Surrey
Beards, Clifford, M.B.Oxfd. 1907, Pewsey, Wilts
Behan, Jeremiah, L.R.C.S.I. 1885, Lixnaw, Co. Kerry
Bell, George, M.R.C.S. 1899, Sheffield
Bellew, Thomas Mulholland, M.R.C.S. 1911, Alder Hey Hosp., Liverpool
Benson, Percy Hugh, M.B.Aberd. 1877, Upper Walmer
Best, Albert James, L.R.C.S.Irel. 1912, Belfast
Bibby, William Ascroft, L.M.S.S.A. 1917, Liverpool
Biggs, John Maundy, M.R.C.S. 1878, Gosberton
Birkinshaw, Eileen Elizabeth (Miss), L.M.S.S.A. 1911, S. Croydon
Birks, Alan Herrenden, M.R.C.S. 1912, Belsize Park, N.W.
Black, Kenneth, F.R.C.S.Eng. 1904, Nottingham
Blackwood, John, L.S.A. 1895, Southsea
Bloomfield, Herbert Wadmore Gissing, M.R.C.S. 1895, St. Bart.'s Hospital
Body, Henry Marten, M.R.C.S. 1865, Wimborne
Bond, Charles Knox, M.R.C.S. 1884, Builth Wells
Borrow, Frederick Charles, M.B.Lond. 1901, Palmer's Green, N.
Braddon, William Leonard, M.R.C.S. 1884, Ealing
Brandon, Gordon Normanby, M.R.C.S. 1911, Ealing
Bronstorph, Ernest Ebenezer, L.R.C.S.Edin. 1918, Coburg Court Hotel
Brown, James Farquharson, L.S.A. 1891, Commercial Rd., E.
Buckley, John, L.S.A. 1898, Manchester
Burton, Charles Frank, M.C., M.R.C.S. 1913, Upper Norwood

Campain, Joseph Henry, M.R.C.S. 1911, Hull
Carr, Donald William, M.B.Camb. 1893, c/o C.M.S.
Cassidy, Joseph Lamont, M.D.Durh. 1877, Ramsgate
Chambers, John Miles, M.R.C.S. 1897, Murtle
Chambry, Johannes Karel Joseph, M.R.C.S. 1915, Wednesbury
Charlesworth, George, L.S.A. 1887, Plaistow, E.
Chatterton, Percy, L.S.A. 1866, Stockwell Green, S.W.
Chevreau, Paulin Roger, M.R.C.S. 1914, Redcliffe Sq., S.W.
Cieh, Ying-Jue, M.R.C.S. 1915, Chinese Legation
Clarke, James Fernandez Howard, L.S.A. 1884, Shaftesbury Ave., W.
Close, Edmund Napier, L.R.C.S.I. 1881, Exeter
Coates, Henry Honiton, M.R.C.S. 1890, Skerries
Coathupe, Edwin Wise, M.R.C.S. 1859, Oxford
Collyer, James Ralph, M.R.C.S. 1884, Playden
Coxwell, Charles Fransham, M.D.Camb. 1891, Dulwich
Cropper, John Hardman, L.R.C.S.Ed. 1883, Bristol
Crossit, Richard, L.R.C.S.Ed. 1876, Cookstown
Cuthbertson, John Oswald, M.B.Oxfd. 1901, Droitwich

Dargan, Patrick Arthur, M.R.C.S. 1916, St. John's Wood
Davenport, Robert Cecil, M.R.C.S. 1916, Highgate Rd., N.W.
Davey, Ernest Llewellyn, M.R.C.S. 1896, Walmer
Dearden, Harold, M.R.C.S. 1911, Lowndes St., S.W.
De Kievit, Gerardus Hendricus, L.M.S.S.A. 1916, Hampstead
Derry, Bartholomew Gidley, M.R.C.S. 1917, Bodmin
Dos Santos, Manoel Pedro, L.M.S.S.A. 1914, Bayswater, W.
Douty, Robert Joel Cazelet, M.R.C.S. 1912, Eastbourne
Driscoll, Cornelius Louis, L.M.S.S.A. 1907, Birmingham
Duke, Albert Theophilus, M.R.C.S. 1892, Bournemouth.
Duncan, George Cuthbertson, L.S.A. 1877, Charing Cross Hotel
Dworkowitz, Paul, M.R.C.S. 1914, North Kensington
Dyson, John Newton, M.R.C.S. 1901, Eastbourne

Eatock, Eric Richard, M.B.Manc. 1911, Crumpsall, Manchester
Ede, Alfred Gordon, M.B.Lond. 1900, E. Molesey
Edwards, Arthur Rea, M.R.C.S. 1881, Cirencester
Ellerton, John, M.D.St. And. 1862, Middlesborough-on-Tees
Ellis, Robert Sidney, M.B.Edin. 1900, Aston Cross, Birmingham
Elrington, Nicolas, M.R.C.S. 1893, Wethersfield
Embleton, Dennis, M.R.C.S. 1906, Hampstead
Emlyn, Charles Willmore, M.R.C.S. [illegible], Colworth Hall

Fairchild, George Cranston, M.R.C.S. 1914, Bishops Stortford
Fendick, Robert George, M.R.C.S. 1867, Livermead, Torquay
Fiddian, James Victor, M.R.C.S. 1912, Brentford
Flaxman, Samuel Christopher Reeve, M.R.C.S. 1909, Peckham
Forrest, John George Stracey, M.R.C.S. 1876, Winchester
Foster, Edward Cecil, M.R.C.S. 1902, Oxford
Fuller, Ashbury Joseph Stuart, M.R.C.S. 1908, Aberystwyth

Gasperine, John James, M.R.C.S. 1916, Stockton-on-Tees
Gauntlett, Harry Leon, M.R.C.S. 1909, Bloxham
Ghose, Sures Chandra, L.M.S.S.A. 1915, Devonport
Ghosh, Abani Mohan, M.B.Ed. 1915, Brighton
Gillam, Thomas Henry, L.S.A. 1876, Tenbury
Gilruth, George Ritchie, L.R.C.S.Ed. 1865, Edinburgh
Girgis, Melik, L.M.S.S.A. 1918, Hampstead
Gott, Jeffrey, L.S.A. 1897, Ringwood
Gunning, Montague Shirley Wyatt, L.R.C.P. Ed. [illegible], [illegible]
Gupta, [illegible], M.B.St. And. [illegible], c/o Thos. Cook and Son

Hale, Edmund Thomas, L.S.A. [illegible], Chiswick
Hall, Ethel Margaret Eades, L.M.S.S.A. 1911, Lancaster
Hampson, Joseph, M.R.C.S. 1878, Atherton, Manchester
Hanworth, Helena Josephine (Miss), M.R.C.S. [illegible], Russell Sq., W.C.
Harding, Geoffrey Duncan, M.B.L'pool 1914, Chorlton
Hardy, George Wilfrid, L.R.C.P. [illegible], Sutton
Harrison, Percy Booth, M.R.C.S. 1906, Dalston
Harvey, Thomas Reginald, M.R.C.S. [illegible], Avebury
Hawkins, Charles Thomas, M.R.C.S. [illegible], Garnant
[illegible], Edward [illegible] George [illegible], M.R.C.S. [illegible], St. Asaph
[illegible], Richard Athelstan Parker, M.D.Camb. 1913, Harrow
[illegible], Herbert [illegible], L.S.A. [illegible], Barnsley
Hodgkinson, Isaiah, M.D.Durh. 1913, South Shields
[illegible], [illegible], M.R.C.S. [illegible], Temple, E.C.
[illegible], Alfred, M.D.Durh. [illegible]
[illegible], Percy [illegible], M.R.C.S. [illegible], [illegible]
[illegible], Edwin Augustus, L.S.A. [illegible], [illegible], W.
[illegible], [illegible], M.R.C.S. 1897, Clapham
[illegible], [illegible], M.R.C.S. [illegible], Queen's Gardens, W.
[illegible], Henry [illegible], M.R.C.S. [illegible], Southend-on-Sea

Ingle, Arnold Clarkson, M.D.Camb. [illegible], Harpenden
Ingle, Laurence [illegible], M.R.C.S. [illegible], Harpenden
Jackson, George [illegible], M.R.C.S. [illegible], Clifton
Jackson, George Oscar, M.R.C.S. [illegible], Alford
James, Walter Evelyn, M.R.C.S. 1890, Derby

Jay, [illegible] [illegible], M.D.St. And. 1883, Constitutional Club, W.C.
J[illegible], [illegible] Arthur Wellesley, M.R.C.S. [illegible], Edgbaston
J[illegible], Arthur Reginald, M.R.C.S. 1897, Leigh
J[illegible], Edward Stanley, M.R.C.S. 1897, Liverpool
J[illegible], Samuel Walter Maslen, M.R.C.S. 1914, [illegible], I.O.W.
Jo[illegible], Gerald George, M.R.C.S. 1894, Southport
Judah, Nathanael Joseph, M.B.Ed. 1911, [illegible] Green

Kameneff, Vladimir, M.R.C.S. 1916, University College Hosp.
Kebbell, [illegible] Frederick Vivian, M.R.C.S. [illegible], West Ealing
Keys, Robert A[illegible], F.R.C.S.Ed. 1874, Wolverhampton
Khan, H[illegible] Hyderali, L.M.S.Bombay 1914, Guy's Hospital
Kilgour, William Robert, M.R.C.S. 1906, Cromwell Rd., S.W.
Kingsford, Percival, L.S.A. 1869, Queensberry Place, S.W.
Knobel, William Bernard, M.D.Camb. 1905, Belbroughton
Knowles, Cyril Reginald, M.C., M.B.Leeds 1916, Bridlington
Kryvett, Hugh Ferrers, L.R.C.P.Ed. 1880, Ridgemount Gardens, W.C.

Langley, John Inman, M.R.C.S. 1898, Coventry
Lazanas, Elias Paragis, M.R.C.S. 1916, Harley St., W.
Lee Watson, Basil Hugh Campbell, M.R.C.S. 1911, Gainsborough
Ledger, Lloyd Kirkwood, M.R.C.S. 1917, Hereford
Lemon, Edward Henry, M.R.C.S. 1889, Bournemouth
Lomax, Montague, M.R.C.S. 1883, Brighton
Low, Charles Arthur, L.S.A. 1877, St. Leonards-on-Sea
Lowe, Charles Edwin Maximilian, M.B.Vict.U. 1892, Crewe
Lynes, John, L.S.A. 1884, Kensington, W.

MacDonald, Charles Eric Wells, M.R.C.S. 1908, Ilford
McGivna, James, L.R.C.S.Ed. 1898, Castlederg
McQueen, Robert Martin, M.R.C.S. 1903, Boundary Rd., N.W.
Manders, Horace, F.R.C.S.Eng. 1878, Harley St., W.
Master, Jehangir Ardeshir, L.M.S.Bombay 1905, Upper Holloway, N.
Matthews, George William, M.R.C.S. 1912, Maxwelltown
Maugham, William Somerset, M.R.C.S. 1897, Mount St., W.
Maunsell, Frederick Wyndham, M.R.C.S. 1916, c/o Nat. Mortgage and Agency Co. of New Zealand
May, Francis Hollingsworth, L.S.A. 1890, Birmingham
Menon, Pat[illegible]veettal Narayana, M.R.C.S. 1917, Royal Eye Hosp., Manchester
Mercer, William Bracewell, M.B.Camb. 1892, Southbourne
Meyer, Gustav, L.M.S.S.A. 1912, Rosebery Av., E.C.
Mitchell, Arthur Oscar, M.R.C.S. 1910, Herne Hill
Mitchell, George Stanley, L.M.S.S.A. 1916, Herne Hill
Moore, B[illegible], M.R.C.S. 1907, Oxton
Morgan, [illegible] Mary, M.B.Lond. 1910, Weymouth
Morrell, Reginald Arthur, M.R.C.S. 1908, Harley St., W.
Moore, Frederick Temple, M.R.C.S. 1892, [illegible]
Morr[illegible], Harold, L.M.S.S.A. 1915, Ealing
Morton, S[illegible], M.R.C.S. 18[illegible], Sheffield
Moxey, Percy, L.S.A. 18[illegible], Dorchester
Moxon, Alban Henry, M.R.C.S. 18[illegible], Catford, S.E.
Moxon, Alfred, L.S.A. 18[illegible], [illegible]
Moxon, Herbert William, M.R.C.S. 1906, Matlock
M[illegible], William, M.D.Durh. 18[illegible], Newcastle-on-Tyne

N[illegible], Charles Henry, L.R.C.P.Ed. 19[illegible], Mortimer
Neal, Warren Fulton, M.R.C.S. 1908, [illegible] Gardens, N.W.
N[illegible], Herbert Lewis Clifford, M.R.C.S. 1910, [illegible]
N[illegible], Benson Joseph, L.M.S.S.A. 1910, [illegible]
Norton, Ar[illegible] Charles Wodehouse, L.S.A. 1854, Chepstow Villas, W.
N[illegible], [illegible] Henry Francis, M.R.C.S. 1896, Balham High Rd., S.W.

Oakes, Arthur, M.R.C.S. 18[illegible], Birmingham
O'Brien, [illegible] James, M.B.Ed. 1879, Maida Hill, W.
O'Donovan, William James, M.R.C.S. 1909, Bow, E.
Oglesby, Henry Newsome, M.R.C.S. 1883, Perry Bar, Birmingham

Paley, Charles Edward Hewitt, M.R.C.S. 1910, Nottingham
Palmer, Ambrose Myrie, M.R.C.S. 1872, Chesterfield
Pank, Philip Esmond Durrell, M.R.C.S. 1916, [illegible] Ford
Pa[illegible], Charles Aubrey, M.B.Lond. 1906, Church End, Finchley
Pantcheva, Elliot Jessie (Mrs.), M.B.Durh. 1911, Judd St., W.C.
Parker, George Fisher, L.S.A. 1860, Cuckfield
Perkins, Whitfield, M.D.Durh. 1886, Port Isaac
Perry, Walter Dymock, M.R.C.S. 1895, Earl's Court, S.W.
Pfeiffer, Albert, M.R.C.S. 1911, Wimpole St., W.
Pill, Stanley Victor Percy, M.R.C.S. 1915, Ladbroke Grove, W.
Place, Thomas Lloyd, M.R.C.S. 1865, Oxford Terrace, W.
Pocock, Theodore Charles, M.B.Lond. 1906, Hove
Pol[illegible], James Ronald, M.D.Birm. 1903, Highcliffe, Christchurch
Ponn[illegible], S[illegible]apillai, L.R.C.P.Ed. 1914, c/o Surgeons' Hall
Poole, Kenneth Worsley, M.B.Durh. 1890, Addison Bridge, W.
Pooler, John Read, M.B.Birm. 1903, Westcliff-on-Sea
Potts, Matthew Bertram, M.B.Manc. 1906, West Vale
Price, William Matthews, M.R.C.S. 1898, Christchurch
Prince, Hugh Tennant, M.R.C.S. 1893, Boston Spa
Prior, Edward Thurlow, L.S.A. 1877, Loddon
Provis, Francis Lionel, M.R.C.S. 1898, Hanover Sq., W.

Race, Edmund, M.B.Durh. 1893, South Shields
Ramsbottom, Charles Henry Geoffrey, M.D.Vict.U. 1897, Whitchurch
Reed, Henry Albert, L.S.A. 1884, c/o O.S. Navigation Co.
Reeve, Edward Gordon, M.R.C.S. 1912, Queen's Gate, S.W.
Reid, Sydney Jessie Scott, M.R.C.S. 1913, Cheniston Gardens, W.
Rennie, William, M.R.C.S. 1889, King's Heath
Rice, Hubert Richard, L.S.A. 1897, c/o Bank of Adelaide
Roberts, Hugh Corrall, M.R.C.S. 1893, Melton Mowbray
Roberts, John Dungey, M.R.C.S. 1869, Ealing
Roberts, Joseph Harry, M.B.Ed. 1891, Hastings
Roberts, Richard Cadwaladr, M.R.C.S. 1906, Wymeswold
Robinson, Edmund, M.R.C.S. 1867, Leeds
Robinson, Norman Battye, M.R.C.S. 1888, Henley-on-Thames
Robinson, William Newman, M.D.Q.U.Irel. 18[illegible], Ealing Common
Rogers, Henry Cripps, M.R.C.S. 1865, Lympstone
Rogerson, William Albert, M.R.C.S. 1914, Leyland, Preston
Rosenberg, Sophie Sarah, M.R.C.S. 1917, Queen Mary's Hosp. for the East End
Rowbotham, Edgar Joseph, M.R.C.S. 1894, Clapham Common
Royle, Essie Marsh, M.D.Manc. 1909, Wigan
Ruel, Charles Percival, M.R.C.S. 1889, Southsea
Ruttledge, William Edward, M.R.C.S. 1900, R.A.M.C., Blackpool
Ryan, Thomas, L.S.A. 1882, Kilkenny

Scott, Ralph Robert, L.R.C.S.Irel. 1853, Bath
Seagrove, George Mervyn, L.S.A. 1906, [illegible]
Sear, John Taylor, M.R.C.S. 1896, Enfield
Seddon, Alan, M.B.L'pool 1911, c/o Cox and Co.
Seddon, Harold, M.B.L'pool 1912, Liverpool
S[illegible], Gr[illegible] Ewart, M.R.C.S. 1882, Folkestone
Shafi, Mian Mohammad, L.M.S.S.A. 1917, London Hospital, E.
Sh[illegible], B[illegible] Z[illegible]uddin, M.R.C.S. 1914, Miller Hospital, S.E.
Sharpe, Claudius Galen Kaye, M.B.Leeds 1910, Luton
Sh[illegible]ford, Henry Bartlett, L.S.A. 1890, Camberwell, S.E.
Sh[illegible], Mandell, M.R.C.S. 1917, London Hospital, E.
Simpson, George Ba[illegible]thorpe, L.R.C.P.Ed. 1897, Smethwick
Soper, John Smith, M.R.C.S. 1913, Victoria Hosp. for Children, Chelsea
Snowdon, Alan Richmond, M.R.C.S. 1911, Scotswood
Somerset, Vero Edward, M.R.C.S. 1911, Finchley, N.
Sommer, Sarah Charlotte Eliza, M.B.Lond. 190[illegible], Hoveringham
Southern, Francis Gerald, L.S.A. 1884, Llandebie
Speedy, Robert George Dunell, M.R.C.S. 1888, Bedford
Spencer, John Heatly, M.B.Lond. 1906, Lower Seymour St., W.
Spillane, James Charles, M.B.Lond. 1895, Royal Societies Club
Stacey, C[illegible]s James, M.R.C.S. 1888, Ealing
Statter, Henry Bellamy, M.R.C.S. 1890, Bournemouth
Steel, Henry Golege, L.M.S.S.A. 1912, Southampton
Stewart, Hugh George, M.D.Glasg. 1901, Northampton
Stolterfoht, Charles Sigismund, M.R.C.S. 19[illegible], Wallingford
Sutcliffe, Alan Lee, M.B.Camb. 1914, Burley-in-Wharfedale
Swindale, Henry Vernon, L.S.A. 1900, Southwick Place, W.

Tetley, Frederick Harrison, L.R.C.S.Ed. 1877, Rugby
Thirkill, Henry, L.S.A. 1885, Leeds
Thompson, George Hobson, M.R.C.S. 1888, Buxton
Thompson, Maitland, M.R.C.S. 1884, Hemel Hempstead
Thomson, Arthur Peregrine, M.B.Birm. 1915, Northfield
Thorburn, Ian Campbell, L.S.A. 1905, Birkenhead
Thorpe, George Elisha Knight, L.S.A. 1869, Sheffield
Titterton, Herbert Charles, M.R.C.S. 1902, Hampden Club, N.W.
Todd, John, M.R.C.S. 1865, Mile End Rd., E.
Todd, William Fentham, M.R.C.S. 1907, New Malden
Toulmin, Ernest William, M.R.C.S. 1908, St. John's Wood
Tripp, Basil Hubert Howard, M.R.C.S. 1909, Southwold
Tucker, Sydney Arthur, M.B.Lond. 1909, Bromley

Wade, Albert Holland, L.S.A. 1900, St. John's Wood, N.W.
Waldron, Charles Edward, M.R.C.S. 1907, London Hospital, E.
Walker, Ernest Ronald, M.R.C.S. 1901, Bromley
Walker, George, M.R.C.S. 1889, Forest Hill, S.E.
Walker, James, M.R.C.S. 1867, Hull
Walker, Lewis Augustus, M.R.C.S. 1899, Lee-on-the-Solent
Wallace, Gerald Douglas Hamilton, M.R.C.S. 1907, Newtown
Waltenburg, Theophilus Ralph, L.S.A. 1904, Manchester
Walter, Ernest William, M.R.C.S. 1878, Stockwell, S.W.
Walters, Enid Margaret, M.B.Lond. 1908, Broadstone, Dorset
Warburton, John Rollo Noel, M.R.C.S. 1914, West Dulwich
Warburton, Joseph Wilkinson, M.R.C.S. 1864, Bournemouth
Ward, Frederic Henry, M.R.C.S. 1865, Ealing
Warden, Horace Frederick William, M.R.C.S. 1913, Lexham Gardens, W.
Watson, John Wallace, M.S.R.U.Irel. 1887, Ivanhoe Hotel, W.C.
Webb, Frank, M.R.C.S. 1890, Leigh
Weizmann, Vera Rebecca (Mrs.), M.B.Manc. 1912, Rusholme, Manchester
West, Richard Milbourne, M.R.C.S. 1891, Leicester
White, John Bradshaw, M.D.Q.U.Irel. 1869, Upper Clapton, N.E.
Wilkin, Loftus Ralph, M.R.C.S. 1882, York
Wilkinson, Lancelot Craven, M.R.C.S. 1914, St. Bart.'s Hospital
Williamson, William Pettigrew, L.S.A. 1899, Royal London Ophthalmic Hospital
Wilson, Charles William, M.R.C.S. 1874, Bury St. Edmunds
Wilson, Mervyn Seppings, L.S.A. 1882, Chippenham
Wilson, William Bernard, M.R.C.S. 1915, Hackney, E.
Wilton, Stanley, M.D.Oxfd. 1903, East Liss
Winter, Frank, M.B.Durh. 1886, Newcastle-on-Tyne
Wolfenden, Richard Norris, M.D.Camb. 1884, Sidcup
Wood, John Askey, M.R.C.S. 1890, Northampton
Wood, Charles Murray, L.S.A. 1902, Charleville Rd., W.
Woolham, Josiah Gilbert, M.B.Vict.U. 1901, Manchester
Wylie, James Thompson Roy, M.R.C.S. 1892, Sallins

Young, Campbell, M.R.C.S. 1916, West Worthing
Young, Roy Frew, M.B.Camb. 1909, Glasgow

Zarchi, Simcha, L.M.S.S.A. 1913, Russian Law Bureau

(b) PRACTITIONERS REGISTERED ON THE COLONIAL LIST.

Abbott, Nigel Basil Gresley, M.B Adelaide 1916, Cheltenham Gen. Hosp.

Bharucha, Kaikhusru Byramji, L.M.S.Bombay 1914, Brighton
Bharucha, Nadir Nasserwanji, L.M.S.Bombay 1909, Earl's Court, S.W.
Bird, Mary Adelaide (Mrs.), M.D.McGill 1915, Gerrard's Cross
Burrell, William Alexander Hamilton, M.B.Melb. 1915, c/o Bank of Victoria, E.C.
Biswas, Lalit Mohon, L.M.S. Calcutta 1911, c/o Thos. Cook and Son
Black, Geoffrey Howard, M.B.Adelaide 1916, Birmingham
Blair, Archibald Turner Macleod, M.B.N. Zealand 1906, Hammersmith Infirmary, W.
Blashki, Eric Phillip, M.C., M.B.Sydney 1915, c/o Bank of Australasia, E.C.
Bretherton, Albert Wilber, M.B.Melb. 1915, Bristol
Brown, Chester Pettit, M.B.Toronto 1913, No. 4 Canadian Gen. Hosp.
Brownridge, Thomas Roy, M.D.Man. 1916, c/o Army Post Office

Casserley, Michael Joseph, M.B.Toronto 1908, c/o Messrs. Holt and Co.
Chaudha, Lakshmi Prasad, L.M.S.Calcutta 1895, c/o Thos. Cook and Son
Chand, Amir, M.B.Punjab 1913, c/o Messrs. H. S. King and Co.
Chohan, Noormahomed Kasembhoy, L.M.S. Bombay 1913, Cromwell Rd., S.W.
Costain, William Alfred, M.B.Toronto 1911, Lancaster Gate, W.

Das, Premananda, L.M.S.Calcutta 1899, Edinburgh

Elliott, Byron Stevenson, M.D.Toronto 1907, Witley Camp
English, Robert Joseph, M.B.Sydney 1909, c/o Bank of N.S. Wales

Fleming, Thomas Gordon, M.C., M.B.Adelaide 1909, Torrington Square, W.C.
Fraser, Alexander Clow, M.B.Melb. 1915, Fovant, Wilts.

George, Thomas Edwin, M.B.Melb. 1912, c/o N. Bank of Australasia

Ghosh, Kiranenda, L.M.S.Calcutta 1912, c/o Thos. Cook and Son
Godby, William Heitland, M.B.Melb. 1914, South Hampstead, N.W.
Griffiths, Ada Isabella Valentine, M.B Melb. 1905, Evelina Hospital, S.E.
Guest, Edith Mary, M.B.Toronto 1910, Piccadilly, W.

Hamilton, George Harold Ross, M.B.Toronto 1910, Swansea
Hartridge, Oliver Keith, M.B.Melb. 1912, c/o Bank of N.S. Wales
Hassan, Syed, L.M.S.Punjab 1900, c/o H. S. King and Co
Hawthorne, William Stuart, M.B.Sydney 1915, c/o Holt and Co.
Hewitt, Samuel Ross De Lapp, M.B Toronto 1914, Woodcote Park, Epsom
Hodgson, Ronald George Keith, M.B.N. Zealand. 1915, c/o Bank of N.S. Wales
Howlett, George Patrick, M.C.P. and S. Ont. 1909, Woodcote Park, Epsom

Jeffries, Lewis Wibner, O.B.E., M.B Adelaide 1907, Hackney Rd., N.E.
Joyce, Cecil Roy, M.D.McGill. 1914, Queensborough Terrace, W.

Kamdin, Rustom Dossabhoy, L.M.S.Bombay 1912, c/o Thos. Cook and Son
Karaka, Dhanjishaw Phirozshaw, L.M.S. Bombay. 1912, Kingswood, Bristol
Kinsella, Malcolm Daniel Boyd, M.D.Ont. 1912, Prince of Wales Hosp., N.
Kneebone, John Le Messurier, M.B.Adelaide 1911, Torrington Square, W.C.

Laskari, Phiroz Framji, M.B Bombay. 1914, Brighton
Lawyer, Annie Amanda, M.D.Ont. 1888, Dawlish
Leacy, Patrick, M.B.Ont. 1916, Witley Camp
Leith, George, M.D.Man. 1917, Witley Camp
Longley, Israel Fletcher, M.C.P. and S.Sask. 1911, Northampton

McCaffrey, Ernest Moore, M.B.Sydney 1916, Swansea
McDonald, Sydney Fancourt, M.D.Melb. 1913, c/o Bank of Victoria

[illegible] Pearson, Stella May (Mrs.), M.D. Durham 1914, Russell Square, W.C.
Monahan, Richard Joseph, L.M.S.N. Scotia, P.M. Bd. 1907, Torrington Square, W.C.

O'Leary, Ralph Daniel, M.B.Melb. 1906, Chatham
Oonvala, Jehangir Hormusji, L.M.S.Bombay 1910, c/o Thos. Cook and Son

Palmer, John Ernest, L.M.S.N.B. Co. 1915, c/o Bank of Montreal
Pettit, Thomas Harold, M.B.N. Zealand 1913, c/o Bank of N. Zealand
Poduval, Ambadi Rama, M.B.Madras 1912, Birkenhead
Purves, Allan Melrose, M.C., M.B.Sydney 1909, Golder's Green

Rau, B. Kesava Narayana, M.B.Madras 1910, Oxford
Robertson, Herbert Donald, M.B.N.Zealand 1911, Gordon Sq., W.C.
Rutter, John Hemphill, M.B.Melb. 1907, c/o Union Bank of Australia

Sabnis, Ramchandra Dattatraya, M.D.Bombay 1915, Hampstead, N.W.
Shaw, Thorne William, M.D.Man. 1917, Bellshill
Short, Hugh, M.B.N.Zealand 1914, Brompton Hosp., S.W.
Sleeman, James Garnet, M.B.Melb. 1915, c/o Bank of Victoria

Talati, Jehangir Manekji, M.B Bombay 1913, Brighton
Thompson, Leslie Joseph, M.B.N.Zealand 1912, Edinburgh
Thompson, William Barbour, M.B.Sydney 1913, Lewisham

Vaidya, Jagannath Balkrishna, L.M.S.Bombay 1910, c/o Thos. Cook and Son

White, James Renfrew, M.B.N.Zealand 1912, c/o Bank of N. Zealand
Woodhouse, Philip Randal, D.S.O., M.B. N. Zealand 1910, W. Kensington, W.

(c) PRACTITIONERS REGISTERED ON THE FOREIGN LIST.

Bertrand, Paul Aime Albert Alex, M.D. Brussels 1900, Connaught Rd., E.

Corpeeren, Emile Felix, M.D.Louvain 1884, Wallington
Curioni, Fernando, M.D.Turin 1901, Shaftesbury Ave., W.

De Bie, Joseph, M.D.Louvain 1887, Liverpool
de France, Maurice, M.D.Ghent 1908, Coventry
de Francisco, Donato, M.D.Bologna 1898, Torrington Sq., W.C.
Delbastée, Georges, M.D.Brussels 1887, Hampstead, N.W.
De Naeyer, Theodore, M.D.Louvain 1886 Brixton Hill, S.W.
de Neeff, Cesar Victor Emmanuel, M.D. Brussels 1902, Reading
Druart, Camille Nicolas, M.D.Brussels 1902, c/o Cunard S.S. Company

Green, Frederick, M.D.Naples 1906, Tottenham Court Rd., W.
Grijspeerdt, Simon Benoit, M.D.Ghent 1884, Forest Gate, E.

Haulet, Leon, M.D.Liége 1898, Glasgow
Hermant, Ernest, M.D.Brussels 1901, King Albert's Hosp., N.
Hottlet, Alfred, M.D.Louvain 1886, Leigh

Kemel, Richard, M.D Louvain 1902, Liverpool
Kennis, Theodore, M.D.Louvain 1881, Westmoreland St., W.
Kesteloot, Michel, M.D.Ghent 1905, Hadley Woods

Lauwens, Rene Marie Louis Ghislain, M.D. Louvain 1905, Sch. of Tropical Medicine, E.
Lemaire, Paul Albert, M.D.Liége 1906, Folkestone
Loonus, Hector, M.D.Louvain 1894, Brixton Hill, S.W.

Maertens, Louis Joseph, M.D.Louvain 1880, Maidstone
Mans, George, M.D.Brussels 1906, Woburn Place, W.C
Merchie, Edmond, M.D.Louvain 1900, Brixton Hill, S.W.
Mersch, Edmond, M.D.Brussels 1889, Woolwich, S.E.
Moreaux, Edouard, M.D.Brussels 1894, Croydon
Murdoch, John, M.D.Brussels 1911, Guilford St., W.C.
Muyshondt, Henri, M.B.E., M.D. Brussels 1899, Birtley

Pattyn, Pierre Antoine Camille, M.D. Louvain 1888, Farningham

Renoirtte, Henri, M.D.Brussels 1902, Bristol

Samson, Louis, M.D Naples 1901, Shooter's Hill, N.W.
Schmit, Roger, M.D.Louvain [illegible], Warwick St., S.W.
Seeuwen, Henri, M.D.Ghent 1888, Manchester
Snoecks, Maurice Edouard Remi, M.D.Ghent 1910, Sidcup

Thielmans, August, M.D Louvain 1909, Talgarth

Van de Male, George, M.D.Ghent 1894, Streatham
Van den Wyngaert, Francis, M.D Louvain 1895, Halifax
Van der Beken, Pierre Mathieu, M.D Louvain 1906, Mansfield
Van der Veerdt, Alfred, M.D.Brussels 1898, King Albert's Hosp., N.
Van Driessche, Albert, M.D.Louvain 1910, Manchester
Van H[illegible], Clemens, M.D Louvain 1892, Teignmouth
Van Hyfte, Henri, M.D.Brussels 1905, Birmingham
Van M[illegible], Auguste, M.D Louvain 18[illegible], Manchester
Van R[illegible], Joseph Leonard, M.D. Louvain [illegible], [illegible]
Ver[illegible], P[illegible], M.D Louvain [illegible], Argyle Square, W.C.

W[illegible], Charles, M.D [illegible] 1[illegible], [illegible] Bedford Place, W.C.
W[illegible], [illegible], M.D [illegible], Liverpool

PART II.

PRACTITIONERS ORIGINALLY REGISTERED IN SCOTLAND.

(Communications in regard to List II should be sent to the Registrar of the Scottish Branch Council, 20, Queen Street, Edinburgh.)

Adam, John, Scottish Triple 1917, Sunderland
Aitken, John Stevenson, Scottish Conjoint 1882, Wakefield
Angus, William Stephen, M.B.Aberd. 1908, Arbroath
Annequin, Edgar, Scottish Triple 1916, Glasgow
Armstrong, Janet, M.B.Edin. 1910, Swansea
Arnold, John Irwin, Scottish Triple 1912, Enniscorthy

Baird, John Bruce, M.C., M.B.Glasg. 1910, Glasgow
Baldwin, Godfrey William Waller de Courcy, Scottish Triple 1889, Liverpool
Barseghian, (Basil) Mesroob, M.B.Edin. 1914, Manchester
Bell, George, M.B.Edin. 1897, Belfast
Bhattacharjee, Monindra Nath, M.B Glasg. 1917, Glasgow
Bidie, Evan, Scottish Triple 1902, Braemar
Birnie, Charlotte Murdoch, M.B.Edin. 1911, York
Bowie, Thomas Chalmers, M.B Edin. 1915, Edinburgh
Brand, Elizabeth Grace (Mrs.), M.B.Aberd. 1915, Keighley
B[illegible], [illegible], [illegible], [illegible], [illegible]ingham
Br[illegible], [illegible], M.B.Edin. 1914, [illegible]
Br[illegible], [illegible], Scottish Triple [illegible], [illegible]
B[illegible], [illegible], M.B [illegible] 1909, [illegible]
Br[illegible], Duncan Francis, M.B.Glasg. 1903, Greenock
Brown, Francis Frederick, M.B.Aberd. 1913, London
Buckley, Lucy, Scottish Triple 1898, Oldham

B[illegible]r, Arthur Harold de W[illegible]t, M.B.Edin. [illegible], Edinburgh
B[illegible], Arthur Macafee, Scottish Triple 1915, Edinburgh

Cameron, James Thomson, M.B.Aberd. 1913, Aberdeen
Cameron, Robert Evan, M.B.Edin. 1914, Edinburgh
Canekeratne, Walter Edmond, M.B.Edin. 1917, Edinburgh
Carroll, Patrick, Scottish Triple 1902, Manchester
Carwithen, Gelfina Maude (Mrs.), M.B.Edin. 1901, Standeford
Case, Henry William, M.B.Edin. 1893, Manchester
Chambers, Henry Francis Townshend, Scottish Triple 1889, Surbiton
Chandler, Frederick Charles, M.C., M.B.Edin. 1914, Edinburgh
Chatterjee, Haripado, Scottish Triple 1910, Whalsay
Christie, Allan Leslie, M.B.Edin. 1912, Edinburgh
Clarke, Allan Wise, Scottish Triple 1887, Liverpool
Clayton, William Arthur, Scottish Triple 18[illegible], Preston
Collett, Edith Grace, Scottish Triple 1892, Sidmouth
Collins, Henry Frank, Scottish Triple 1907, Edinburgh
Combe, Frederick Orloff, M.D.Edin. 1889, Bexhill-on-Sea
Conley, Wallace MacCallum, M.B.Glasg. 1913, Glasgow
Cook, Oswald, M.B.Edin. 1912, Birmingham
Cooke, Agnes Elizabeth Mary, M.B.Glasg. 1914, Greenock
Cosgrove, Charles, Scottish Triple 1913, Edinburgh
Coutts, Edgar Nesbitt, Scottish Triple 1904, London
Cowe, John, Scottish Triple 1889, Liverpool
Craik, William, M.B.Glasg. 1892, Goldthorpe
Cumming, Robert Scott, M.C., M.B.Aberd. 1915, Aberdeen

Dakers, Bernard William, Scottish Triple 1906, Brigg
Dalal, Mulubhai Kuberdas, Scottish Triple 1914, Sheffield
Davies, George Augustus, M.D.Edin. 1905, Musselburgh
Davies, Philip [illegible], M.B.Edin. 1912, Chislehurst
Davies-Jones, Charles William Sanderson, M.B.Edin. 1915, Edinburgh
[illegible], Bertrand Langridge, O.B.E., M.B.Aberd. 1915, Aberdeen
D[illegible], Thomas Francis, Scottish Triple [illegible]
D[illegible], [illegible] William, M.B.Aberd. 1891, [illegible]
D[illegible], Edward Demetrius Dalziel, M.B.Edin. [illegible], Edinburgh
D[illegible], James, M.C., M.B.Edin. 1916, Edinburgh
D[illegible], Winifred Mary, Scottish Triple 1913, [illegible]
D[illegible], Scottish Triple 1914, Edinburgh
D[illegible], Russell John, M.D.Edin. 1894, [illegible]
Drynan, Alexander Erskine, M.C., M.B.Edin. 19[illegible], Edinburgh

E[illegible], John, Scottish Triple 1897, Beal
E[illegible], Scottish Triple [illegible]
E[illegible], M.B.St And. 1915, Dundee
E[illegible], Thomas Henry, Scottish Triple 1897, Liverpool
E[illegible], M.D.Edin. 1902, Gullane
E[illegible] Hoggan, M.D.Edin. 1897, Hythe

F[illegible], Clarence Forbes, M.B.Aberd. [illegible]
F[illegible], John Potterton, Scottish Triple [illegible], Dunedin
F[illegible], Harry Taylor, M.B.Glasg. 1915, [illegible]
F[illegible] Hamilton, Scottish Triple [illegible]
F[illegible], Duncan, Scottish Triple 1895, Perth
F[illegible], William, Scottish Conjoint 1875, [illegible]

G[illegible], Bhaskar Balwantrao, M.B.Edin. [illegible], Edinburgh
G[illegible], M.B.Edin. 1917, Edinburgh
G[illegible], William James, Scottish Triple 1906, Edinburgh
G[illegible], William, M.B.Glasg. 1901, West [illegible]
G[illegible], Arthur Leslie, Scottish Triple 1916, Edinburgh
Gillespie, John Marchbank, M.C., M.B.Edin. [illegible]
G[illegible], Alexander, M.D.Glasg. 1904, London
G[illegible], Joseph, M.B.Glasg. [illegible], London
Goldberg, Harry Raephal, M.B.Edin. 1918, Haddington
Gordon, William Gordon, M.B.Aberd. 1905, Malvern
Granger, Robert Fawcitt, Scottish Triple 1889, Liverpool
Grant, George Reginald, M.C., M.B.Edin. 1913, Edinburgh
Gray, David George, M.B.Edin. 1907, Belfast
Gray, Francis Audubon, Scottish Triple 1902, Armagh
Griffiths, Alfred Thomas, Scottish Triple 1897, Cleckheaton
Gwynne, Joseph Robert, Scottish Triple 1913, Liverpool

Harley, Richard James, Scottish Triple 1903, London
Harmar, Mary, Scottish Triple 1895, London
Hawthorne, Walter Llewellyn, Scottish Triple 1893, Lucan
Hay, Jane Elizabeth, M.B.Edin. 1916, Dumfries
Haynes, Harold Cranwell Aloysius, M.C., Scottish Triple 1916, Edinburgh
Henderson, Janet Fraser, M.B.Glasg. 1915, Glasgow
Henderson, John Dunlop, M.B.Aberd. 1904, Aberdeen
Henderson, Norman Keane, M.B.Edin. 1916, Southport
Hennessy, Joseph Martin Reeves, Scottish Triple 1912, London
Henry, David Colvin, M.D.Edin. 1910, Great Yarmouth
Hetherington, George Mundell, M.B.Glasg. 1916, Tillicoultry
Heyliger, Ernest Denny Scott, M.B.Glasg. 1892, Blackburn
Hickey, Daniel John, Scottish Triple 1911, Blaengarw
Hill, James Rowland, M.B.Edin. 1907, Coleraine
Hope, Charles Milburn, M.B.Glasg. 1900, Market Drayton
Hopkins, William Edward, Scottish Triple 1909, Carnarvon
Huie, Henry Greville, M.D.Edin. 1893, Droxford
Hunter, John Arnold, M.B.Edin. 1896, Whitehead
Hunter, John Henry Graham, M.B.Edin. 1913, Edinburgh
Hutchison, Alice Marion, M.D.Edin. 1905, Edinburgh
Hyam, Samuel Priestly, M.B.Edin. 1894, Edinburgh

Jackson, George Fortesque, Scottish Triple 1894, Sutton Coldfield
James, Arthur Edwin, Scottish Triple 1914, Edinburgh
Jeffcoat, Leslie Fraser Eiloart, M.B.Edin. 1914, London
Johnson, Frank Davidson, Scottish Triple 1914, Edinburgh

Kaushosh, Ramchander, Scottish Triple 1913, Liverpool
Keiller, Alexander John, Scottish Triple 1889, New Pitsligo
Kerr, Felix Arthur, M.B.Glasg. 1912, North Shields
K[illegible]n, Noel Wallace, M.B.Edin. 1906, Liverpool

Lamberton, James, M.B.Edin. 1912, Sheffield
Langley, William Johnson, Scottish Triple 1892, Basingstoke
Lee, James, M.D.Edin. 1902, Belfast
Lee, Ying Chuen, M.B.Edin. 1917, Edinburgh
Levy, Louis, M.B.Edin. 1914, Edinburgh
Lincoln, Hugh Percival Witwell, Scottish Triple 1894, Manchester
Lloyd-Jones, John Richard, Scottish Triple 1890, Nundle, N.S.W.

McCune, Lancelot Gordon, M.B.Edin. 1907, Belfast
Macdonald, Angus, M.D.Edin. 1912, Plymouth
Macdonald, Frank Bedingfeld, M.B.Edin. 18[illegible], Northampton
Macdonald, Philip Norman Mackay, M.D.Edin. 1901, Tiverton
Macdonald, William, M.B.Edin. 1912, Edinburgh
McGregor, John, M.B.Glasg. 1873, Ardgay
Mackenzie, Hugh Munro Macleod, Scottish Triple 1891, Clevedon
Mackie, George, D.S.O., M.B.Edin. 1899, Malvern
Mackillop, Margaret Helen, M.B.Glasg. 1913, Glasgow
McKinnon, Neil Charles, L.R.C.S.Edin. 18[illegible], Sonya, Canada
Macknight, William Crawford, M.B.Edin. 189[illegible], Liverpool
Macleod, Herbert William George, M.D.Edin. 189[illegible], London
McNeill, Katharine Beaton Arbuckle (Mrs.), M.B.Edin. 1904, Llanelly
Macphail, Norman, M.B.Aberd. 1912, Ballindalloch
Macrae, Farquhar, M.B.Aberd. 1887, London
McRobbie, Alexander, M.B.Aberd. 1914, Banchory
McWillie, John George, M.B.Aberd. 1896, Hull
Malone, Reginald Hampstead, Scottish Triple 1918, London
Marshall, Thomas, Scottish Triple 1891, Liverpool
Martin, John, Scottish Triple 1914, Glasgow
Martyn-Clark, Robert Eric Noel, Scottish Triple 1913, Edinburgh
Mason, George William, Scottish Triple 1912, Pontypool
Mason, Margaret Baillie (Mrs.), M.B.Glasg. 1907, Glasgow
Matheson, Farquhar William, M.B.Edin. 1883, Cwmtwrch
Maunsell, Daniel Beresford, M.B.Edin. 1910, Edinburgh
Mavor, George Alexander, M.B.Aberd. 1899, Hounslow
Maynard, Frederick Arthur, M.B.Edin. 1899, Trealaw
Meek, Ronald, M.B.Glasg. 1912, Glasgow
Melrose, Thomas Robert Gray, Scottish Triple 1912, Edinburgh
Metcalfe, Thomas Marshall, Scottish Triple 1916, Glasgow
Miller, John Albert Henry, Scottish Triple 1907, Musselburgh
Milne, John Brownlee, M.B.Edin. 1900, Montrose
Mitchell, Andrew Ronald, M.D.Glasg. 1911, Glasgow
Mitchell, Mary Cochrane, M.B.Glasg. 1909, Milton of Campsie
Mondon, Vilcourt Pierre, M.B.Edin. 1910, Blaina
Monro, David Carmichael, M.B.Edin. 1911, Edinburgh
Moore, Francis Laird, M.B.Edin. 1910, Bideford
Morrow, Hans Lowry, M.B.Edin. 1909, Enfield
Moxon, Benjamin Howard, L.R.C.P.Edin. 1871, Hull
Munro, Donald George Macleod, M.D.Edin. 1902, Maidenhead
Munro, Janey Lamond, M.B.Glasg. 1915, Glasgow
Murchie, Findlay, M.B.Glasg. 1909, Glasgow
Murray, William Henry, M.B.Glasg. 1888, London
Mutterer, James George, M.B.Aberd. 1908, Aberdeen

Nevett, Alfred Jebb, Scottish Triple 1894, Stockport
Nicholson, Balfour Stewart, M.B.Glasg. 1893, Derby
Nicolson, Samuel, Scottish Triple 1896, Glasgow
Noble, Alexander, M.B.Aberd. 1906, Laurencekirk

O'Neal, Charles Duncan, M.B.Edin. 1904, Fulwell

Pallett, William Horner, M.B.Edin. 1914, Edinburgh
Palmer, Percy Gerald, M.B.Edin. 1908, Edinburgh
Patterson, William John, M.B.Edin. 1904, Worthing
Paul, David Hutcheon, M.D.Edin. 1909, Manchester
Paxton, Arthur Geoghegan, M.B.Glasg. 1905, Glasgow
Petroza, John William, Scottish Conjoint 1883, London
Penfold, William James, M.B.Edin. 1896, London
Platt, Garfield Arthur, Scottish Triple 1913, Edinburgh
Power, Francis Grene, Scottish Triple 1912, Edinburgh
Prentice, Adam, M.B.Edin. 1916, Edinburgh
Proctor, George Bridgeford, Scottish Triple 1889, Walton-on-Thames

Raffan, George, M.D.Edin. 1913, London
Ramsay, Maxwell, M.B.Edin. 1911, Edinburgh
Randell, Henry St. John, M.B.Edin. 1901, Aldershot
Reed, Kathleen, Scottish Triple 1909, Dublin
Rees, John Edward, Scottish Triple 1913, Gwaun Cae Gurwen
Reid, James, M.B.Aberd. 1904, Dublin
Reid, Spence Dyer, M.B.Edin. 1911, Edinburgh
Richards, Arthur James, Scottish Triple 1893, Liverpool
Ritchie, Duncan, Scottish Triple 1897, Dundee
Ritchie, Frederick, M.B.Aberd. 1913, Aberdeen
Roberts, Charles Howard, Scottish Triple 1893, Devonport
Robertson, George Henry Whiteside, M.D.Edin. 1913, Westcliff-on-Sea

Robertson, Margaret Eason, M.B.Glasg. 1909, Glasgow
Robertson, Stuart Dewar, M.B.Glasg. 1914, Glasgow
Rose, John Alexander, M.B.Aberd. 1897, Salop
Russell-Cargill, James Alexander, M.B.Edin. 1908, London
Ryle, Arthur John, M.B.Edin. 1909, Colwyn Bay

Sardesai, Dinkar Sakharam, Scottish Triple 1919, Edinburgh
Saunders, Benjamin Theodore, M.B.Aberd. 1913, Aberdeen
Saville, William Henry, Scottish Triple 1887, Manchester
Scales, Cuthbert, M.C., M.B.Edin. 1913, Bradford
Scott, Archibald Alastair Bruce, M.B.St.And. 1916, St. Andrews
Scott, Hon. George Hepburne, M.B.Camb. 1898, London
Scott, James McAlpine, M.D.Glasg. 1913, Congleton
Sells, Hugh Lancelot, M.B.Edin. 1906, Edinburgh
Shiels, Peter McLaren, M.B.Edin. 1913, Edinburgh
Sinclair, Agnes Brymner, M.B.Glasg. 1900, Greenock
Sinclair, James Edward, Scottish Conjoint 1883, Aldeburgh
Sleigh, George Baird, M.B.Aberd. 1903, Broughty Ferry
Smith, Clifford Halliday Kerr, M.C., M.B.Edin. 1914, Humbie
Smith, Edwin Charles Allan, Scottish Triple 1911, Perth
Smith, George McCall, M.B.Edin. 1904, Perth
Smith, John Kenneth, M.B.Glasg. 1914, Glasgow
Smithies, Walter, M.B.Edin. 1912, Atherstone
Standring-Smith, Robert Charles, M.B.Edin. 1905, Ipswich
Stephens, Riccardo, M.B.Edin. 1893, Brora
Stewart, Roger St. Clair, M.D.Edin. 1908, Edinburgh
Stewart, Arthur Ford, M.B.Glasg. 1909, Glasgow
Stewart, Henry, M.B.Glasg. 1914, Glasgow
Stewart, James David Grahame, M.B.Lond. [illegible], Edinburgh
Stewart, William Ross, M.B.Edin. 1912, Edinburgh
Strachan, Benjamin, M.B.Glasg. 1877, Cotherstone
Strong, Clement Percival, M.B.Edin. 1900, Woking
Sullivan, Patrick, Scottish Triple 1895, London
Swaffield, Walter Henry, M.D.Edin. 1903, London
Swan, James Douglas Cannon, M.B.Glasg. 1899, Glasgow
Symons, Thomas George Gordon, Scottish Triple 1892, Southsea

Tait, John, Scottish Triple 1893, Alyth
Taylor, Robert Scott, M.B.Glasg. 1907, Johnstone
Telford, Robert Whitson, M.D.Edin. 1909, Edinburgh
Thomas, Adolphe Harrison, M.B.Edin. 1881, Thornton Heath
Thomas, William James, M.D.Edin. 1899, Sutton
Thomson, Henry James, M.B.Aberd. 1910, Alford
Thomson, Peter, M.B.Glasg. 1893, Glasgow
Tibbles, Joseph Russell, M.B.Aberd. 1915, Melton Mowbray
Turnbull, Arthur, M.B.Glasg. 1909, Glasgow

Valentine, Gilbert Enos, M.B.Aberd. 1914, Montrose
Vickerman, Philip Seston, O.B.E., M.B.Edin. 1905, London

Walker, William, M.C., M.B.Aberd. 1914, Newcastle-on-Tyne
Walker, William James Alexander, M.B.Glasg. 1897, Glasgow
Wallace, Robert, M.B.Edin. 1918, Edinburgh
Wang, Chang Ching, M.B.Edin. [illegible], Edinburgh
Ware, Samuel Middleton, Scottish Triple 1898, Edinburgh
Warwick, Hugh Fleming, M.C., M.B.Glasg. 1904, Millom
Watson, Frederick Robert, Scottish Triple 1909, Edinburgh
Wedgwood, Percy Ashworth, Scottish Triple 1898, York
White, John Duncan, M.B.Edin. 1917, Edinburgh
White, Rosina Jane, Scottish Triple 1899, Leith
Whittingham, Harold Edward, M.B.Glasg. 1910, Glasgow
Wilkinson, Ada, M.B.Edin. 1902, Birmingham
Wilkinson, Albert Robinson, Scottish Triple 1896, Worthing
Wilkinson, Stephen Harold, M.B.Edin. 1910, Woodhall Spa
Willcox, Frank Mayes, M.B.Edin. 1896, Edinburgh
Wilson, Alexander Fraser, M.C., M.B.Edin. 1889, London
Wilson, Donald McDonald, M.C., M.B.Edin. 1911, Greenock
Wilson, Henry, M.B.Glasg. 1882, Dunblane
Wilson, Robert Murray McCheyne, Scottish Triple 1911, Edinburgh
Wright, Bertram Ernest, M.B.Edin. 1914, Edinburgh
Wright, Reginald Harcourt, Scottish Triple 1893, Manchester

Young, Andrew Morton, M.B.Glasg. 1913, Glasgow
Young, George, M.B.Glasg. 1905, Liscard, Cheshire
Young, Robert Henry, M.B.Glasg. 1883, Southend-on-Sea

PART III.

PRACTITIONERS ORIGINALLY REGISTERED IN IRELAND.

(Communications in regard to List III should be sent to the Registrar of the Irish Branch Council, 35, Dawson Street, Dublin.)

Ainley, John Francis, M.B.Q.U.Belf. 1917, Belfast

Beasley, Henry Cecil, Irish Conjoint 1893, Selby
Beatty, James, M.B.Univ. Dubl. 1895, Northampton
Beatty, Thomas Edward Bellingham, L.M.Univ. Dubl. 1915, Monkstown
Bo[illegible], Francis William, M.D.Univ. Dubl. [illegible], Mullingar
Bourns, Charles, Irish Conjoint 1870, Oxted
Byrne, Daniel Joseph, L.A.H.Dubl. 1914, Tullow

Casey, Philip Forth, Irish Conjoint 1872, Kew Gardens
Clarke, James Kilian-Patrick Patrick, M.B.R.U.I. 1908, Oakham
Clarke, John Andrew, M.B.R.U.I. 1909, Dublin
Clarke, Jonathan, Scotch Conjoint 1886, Dublin
Collen, George Denbigh, M.B.Univ. Dubl. 1897, London, N.7
Condell, William Haskins, Irish Conjoint 1912, Hetton le Hole
Craig, Eric William, M.B.Univ. Dubl. 1915, Dublin
Crosbie, Frank, M.B.Univ. Dubl. 1911, Dundrum
Curry, Stephen Henry, Irish Conjoint 1902, London, S.W.
Curtin, Patrick James, Irish Conjoint 1885, Dublin

Devlin, Henry William, Irish Conjoint 1890, Ballygaveen
Dimond, William Elliot Randall, Irish Conjoint 1915, Maryborough
Dobbyn, Michael Gilbert, Irish Conjoint 1891, Bristol
Dooley, George Gerald, Irish Conjoint 1889, York
Dowling, Ignatius Alphonsus, Irish Conjoint 1911, Manchester
Doyle, Joseph Stanislaus, M.B.R.U.I. 1908, Enniscorthy
Dunlop, Joseph Everard, M.D.R.U.I. 1890, London, W.1
Dunlop, Peter, Scottish Conjoint 1882, London, E.7

Ennis, John Cormac, L.M.Univ Dubl. 1895, London, W.1.

Falkiner, John McIntire, Irish Conjoint 1890, London, E.4
Fausset, Robert Rowley, Irish Conjoint 1909, London, W.
Foley, Cornelius, Irish Conjoint 1902, Horsley Woodhouse
Foley, Edward Green, Irish Conjoint 1914, Sutton Cross
Foran, John Joseph, Irish Conjoint 1911, Thornton Heath

Gubbins, Robert Joseph, Irish Conjoint. 1882, Kilmallock
Gwynn, Eileen Gertrude, M.B.Univ.Dubl. 1916, Dublin

Halpin, Richard Stopford Gilbert, M.B.Univ. Dubl. 1913, Neyland
Heron, James Mathew, M.D.Univ.Dubl. 1891, London, S.W.
Hill, John Francis, M.B.N.U.I. 1912, Cardiff
Holmes, Reginald, M.D.Univ.Dubl. 1907, Gravesend
Hopkins, Frederick, M.B.Belf. 1917, Belfast

Johnston, Robert Henry, M.B.Dubl. 1878, London, N.W.

Keane, Percival Maurice, Irish Conjoint 1907, Stoke Newington
Kelly, Richard, M.B.Univ.Dubl. 1905, Huddersfield
Kennedy, Arthur Patrick, Irish Conjoint 1913, Clonmel
Kilgariff, Joseph O'Loughlin, M.B.Univ. Dubl. 1889, Manchester
Kirwan, Frederick Michael, Irish Conjoint 1911, Limerick

Landy, Michael Joseph, M.B.R.U.I. 1903, Burnham
Lapper, Cecil Lindsay, Irish Conjoint 1912, Dublin
Latimer, Gordon Dill, M.B.Belf. 1913, Belfast
Levins, James Mary, Joseph Allen, L.A.H.Dubl. 1913, Dublin
Lyden, Michael Augustine, Scotch Conjoint 1881, London
Lynham, Bernard Malachy, Scotch Conjoint, 1917, Bellaghy
Lyons, John Francis, Irish Conjoint 1915, Clontarf

McCausland, Joseph, M.B.R.U.I. 1908, Raphoe
McCloy, John Moorcroft, M.B.R.U.I. 1909, Belfast
Mc[illegible], Samuel, Scottish Conjoint 1882, Dublin
McCreery, Arthur Lonsdale, M.B.Belf. 1915, Belfast
MacErlean, Donagh Aloysius, M.B.N.U.I. 1913, Dublin
MacLulich, John Peers, M.B.Univ.Dubl. 1896, Edinburgh
MacMahon, Augustine Patrick, M.B.R.U.I. 1907, Dublin
McMurray, John, M.B.R.U.I. 1907, Manchester
MacSweeney, John Alphonsus, Irish Conjoint 1917, Dublin
MacSwiney, Thomas Stephen, M.B.R.U.I. 1891, Barnsley
McVittie, Arthur Craigie, M.B.Univ.Dubl. 1898, Rugeley
Maguire, William Joseph, M.B.R.U.I. 1894, Belfast
Minchin, Edward John, Irish Conjoint 1884, London, E.4
Montford, Archibald Henry, M.D.Univ.Dubl. 1875, Monkstown
Moorhead, William St. Leger, Irish Conjoint 1907, London, W.
Moriarty, James Joseph Patrick, M.B.N.U.I. 1915, Dublin
Mosley, Reginald Lawson, Irish Conjoint 1880, Long Eaton
Mulligan, Michael John, M.B.R.U.I. 1908, Athlone
Murphy, Walter Joseph, Irish Conjoint 1901, Ballinakill

Nicholson, John Francis, M.D.Univ.Dubl. 1903, Liskeard

O'Callaghan, Maurice Ahern, Irish Conjoint 1911, Dalkey
O'Connell, Mathew Daniel, M.B.Belf. 1909, Tadcaster
O'Donoghue, James Bennett, L.A.H.Dubl. 1911, Dublin
O'Ferrall, Lewis Richard More, Irish Conjoint. 1899, Bristol
O'Gorman, Michael Charles, Irish Conjoint 1888, Aughrim
Oldham, Ralph Stransham, M.B.Univ.Dubl. 1906, Sutton
O'Kelly, John Joseph, Irish Conjoint. 1912, Dublin
O'Neill, James Arthur, L.A.H.Dubl. 1887, Colyton
Ormsby, William, Irish Conjoint. 1903, Roscommon
O'Reilly, Patrick Joseph, Irish Conjoint 1914, Dublin
O'Sullivan, Daniel, Scotch Conjoint 1884, Killarney

Parker, William Patrick Hugh, Irish Conjoint 1919, Glenageary
Patton, Grahame, Irish Conjoint 1908, Long Eaton
Pereira, John Michael, L.A.H.Dubl. 1913, London
Pierce, Michael Joseph, Irish Conjoint 1908, Wrexham
Phillips, Frank Gaedt, Irish Conjoint 1919, Dublin

Porter, Joseph, M.B.Belf. 1913, Wigan
Powell, Edward, Irish Conjoint [illegible], Dublin

Quin, Henry Christian Ernest, Irish Conjoint 1901, Barnstaple

R[illegible], Irish Scottish Conjoint 1913, Dublin
Rea, Robert James, M.B.Belf. 1914, Belfast
Richardson, Ambrose Chapman, M.B.Univ.Dubl. 1917, Dublin
Ross, William, Irish Conjoint 1901, London, E.
Reynolds, Charles Maurice, Irish Conjoint [illegible], Cookstown
Riddell, Harry Edward Sutherland, M.B. R.U.I. 1901, Liverpool
Robinson, Samuel Robert, M.D.Univ.Dubl. [illegible], Dublin
Robinson, Edith, M.B.Belf. 1914, Whitehead
Robertson, Walter Boyd, M.D.R.U.I. 1897, Belfast
Russell, Mortimer McGee, M.B.Univ.Dubl. 1916, Booterstown
Rutherford, William George, Irish Conjoint 1885, Hanslope
Rutledge, Thomas Wilson, M.B.N.U.I. 1910, Dublin

Savage, John Joseph, Irish Conjoint, 1885, Rock Ferry
Scott, William Sydney Jebb, M.B.Univ.Dubl. 1881, Lymington
Sheffield, William Henry, M.B.R.U.I. 1909, London, E.
S[illegible], John William, Irish Conjoint [illegible], Southgate
Sirnott, Thomas Joseph, Irish Conjoint 1913, Dublin
Smith, George, Irish Conjoint 1875, Southsea
Smullen, John Alexander, Irish Conjoint 1907, Dublin
Smyth, Frederick Gerald, M.B.Belf. 1915, Belfast
Smyly, John Dryden, M.D.Univ.Dubl. 1897, Dublin
Somerville, Thomas Townsend, Irish Conjoint 1871, Sheffield
Stubbs, John William Bolter, M.B.Univ.Dubl. 1913, Dublin
Sweeney, William David, Scottish Conjoint 1891, Manchester

Thompson, Gordon Moffat, M.B.Univ.Dubl. 1894, Liverpool
Thompson, Thomas Rolland Stewart, M.B.Belf. 1916, Belfast
Thunder, Wilfred, M.B.Univ.Dubl. 1904, Salop
Tidmarsh, James Moriarty, Irish Conjoint 1887, Luton
Tobias, William Oliver, M.B.Univ.Dubl. 1914, Dublin
Turrell, William, M.B.Belf. 1213, Belfast

Villiers, Henry John, Irish Conjoint 1915, Dublin

Wallace, Edward Chapman, Irish Conjoint 1911, Limerick
Wallace, Vivian, Irish Conjoint 1911, Multyfarnham
Walters, Mortimer, Irish Conjoint 1906, Dublin
Waters, Christopher, Irish Conjoint 1902, Dundrum
Watson, James Samuel, Irish Conjoint 1895, Poole
Weldon, Robert Percy, Irish Conjoint 1914, Epsom
White, Henry Heathcote, M.D.Univ.Dubl. 1905, Norwich
White, James Rose, M.B.Belf. 1912, Ballyshannon

Young, Charles Henry, M.B.Nat.U.Irel. 1918, Carrigaline

IMPERIAL CANCER RESEARCH FUND.

ANNUAL MEETING.

THE eighteenth annual meeting of the Imperial Cancer Research Fund was held on July 22nd at the Examination Hall, Queen Square, Bloomsbury, when the DUKE OF BEDFORD presided. Among those present were Sir Norman Moore, Sir William Church, Sir George Makins, Sir Frederick Andrewes, Sir John Bland-Sutton, Sir Rickman Godlee, Sir John Tweedy, Dr. Wm. Bulloch, Sir G. Sims Woodhead, Dr. J. A. Murray (Director), Dr. B. R. G. Russell, Dr. W. Cramer, and Mr. F. G. Hallett (Secretary).

Director's Report.

Sir WILLIAM CHURCH, in moving the adoption of the report, gave a summary of the investigations during the past year, in which he stated that the Director had continued the autologous grafting experiments, in which by transplanting an animal's own tumour to a part of its body away from the site of the primary growth an artificial secondary growth is established. The formation of secondary growths was the most certain evidence of the cancerous nature of a growth. It was to be hoped, therefore, that this method would be more widely applied as a control in the experiments on the production of cancer by chronic irritants which were being undertaken in so many laboratories throughout the world. In these experiments the most definite proof of malignancy was essential to progress. Dr. Cramer (continued Sir William Church) has examined the action of a number of inorganic substances on cancer cells. The first step in these investigations is to expose emulsions of a transplantable tumour to the reagent in the test tube and find out by inoculating the treated emulsion into susceptible animals the amount of damage produced. Salts of cerium were found to be the most active of those tested. Manganese and uranium salts were less potent, and the other elements experimented with were without effect in strengths which could be tolerated by the experimental animals. None of these substances, however, had any influence on growing tumours, a failure probably due to the irregularity of the circulation in the tumours, which delays the access of the reagents to the cells, coupled with their rapid elimination by the kidneys and bowels. This is one of the difficulties which is constantly met with in direct therapeutic experiments on cancer. The cancer cell is so like the normal cells of the body that agencies which destroy it are also dangerous to life. Before we can plan a rational method of treatment it will be necessary to know more of the vital processes in cancer cells and the nature of the very delicate differences between them and the normal. A beginning has been made with the study of cell respiration. Respiration is essentially a combustion process, oxygen being taken in and carbon dioxide given off. These are only the first and last terms, however, of a series of chemical equations, so that there is room for great variety in the intermediate stages, even if the final result should be the same. Dr. Drew has approached the problem by studying the rate of decolorization of dilute methylene blue solution by normal and cancer cells. With this method there is a wide difference between the two, decolorization being much more rapid with normal cells. Dr. Russell and Dr. Gye have suspended the tissue emulsions in fully oxygenated defibrinated blood and measured the rate at which oxygen is abstracted on incubation at body temperature. By this second method the differences are much less pronounced, and it is found that the more rapidly growing tumours, with significant exceptions, absorb more oxygen than those which grow slowly. The investigations are being continued, and give promise of interesting light on this fundamental feature of the life of cancer cells.

The DUKE OF BEDFORD, in moving a vote of thanks to the Executive Committee and others who have assisted in the work of the Fund during the past year, referred to the wide range of investigation covering such important researches as those relating to (1) experimental induction of cancer; (2) respiration in normal tissues, which is a fresh line of research in connexion with cancer; and (3) experiments on the action of chemical substances on cancer cells in the test tube and in the body, and the very technical investigation of the Director on grafting; he noticed with satisfaction that the Fund is again in a position to assist investigators at home and abroad with tumour material for experimental purposes. Speaking of the finances of the Fund, he mentioned that increased expenditure was caused by the full resumption of laboratory research work as well as the enhanced cost of materials. The fixed income of the Fund was £5,550, whereas the expenditure was £7,000, the difference this year being met by a certain number of subscriptions and legacies. The Fund requires at least £1,500 a year more to maintain the researches. He referred to the valuable services of Sir Watson Cheyne, who had resigned the post of honorary treasurer, in which he is succeeded by Sir George Makins.

Secretary's Report.

The Secretary's report gives a list of the papers published from the laboratory during the year, including Dr. J. A. Murray's opening paper on the present position of cancer research, read before the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association in Cambridge this summer. Through the kindness of Professor J. Fibiger, of Copenhagen, the scientific staff of the Fund have received a number of mice infected with *Spiroptera neoplastica*, to enable them to repeat his work on the experimental production of cancer. The investigations are being carried out with the collaboration of Dr. R. T. Leiper of the London School of Tropical Medicine. In October last a small subcommittee was appointed to consider a revised scale of remuneration for the laboratory staff to meet the increased cost of living. Their report was unanimously adopted, and the new scale of payment is stated to have caused much satisfaction among the staff.

A vote of thanks to the Duke of Bedford for his constant support of the work of the Fund having been adopted, the proceedings terminated.

British Medical Journal.

SATURDAY, JULY 31ST, 1920.

POST-GRADUATE SPECIALIZATION.

In our issue of June 19th Sir Humphry Rolleston and Mr. Waring described a system of post-graduate instruction which, at least upon the scale indicated, is unfamiliar in this country. It is, as the authors observe, surprising that so many as four thousand American medical men should be able to devote three years to a course of training demanding the whole time of the student in return for less than a maintenance allowance. Assuming that the majority of the students had recently graduated and that the seven years' undergraduate course of the University of Minnesota is typical of the schools whose pupils are concerned, ten years must elapse between the commencement of university study and the receipt of a diploma which will be formally equivalent to our F.R.C.S. or M.R.C.P. The span of years is formidable, but it may be doubted whether in our own country the novitiate of the specialist has been much shorter. Very few men have obtained a junior visiting staff appointment within five years of graduation; few of these earn a living wage from their speciality within another two or three years. It is, therefore, not the length of the apprenticeship but its form which is in question.

Those who had the privilege of hearing Dr. Arnold Chaplin's paper on medical education in the universities of Oxford and Cambridge, at a recent meeting of the section of the History of Medicine of the Royal Society of Medicine, and the readers of the articles on the early days of the Cambridge school, contributed to our columns by Dr. F. J. Allen, will have been impressed by the contrast between the ancient and the modern systems. In effect the old system was, or professed to be, a training in principles; modern medical education is devoted to the acquirement of technique. The modern reader who shudders in face of the massive folios of the Juntas' Galen and cannot stomach even the twenty odd octavos of Kuehn's edition, may fairly doubt whether, despite university statutes and regulations of the College of Physicians, doctors in the eighteenth century did master the usually acute but frequently incorrect and always verbose teaching of the Pergamite. But it is certain that the doctrine which gives a name to one of Galen's more agreeable essays ("That the best physician is also a philosopher"), and is reiterated in all his works, *was* generally believed. To this belief we doubtless owe much hardly tolerable theorizing; also perhaps something we can less gladly spare.

We have quoted before in these columns Samuel Johnson's dictum that an Athenian blockhead is the worst of blockheads. Sir James Mackenzie has demonstrated, both by precept and example, that a wide non-specialized experience prepares the intellectual soil for the cultivation of choice flowers which hothouses of the most improved technical finish have not reared. Can it be possible that the very considerable demand for "advanced and intensive graduate education" which has surprised Sir Humphry Rolleston and Mr. Waring is not altogether a good thing? We do not wish to be understood to speak scornfully of technical acquirements, still less to be regarded as adherents of the armchair medical philosophers who excited Sydenham's contempt. But we think there is a tendency to overrate the importance of technique, and that intensive graduate education of the kind adumbrated in the American scheme is not so wholly admirable as some may be inclined to assume.

"It would be well," said an early Victorian author (Sewell), "to impress on the young men of the present day the value of ignorance, as well as of knowledge; to give them fortitude and courage enough to acknowledge that there are books which they have not read and sciences which they do not wish to learn, and to make them feel that one of the very greatest defects in a mind is want of unity of purpose, and that everything which betrays this betrays also want of resolution and energy." There are two ways of applying this moral to the difficult art of medicine. One is to seek rigorous specialization, to impress upon the student the difficulty of technique, and to encourage him to devote his whole energies to a particular branch. It is the easier path to follow, but it may end in the plain which was the site of the tower of Babel. We remember a meeting of the Royal Society at which a paper by a famous physicist and a communication by an equally eminent physiologist were to be read. At the commencement of the proceedings some fifty Fellows were in the room. When the physicist sat down, the voice of a secretary reading the title of the next paper was lost amid the rustling of forty-four Fellows on their way to the door. No disrespect to the physiologist was intended; it was a mere recognition of mutual incomprehensibility. This is, perhaps, inevitable in a society which takes all natural knowledge for its province; it ought not to be inevitable within the bounds of our profession. Yet we have heard many Fellows of the Royal Society of Medicine confess that a large proportion of the papers read in sections other than that dealing with their speciality are to them mere sound and fury. Even within one and the same section secretaries have sometimes been hard put to it to secure speakers in the discussion of particular papers. This way of avoiding Sewell's moral weakness must end in the destruction of catholicity and be worse than the evil of a slovenly omniscience at which his censure was aimed.

There remains an alternative—the realization of the solidarity of the whole science of medicine. The young man or woman who is fortunate enough to be able to devote some years to post-graduate education and follows the lines of the "Alabama Student" of Osler's biography will surely have chosen the better part. A wide basis of experience, the synthesis of such experience into a general philosophy of medicine—a synthesis each must perform for himself—is the proper training of a physician, and has indeed been the foundation upon which nearly all who have achieved eminent success in particular techniques have built. Real mastery of a technique is not obtained in three or in thirteen years of intensive training; dexterity may be so acquired, but not judgement. It is not true that working twelve hours a day for a year at a subject has as good an effect as working three hours a day for four years. We believe that a post-graduate system which ignores these aspects of the matter is unsound, and we hope that any organization of higher teaching in this country will give due weight to what Sir George Newman terms the integrative side of medical education.

UNIVERSITY OF LONDON SITES.

THE Senate of the University of London, at its meeting on July 21st, requested the Government to keep open its offer of a site in Bloomsbury; in view of the important issues involved, and the uncertainty as to the nature of the offer in many respects, more time is desired for further consideration and consultation with the Government. The site offered in Bloomsbury, to the north of the British Museum, covers 11½ acres, but owing to the space occupied by roads and to conditions under which certain houses on the site are held, it is said that the actual area presently available does not exceed 8½ acres. The value of this has been estimated at half a million.

The decision is affected by the Government's proposal that King's College should vacate its present site in the Strand, and rebuild on part of the Bloomsbury site. King's College holds its site in the Strand on lease from the Government for 999 years at a nominal rent of £1 a year; the valuer of the London County Council therefore regards it as a tenure in perpetuity. At present it can only be used for purposes of education, but were the property surrendered to the Government its full economic value could be developed. The President of the Board of Education has informed the University that the Government is prepared to recognize its responsibility as regards maintenance, rates, etc., for the university head quarters, and to arrange for the payment of an annual sum from votes of Parliament to meet the cost of these services, now received in kind. The Government promises also that when the time comes for King's College to vacate the Strand buildings and remove to the new site in Bloomsbury, it will be prepared to seek the authority of Parliament to purchase the King's College buildings on the Strand site at a fair valuation. The London County Council valuer is of opinion that the King's College site is worth to the Government between £800,000 and £1,000,000. Mr. Fisher, in concluding his letter, expressed the opinion that the Government, in offering the Bloomsbury site, was affording the university "a unique opportunity of developing in new surroundings in a manner worthy of the name it bears."

The Government has in form made a single offer, but it is, in fact, double, and the two parts should be disentangled. The one part is an offer to the university of a free site for its head quarters. Assuming that the large sum for buildings could be raised, the offer is tempting, for the site is central, and the university at present only has the use of part of the Imperial Institute on sufferance. The other part of the offer, though made to the university, really concerns King's College. We are prepared to agree that the present site of King's College is wholly unsuitable, but it does not follow, as Mr. Fisher appears to assume, that to transfer it to Bloomsbury, where it would be cheek by jowl with University College, is the only alternative. Why should not King's College go to London south of the Thames, where there is a population of two or three million without a university college? King's College has many faculties, and we do not wish to attach undue importance to the medical, but the fact that its hospital has gone to the south of the Thames affords some indication of the trend of opinion among those who realize the needs of south London; if that district needs a university hospital, does it not also need a university college?

The university at present, as has been said, occupies its head quarters at South Kensington free, and the Government does not offer to find the cost of building new head quarters in Bloomsbury. It appears, therefore, that the Senate is fully justified in looking this gift horse in the mouth. The advantages of having a university in so central and appropriate a part as Bloomsbury are very great, but it must be admitted that there are serious objections. Setting aside for the moment the financial question—the recent experiences of other universities in appealing for large funds have not been encouraging—there is a fundamental doubt whether the site in Bloomsbury is large enough. On this point there comes opportunely the reprint of an address on the university problem delivered by Sir Edward Sharpey Schafer to the Welsh Medical School last January. His contention is that a university, if it is to have a prudent eye to the future, ought to have possession of a site of 100 acres or more, and he points to the example of the universities in the United States, and recently of his own university. Fortunately, he says, for the future of Edinburgh, the present head of the university has been able to look into the future, and has persuaded the governing body to purchase a plot of land of about 115 acres on the outskirts of the city. We have already described this estate, and it will be remembered that it is not more than a mile from the existing university. It has cost £28,000, but 2½ acres of town land will cost £55,000. The first thing, he says, that the founders of a university on the other side of the Atlantic generally do is to provide the future institution with enough land, not only for its immediate needs, but for any future expansion that can be foreseen. The campus of many an American university is one of the most beautiful features of the city. It is laid out as a park with abundant stretches of greensward and avenues of trees. On appropriate sites in the university part libraries, lecture rooms and laboratories, students' hostels, athletic grounds, and houses for the professors and lecturers are provided. He conceives a university thus self-contained as a small city in itself, within which not only means for instruction, but also for recreation and amusement, are provided. On such a site, he goes on to point out, laboratories, with adequate facilities not only for teaching but for research, might be constructed on an inexpensive plan, but one allowing ample opportunity of expansion as necessity arises in the future. These opinions, coming from one of so much experience and with vision so far-seeing, are worthy of the most anxious consideration of the Government and the University of London.

It is said that there is a possible alternative site in the Kenwood estate of about 220 acres on the high ground between Hampstead and Highgate, but here again more precise definition appears necessary. For what purpose is so large a site needed? If merely for the central office of a university it would be far too large and out of the way. It would indeed fulfil all the requirements laid down by Sir Edward Sharpey Schafer. But is it proposed to establish another university college at Kenwood?

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LORD HERBERT OF LEA.

AT the dinner given to the Army Medical Department Sir Alfred Keogh spoke of the debt that military medicine owes to Lord Herbert of Lea. His statue stands beside Florence Nightingale's in front of the Guards' Crimea Memorial in Waterloo Place, but few passers by know why. There are still fewer who can believe that a Secretary for War during the Crimea is worthy of a memorial at all. Yet it was Sidney Herbert who first listened with understanding to the grievous reports of crippled medical services and avoidable suffering in the Crimea. It was he who sent out Florence Nightingale and gave her orders to communicate direct with him, then Secretary of State for War. It was he who, knowing her limitations, none the less turned her great powers of observation to the best account through the filter of his own still greater wisdom. When the Ministry of which he was a member fell Herbert continued to be the principal adviser to the succeeding Government on everything which concerned the medical service. Never was there a wiser or saner adviser to any Cabinet responsible for the conduct of war. He had realized very early in the Crimean campaign that it would "require and exhaust not only all the medical ability of our army, but of the medical profession generally, and we must get the best advice and skill which can be got, so long as it can be got. Clearly," he wrote, "we do not do that if we exclude from our ranks all but those who are young enough or needy enough to accept an acting surgeon's commission. . . . We must carry the introduction of civilians with acting commissions one step higher. . . . We must introduce civilians of higher rank and give not only acting surgeoncies but acting deputy inspectorships. . . . We may ultimately be reduced to have hospitals managed by civilians, just as we have sometimes dépôts and even regiments attended by civilians." Herbert realized how necessary it was that army doctors, whether regular or temporary, should be given military rank. "In a military body," said he, "no position can be secure without rank, for in it there can be no overwhelming force of opinion to confer socially or by custom what authority withholds." He saw clearly and urged forcibly the importance of retaining men of experience for professional work and not confining the higher ranks to administrative duties. The question has never been more brilliantly expounded. He pointed out that a director-general of the day had a singular conception of the duties of a physician or surgeon which was peculiar to the Army Medical Department. "It has been held that young men should practise, operate and prescribe; but that the higher ranks should be confined to what have been considered the higher duties of administration. A very grand name for very humble offices. To the surgeon very properly, to the assistant-surgeon very improperly, have been made over the knife, the pharmacopoeia, and the *corpus vile* of the British soldier. To the experienced physician and skilled surgeon—namely, to the inspector or deputy-inspector—have been entrusted the sacred inspection of stores, the cleanliness of wards, the filling up of returns, the countersigning of requisitions, the necessity of which he has less means of judging than the prescribing officer, the supervision of washing and even of washerwomen: in short, all the dealings with buildings, with furniture, with stores, with pots and pans, which in civil hospitals are the province of a house-steward, a matron, or a housemaid. . . . Imagine Sir Benjamin Brodie withdrawn from the bedsides or the theatre at St. George's and in virtue of his experience and ability set to overlook accounts, countersign demands for extras, check the issue of stores, and see that the broom and scrubbing-brush have been properly applied." Sidney Herbert saw further than this. Apart from the advisability of encouraging medical officers to use their professional skill and experience in the healing of the sick and wounded, he realized far in advance of his day the value of preventive medicine. "Prevention gives us soldiers, cure gives us pensioners." Expanding this aphorism, he wrote: "For the mere purpose of the campaign, putting aside humanity and duty to the soldier, the success or failure of the remedy is not very material. Indeed, death affects an army less than disease. For death only diminishes numbers, whereas disease not only diminishes numbers, but detracts from the efficiency of the remainder who are still unaffected by it. The hospital intercepts rations, transports, guards, surgeons, money, all of which are wanted to maintain in efficiency an army at the front." Herbert had large views as to the powers which a director-general should possess. He wanted him to be an autocrat in matters medical, but an autocrat with specialist advisers. "If I require undivided responsibility, I must give my autocrat every means of coming to a right decision." For this purpose he suggested three equal subordinates who should be given high rank and be (under the director-general) heads of three independent departments: statistical, medical, and sanitary. Sixty years later we find these proposals carried in some measure into effect in the shape of the appointment of directors of hygiene and pathology. But nowhere is the wisdom and sweet reasonableness of Sidney Herbert better exemplified than in his advice to Florence Nightingale, who with all her gifts certainly lacked his patience and his reasonableness. Her judgement was often harsh and her statements exaggerated. He wrote plainly to her of her failings: "You will have read McNeill's and Tulloch's report. It is a signal illustration of what I mean. There is not a hard word in it, or an epithet, not an accusation, scarcely an animadversion, but the sobriety of tone has arrested the attention and conquered the confidence of the public, and they have made the necessary inferences, and pretty broad ones too. The fact is the public like to have something left to their own imagination, and are pleased with their own sagacity when they have found out what is too obvious to be missed. It is always wise, too, in a public document to understate your case. If on examination your case proves stronger than you have stated it you reap the whole advantage. If, however, any part, however slight, is shaken, the credit of the whole is shaken with it. My moral is that you must write more calmly, and not yourself accuse or attribute motives to those whose misstatements you may disprove and whose misconduct you may expose without either, and do it far more effectively too." It was a happy inspiration that led Sir Alfred Keogh to recall to memory the debt of the Army Medical Service to Lord Herbert of Lea.

INTERNATIONAL JOURNAL OF PUBLIC HEALTH.

A NEW publication, the *International Journal of Public Health*, makes its appearance this month. It is intended to be the official scientific organ of the League of Red Cross Societies, whose official lay publication, the *Bulletin of the League of Red Cross Societies*, has been appearing monthly since May, 1919, and has often been mentioned in these columns. The production of two periodicals, the one scientific and technical, making its appeal to professional workers in public health and preventive medicine, and the other popular, was decided on at the Cannes Conference in April, 1919. Both journals are edited and published in the Department of Medical Information at the head quarters of the League in Geneva. It is proposed to print in the new journal original articles of scientific and practical import, critical reviews on subjects of timely interest, abstracts of important articles appearing in other special journals and in general medical literature, and demographical notes and statistics bearing on health conditions in all parts of the world. The first number keeps to this programme in very workmanlike fashion. For the present the journal will be published every two months and will appear in four languages—English, French, Italian, and Spanish—each edition containing the same material. The titles of the four editions are respectively *International Journal of Public Health*, *Revue Internationale de l'Hygiène Publique*, *Rivista Internazionale di Sanità Publica*, and *Revista Internacional de Sanidad.* We can bear out the Editor in his belief that this is an undertaking never before attempted on so large a scale in a scientific journal, and we are glad to wish it all success. The toil, to say nothing of the cost, must be very great. Dr. Emile Roux gives his blessing to the first number, which contains articles by Professor Calmette on the protection of mankind against tuberculosis, by Dr. Richard P. Strong on the antityphus campaign, by Dr. D'Espine on the use of "protein milk," by Dr. G. Whipple on world sanitation, and by Dr. Tropeano on social medicine. The demographical notes form a valuable feature, and are under the charge of Dr. Knud Stouman, who gives tables of births and deaths in various European countries during the war and makes many significant remarks thereupon. The editorial staff has at its head Dr. Thomas R. Brown, with Dr. W. W. Francis as associate editor, and six assistant editors. The first three numbers will be distributed free to organizations and individuals in all parts of the world actively interested in public health matters. Beginning with the fourth issue the subscription rate will be 20s. a year, or the approximate normal equivalent in the currency of the subscriber's country.

THE PLIGHT OF PETROGRAD DOCTORS.

The state of affairs among the doctors in Petrograd is reported by the *Tidsskrift for den Norske Laegeforening* of June 15th to be most distressing. During the recent epidemic of typhus the mortality among the doctors in attendance was between 45 and 50 per cent., whereas the mortality for the whole of Petrograd's population was only between 8 and 9 per cent. The doctors have been nationalized, are regarded as the Government's employees, and are disqualified from earning an independent living. Their official monthly wage is, on the average, between 5,000 and 6,000 roubles *plus* a double food ration, which includes half a pound of bread a day; they are entitled also to one public meal a day, consisting of soup and horse flesh. On this dietary the doctors in Petrograd have, during the past two years, carried out most onerous duties which have been augmented by epidemics of cholera and dysentery in the summer and of small-pox and typhus in the winter. Of the 4,000 doctors resident in Petrograd before the war only about 800 are left; most of the rest have died of starvation, overwork and epidemic diseases. Their work has generally to be done on foot. The trams are so lice-infested that their use entails grave risks of typhus, and the cost of a horse and vehicle is about 2,000 roubles an hour. The few motor cars in existence are not available for doctors.

VOLUNTARY WAR HOSPITALS.

During the war 3,214 private houses were established and maintained as hospitals for the treatment of officers and men of the army, their distribution in areas being as follows: Aldershot Command, 40; Eastern Command, 687; Irish Command, 105; London District, 352; Northern Command, 439; Scottish Command, 314; Southern Command, 660; Western Command, 637; Guernsey and Alderney District, 6; Jersey Command, 4. The work of the hospitals having now been practically completed, the Army Council, in the name of the nation, has placed on record its thanks to those whose generosity made the work possible, and the Council is also issuing an inscribed scroll which may be hung in each building as a permanent memorial of the patriotic purpose to which it was devoted in 1914-1919. The inscription is as follows:

> During the Great War of 1914-1919 this building was established and maintained as a Hospital for British sick and wounded. The Army Council in the name of the Nation thank those who have rendered to it this valuable and patriotic assistance in the hour of its emergency, and they desire also to express their deep appreciation of the whole-hearted attention which the staff of this hospital gave to the patients who were under their care. The War has once again called upon the devotion and self-sacrifice of British men and women, and the Nation will remember with pride and gratitude their willing and inestimable service.

More than [illegible] scrolls have already been issued, and the remainder are being despatched within the next few weeks.

"MEDICAL REGISTER": CHANGE OF ADDRESS.

Some weeks ago (June 19th, p. 841) we drew the attention of every medical practitioner to the necessity in his own interest of informing the General Medical Council of any change of permanent address, as otherwise his name may be erased from the *Medical Register*, and he will be put to trouble in getting it restored and be required to pay a fee of £1—trouble and expense that may easily be avoided by prompt notification to the Registrar. We now, at the request of the Council, as a special measure which is not likely to be repeated, publish a list of practitioners who cannot be traced, which will be found at p. 171. It is probable, in many instances, that the practitioner died during the war and that the death was not reported; in others it is possible that the practitioner has gone abroad. Any of those who find their names in this list should immediately communicate with the Registrar concerned; information from friends of deceased persons or others will also be welcomed. There is another matter to which it is desired in the interest of practitioners to draw special attention. It is by no means unusual for persons to practise under names which differ in some particular from those appearing on the *Register*. Sometimes Christian names or initials are dropped or added; sometimes hyphenated names are used. It is now the custom for the Ministry of Health and various public officials to consult the *Register* regularly, and to decline to recognize anyone by a name which is not that registered. Therefore those who have made an alteration in name should take the necessary steps to have the matter put in order by causing a corresponding alteration to be made in the books of all the bodies whose qualifications they hold, and by notifying the fact to the Registrar concerned. The General Medical Council charges a fee of 6s. for making the change, which involves some expense to it, and the fee includes the Government stamp of 1s. for a certified extract from the *Register* as corrected.

Medical Notes in Parliament.

The Proprietary Medicines Bill.

Our Lobby correspondent writes: In the Memorandum explanatory of the text of the Proprietary Medicines Bill, which was issued on July 27th, Lord Astor states that its object is to give effect to the recommendations of the House of Commons Select Committee who reported early in August, 1914. The measure, he says, contains no provision which was not specifically recommended by the Select Committee, and it includes all their more important recommendations, so far as they fall within the province of the Ministry of Health. A comparison of the actual proposals of the Government with the findings and recommendations of the Committee will confirm this observation. But drafting necessities and other considerations, some of them evidently arising from a desire to get simple and quick working in administration, cause the two documents—the bill and the Committee's report upon which it is based—to have a different appearance and vary in certain particulars. Before noticing the essential unity and the minor divergencies it is well to recall the circumstances which account for the presentation of the measure at the present time. The Select Committee, of which Sir Henry Norman was chairman, began its investigations in May, 1912, and concluded them, as already mentioned, at the beginning of August, 1914—that is, a few days before the declaration of war. The report was issued on August 26th, 1914,[1] when the attention of everyone was concentrated on the war. That being the case it could not then be taken up. The findings of the Committee, which followed on the hearing of varied and voluminous evidence, formed the basis of these recommendations for legislative enactments. The Committee had found that there was a large and increasing sale in this country of patent and proprietary remedies and appliances and medicated wines. They further found that these remedies were of a widely differing character: (*a*) genuine scientific preparations; (*b*) unobjectionable remedies for simple ailments; and (*c*) many secret remedies, making grossly exaggerated claims of efficacy, causing injury by leading sick persons to delay in securing medical treatment, containing in disguise large proportions of alcohol, sold for improper medication, professing to cure diseases incurable by medication, or essentially or deliberately fraudulent. The Committee went on to declare that the last mentioned class (*c*) constituted a grave and widespread public evil, and after pointing out that the existing law was chaotic and had proved inoperative in regard to these matters, they held that amendment of the law was urgently needed. The Committee afterwards proceeded to set forth what changes in the law they thought could be made, and here it may be well to summarize briefly the clauses of the bill. The Government propose that no one shall manufacture or prepare for sale any proprietary medicine or any proprietary surgical appliance unless he be registered under the Act for the purpose; unless the medicine or appliance be registered under the Act; and unless, in the case of a medicine, it is compounded of the ingredients and in the proportions specified, and in the case of an appliance corresponds to the specimen furnished. Registration is to be signified on the medicine or article by a number. The section prohibiting sale save under these conditions is to operate six months after notice in the *London Gazette* that applications for registration will be received. In the second clause it is laid down that after six months from the passing of the Act it shall not be lawful to sell any medicine or surgical appliance purporting to prevent cure or relieve any of the diseases or infirmities mentioned in the schedules. These are enumerated as follows: Cancer, consumption, lupus, deafness, fits, epilepsy, amenorrhoea and other diseases peculiar to women, diabetes, paralysis, locomotor ataxy, Bright's disease, rupture. Power is reserved to the Minister to extend the schedule. In the same clause prohibition is made against the advertisement of any article which might be used for abortion or miscarriage. The third clause deals with offences connected with advertisements. It sets forth as misdemeanours invitations by correspondence to take up remedies; the use of fictitious or misleading testimonials; the issue of a statement that a medicine or appliance is recommended by a duly qualified medical practitioner without including in the particulars names and qualifications, and, in the case of a living person, the address of a practitioner; the publication of a false statement that a medicine or appliance was discovered, invented, or compounded by a medical practitioner. The fourth clause provides for the keeping by the Ministry of Health of a confidential register, security being afforded against the divulgence of ingredients of a medicine. The fifth clause is an enabling one for the Minister to make regulations, and these are to be laid before Parliament. The regulations will, *inter alia*, allow the Minister, if he thinks fit, to direct that the name and quantity of any poisonous or dangerous drug forming an ingredient in any registered medicine shall be stated on the vessel or package, and will require that every proprietary medicine containing more alcohol than the Minister deems to be properly contained therein shall show on its vessel or package the proportion of alcohol contained. Another regulation is to be made to prohibit any statement being made by an owner that a medicine or appliance possesses any therapeutic qualities other than such qualities as are specified in the register as being its therapeutic qualities. The Minister is to have authority to remove any medicine or appliance from the register subject to appeal to the High Court against such removal. The penalties laid down for misdemeanours are imprisonment for a term not exceeding twelve months or a fine not exceeding £100, or both such imprisonment and fine. If a person be guilty of any other offence under the Act he is to be liable on summary conviction to a fine not exceeding £20, with a further fine not exceeding £5 a day for each day during which an offence continues after conviction. There are saving clauses for sales on medical prescriptions and for the sales of existing stocks bought by the vendor before July 24th, 1920. The expression "proprietary surgical appliance" is partly defined as one which is sold under a trade name or a trade mark with claim for exclusive rights and recommendation for curative purposes. The principal difference in the text of the bill from the recommendations of the Committee is as regards procedure. The Committee recommended that a special court or commission should be constituted with power to permit or prohibit, in the public interest or on the grounds of non-compliance with the law, the sale or advertisement of any remedy or appliance; and that the Commission should be a judicial authority such as the metropolitan police magistrate sitting with two assessors, one appointed by the department, and one by some such body as the London Chamber of Commerce. The bill makes the power to remove medicines and appliances from the register to reside in the Minister subject to the same right of appeal to the High Court which the Committee recommended. In the schedule the Committee appended against the word "rupture" the parenthetic phrase "(without operation or appliance)."

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[1] BRITISH MEDICAL JOURNAL, August 29th, 1914, p. 404.

An Attack on Medical Appeal Boards.

Mr. C. Edwards asked, on July 22nd, if the Minister of Pensions was aware that great dissatisfaction existed among ex-service men through the decisions of the medical appeal tribunals, which deprived them of any further pensions, notwithstanding the fact that many of these men were now unable to do the same work as before, and could do only work of a less arduous nature at much lower wages than their former employment would now bring them in; whether many were discharged as totally unfit for further service yet the result of the appeal tribunal was the same; how these tribunals were appointed; whether they were permanently employed; and what instructions were given them as to these examinations. Mr. Edwards also asked if the Minister would set up another tribunal with power fully to investigate the former condition of these men as regards health for comparative purposes when the final examination was being made. Mr. Macpherson said he was not aware of any grounds for thinking that the arrangements for appeal to medical appeal boards were working otherwise than satisfactorily. These boards were constituted to give both disabled men and the Ministry the advantage of the advice of specialists in the various classes of disability, and the specialist was always a member of an appeal board. Members were appointed by the Minister, and, apart from the Deputy Commissioner of Medical Services of the area, who was a whole-time officer—they were remunerated on the basis of a fee per session. None of the members was in the permanent employ of the Ministry. No special instructions had been given to the appeal board which would interfere with their unfettered judgement, and in the circumstances he could see no advantage in constituting a new tribunal. The accepted basis of the award of disablement pension was the medical estimate of the extent of the disablement consequent upon the disability found to be due to the man's war service. Considerations as to the wages which a pensioner was capable of earning (which under the present system were expressly excluded from the assessment of pension) could not reasonably be introduced in those cases only where they would be to the man's advantage.

National Health Insurance: Referee Consultants.—Sir J. D. Rees asked, on July 26th, whether thirty two doctors at £1,000 a year were being appointed to work under the direction of the Minister of Health. Dr. Addison replied that that was so. They were appointed to act as referee consultants under the National Health Insurance scheme with the object of protecting insurance funds from unnecessary claims to sickness benefit and improving the general standard of insurance medical practice. Funds for this purpose were voted by Parliament in 1914, but not spent during the war owing to the impossibility of establishing this much-needed extension of the health insurance medical service during that time.

Small-pox in Glasgow.—Mr. R. Young asked, on July 23rd, in reference to the Glasgow small-pox outbreak, whether any of the cases or deaths, given in the return for July 12th, 1920, as unvaccinated, had been vaccinated at any time either before the development of the disease or during its course. Mr. Munro replied that in the return mentioned, the classification of "unvaccinated" and "vaccinated" was determined by the condition at the date of exposure to infection. Of the 88 cases included under the heading "unvaccinated," 15 were vaccinated between exposure to infection and development of the disease, 14 successfully and one unsuccessfully. Of these 15 cases two died. One was a child, aged 2 months, who had been successfully vaccinated, and the other, aged 6 years, had been unsuccessfully vaccinated four days before the disease developed.

Dangerous Drugs Bill.—A House of Commons Committee, to which this bill was referred, twice failed to form a quorum; but the bill, which has been framed to give effect to the International Opium Convention, was considered on July 27th, and passed the Committee stage.

The Definition of Charity for Income Tax.—Sir H. Nield asked the Chancellor of the Exchequer, on July 22nd, if he would consider the desirability of inserting a clause in the Finance Bill which would more clearly define what was a "charity" within the meaning of the existing Finance Acts, so that institutions not run for profit yet deriving a portion of their incomes from relatives and friends of the inmates, might be exempted from payment of income tax under Schedule A on freehold and leasehold properties, purchased by them out of funds subscribed by the public, or from testamentary bequests, and from payment of tax under Schedule D on dividends from investments similarly acquired. Mr. Chamberlain replied that the legal definition of the term "charity" was considered by the Royal Commission on Income Tax, who expressed the opinion that for the purposes of income tax a "charity" should be specially defined by Parliament. This and other suggestions made by the Royal Commission (in Section 14 of Part 3) of the report in regard to the income tax exemptions that were granted to charities, would be considered when it was possible to deal with the Royal Commission's recommendations which were still outstanding.

Women Doctors and Income Tax.—Captain Elliot asked, on July 20th, why women doctors who were serving at home on whole-time contracts, but were told off to attend female units such as Queen Mary's Army Auxiliary Corps, had been refused the income tax concession which was granted to other persons who were doing work of a military character. Mr. Chamberlain replied that civilian doctors, whether men or women, detailed to attend units such as Queen Mary's Army Auxiliary Corps in this country, could not be regarded as entitled to income tax reliefs which under Section 42 of the Income Tax Act, 1918, were allowed to soldiers and sailors and others who were performing service of a naval or military character in the war.

Neurasthenic Cases in Manchester.—Dr. B. McDonald asked, on July 22nd, if the attention of the Minister of Pensions had been drawn to the "callous manner" in which neurasthenic cases were treated by the Manchester Medical Board; and if he would issue instructions that greater consideration be extended to these shattered men. Mr. Macpherson replied that no complaint whatever had been received by the Minister at head quarters or by the regional director which would support the suggestion that the special board which examined neurasthenic cases in Manchester dealt otherwise than with tact and consideration with the cases that came before them. If, however, Dr. McDonald had any specific instances in mind he would be glad to inquire into them at once.

Provision for Neurasthenics in Ireland.—Sir Robert Woods asked, on July 22nd, whether for the three southern provinces of Ireland the only institution for the treatment of discharged soldiers suffering from neurasthenia was Leopardstown Park, county Dublin; if the accommodation was limited to thirty-five patients; and if there were at present awaiting admission there 248 men for whom treatment in that place had been recommended. Mr. Macpherson replied that the facts were substantially as stated. Arrangements were, however, in progress to provide accommodation at Leopardstown Park for an additional 50 patients, and the question of providing further facilities for the treatment of this class of patient was engaging his earnest attention. Considerable local difficulties had to be contended with, but everything possible would be done to meet the situation.

Reduction of Disablement Pensions.—Captain Bowyer asked, on July 22nd, whether the Minister of Pensions was aware that numerous cases of complaint had arisen with regard to the cutting down of the pensions of disabled soldiers irrespective of, and without apparent reference to, the awards of medical boards; on what principle such pensions were cut down; and whether he would undertake that in future, where the disability remained constant or increased, the pension should also remain constant or be increased. Mr. Macpherson replied that he was not aware of the numerous cases of complaint suggested. All the awards of pensions under the Royal Warrant were in accordance with the findings of the medical board by whom the pensioners were examined, and no alteration was made in a board's original estimate of the degree of a man's disablement without further reference to the board, or the authority of a superior board, after a fresh examination of the man. The present practice was in fact in accordance with the suggestion made in the last part of the question.

Disabled ex-Service Postmen.—In reply to Sir A. Shirley Benn, who asked, on July 21st, if disabled ex-service men were subjected to medical examinations before being put on the permanent staff of the post office, Mr. Illingworth said that candidates for established appointments in the civil service had to obtain a certificate from the Civil Service Commissioners, and this involved a medical examination. The ordinary physical requirements were relaxed in favour of men disabled in the war, provided a reasonable period of service was likely to be given and the men were able to perform the duties allotted to them.

Service and Disability Pensions.—Sir Watson Rutherford asked, on July 26th, whether a man who applied for a service pension was to be subjected to a fresh medical examination, and whether there were numerous cases where the service pension now granted was accompanied by such a reduction of the disability pension that both put together did not exceed the total amount formerly drawn on the disability alone. Mr. Macpherson replied that the regulations regarding service pensions in addition to disablement pensions varied according to the length and nature of the man's service, and he regretted, therefore, that it was not possible to give a comprehensive answer to the question. He would be glad to reply on any specific case brought before him.

Health of Troops in Mesopotamia.—Mr. Churchill, replying to Mr. Lambert on July 28th, stated that for the first three months of this year the health of the troops was very satisfactory, the sick rate being less than in the United Kingdom. In April, the last month for which figures were available, the admission rate per 1,000 of strength rose, owing to the seasonal incidence of sandfly fever, giving an annual ratio of 890.4 per 1,000.

Treasury Grants to Port Sanitary Authorities.—The Ministry of Health has now notified port sanitary authorities that by arrangement with the Treasury it will grant 50 per cent. of the local authorities' expenditure in taking action to guard against infection from abroad. The circular notifies that this concession will apply to the payment of salaries of medical officers, the provision of ambulances, and for other administrative work.

Criminal Law Amendment.—Several sittings have been held by the Joint Committee of Lords and Commons which is considering the Criminal Law Amendment Bill introduced by Earl Beauchamp, the Criminal Law Amendment Bill (No. 2) introduced by Lord Sandhurst for the Government, and the Sexual Offences Bill introduced by Earl Beauchamp. A good deal of time has necessarily been occupied by the evidence of Sir Ernley Blackwell, Under Secretary for the Home Office, on information at the disposal of the department. He mentioned incidentally that the figures of venereal disease were not so grave as they had been, although still very striking.

Exposure of Carcasses.—Dr. McDonald asked, on July 21st, if the Minister of Health would take steps to prevent the exhibition of carcasses outside butchers' shops, and insist on the prohibition of all blowing of carcasses. Dr. Addison replied that he had recently appointed a committee to advise as to the measures necessary to protect the health of the people in connexion with the slaughter of animals and the distribution of meat for human consumption.

The Air of Manchester.—Mr. Clynes asked, on July 20th, whether the Minister of Health had received complaints from Manchester as to atmospheric conditions in that city; and whether his attention had been called to a complaint of the rector of St. Luke's, Platting, regarding the bad smells in the district. Sir Robert Saunders, for Dr. Addison, replied that complaint had been received, and it had been referred to the Departmental Committee on Smoke and Noxious Vapours Abatement, which was about to visit Manchester.

National Registration Acts.—Dr. Addison informed Sir B. Chadwick, on July 26th, that the National Registration Acts legally remain in operation until the official termination of the war; but they are not being kept up to date, and a question as to cost therefore does not arise.

Answers in Brief.

The cost of working the National Insurance scheme by the general body of approved societies represents on an average about 12 per cent. of the receipts from contributions.

Dr. Addison states that a few experimental consignments of sterilized milk were imported from Denmark in the early part of the year, but the undertaking proved unremunerative. He has no information as to the purity and quality of milk imported from Holland, but consignments from both countries are subject to examination at the port of entry under the Unsound Food Regulations. Samples of the Danish milk sent to this country have also been examined at the Ministry of Health, and there is a system of municipal inspection of dairy farms in Denmark and Holland.

The total number of applications and appeals of all kinds outstanding throughout the Civil Liabilities Department on July 10th, 1920, was 14,731. On January 10th, 1920, the total number outstanding was 12,446. The average number of cases dealt with per week in the present year is 5,170.

The total consumption of foodstuffs in the United Kingdom in the year ended December 31st, 1919, has been estimated as follows: Milk available for liquid consumption, 920,000,000 gallons; sugar for domestic use only, 790,000 tons; tea, 150,000 tons, flour, 5,110,000 tons, beef and mutton, 1,360,000 tons; bacon, 445,000 tons; butter, 180,000 tons; margarine, 330,000 tons. The value of these total quantities at the average retail prices prevailing were approximately as follows: Milk, £125,000,000; sugar, £50,000,000, tea, £60,000,000; flour, estimated value of bread sold by bakers, £90,000,000; flour, estimated value of flour sold for example, flour other than that in bread, £25,000,000; beef and mutton, £195,000,000; bacon, £100,000,000; butter, £[illegible]; margarine, £35,000,000. The values quoted for bread and flour are exclusive of the Government subsidy on wheat.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received up to and including the first post on Monday, July 26th, in response to the appeal published in our last issue (p. 129), towards the presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. **Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.**

SECOND LIST OF SUBSCRIBERS.

	£	s.	d.
Brought forward from first list of subscribers	294	6	6
Abercrombie, Dr. P. H., London	2	2	0
Adams, Dr. John, Glasgow	5	5	0
Almond, Lieut. T. H., I.M.S.	1	1	0
Anderson, Dr. G. C., London	1	1	0
Andrew, Dr. J. Grant, Glasgow	2	2	0
Angior, Dr. F. L., O.B.E., Wigan	1	1	0
Anstey-Chave, Dr. T., Redhill	1	1	0
Baines, Dr. E., Whitby	1	1	0
[illegible], Dr. Mary D., St Ives	0	5	0
Barling, Sir Gilbert, Birmingham	2	2	0
[illegible], Dr. F. P., St. Helens	3	3	0
[illegible], Dr. W. F., [illegible]	1	1	0
Baxter, Dr. S. E., Wellingborough	1	1	0
Beckett-Overy, Dr. H., London	2	2	0
Beveridge, Dr. J., Hurlford	1	0	0
[illegible], Dr. A. T., Altrincham	1	1	0
Bond, Mr. C. J., C.M.G., Leicester	2	2	0
Bowie, Dr. J. M., Edinburgh	1	1	0
Bowlan, Dr. M. M., London	1	1	0
[illegible], Dr. W., Bletchley	1	1	0
Brook, Mr. W. F., Swansea	1	1	0
[illegible], Dr. H. W. Langley, O.B.E., West Bromwich	2	2	0
Browne, Dr. J. Walton, Belfast	1	1	0
Butcher, Dr. Flora, Newcastle-on-Tyne	0	2	6
Caiger, Dr. H., Sheffield	1	1	0
Calwell, Dr. W., O.B.E., Belfast	1	1	0
[illegible], Dr. H. J., London	1	1	0
Castle, Dr. R. F., Darfield	1	1	0
Charles, Dr. J., Stanley, co. Durham	1	1	0
Churchill, Dr. J. F., [illegible]	1	1	0
Collier, Dr. W., Oxford	1	11	6
Collyns, Dr. R. J., Dulverton	0	5	0
[illegible], Mr. A. J., London	2	2	0
Crawshaw, Dr. S., Ashton-under-Lyne	2	2	0
Crook, Dr. A., Norwich	1	1	0
Cross, Mr. F. R., Clifton, Bristol	1	1	0
Crouch, Dr. C. P., Weston-super-Mare	1	1	0
Curme, Surgeon Lt.-Col. Decimus, Bournemouth	2	2	0
[illegible], Mr. C. E., Gloucester	2	2	0
Dain, Dr. H. G., Birmingham	2	2	0
Dando, Dr. E. A., Dudley	2	2	0
Davison, Dr. J. R., Belfast	1	1	0
Dawes, Dr. G. H., Sheffield	1	1	0
Deanesly, Mr. F., Wolverhampton	1	1	0
Dewar, Dr. W. J., Arbroath	0	10	0
Dickson, Mr. R. H., Newcastle, Staffs	1	1	0
[illegible], Dr. E. J., O.B.E., Bridport	2	2	0
Drummond, Dr. David, C.B.E., Newcastle-on-Tyne	5	5	0
Duncan, Dr. W., O.B.E., London	1	1	0
Edwards, Dr. E. S., [illegible]	1	0	0
Estcourt-Oswald, Dr. Agnes, Colchester	1	1	0
Evans, Dr. W. T., [illegible]	1	1	0
Flemming, Dr. C. E. S., Bradford-on-Avon	5	5	0
Fletcher, Dr. J., London	1	1	0
Fogarty, Dr. D., London	2	2	0
[illegible], Dr. C., Westcliff	1	1	0
[illegible], Dr. A., Nottingham	5	5	0
Gamgee, Mr. Leonard, [illegible]	2	2	0
Gauvain, Sir Henry J., Alton, Hants	1	1	0
Goodall, Dr. E. W., London	1	1	0
Gordon, Dr. J. E., O.B.E., [illegible]	1	1	0
Gosse, Dr. W., Parkstone	2	2	0
[illegible], Dr. Chas., O.B.E., London	1	1	0
Gray, Sir Henry M. W., K.B.E., C.M.G., C.B., Aberdeen	2	2	0
Halstead, Dr. W., Sutton, Surrey	1	1	0
Harris, Dr. A. C. E., Birkenhead	0	10	0
Haynes, Dr. G. S., Cambridge	1	1	0
Hopkins, Prof. Gowland, F.R.S., Cambridge	2	2	0
Horner, Dr. N. G., London	2	2	0
[illegible], Dr. James, Newcastle-on-Tyne	1	1	0
[illegible], Dr. Malcolm, Stamford	2	2	0
Ingle, Mr. C. Durban, Somerton	1	1	0
[illegible], Dr. P. R., London	2	2	0
Irish Medical Schools' and Graduates' Association per Dr. Stephen Boyd, [illegible]	2	2	0
Irwin, Mr. S. T., Belfast	1	1	0
James, Dr. P., [illegible]	0	10	6
Jaques, Mr. R., Plymouth	1	1	0
Jocelyne, Dr. A. E., Taunton	1	1	0
Johnston, Dr. G. Ainslie, [illegible]	1	1	0
Johnstone, Dr. G. W., London	1	1	0
Johnston, Colonel W. T., R.A.M.C., Bedford	1	1	0
Jones, Dr. Hugh, Dolgelley	1	1	0
Jones, Dr. Richard, Blaenau Festiniog	1	1	0
Kirby, Dr. E. D., Birmingham	1	1	0
Langran, Dr. W., Axminster	1	1	0
Larking, Dr. A. E., Tot[illegible]	0	10	6
Laurence, Dr. G., Chippenham	1	1	0
Lawson, Dr. D., Banchory	[illegible]	[illegible]	[illegible]
[illegible], Dr. A., [illegible]	2	2	0
Lodge, Dr. G. H., Rotherham	1	1	0
Lord, Dr. C. Courtenay, London	1	1	0
***Lucas, Mr. A.,** Birmingham	2	2	0
Macdonald, Dr. John A., [illegible]	1	1	0
[illegible], Dr. E., Lanark	2	2	0
MacLennan, Dr. A., Runcorn	2	2	0
[illegible], Dr. A. G. S., Bournemouth	0	10	6
Marks, Dr. Urban, Swansea	0	10	0
Major, Dr. H. C., Jersey	1	1	0
Martland, Dr. E. H., Oldham	2	2	0
Meade-King, Dr. R. L., [illegible]	2	2	0
Meredith, Dr. H., Wellingborough	2	2	0
Metcalfe, Dr. J., London	1	1	0
Minton, Dr. H., Woolwich	[illegible]	[illegible]	[illegible]
Mollison, Mr. W. M., London	2	2	0
Moore, Dr. S., Leeds	1	1	0
Murray, Dr. J., Llandrindod Wells	1	1	0
Newsome, Dr. H., Pill, near Bristol	1	1	0
Newton, Dr. D. Gray, Sheffield	2	2	0
Orton, Dr. J., Coventry	1	1	0
Palmer, Dr. C. J., Mansfield Woodhouse	1	1	0
Parker, Dr. G., Clifton, Bristol	1	1	0
Phillips, Dr. J., Bradford	1	1	0
Pockley, Dr. F. A., Sydney, N.S.W.	1	1	0
Pollard, Dr. G. S., Midsomer Norton	0	10	0
Price, Dr. D. R., Ammanford	1	1	0
Ratcliffe, Dr. J. R., Birmingham	1	1	0
Rawlings, Dr. F., Manchester	1	1	0
Rawlings, Dr. J. A., [illegible]	1	1	0
Richardson, Mrs. Sophia M. V., M.D., Cheltenham	1	1	0
Robb, Dr. A. G., Belfast	2	2	0
Roberts, Dr. R. Lawton, [illegible]	1	1	0
Robertson, Dr. A., Prestwick	1	1	0
[illegible]	[illegible]	[illegible]	[illegible]
Ross, Dr. A. T., Leigh	[illegible]	[illegible]	[illegible]
Ross, Dr. D., London	[illegible]	[illegible]	[illegible]
Russell, Dr. T., Glasgow	[illegible]	[illegible]	[illegible]
Ryall, Mr. Charles, C.B.E., London	[illegible]	[illegible]	0
[illegible], Dr. W. H., [illegible]	1	[illegible]	[illegible]
Shaw, Dr. J. T., Walthamstow	1	1	0
Shoolbred, Dr. T. B., [illegible]	1	1	0
Sinclair, Professor T., Belfast	1	1	0
Smith, Dr. A. Tennyson, [illegible]	[illegible]	2	0
Smith, Dr. L. Muir, Eastbourne	[illegible]	2	0
Spearman, Dr. B. J., Entebbe, Uganda	1	1	0
Starling, Dr. E. A., Tunbridge Wells	1	1	0
Stewart, Sir James Purves, K.C.M.G., London	2	2	0
Symes, Dr. J. O., Clifton	[illegible]	[illegible]	[illegible]
Taylor, Dr. Mark R., [illegible]	1	1	0
Thomson, Sir StClair, London	1	1	0
Tisdall, Dr. J. J., Liverpool	1	1	0
Unwin, Dr. H. R., Yeovil	[illegible]	1	[illegible]
Walker, Dr. J. F., [illegible]	1	1	0
Wardlaw, Dr. Robert, [illegible]	1	1	0
[illegible], Dr. W. N. [illegible], Bradford	1	1	0
Watson-Williams, Dr. P., Clifton, Bristol	2	[illegible]	0
Wiley, Dr. V., Cork	1	[illegible]	0
Willcocks, Mr. A. D., [illegible]	1	1	0
	[illegible]	[illegible]	[illegible]

* Omitted in error from last list.

THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

THE Sir Alfred Jones Laboratory of the Liverpool School of Tropical Medicine was officially opened on July 24th. In connexion with this event there has been published a *Historical Record*[1] (1898–1920) of the school. An account is there given of the formation of the school in 1899 as a result of the energy and public spirit of two men—Sir Alfred Jones and Sir Rubert Boyce, with whom the idea originated. In November, 1898, the former offered £350 per annum for three years to promote the study of tropical diseases, and fifteen days later a committee was formed, of which he was the chairman and Rubert Boyce (Holt Professor of Pathology at University College, Liverpool) a member. By the following April Boyce had been appointed Dean, Dr. H. E. Annett demonstrator, and Major Ronald Ross, I.M.S., lecturer in tropical diseases. After a formal opening on April 22nd teaching was commenced in May of the same year. Government recognition was slow in coming, and when the school's first expedition sailed for West Africa, on July 29th, 1899, the Colonial Office, the India Office, and the Foreign Office were all unable to offer any pecuniary assistance. The British Medical Association sent a cheque for £[illegible] and the expenses of one member were paid by Sir Alfred Jones. This expedition, the first of thirty-[illegible], consisted originally of Sir Ronald Ross, Dr. H. E. Annett, and Mr. E. E. Austen, together with Dr. van Neck of the Belgian Government. On August 17th a cable was received from Major Ross saying that the "malaria mosquito" had been discovered.

The record goes on to outline the history of the school from 1898 to the present time. The object of the compilers has been to commemorate the names of those who have been most closely connected with the activities of the Liverpool School of Tropical Medicine. The volume includes a list of the medical men who have been or who still are members of the staff, some of whom have died in and from their service. Thirty-five photographs and portraits of the school, its officers, and its memorials are given, as well as a compendious list of the scientific papers written by the members of the staff while at the school. It is greatly to be hoped that the publication of this book, with its record of laborious research, brilliant discoveries, and beneficent instruction, may lead the public to accord strong financial support to the school in the efforts it is now preparing for a further attack on the many problems in tropical medicine which still await solution.

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[1] *Liverpool School of Tropical Medicine. Historical Record* (1898–1920). Liverpool: The University Press. 1920.

During the war the laboratories were used as a military hospital. Now they possess every facility for carrying on research work, and in organization, it may be claimed, are second to none in the world. The laboratories are in close touch with a ward for patients suffering from tropical diseases within the precincts of the Royal Infirmary. Further, a laboratory at Sierra Leone is to be established, which will foster the study of disease and become a centre for teaching for those on the African coast who cannot come to England for instruction. The cost of these buildings had been defrayed out of money left by the late Sir Alfred Jones, and it was only fitting that the laboratories should ever be associated with his name.

Opening of the Sir Alfred Jones Laboratory.

Lord **Leverhulme** declared the building open, under the chairmanship of Sir Francis Danson and in the presence of a large attendance of ladies and men, many of whom were in academic costume. Lord Leverhulme emphasized the great work Sir Alfred Jones had done in promoting measures for a more healthy life in the tropics. It could be truly said, as it was of Sir Walter Raleigh, that he "toiled terribly." Such work was the only kind of warfare that left the victors truly victorious.

Sir Francis Danson, in his introduction, gave a survey of the work that the school had accomplished during its twenty-two years of existence. Seven expeditions had been sent to Sierra Leone, four to the Gold Coast, three to Gambia, two to Jamaica, and single expeditions to many other tropical regions. Through the generosity of one of the great Liverpool steamship companies a centre at Manaos, under the direction of Dr. Wolferstan Thomas, whose work on yellow fever is well known, had been established.

Mary Kingsley Memorial Medallists were presented to Lord Leverhulme by Professor J. W. W. Stephens, and among the recipients were Dr. Arthur G. Bagshawe, Dr. Andrew Balfour, and Professor R. T. Leiper (London School of Tropical Medicine). Mrs. Albert Chambers was awarded the medal in recognition of the work of the late Dr. Albert Chambers, an illustrious Liverpool University graduate who recently died. In the evening Sir Francis Danson, Chairman of the School of Tropical Medicine, entertained to dinner many of Liverpool's leading citizens engaged in commerce with the tropics, and medical men interested in tropical medicine. He pointed out the immense importance of the work that was carried on at the school, and in order that this should not be in [illegible] danger he made a spirited appeal not only to those at home but to the wealthy natives resident in the tropics, for further aid. He desired to raise £100,000, and as a pledge of his earnestness he would contribute £1,000 in memory of his son fallen in the war. The Vice-Chancellor, Dr. J. G. [illegible], supported the appeal, and looked forward to the time when the natives of the tropics would reap abundantly the fruits of the research carried on in the new laboratories, and so make the University of Liverpool an Imperial University in the truest sense of the term.

A [illegible] [illegible] Mrs. Glass's direction about the hare.

The [illegible] Committee has adopted a [illegible] will be given [illegible] Bill [illegible] into law. The [illegible] more definite restriction of raw opium and morphine and cocaine to medical requirements, and that the provisions of the bill may be extended to India and other Eastern dependencies in accordance with the terms of the Declaration of the British signatories at the Hague Convention.

England and Wales.

Precautions against Small-pox in London.

Some discussion has arisen between the London County Council and the Camberwell Borough Council regarding the accommodation in Camberwell for the isolation and observation of contacts with cases of small-pox. Under the Public Health (London) Act, 1891, local sanitary authorities are required to provide temporary shelter or house accommodation for the members of any family in which any dangerous infectious disease has appeared, who have had to leave their dwellings for the purpose of enabling such dwellings to be disinfected by the sanitary authority. In May, 1918, a communication on the subject was addressed to the London borough councils asking them to review their arrangements with the object of insuring that such provision had been made. The Camberwell Borough Council alone questioned the desirability of complying with this course. The accommodation provided in that borough is stated to be unsuitable for small-pox contacts, and alternative suitable accommodation has not been provided by the borough council. The view of the Camberwell authorities is that the visitation of contacts by the sanitary inspector is to be preferred to their isolation in a suitable building. The London County Council, however, is advised that medical inspection is essential to enable the disease to be detected in its earliest stages, and for this purpose contacts should in certain cases be kept under close medical supervision up to sixteen or eighteen days from the possible date of exposure to the risk of infection, and contact shelters have repeatedly proved to be of invaluable assistance to medical officers of health. The facts and considerations with regard to the whole matter are being communicated to the Minister of Health.

Red Cross Gifts for London Hospitals.

At a special meeting of the general council of the King Edward's Hospital Fund for London, on July 23rd, Viscount Finlay, the chairman, moved the adoption of the report and awards of the Distribution Committee with respect to the gift of £250,000 entrusted to the Fund by the Joint Committee of the British Red Cross Society and the Order of St. John of Jerusalem, in aid of schemes of extension or improvement at London hospitals treating ex-sailors or ex-soldiers. Lord Finlay pointed out that this was the second distribution of £250,000 made through the agency of the Fund in 1920. On June 22nd an emergency distribution of the same amount had been made out of the capital assets of the Fund in order to assist the present need of the hospitals;[1] the present gift, however, came out of the surplus funds at the disposal of the committee of the British Red Cross Society and the Order of St. John of Jerusalem. It had been made a condition of this gift that none of it was to go to maintenance; it was to be used to assist definite schemes of extension or improvement, and it was to be confined to hospitals which could and would treat ex-sailors or ex-soldiers. The Distribution Committee had decided that only a small proportion of the £250,000 should go to bed extensions; the bulk of the gift had been allocated to such improvements as enlarged out-patients' departments, new operating theatres, improved nurses' quarters, and the equipment of special departments. The plans and estimates for these schemes, where they were of any size, had been thoroughly examined, and the hospitals had been visited. The Prince of Wales sent a message thanking the joint committee for their magnificent gift. The motion was seconded by the Lord Mayor, and carried unanimously. The thanks of the general council were tendered to the Joint Committee.

Among the larger grants made for specific purposes by the Distribution Committee were £9,000 to East Ham Hospital, £[illegible] to the Great Northern Central Hospital, £11,000 to Guy's Hospital, £7,000 to Brompton Hospital for Consumption, £[illegible] to the Miller General Hospital for South East London, £[illegible] to the Passmore Edwards Hospital for Willesden, £10,000 to the Prince of Wales's General Hospital, £12,000 to Queen Mary's Hospital for the East End, £8,500 to the Royal Free Hospital, £[illegible] to the Royal National Orthopaedic Hospital, £[illegible] to St. Bartholomew's, £8,000 to the West London Hospital, and £5,000 to the Woolwich War Memorial Hospital.

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[1] British Medical Journal, July 3rd, 1920, p. 28.

CENTRAL MIDWIVES BOARD.

The Central Midwives Board for England and Wales met on July 22nd for a penal meeting and for the ordinary monthly meeting. Professor Briggs presided, and before commencing proceedings it was decided that:

> The minutes of this meeting will record the first absence of Sir Francis Champneys during his eighteen years' chairmanship of the Board, one of many personal proofs of enviable vigour, also of earnest devotion to the Board's business. He is at present under treatment for an eye affection. The members of the Board regret his absence to-day and welcome the bright promise of his presence at the next meeting of the Board in October.

Six penal cases were considered. The names of two midwives were struck off the roll, the principal misdemeanours being failure to send for a doctor in an abnormal presentation and in two cases of puerperal fever, the result being fatal in each of the cases.

Ireland.

THE RECENT RIOTS IN BELFAST.

A LARGE number of gunshot wounds were admitted to the various hospitals on the nights of July 21st, 22nd, and 23rd. Many of these have unfortunately proved fatal, and a large number have no doubt been treated at their own homes. The Royal Victoria Hospital and the Mater Infirmorum Hospital received the largest number. About twenty-three have been admitted up to July 25th into the Royal Victoria Hospital, of whom one was carried in dead and nine have since died. The gunshot wounds are of the usual multiform character, and no special blood poisoning nor infection has appeared. One bayonet wound and several cases of cuts and lacerations from broken glass are also found. Several patients are still in a serious condition. The hospitals have so far been quite able to cope with this unusual strain on their resources, and much credit is due to the resident staffs for their energy and resource.

CENTRAL MIDWIVES BOARD FOR IRELAND.

The Central Midwives Board for Ireland held its first examination for midwives on July 8th and 9th. The examinations took place simultaneously at the Royal College of Surgeons, Dublin, the Queen's University, Belfast, and University College, Cork. The examiners were Drs. Trevor N. Smith, Reginald G. White, Gerald Tierney, J. M. Gilmor, J. D. Williamson, John McLeish, John Booth, and Walter Rahilly. Of the seventy-three candidates who presented themselves, sixty-two passed.

New South Wales.

THE UNIVERSITY OF SYDNEY.

AT the recent graduation ceremony 285 degrees were conferred in the various faculties. The Chancellor in the course of a short address referred to the needs of the University for increased accommodation. Since his previous address in June, 1919, in which he pointed out the almost complete impracticability of carrying on, with the limited space available, the classes at the rate of expansion manifested in recent years; the Legislature had made a grant for certain extensions, but the necessity for further development was still very great. The University had received material assistance from the splendid bequest of the late Sir Samuel McCaughey, and was also indebted to the donors of smaller amounts. The work of obtaining money even to relieve the congestion in the field of primary education was often difficult, but it should be realized by the general public that neither the aspirations of the University of Sydney nor of the community would be realized if the institution had ever to accept anything less than the best. The State having once established the University, could never allow it to decline in efficiency. The University had a fine tradition: men on its staff had won the highest fame, and the University degrees were recognized everywhere. It was incumbent therefore upon the State to see that this fine tradition was maintained.

The Minister for Education gave his assurance that the University would not suffer because there had been a change of Government. No body of men realized more fully than the present Ministry what men lost through not being able to take advantage of the opportunities for education at such an institution, and for that reason it was determined that the younger section of the community should get every opportunity to secure what had been denied to those who had gone before them.

THE NEW DEAN OF THE FACULTY OF MEDICINE.

Professor J. T. Wilson has been elected Dean of the Faculty of Medicine in the University of Sydney in succession to the late Sir Thomas Anderson Stuart. Professor Wilson is a native of Dumfriesshire, Scotland. He graduated M.B., C.M. at Edinburgh University in 1883. He was for a year or two demonstrator of anatomy in that university, and came to Sydney in February, 1887. He was demonstrator of anatomy here till 1890, when he was appointed Challis Professor of Anatomy, a post he will continue to hold. In 1909 he was elected to the Fellowship of the Royal Society of London. He is a member of the International Brain Commission and a Membre de l'Institut International d'Embryologie. He is a past president of the Linnean Society of New South Wales, and an honorary Fellow of the Royal Society of South Australia. In accepting the position of Dean of the Faculty of Medicine he has relinquished the more senior position of chairman of the professorial board, which he had occupied for several years.

THE INFLUENZA EPIDEMIC AND THE DEATH RATE.

The Government statistician reports that the death rate during the past year was 32.5 per cent. above the average for the last five years. This large increase was due to the influenza epidemic, which caused 6,387 deaths, or 24 per cent. of the total deaths from all causes, during the year. The period of the epidemic is taken officially by the public health authorities as from January 1st to September 30th; but 5,881 deaths, or 92 per cent. of the total from influenza, occurred during twenty weeks from March 19th to August 5th. During this period the epidemic followed its course in two distinct waves, each rising and falling in ten weeks. In the first wave, from March 19th to May 27th, 1,892 deaths occurred, and 3,989 during the second wave, from May 28th to August 5th. The statistics show that the mortality was highest in the most densely populated areas. The death rate was lowest among young children, it was practically equal for both sexes at school ages, and was highest among men of working ages, whilst the rates among women over 25 years of age were fairly uniform.

THE BIRTH RATE.

The birth rate for the metropolitan area of Sydney for 1919 was the lowest on record, being 14 per cent. below the average for the previous five years. The rate is equivalent to 23.05 per 1,000 of population. The decline in the birth rate since 1914 has been 5 per 1,000, but probably not all the decline can be attributed to the war, as the rate, after increasing from 1903 to 1912, declined slightly from 1912 to 1914. Illegitimate children numbered 7.41 per cent. of the total births, equivalent to 1.71 per 100 of population.

Correspondence.

THE CARLISLE EXPERIMENT IN LIQUOR CONTROL.

SIR,—I have from time to time sent to you particulars of the successful working of the regulations of the Central Control Board (Liquor Traffic) in the Carlisle area. The success of the experiment is evidently as distasteful to the advocates of prohibition as it is to "the Trade." Many of your readers have no doubt seen a list prepared by Alderman Malins, J.P., of Birmingham, a well-known prohibition leader. It is a most unfair attack on the fair fame of this ancient city. This list tries to show that Carlisle is a more drunken place than most other English boroughs. The list contains the names of 155 boroughs, gives the number of convictions for drunkenness in 1919 per 1,000 of the population, and Carlisle appears at the head of the list with the largest number of such convictions.

The list is, of course, a carefully selected one, and all the boroughs which have a larger proportion of convictions than Carlisle have been conveniently omitted. Why have such places been left out as Newcastle, Sunderland, Gateshead, North and South Shields, Middlesbrough, Workington, Barrow-in-Furness, Salford, Manchester, Liverpool, Rotherham, Durham, etc.?

A list of this sort is obviously misleading, but even apart from its partial character the comparison of convictions for drunkenness between town and town is of very little value as police administration differs so greatly in different towns. The only reasonable comparison is between the convictions for drunkenness in the same town at different periods. From the chief constable's reports it appears that the convictions for drunkenness at Carlisle in pre-war years averaged about 250, while in 1918 they were 80, and in 1919, 78. It should also be noted that whereas in 1919 the number of convictions for drunkenness all over the country was practically double that of 1918, at Carlisle the number actually decreased.

Let us take another list showing the same boroughs as those included in Alderman Malins's list, but tabulated on a different principle. In this case the number of convictions for drunkenness at each town for the year 1919 has been deducted from the number for 1914 (as given in the licensing statistics for that year) and the percentage decrease in the convictions for the latter year as compared with those of 1914 have been worked out. In this list Carlisle appears seventy-ninth instead of first.

In an amusing pamphlet entitled *The Statistical Exploits of a Fanatic*, published by P. S. King, Limited, price 2d. net, Mr. Arthur Sherwell makes very short work of Alderman Malins's list, and anyone who may have been led by a perusal of this list to the conclusion that the Carlisle experiment is a failure should read Mr. Sherwell's pamphlet to get a truer view of the matter.

But, indeed, the whole question is a wider one than the mere demonstration of the unreliability of a set of figures. The system of State management as carried out at Carlisle, as any fair-minded resident will admit, is undoubtedly having a good effect on the sobriety of the city, and there is good hope that when the present system has continued for a few more years the drunkenness of the city will be still further reduced. It has never been claimed that the Carlisle system, under which the private interest in the sale of intoxicants is wholly eliminated, has eradicated drunkenness in the city. This is quite impossible in a short space of time. What is claimed is that a most promising experiment is being carried on, and one which bids fair to point the way to a great improvement in the conditions under which the licensed trade may be carried on. Alderman Malins and his like would have this experiment branded a failure and the liquor trade handed back to the hands of private interests to be conducted for their own private gain because they hold that any reform which still allows the sale and consumption of alcohol is bad *ab initio*. They cannot see that half a loaf is better than no bread, and they prefer to continue the hopeless war against vested interests which they have carried on now for the last fifty or sixty years, the only result of which has been that their opponents are in every way in a stronger position now than ever before. They refuse to realize that it would be infinitely easier to persuade the electors to vote for prohibition (if this should be the will of the people) when there is no vested interest to weight the scales.—I am, etc.,

Carlisle, July 22nd. HENRY BARNES.

VACCINAL CONDITION OF SMALL-POX CARRIERS.

SIR,—It is, I think, an impracticable suggestion that the unrecognized case of small pox can be eliminated by the instruction of the medical student, and at any rate I cannot agree that children should be exposed to unnecessary risk in order that the task of the medical man may be rendered easier.

For, after all, this is what Dr. Killick Millard's suggestion, in your issue of July 17th, amounts to. It is admitted that vaccination confers absolute immunity upon the individual for a variable period, and that as the protection wanes the individual becomes liable to an attack of small pox of a severity commensurate with the amount of acquired immunity he [illegible] possesses. It follows, therefore, that infantile vaccination is primarily a protection to the child population, and that the effects of its discontinuance would fall most heavily, and with most distressing results, on this helpless section of the community. Incidentally, infantile vaccination may benefit individuals of adult age—even those whose vaccination is twenty to thirty years old—by modifying their attacks; but their protection is not the object of infantile vaccination.

The point at issue, then, is not whether it is possible "to protect the whole community, or anything like the whole community, by infantile vaccination," but whether that section of the community which it is designed to protect derive sufficient advantage to outweigh the particular disadvantage on which Dr. Millard bases his objection.

The answer to this must, I think, be an emphatic affirmative. In the first place, in considering the advantages to the child population, I feel that it is impossible for anyone, who has seen cases of small-pox in vaccinated and unvaccinated children, to put aside the individual aspect of the question and consider only the possible effects on the community as a whole; the difference between the two classes of cases is too great to admit of such cold-blooded reasoning, in the presence or with the memory of the preventable individual suffering—and it does not seem to be in the interests of the community that those parents who are desirous of protecting their children should be discouraged from doing so in order that others may reap a problematical advantage.

I have records of 3,057 cases of small-pox in children under 15 years of age; 673 of these were vaccinated, and of these 22 (19 over 10 years of age) were confluent, of which 7 died; the remaining 651 were discrete cases, of whom all except one recovered; of the 2,384 unvaccinated cases 845 were confluent and 480 died, and there were also 142 deaths amongst the 1,539 discrete cases; under 10 years of age there were 2 deaths amongst the vaccinated, as compared with 526 amongst the unvaccinated; the proportion of severe discrete cases amongst the unvaccinated was 72.4 per cent., as against 24.8 amongst the vaccinated; and under 10 years of age the corresponding figures were 72.1 and 10.7.

Would Dr. Millard have deprived these vaccinated children of the immense advantage they enjoyed? And would he, if some of them passed on their modified attack in a virulent form to an unvaccinated child, have laid the blame for that child's misfortune on the practice of infantile vaccination, or upon those who, directly or indirectly, were responsible for the child's unvaccinated condition?

In the absence of infantile vaccination Dr. Millard would rely upon administrative measures, of which vaccination of contacts would be perhaps the most important. As some indication of the danger of postponing vaccination until cases arise I would point out that amongst the unvaccinated cases mentioned above 426 were successfully vaccinated after exposure to infection, and that 87 died.—I am, etc.,

Gravesend, July 24th. ARCHIBALD KIDD.

FUTURE PROVISION OF MEDICAL SERVICES.

SIR,—It would be interesting to ascertain what is exactly a "proper doctor." A correspondent in the JOURNAL who gratuitously slanders the professional work of the majority of the medical men in the country apparently lays claim to the title.

We learn on the authority of Dr. C. L. Traylen (July 3rd, p. 29) that the panel doctor has a callous manner, and that he does not examine the chest, throat, heart, or even pulse, etc., of his patients. On what grounds does this correspondent base his assertions, and what opportunities has he had of forming this opinion? I do not believe that Dr. Traylen possesses a monopoly of the medical conscience of Willesden Green; and without having actual acquaintance with medical men in that district, I should say that there are panel-practitioners there whose sense of professional duty and whose kindness of heart will compare quite favourably with these qualities as possessed by your correspondent. It has probably never occurred to him that the panel practitioner may be a strictly honourable, kindly man with a reputation to maintain.

I am acquainted with a number of panel practitioners, and I hope Dr. Traylen will not be unduly shocked when I assure him that there are men who do not differentiate between the treatment of their panel and private patients; anaesthetics, serums, vaccines, oxygen, are provided for the panel patient as occasion requires, and perhaps I had better add that it is quite a common occurrence even to feel the pulse. The panel system receives a large amount of quite unmerited abuse. A panel is largely what the individual practitioner makes it.

A fact which is often overlooked is that there are, there always have been, and there always will be, two distinct types of men in the profession: There is the man who is a gentleman by nature, not necessarily by birth, who has high ideals of the healing art and of his duty to his patients, and there is the man who is in the profession to get all he can out of it. By their works ye shall know them. One type is hall-marked, the other bears a trade mark, both indelible. Nothing can alter this, whatever system is in vogue, whether panel, whole-time service, or what not; the two types will always be in evidence. Can there be any doubt which of the two is a "proper doctor"?

I have my own ideal of a "proper doctor," and have met him on many occasions in Harley Street, in the slums, and often in insurance practice, but your correspondent does not fill my picture, for he lacks one essential quality—the saving grace of charity.—I am, etc.,

Lenham, Kent, July 5th. J. TEMPERLEY GREY.

CALCIUM IN THE TREATMENT OF TUBERCULOSIS.

SIR,—Nature's remedy for tuberculosis is first fibrosis and then calcification. The amount of fibrosis may be regarded as evidence of the amount of resistance of the patient. Fibrosis comprises two factors: the imprisonment of the tubercle bacillus and its toxins on the one hand and the systemic attack of the white (giant) and other cells and their constituents on the other. Whilst, therefore, building up fibrosis and all it implies, on the one hand, by means of sanatorium environment and treatment, I wonder if, on the other, by giving lime salts in a colloid or finely divided form, we could not do something to cut short the life of the tubercle bacillus in glandular, pulmonary and other tissues.

What is the exact composition of the calcareous nodules found in healed tuberculous glands and scars? I believe that along the lines of combination of the chemical constituents with the vital we may in time work out a cure for tuberculosis.—I am, etc.,

Newcastle-on-Tyne, July 3rd. T. M. ALLISON.

MORTALITY OF VENEREAL DISEASES.

SIR,—In the BRITISH MEDICAL JOURNAL for July 17th, 1920, p. 80, there is a serious misstatement of fact (presuming correct reporting). Sir J. Crichton-Browne refers to the "three chief killing diseases" as cancer, tuberculosis, and venereal disease. This latter can only mean syphilis, as no deaths are ascribed to gonorrhoea in the Registrar-General's report.

The figures for 1917 show total deaths in England and Wales as follows:

Tuberculosis	55,934
Cancer	41,158
Pneumonia	39,832

Instead of being the third killing disease, syphilis comes a very long way down the list and was responsible for 2,127 deaths in the statistics above mentioned for 1917.—I am, etc.,

CHARLES RUSS, M.B.Lond., M.R.C.S., L.R.C.P.,
Honorary Physician, Electrical Department,
Male Lock Hospital.

London, W., July 27th.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on July 20th, the following medical degrees were conferred:

D.M.—F. L. Apperly (*in absentia*).
M.CH.—N. A. Sprott.

UNIVERSITY OF CAMBRIDGE.

PROFESSOR G. H. F. NUTTALL reports that Mr. and Mrs. P. A. Molteno have undertaken to make an additional contribution of £6,000 in order that the Molteno Institute of Parasitology may not suffer from the increased cost of labour and material, and the original plan be maintained.

UNIVERSITY OF LONDON.

THE Senate has appointed Dr. W. S. Lazarus-Barlow to the new University Chair of Experimental Pathology, tenable at the Middlesex Hospital Medical School.

The following candidates have been approved at the examination indicated:

M.D.—(*Medicine*): T. I. Bennett, F. V. Bevan-Brown, G. Bourne, J. A. Drake, A. R. Elliott, *G. Marshall, J. G. Moseley, H. B. Russell, J. H. Sheldon, T. P. Williams, Irene Yates. (*Pathology*): S. F. Dudley. (*Mental Diseases*): T. Beaton, M.D., H. W. Hills. (*Midwifery and Diseases of Women*): Marian N. Bostock, *A. Goodwin, W. Salisbury, R. S. Townsend. (*State Medicine*): E. N. Ramsbottom, *H. Stott. (*Tropical Medicine*): C. C. Chesterman, M. D. Mackenzie.

* University medal.

LONDON HOSPITAL MEDICAL COLLEGE.

The prizes and certificates awarded to the successful candidates for the session 1919–20 were distributed by Dr. Robert Hutchison on July 5th. The following is a list of the awards:

"Price" Entrance Scholarship in Science (£100), L. Mushin. Second Entrance Scholarship in Science (£50), H. Taylor. Price University scholarship in Anatomy and Physiology (£52 10s.), Miss C. M. Ottley. Medical Prize (£20), D. Hunter. Prize in Clinical Obstetrics and Gynaecology (£20), M. C. Hartley; Honorary Certificates, J. R. Zeitlin and Miss M. E. Kennedy. "Andrew Clark" Prize in Clinical Medicine and Pathology (£25), D. Hunter; Honorary Certificates, P. Steinberg and F. H. W. Tozer. Surgical Prize (£20), D. Hunter; Honorary Certificate, Miss M. F. Kennedy. "Anderson" Prizes in Elementary Clinical Medicine (£3 each), Miss D. J. Fox, Miss D. Gibson, F. H. Mather; Honorary Certificates, H. D. Lawson, Miss H. R. Ashton, Miss D. S. Russell, and Miss M. E. Dixon. In-patient Dressers' Prizes (£5 each), C. S. Cloake, Miss D. Gibson and W. Thomas (equal, prize divided), Miss H. R. Ashton, Miss G. H. Jones; Honorary Certificates, Miss G. Denham and Miss D. S. Russell. Practical Anatomy (£6 Prize), Miss S. H. G. Robinson, (£2 Prize) P. H. O'Donovan, (£2 Prize) A. J. Reed; Honorary Certificates, D. R. Blunn, G. N. Golden, S. A. Grant, K. W. Todd. Letheby Prizes: Organic Chemistry (£15), R. T. Brain; Honorary Certificates, L. Mushin; Chemical Pathology (£10), C. S. Cloake; Honorary Certificate, F. C. Hunt. Sutton Prize, Pathology (£20), M. Tree. Buxton Prizes in Anatomy and Physiology (£31 10s.), G. N. Golden; Honorary Certificate, Miss D. Peake. Arnold Thompson Prize in Diseases of Children (£15), Miss O. G. Potter; Honorary Certificates, Miss D. J. Fox, Miss M. E. Kennedy.

LONDON SCHOOL OF TROPICAL MEDICINE.

The following were successful at the examination at the termination of the sixty-third session:

*T. J. D. Lane (gained Duncan Medal), *R. Jamison, *Miss E. J. O'Driscoll, *F. E. Reynolds, M. D. Mackenzie, J. M. MacKay, R. B. Hawes, J. Glavina, J. Forrest, V. E. Critien, S. A. Eldaab, J. V. Holmes, G. C. R. Wilson, J. H. Parry.

* Passed with distinction.

KING'S COLLEGE.

The following appointments have been made by the Delegacy: Dr. O. Inchley, lecturer in pharmacology; Dr. J. E. Hadfield, lecturer in psychology.

UNIVERSITY OF MANCHESTER.

THE following have been approved at the examinations indicated:

B.Sc. (PUBLIC HEALTH).—E. N. Ramsbottom.
D.P.H.—W. Ash, Sybil Bailey, J. C. Beckitt, Hilda Brade-Birks, J. P. Charnock, W. J. McIvor, C. G. Magee, Kathleen O'Donnell, W. J. A. Quine, A. Renshaw, L. S. Robertson.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examination indicated:

THIRD M.B., CH.B.—E. S. Clayton, Mary P. Gell, R. D. S. Inman, R. T. Lee, Elsa F. Page, R. Platt (distinction in Pathology), P. H. Sharp.

UNIVERSITY OF BRISTOL.

O. C. M. DAVIS, D.Sc., has passed the examination for the degree of M.D.

UNIVERSITY OF EDINBURGH.

AT the university court held on July [illegible] it was resolved, in view of the greatly increased cost of laboratory material, to make an additional charge in respect of laboratory training in the Faculties of Arts and Science, commencing on October 1st.

The court expressed its gratification at the further grant of £500 made by the Combe trustees towards the equipment of the laboratory in connexion with the Combe Lectureship in Physiology.

Dr. James Miller has resigned the post of Lecturer in Morbid Anatomy on his appointment to the Chair of Pathology in Queen's University, Kingston, Ontario.

Dr. W. T. Ritchie has been granted recognition for three years as an extra-mural lecturer in medicine.

The regulations drafted by the Faculty of Medicine for the diploma in tropical medicine and for the diploma in psychiatry were approved.

Dr. James E. M'Cartney was appointed Lecturer in Bacteriology.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following gentlemen, having passed the requisite examinations, have been admitted Fellows:

H. B. Atlee, J. C. Bell, F. Cameron, A. R. Campbell, F. E. Feildon, J. A. Ferriere, T. G. Fetherstonhaugh, T. W. Hancock, S. L. Harke, W. K. Irwin, G. B. Isdale, H. H. Jamieson, C. King, J. T. M'Auslin, A. J. M'Creadie, W. A. Mein, A. C. N. Misbah, D. M. Morison, G. T. Mowat, W. G. Oakeley, G. H. Peall, H. N. M. Puckle, M. E. Robinson, R. J. Silverton, A. F. Sinclair, F. W. Stone, F. K. Te Water, C. Uren.

Medico-Legal.

LIBEL ACTION AGAINST A MEDICAL OFFICER OF HEALTH.

A CASE of some little interest came before Mr. Justice Roche and a common jury in the King's Bench Division on July 15th. The plaintiff was a Mrs. Mabel Copeland, and she brought an action for damages for libel against Dr. Thomas Orr, the medical officer of health of the borough of Ealing.

It appeared that the plaintiff entered the service of the town council as a lady sanitary inspector in June, 1911, and from that time until Dr. Orr's appointment as M.O.H. in September, 1915, her duties consisted mainly in visiting newly born babies. On her return from her holidays in September, 1915, Dr. Orr, having entered upon his duties whilst she was away, the plaintiff was instructed by Dr. Orr to take up the returned scarlet fever cases. As a result the plaintiff saw the Chairman of the Public Health Committee, whom she asked for a testimonial with a view to obtaining another appointment. However, she changed her mind, and things went fairly smoothly for a time. In April, 1917, as the result of a new scheme of health work which Dr. Orr then introduced, the plaintiff again decided to resign, and wrote to the town council for a testimonial. The council asked Dr. Orr to report to them on the plaintiff and her work, and the doctor prepared a written statement, in which he said that the plaintiff was late in arriving at the office, absented herself without permission, and was unsatisfactory in the performance of her duties. This statement was handed to the Public Health Committee at their next meeting.

At about this time a letter had been written by the plaintiff's sister to Dr. Orr which stated that the plaintiff had been ill as a consequence of Dr. Orr's harsh and aggressive attitude towards her. This letter was laid before the Committee, who called upon the plaintiff to attend before them and support the statements contained in her sister's letter. She did not do so, and the council eventually decided to dismiss her from their employment. The plaintiff then brought her action against Dr. Orr for libel contained in the report which he had submitted to the Committee in April, 1917, and the doctor pleaded that the report was made bona fide at the request of the Committee in circumstances which rendered it privileged.

The plaintiff in the witness box spoke of the defendant's manner towards her having been harsh and brusque, and referred to an interview on one occasion on which the defendant had said that either he or she had "got to go." The plaintiff's sister was also called, and the evidence of the former chairman of the Public Health Committee, which had been taken on commission, was read.

This closed the plaintiff's case, and Mr. Hemmerde, K.C., who appeared as counsel for the defendant, submitted that the plaintiff had not proved that the defendant had acted from any malicious motive in making his report, and that the case ought therefore to be withdrawn from the jury. The judge, however, said he thought it best to hear the case out, although he was inclined to think there was no evidence of malice. The defendant then went into the box and detailed his association with the plaintiff, and in particular dealt with the circumstances under which he made the report to the Committee. The plaintiff was lacking in method, and her records were in arrears. He honestly believed the statements contained in his report, which were founded chiefly upon his own observations. He had no personal feeling against her, nor desire to get her out of her employment. Two other witnesses spoke to the unsatisfactory way in which the plaintiff had carried out her duties.

In his summing up to the jury the judge asked them to say whether in making the report to the council the defendant acted bona fide, and pointed out that being actuated by malice did not necessarily mean ill will, although ill will was a form of malice. It meant an indirect and improper motive, and might be expressed in this way. The defendant had of course to report to his council because he was asked to do it. The report was therefore privileged. But a person in such circumstances must not abuse the occasion, and the question was whether he had done so. The judge also intimated that there might be a question which he would have to decide thereafter as to whether there was any evidence upon which they could find in favour of the plaintiff.

The jury found £25 damages in favour of the plaintiff, and the judge postponed entering judgement pending legal argument. On July 19th the case was mentioned to the court by Mr. Hemmerde, who moved that judgement be entered for the defendant, on the ground that there was no evidence of malice, and Mr. Justice Roche, in the course of a somewhat lengthy argument by counsel on both sides, said: "Speaking as a great believer in juries, this is one of the cases which occurs now and then in which one's faith is a little shaken. I say no more than that. It is not for me to set the jury's verdict aside as being an unreasonable verdict, but I am entitled to say that I am very dissatisfied with it. It is difficult, however, to say that there was no evidence which could be submitted to the jury."

Judgement was therefore entered for the plaintiff for the sum of £25. We understand that an appeal has been entered by the defendant.

The Services.

HONOURS.

O.B.E. (MILITARY).

CAPTAIN WILLIAM NIVEN GREER, R.A.M.C.(S.R.), and temporary Captain David Vincent O'Malley, R.A.M.C., have been appointed O.B.E. (Military Division) in recognition of valuable services rendered in connexion with military operations in Burma.

MENTIONED IN DISPATCHES.

The names of the following officers have been brought to the notice of the Secretary of State for War for valuable and distinguished services rendered in connexion with the military operations in the theatres of war indicated:—*South Persia Force:* Major R. G. G. Croly, I.M.S., and Captain (acting Lieut.-Colonel) J. B. Hance, I.M.S., attached South Persian Rifles. *Kuki Punitive Operations:* Captain T. Fleming, R.A.M.C., Captain W. N. Greer, R.A.M.C. (S.R.), and temporary Captain D. V. O'Malley, R.A.M.C.

Temporary Captain John Marsters Mitchell, R.A.M.C., has been appointed O.B.E. (Military Division) in recognition of valuable services in connexion with military operations in South Russia.

Captain Oswald Russell, the son of Major-General Sir Michael Russell, K.C.M.G., C.B., late Deputy Director-General of the Army Medical Services, War Office, has been awarded the Military Cross for conspicuous gallantry and devotion to duty near Sasiliyah (Mesopotamia) on March 7th, 1920.

Obituary.

SIR ALEXANDER DEMPSEY, M.D., J.P.,

Gynaecologist to the Mater Infirmorum Hospital, Belfast.

THE announcement last week of the death of Sir Alexander Dempsey, M.D., at his residence, Coldagh, Somerton Road, Belfast, occasioned widespread regret amongst all classes and sects in Belfast and the North of Ireland. About the end of June he became confined to the house, and gradually became weaker, and he died on July 18th.

Alexander Dempsey was born at Coldagh, Ballymoney, County Antrim, in 1852; he was educated at St. Malachy's College, Belfast, and began his professional career in Queen's College, Galway, and subsequently studied in the Roman Catholic University Medical School, Dublin, and obtained the M.D. in the old Queen's University, and the L.R.C.S.I. in 1874. He began practice in Belfast in Donegal Street, and removed to Clifton Street, which remained his professional residence to the end. Along with the late Dr. John Moore and the late Dr. William McKeown, he established the North of Ireland Branch of the British Medical Association, in which he always took a keen interest; for many years he acted as its honorary secretary and treasurer, and subsequently he was elected its president. When the Association met in Belfast in 1884 he was one of the honorary secretaries. Sir Alexander Dempsey was much associated with the public life of the city: he was appointed a justice of the peace in 1880; for many years he was a member of the joint board of the Belfast and County Antrim Asylum, and of the visiting committee of the Belfast prison. He was elected a member of the governing body of the University College, Dublin, and nominated at its inception a member of the National University Senate. Two years ago he was also nominated to the Senate of the Queen's University, Belfast.

His chief professional work was done as gynaecologist to the Mater Infirmorum Hospital, Belfast, to the rebuilding and reorganization of which he devoted much time and energy. He enjoyed a very large and lucrative practice both as a family physician and, amongst those of his own denomination, as a consultant. On several occasions he acted as local examiner in obstetrics and gynaecology in the Queen's University and as extern examiner in the National University of Ireland. In 1911 he received the honour of knighthood.

Sir Alexander Dempsey was esteemed for his genial disposition, his openness and fairness, and his high professional abilities. He was a favourite with all classes and creeds, both amongst his professional brethren and the public generally. He is survived by a brother, two sons (one Dr. Alex. J. Dempsey, late of the R.A.M.C.), and a daughter, with whom much sympathy is felt.

WE regret to learn of the unexpected death of Lieut.-Colonel W. D. SUTHERLAND, M.D., C.I.E., I.M.S., Imperial Serologist, Calcutta. He was taken ill on June 22nd with acute appendicitis and, in spite of very early operation, he died in the Calcutta Medical College Hospital on June 27th, when he had almost completed his full service for pension, leaving a widow in England and a son in the army. He took the M.B., C.M. degrees at Edinburgh University in 1888 and subsequently the M.D., entered the Indian Medical Service in March, 1890, and saw military service in Burma. In July, 1894, he entered the civil medical department of the Central Provinces, where he served for many years. He made a special study of medico-legal tests for blood stains, including the serological test, and wrote a small book on the subject while on leave, which led to his being placed on special duty in Calcutta for investigation of the serological test, and in 1914 he was appointed to charge of the newly-created post of Imperial Serologist, which included medico-legal blood tests for the whole of India. His technique was extremely good, while he was an accomplished linguist and well up in foreign medical literature, and his valuable work in this line was recently rewarded by the grant of the C.I.E. His sudden and untimely death is a great loss to science and to his service, as well as to the Calcutta School of Tropical Medicine, in which he was to have lectured, while he was also a member of the governing body of the Endowment Fund, under which the school is about to open as a research institute until such time as the Government of India can provide a teaching staff. Colonel Sutherland was a most accomplished man, a valued colleague and a true friend to many, and a most entertaining and popular companion; his scientific work was most careful and reliable. He will be greatly missed by his many friends, while his unexpected death when so near his retirement is one of the many calamities inseparable from work in the tropics. His last remains were given a military funeral, which was largely attended.

Medical News.

THE house and library of the Royal Society of Medicine will be closed during the whole of August for repairs and cleaning.

A POST-GRADUATE course conducted by members of the staff will be held in the Radcliffe Infirmary and County Hospital, Oxford, commencing on Friday, October 1st, and terminating on Saturday, October 9th. Further particulars can be obtained on application to the Secretary, Post-graduate Course, Radcliffe Infirmary, Oxford.

WE are asked to state that although several of the wards of the National Hospital for the Paralysed and Epileptic, Queen Square, London, are closed through lack of funds, the whole of the out-patient department is working as usual.

DURING the month of September a very complete course of post-graduate teaching will be conducted by the staff of the Glasgow Royal Infirmary. Full details as to classes and enrolment are given in our advertisement columns.

THE School Dentists' Society has resolved to increase the annual subscription for membership from 5s. to 10s. 6d., dating from January 1st, 1921.

THE Faraday Society and the Physical Society of London have arranged to hold a general discussion next October on colloidal physics and chemistry.

The treasurer of St. George's Hospital has issued a statement contradicting the rumour that the hospital is to be moved. Private negotiations which were entered upon last year for amalgamation with another hospital have fallen through. The site of St. George's Hospital was offered for sale some years ago, but no adequate offer was received; various restrictions and conditions apply to about half the site, and so reduce its saleable value. The governors have decided to extend and improve the hospital at the earliest opportunity, and eventually to rebuild it on the present site at Hyde Park Corner.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"ELTEE," a Territorial R.A.M.C. officer entitled to the 1914–15 Star, Victory and Allied Medals, inquires where he should apply for these.

, The Medal Branch (A.G. 10) of the War Office is at 27, Pilgrim Street, Ludgate Hill, E.C.4.

INCOME TAX.

C. H. D. inquires as to the basis on which income tax should be paid in the case of a medical partnership.

, First of all the liability of the practice as a whole is determined—that is to say, the amount of the average profits, total receipts less united expenses, over the previous three years. Then the result is divided into the proportions provided for by the deed of partnership and the special individual expenses deducted therefrom. The united return should be the aggregate of the resulting net shares of the gross profits. Although the assessment is made on the basis that the firm is liable as a distinct entity, it is calculated, as regards allowances, rates of tax, and so on, as if it were simply the aggregate of assessments on the individual members of the firm.

P. Q. R. inquires whether he is liable for tax on fees, etc., received while acting as locumtenent and, if so, on what basis. He gave up an appointment last year and has been acting as locumtenent at various times since.

, The income is undoubtedly assessable though it is to a large extent casual in our correspondent's case. The basis is the usual three years' average except that in the first year for that work the liability is on the first year's earnings, for the second year on the same amount, and for the third year on the average of the first two years. The value of lodgings and board received in kind is not liable to tax, and, in our opinion, P. Q. R. is entitled to deduct the reasonable expenses incurred in travelling to take up the various locumtenancies.

"RETIRED PAY" inquires how an income made up as follows will be treated for income tax purposes: Army pension £365; investment income, £25 taxed and £2 10s. untaxed. "Retired Pay" is married, lives abroad, and pays £10 for life assurance.

, Our correspondent appears to assume that the £365 is exempt because he lives abroad; this will not be the case if the pension is paid from British and not Colonial or Indian sources. The allowances to which he is entitled are £225 plus £10, and the assessable income, £392 10s., less one-tenth of £365 = £36 10s.—that is £356 net, leaving a full liability of £356 —£225 = £131 at 3s., less the life assurance allowance of £10 at 3s., that is, £121 at 3s. If the army pension be exempt, the allowances have to be divided between the liable and non-liable income—that is, in the ratio of £365 to £27 10s., and his liability would be a matter of a few shillings only. We assume, of course, that he has no foreign or colonial income which has not been mentioned in his letter.

H. T. has been informed by the assessor that unpaid book debts must be included as earnings in his income tax return, and asks whether this is correct.

The legal position is that book debts are liable, but subject to a reasonable allowance for estimated bad debts. In the case of a medical practice it is impossible to make such an estimate with any degree of accuracy, and it is a well understood practice on the part of the Board of Inland Revenue to assume that, in the case of a medical practitioner who has been in possession for some years, the cash receipts in any one year fairly represent the real value of the year's bookings. In the long run the basis of cash receipts must be fair to both parties, always provided that it is not applied to the first two or three years of a practitioner's earnings, when there are no payments of old debts coming in to offset the non-inclusion of unpaid debts booked during the particular year in question. We think that the assessor to whom our correspondent refers must be under a misapprehension as to the attitude of the authorities on this question.

MEDICAL PRACTICE IN ITALY.

"V. P." asks for information regarding the prospects for practice in Italy by British medical women, and inquires whether a British qualification entitles one to practise among the Italian population?

*** Italy accords to those whose names are on the *Register* kept by the General Medical Council of this country the right of admission to the Italian register.

TENNIS ELBOW.

DR. JOHN G. HAVELOCK (Swanage) writes: Can you refer me to a textbook which contains a full description of "tennis elbow"? It is a very common complaint, yet I can find no reference to it in the modern surgical works at my disposal. In the last edition of that very comprehensive *Index of Symptoms*, edited by H. French, I can find references only to rupture of the plantaris longus and subacromial bursitis. I constantly meet players who complain of having a "tennis elbow," and would like to know whether it is a definite lesion or a term given to a variety of lesions.

*** We have referred this question to Mr. E. Muirhead Little, to whom we are indebted for the following reply: "I do not think that in the literature there will be found more than a few lines on this subject. Tennis elbow, fencer's elbow, and several other instances of similar kind are generally put down to muscle strain. Tennis elbow is attributed to sprain of the pronator radii teres. A short description will be found in R. H. A. Whitelocke's book *Sprains and Allied Injuries of Joints* (Henry Frowde, and Hodder and Stoughton, 1909). I believe that these affections are not always muscle sprains, but that some of them are injuries of ligament or of the attachment of ligament to bone. Prolonged rest from the movement which causes the pain is the best treatment. For instance, a fencing master who was under my care was quite cured by abstaining from fencing with the right hand for about six months. He used his left hand exclusively for that period."

COTTAGE HOSPITAL ORGANIZATION.

DR. WM. J. AITKEN QUINE (Osborne House, Chinley) writes: I am endeavouring to arouse interest locally for the erection of a cottage hospital of twelve to sixteen beds. Could any of your readers connected with similar institutions furnish me with information under any of the following heads: (a) Preliminary organization; (b) suitable plans and equipment; (c) cost of erection and maintenance? Copies of recent annual reports and plans would be specially useful.

LETTERS, NOTES, ETC.

THE Women's Service Bureau was opened in the first week of the war, and has been the means of training, advising, and placing many women in suitable work. About 1000 employers and [illegible] women have been approached and dealt with since the bureau was started in August, 1914, and many positions such as surgery attendants, canteen, book keepers, correspondence and confidential clerks and secretaries, stenographers, have been filled. No fees are charged either to employers or employed; the bureau is maintained by voluntary contributions from the members of the society and from those whom it has been able to help. Inquiries should be addressed to the Secretary, Miss P. Strachey, London Society for Women's Service, 58, Victoria Street, S.W.1.

TREATMENT OF WHOOPING COUGH.

DR. W. J. MIDDLETON (Bournemouth) writes: I have read with interest the note on the treatment of whooping-cough in the Epitome, BRITISH MEDICAL JOURNAL, July 24th. Anything that promises a reasonable prospect of success in this distressing malady is worthy of consideration. For several years I have painted the chests of children suffering from it with a mixture containing approximately $\frac{1}{4}$ grain cantharidin and 40 minims of croton oil to an ounce of almond oil. It is repeated once or twice at weekly intervals. In every case the relief has been prompt and cure effected in under a month.

ACIDOSIS IN DISEASE: A CORRECTION.

OUR attention has been called to a printer's error in Dr. E. P. Poulton's contribution to the discussion on this subject in the Section of Physiology and Pharmacology at Cambridge (BRITISH MEDICAL JOURNAL, July 17th, p. 72, col. 2). In correcting the author's proof the two lines immediately following the setting out of Hasselbalch's formula were, unfortunately, transposed. The correct reading is as follows:

$$p_{\rm H} = p_{{\rm K}_1} + \log \frac{\text{Combined CO}_2}{\text{Free CO}_2}$$

—a very simple matter. Hence the alkali reserve may be expressed as the $p_{\rm H}$ of blood at 40 mm. This value probably lies between 7.41 and 7.31 in health.

We regret the error the more as considerable pains had been taken to make this report accurate.

ATROPINE IN SEA-SICKNESS.

DR. GERALD W. MAW (Surgeon P. and O. S. N. Co.) writes: In the early part of this year a note appeared in the BRITISH MEDICAL JOURNAL (January 3rd, 1920, p. 23) in which it was stated that atropine, given hypodermically, was a cure for sea-sickness; its use was also suggested as a prophylactic measure. During the last three months I have repeatedly tried atropine for sea-sickness. I began by giving $\frac{1}{50}$ grain of atropine for an attack of sea-sickness; in every case it entirely failed to control the vomiting, and I therefore abandoned its use when an attack had already commenced. During the present voyage I have tried it exclusively for prophylaxis. The day before entering the Bay of Biscay I gave the passengers notice that I was prepared to give hypodermic injections of atropine as a preventive against sea-sickness. Four ladies requested me to give them the treatment, each of whom said that, in a rough sea, she was repeatedly sick. The following is a brief account of the result in each case.

Mrs. A., aged 19, who was seven months advanced in pregnancy, was given $\frac{1}{50}$ grain of atropine on three successive days; fortunately sickness was entirely prevented, as, having regard to her condition, a bad attack of vomiting might have been accompanied with disastrous results.

Mrs. B., aged 27, had three successive injections of atropine; she vomited once only.

Mrs. C., a highly nervous lady of 29, was given one injection of atropine, but she afterwards refused to continue the treatment; she obtained immunity for twenty-four hours, but was afterwards so violently sick that morphine had to be administered.

These three ladies left the ship before the next spell of bad weather was experienced.

Mrs. D., aged about 30, was given three successive doses of $\frac{1}{50}$ grain atropine. She escaped sea-sickness on that occasion, but when in the Indian Ocean she vomited as she was going to her bath. I gave her an injection of atropine, but the vomiting persisted.

I have come to the conclusion that it is useless to administer atropine when sickness has once started. Undoubtedly the drug has some value as a prophylactic, but the results obtained are by no means uniformly satisfactory.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 27, 30, 31, 32, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28, 29, and 30.

THE appointment of certifying factory surgeon at Loughor (Glamorgan) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

A British Medical Association Lecture

ON

DIABETES IN RELATION TO THE DUCTLESS GLANDS.

BY

W. LANGDON BROWN, M.A., M.D.CANTAB., F.R.C.P.,

PHYSICIAN WITH CHARGE OF OUT-PATIENTS TO
ST. BARTHOLOMEW'S HOSPITAL.

A LIVING organism, like a spinning top, is only in equilibrium because it keeps going. But, unlike a top, it is provided with delicate mechanisms for readjusting its balance should this be disturbed. Disease is the resultant of the action of some external force and the reaction of the body. The reaction may be adequate to restore equilibrium to its former position—that is, a return to health; or the external force may be sufficient to overthrow the balance altogether—that is, death ensues. But short of these extremes a new though inferior position of equilibrium may be attained—that is, more or less compensation is acquired. In this new inferior position the machinery works with more friction, and the reserves are thereby reduced. Thus the body works best at a temperature of 98.4°, with five million red corpuscles per cubic millimetre, with a gastric juice of 0.2 per cent. HCl, and alveolar air containing 5 per cent. CO_2, and blood containing 0.1 per cent. of sugar, though capable of working with figures considerably in excess or defect of these. In this regulation of balance the endocrine glands play an important part. Broadly they fall into two groups, the accelerators and the retarders of metabolism. In general terms, the accelerating endocrine glands are controlled by the sympathetic and the retarding co-operate with the parasympathetic. These constitute the two divisions of the lowest level of the nervous system—the visceral, vegetative, or autonomic system, which, acting apart from the will and normally without exciting sensation, subserves the functions of organic life. The sympathetic is katabolic in its activity, converting the reserves of the body into kinetic energy, and defensive in its manifestations, while the parasympathetic is anabolic, building up reserves.

The sympathetic is militant, the parasympathetic peaceful. Emotions which in the primitive state activate us for fight or flight do so through the sympathetic. One of the most important steps in this mobilization concerns the blood sugar. Active muscles consume three and a half times as much sugar as resting muscles, so that it is not surprising to find that sympathetic stimulation leads to increase of the sugar in the blood. This it apparently does partly through the thyroid, pituitary, and adrenals. The close association between endocrine glands and the sympathetic is most clearly seen in the case of the adrenals. In the worms there are cells in the central nervous system which are the common ancestors of both the sympathetic ganglion and the adrenalin-secreting cell. In the lowest vertebrate, the lamprey, the sympathetic cells are scanty, but there is a wide distribution of adrenalin-secreting cells (J. F. Gaskell). As evolution proceeds these secreting cells gradually give way to an increasing development of the sympathetic system, so that ultimately their only surviving remnant is the medulla of the adrenals. Not only is this medulla stimulated to secretion by the sympathetic, but in its turn it increases the sympathetic response. Stimulation of the sympathetic or injection of adrenalin, therefore, alike increase the blood sugar and lower carbohydrate tolerance. There is a similar correlation between the sympathetic and the thyroid. The effect of the pituitary in increasing the blood sugar and lowering carbohydrate tolerance is proved, as is the effect of sympathetic stimulation in increasing its secretion, but the converse effect of its secretion on the sympathetic has not been shown.

The effect of the parasympathetic in building up reserves is seen particularly in its action on the assimilation of food. It plays the chief part, both directly and indirectly, in providing the digestive juices and in maintaining the due tone necessary to peristaltic movements. Now one of the digestive glands, the pancreas, not only provides a powerful external secretion, but it supplements this by an internal secretion which leads to the building up of ingested sugar into more complex colloid combinations, which enable it to escape excretion by the kidney, thus increasing carbohydrate tolerance. In passing, we may note the advantageous position in the circulation where the pancreas pours this secretion into the blood stream, side by side with the dextrose absorbed from the alimentary tract. We may surmise that some of the absorbed sugar is at once stored in the liver as glycogen, while by means of this internal secretion of the pancreas the rest is built up through a series of increasingly stable colloid combinations into the tissue cells. Support can be adduced for this surmise in two facts—one that the sugar in normal blood behaves like a colloid and the other that the pancreatic internal secretion is much less effective if introduced at any other part of the circulation than the portal vein.

Now, whenever sympathetic and parasympathetic fibres are distributed to the same structures they are antagonistic in function. The pancreas is not as much under nervous control as some other glands, but, so far as the evidence goes, it points to the vagus having a secretory effect upon it, although it is true that in large part its secretion is excited by chemical means. It would be in accordance with this general plan for the sympathetic to be inhibitory to the pancreas, both for its external and internal secretions, and it would therefore appear that sympathetic stimulation would increase blood sugar and lower carbohydrate tolerance both by stimulating the accelerating or katabolic glands and by checking the anabolic gland. My first generalization is then:

> *The sympathetic mobilizes the sugar into the blood by means of the endocrine glands, for purposes of defence, while the parasympathetic stores it in the tissues in reserve.*

Sugar serves three useful purposes in the body: it can be stored in the liver as glycogen, or in various tissues as fat, or it can be utilized at once as a source of muscular energy. If these three methods are inadequate, some will appear in the urine. Recent work has shown that we get a much more accurate idea of what is happening by examination of the sugar in the blood than in the urine. I have given the normal level of the blood sugar as 0.1 per cent. It rises within about ten minutes of drinking a solution containing sugar, and more gradually after eating starch, to about 0.14 per cent. If it rises above this point an overflow is likely to occur into the urine. This Graham has called the "leak-point," and it varies in different individuals. In some it is abnormally low. Such persons constantly pass about 1 to 2 per cent. of sugar, whatever the diet. Their glycosuria is non-progressive and causes no symptoms, being only discovered on routine examination. There may be other evidence of a renal lesion, more often there is not. Such a condition has been compared to the glycosuria temporarily induced by injecting phloridzin, when the kidney actively secretes sugar. A glycosuric of the ordinary type who only passes 1 to 2 per cent. of sugar on a mixed diet might be expected to pass none on a strict diet. But these cases continue to do so, and can therefore often be recognized without the aid of an estimation of the blood sugar. Strict diet appears to do them harm.

I recently saw an interesting variation from this type. A lady, aged 52, was known to have had glycosuria for twelve years. Sometimes she had dieted, sometimes not—it made little difference to her health; if anything, she was better on a mixed diet. Her blood sugar was [illegible] per cent. On strict diet she generally passed some sugar, and she also developed acetonuria. As a result of strict dieting her blood sugar rose to 0.19 per cent., and on giving her 25 grams of dextrose it rose to a maximum of [illegible] per cent. in half an hour. Yet she only excreted 4 grams of the 25 grams given her. Now, this shows that she could assimilate sugar, but that the effect of dieting was actually to push her leak-point up. This would appear to be an attempt on the part of the body to prevent the escape of a valuable foodstuff. Seeing that I was actually producing a hyperglycaemia by dieting I abstained from further treatment which was likely to do harm; I allowed starches freely, which would enter the blood gradually, and merely prohibited sugar as such.

An ordinary diabetic shows an excess of sugar in the blood—a usual figure is 0.25 per cent., but it may rise to 0.3 or 0.4. Even when he has been freed from glycosuria the blood sugar may remain as high as 0.25. Yet, as we have seen, a normal individual will leak sugar somewhere about 0.15, so that the kidney must raise its leak-point in diabetes. Here again it seems there must have been an attempt to establish a new position of equilibrium and to prevent escape of foodstuff. It may be asked, In what respect is such an individual in an inferior position to the normal? Why is 0.1 per cent. the optimum blood sugar content? Apparently the 0.1 per cent. is carried in combination, whereas sugar in excess of this amount is in simple solution. To carry an excess of crystalloid in simple solution has certain definite drawbacks—it alters the osmotic pressure of the body fluids, which may, for instance, damage the translucency of the crystalline lens; may infiltrate the nerves, causing interstitial neuritis; and provide a pabulum for septic organisms, producing boils and carbuncles. All these seem to be the direct results of hyperglycaemia. I have even known gangrene occur in a diabetic during a time when he was free from glycosuria but still had hyperglycaemia. In the same way any wide departure from the optimum five million red corpuscles per cubic millimetre produces disturbances. If much below this figure, insufficient haemoglobin is carried for the needs of the organism; if much in excess, the viscosity of the blood is raised so much that the circulation is seriously slowed. Indeed, if the new figures were better than the old they would tend to replace them in evolution.

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* Delivered to the Sussex Branch.

If we seek for the explanation of the difference between free and combined sugar we must turn again to the pancreas. Its internal secretion acts like an amboceptor joining the sugar to larger molecules such as protein. Normally there are enough of them to carry 0.1 per cent. of sugar in this way. If there is more sugar than this to be carried in the blood, overflow occurs; though this may be diminished by raising the leak-point. But if the pancreatic secretion is inadequate, less sugar is carried in the combined form and glycosuria occurs on an ordinary diet. There is thus no hard and fast line between simple alimentary glycosuria and "total" diabetes when no sugar is assimilated. It is merely a question of the relation between the pancreatic amboceptor and the needs of the body.

In health there is quite sufficient amboceptor to deal with an ordinary diet, though if 150 to 200 grams of dextrose are given at one time some will appear in the urine. But this is an amount which no one will voluntarily take, and the administration of such an amount may provoke its rejection by vomiting. The capacity of the pancreatic internal secretion thus has a definite limit, and if other agencies tend to keep up a persistently high level of blood sugar overflow will occur. Such agencies exist, as we have seen, in the adrenals, thyroid, and pituitary.

We may next inquire whether a similar antagonism between this group and the pancreas can be shown to exist in respect of their other functions. To a certain extent it can. Thus Pemberton and Sweet showed that removal of the adrenals was followed by a continuous flow of pancreatic juice, which could be temporarily inhibited by injection of suprarenal extract. Again, it is well known that adrenalin dilates the pupil of an excised eye, but not of the intact eye of a normal individual. Therefore something inhibits the adrenalin effect. Now, Loewi found that in a depancreatized dog adrenalin did dilate the pupil. He therefore suggested the installation of adrenalin into the eye as a test for pancreatic insufficiency. Though not infallible, it is a useful aid to diagnosis. A drop of the 1 in 1,000 solution is put into the right conjunctival sac, five minutes later it is repeated, and dilatation of the pupil, often eccentric in form, is looked for between twenty minutes and one hour afterwards. If this reaction is positive, it is certainly suggestive of pancreatic insufficiency. But it may also be present in hyperthyroidism, suggesting that the thyroid excess inhibits pancreatic activity, allowing adrenalin to show its dilator action unchecked.

It must be admitted that the ordinary case of diabetes shows no evidence of endocrine disease, and conversely if endocrine disease is present it presents other manifestations besides altered sugar tolerance. Allen, who strongly upholds the pancreatic theory of diabetes, admits that the disease may reach a fatal issue and yet the pancreas be as good as normal. And more recently he has stated that the hydropic degeneration of the cell islets of the pancreas which has been observed may be the result and not the cause of diabetes. He inclines, that is to say, to the view that diabetes shows itself *through* the pancreas, rather than that it is a disease *of* the pancreas. And he is prepared to accept a nervous origin for this pancreatic insufficiency.

If there is organic disease of the pancreas we should expect to find other signs besides glycosuria. The comparative value of these signs has recently been fully discussed by Sir Archibald Garrod in his Schorstein lecture. It will be sufficient if I say here that the signs on which I have learned to rely most are:

(1) An excess of unsplit fat in the stools—since the pancreas provides the lipase for fat-splitting.

(2) A high diastase content in the urine—since if there is any obstruction to the outflow of pancreatic juice excess of pancreatic diastase will be reabsorbed into the urine and show its presence by the digestion of an unduly large amount of starch paste. (For technique see Corbett, *Quarterly Journal of Medicine*, 1913, vol. 6, page 351.)

To these I might add (3) the adrenalin eye test.

If these three tests were positive and glycosuria were present the diagnosis of pancreatic disease might safely be made. Jaundice would further suggest that the head of the gland was involved in the process, while severe pain would suggest pressure on the nerves. In acute disease of the pancreas the eye test would probably be positive and the diastase in the urine be very high—say, 300 to 500 units, as against the normal 10 to 30. The pain would probably be agonizing and cause inhibition of intestinal peristalsis, with resulting obstruction. But glycosuria only occasionally occurs in such cases. With a chronic obstruction to the head of the gland, such as a new growth, the eye test would probably be positive and the diastase moderately raised, say, 50 to 150 units, but pain would not be at all a marked feature. Jaundice would be present, but not glycosuria. It is in a chronic inflammatory lesion of the whole pancreas that glycosuria might be expected, but then there would also be a positive eye test, a moderately raised diastase output in the urine, fatty stools, and probably some jaundice. Now all these other symptoms are usually lacking in diabetes, where the glycosuria remains the only symptom we can attribute to the pancreas. We must therefore look further afield for an explanation of diabetes.

That thyroid extract will excite glycosuria is well known. Graves's disease is accompanied by lowered sugar tolerance and sometimes by actual glycosuria, while in myxoedema the sugar tolerance is much increased. Only last week a girl of 25 was sent to see me with a history of thyroid enlargement for the last four or five years, which had increased recently. There was no exophthalmos and no tremors, but the pulse was 100. At the beginning of the illness she had unfortunately been treated with thyroid extract. In March, 1920, she was noticed to be wasting rapidly, and on routine examination glycosuria was found. Even after restricted diet this amounted on June 2nd to 2,800 grains a day. There was also pronounced acetonuria. The hyperglycaemia was well marked, the blood sugar amounting to 0.308 per cent.—that is, three times the normal. This would appear to be a glycosuria of thyroid origin, but it only differed from ordinary diabetes in showing other definite endocrine symptoms. My impression is that giving thyroid extract may have helped to tip the balance towards diabetes by increasing katabolism and hyperglycaemia.

In a similar way oversecretion by the pars intermedia of the pituitary lowers sugar tolerance and may excite glycosuria. The following are examples:

A man of 32 came under my care in hospital for glycosuria which was accompanied by a right ophthalmoplegia and left-sided facial paralysis. There was severe headache and occasional vomiting. The last two symptoms suggested increased intracranial pressure, though he had no optic neuritis then. A gummatous meningitis involving the base of the brain, and including the pituitary, seemed the most probable diagnosis. In confirmation of this the Wassermann reaction was found to be strongly positive. While under treatment his headache, vomiting, and cranial palsies cleared up, and his carbohydrate tolerance rose to more than 100 grams. Unfortunately he relapsed some months later, and developed right hemiplegia, apparently due to endarteritis of the middle cerebral.

Quite lately I saw an officer who in 1915 had been hit on the forehead by a fragment of high explosive shell which entered the skull. There seems to have been a [illegible] [illegible] and fluid from the nose. An attempt to remove the fragment by operation had been unsuccessful. X-ray plates pointed to some damage to the posterior wall of the frontal sinus and the left frontal lobe. Two years later he began to show some failure of mental concentration [illegible] [illegible] manner. Two years after this he began to have fits starting in the muscles of the right side of the face. He seemed dazed in the fits, but did not entirely lose consciousness. He was found to have 8 to 10 per cent. of sugar in the urine, and his blood sugar was at the upper limit of normal, 0.15 per cent. The left visual field was found to be defective on the temporal side.

Here again the pituitary was probably responsible, though an element of doubt arises through a diabetic family history. Yet the *x*-ray findings, the fits, the mental and ocular symptoms, are very suggestive, and in true diabetes a higher blood sugar might be expected. I hear that under treatment he is keeping free from sugar. At any rate the pituitary, like the thyroid cases, generally declare themselves by their associated symptoms.

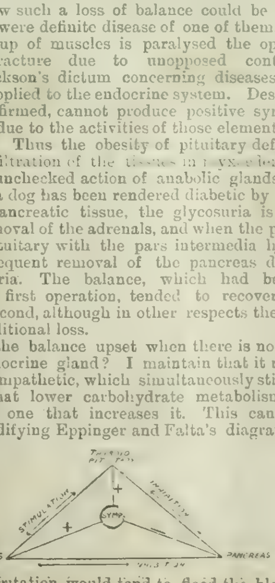
The glycosuria, as distinct from the lactosuria, of pregnancy is probably due to the known stimulating effect of pregnancy on the thyroid and pituitary. I was recently consulted in a case of glycosuria in pregnancy which had caused considerable anxiety because there was acetonuria as well. But the patient had been vomiting a good deal, and I suggested the acetonuria was merely due to this. Normal blood sugar pointed to the same conclusion. At any rate she was delivered of a healthy child, and the glycosuria cleared up.

Although glycosuria may be excited by adrenalin, the case for a definite adrenal diabetes is not clear. Emotional temporary glycosuria is naturally regarded as due to adrenal stimulation through the sympathetic, and probably some of the cases in soldiers are of this type. It also seems probable that some of the cases of glycosuria in later life, accompanied by raised blood pressure, are of this nature, for the two most obvious results of adrenal excess would be raised blood pressure and hyperglycaemia; but we lack precise evidence. I think we may now advance a second generalization:

> *In [illegible] diabetes there is no other evidence of endocrine disease, while endocrine glycosuria betrays the evidence of its cause.*

This difficulty led Eppinger and Falta to advance the theory that diabetes was not due to any one endocrine gland but to loss of balance between them. It is easy to understand how such a loss of balance could be brought about if there were definite disease of one of them, just as when one group of muscles is paralysed the opponents show a contracture due to unopposed contraction. Hughlings Jackson's dictum concerning diseases of the brain may be applied to the endocrine system. Destruction of tissue, he affirmed, cannot produce positive symptoms. They must be due to the activities of those elements which remain intact. Thus the obesity of pituitary defect and the general infiltration of the tissues in myxoedema may be referred to unchecked action of anabolic glands. Conversely, when a dog has been rendered diabetic by removal of sufficient pancreatic tissue, the glycosuria is greatly reduced by removal of the adrenals, and when the posterior lobe of the pituitary with the pars intermedia has been removed, subsequent removal of the pancreas does not cause glycosuria. The balance, which had been disturbed by the first operation, tended to recover as the result of the second, although in other respects the animal suffered an additional loss.

But how is the balance upset when there is no disease of any one endocrine gland? I maintain that it must be through the sympathetic, which simultaneously stimulates the glands that lower carbohydrate metabolism while inhibiting the one that increases it. This can be expressed by modifying Eppinger and Falta's diagram thus:



Sympathetic irritation would tend to flood the blood with sugar while diminishing the secretion which combines that sugar into a form in which it would escape excretion by the kidney.

To some extent the escape might be checked by raising the leak-point, but this is not usually adequate, and is apt to bring complications in its train.

This sympathetic irritation might be due to an emotional cause. As [illegible] says, "When stocks go down in New York, diabetes goes up." The factor of strain, anxiety, and emotion is clear in many cases of diabetes. Even when it is not clear we cannot always exclude it because of the tendency to push a disagreeable emotion "out of the mind," which merely means pushing it into the deeper levels of the unconscious where it continues to produce its effect. There is a close analogy between diabetes and Graves's disease in this respect. Normally the sympathetic nervous system should act as a whole—as an intensive preparation for action or defence. But in disease dissociation is a recognized phenomenon—for example, the dissociation of sensory symptoms in tabes. In diabetes there is a dissociated sympathetic response which is specialized in the direction of endocrine katabolism, and once this is started it will tend to continue because nervous impulses tend to run along accustomed channels. Taking the three levels of the nervous system as the psychic, the sensori-motor, and the vegetative, an emotional disturbance tends to assert itself at the highest level as an obsession, at the middle level as a functional paralysis, contracture or anaesthesia, and at the lowest level as diabetes, Graves's disease, asthma, or certain digestive neuroses. I am not going to claim all cases of diabetes as emotional in origin. We are far too ignorant of the morbid anatomy of the sympathetic nervous system to assert this. It has been shown, for instance, that in pellagra there are structural changes in the sympathetic which is responsible for the skin changes among others, and it is quite likely that in some cases of diabetes there are organic changes there also. But I do think the present state of our knowledge does justify, as my third generalization, the following classification of cases of glycosuria:

> (1) Organic origin, *with structural changes in the endocrine glands, leading to an excess of adrenal, thyroid, pituitary, or a reduction of the pancreas.*
>
> (2) Sympathetic origin, *with no evidence of structural disease in any endocrine gland, but producing a [illegible] of adrenal, thyroid, pituitary, and [illegible] of pancreas.*

But if I stopped here I could rightly be criticized as only explaining part of the disease. As Abderhalden says:

> Up to the present, the most pronounced symptom, that of glycosuria, has dominated the entire investigation of problems concerning diabetes, and it is very probable that this is the reason why the disease is, as a whole, so little understood.

I have long felt it a mistake to look upon the disease merely as a disturbance of carbohydrate metabolism. But we must remember that carbohydrate represents at least 70 per cent. of an ordinary diet, and that the carbohydrates are the most readily mobilized of the foodstuffs. If the metabolism is only slightly affected, it will, therefore, be most apt to show this in relation to carbohydrates. There may be a stage in which, although the power of dealing with sugar as such is impaired, the power of converting it into fat is not. Consequently, rather than permit the escape of valuable food material, the body converts it into fat. Hence the glycosuria associated sometimes with obesity. As von Noorden says, some cases of obesity may be looked upon as latent glycosuria. But as the disease proceeds fat metabolism is also impaired, and diacetic acid appears. Further, it has been shown that protein metabolism is involved, and even the metabolism of inorganic salts.

Diabetes is, then, a sign of exaggerated metabolism, evoked through the sympathetic and the associated endocrine glands, which first asserts itself in relation to the most abundant food material, but as it advances expresses itself in relation to all.

Alimentary Rest.

The recent advance in the treatment of this disease by alimentary rest supports this view. The quickest way of compelling metabolism to adopt economical lines is to cut off supplies. In proof of this, we have only to notice the rapid fall of nitrogenous output as soon as no protein food is taken. The old method of treatment was greatly to increase the amount of protein in the food, thus throwing fuel into the flames, for excess of protein is a great quickener of all metabolic processes. This was accompanied by excess of fat, which was incompletely oxidized with the formation of toxic products. We all had to learn during the war that we could balance our metabolism at a much lower level than we previously thought possible; and what may be but a passing phase for the normal individual must remain a permanent state for the diabetic. He must be permanently underfed to avoid overtaxing his damaged powers of assimilation. Clearly the outlook depends on how much these powers are damaged. If he can balance his metabolism when the calorie value of his food is adequate to maintain life and a fair display of energy, the outlook is good; if he cannot acquire a balance until the intake is reduced too much for this, the outlook is bad; for there must be a limit to this process of reduction.

It follows that some loss in weight is almost inevitable under the treatment, and to a certain extent this is beneficial; the amount of food required bears a ratio to the total weight of the body. The diabetic does best when his weight is somewhat below that which he possessed before the onset of the disease.

The first and most important effect, then, of alimentary rest in the treatment of diabetes is to slow down metabolism. Another subsidiary effect is that pancreatic activity is diverted from the production of external secretion to producing internal secretion, for, as Allen showed, anything which increases the former diminishes the latter. On Graham's plan, which is the one I usually employ, a mitigated fast of forty-eight hours is prescribed—only some tea or coffee, clear soup, and lemonade are allowed; though 2 to 3 ounces of whisky may also be given in suitable cases. This is followed by two days on which nothing but eggs and green vegetables are given. This diet has a calorie value of 1,170 and a carbohydrate intake of about 10 grams. Cautious additions are made every other day to this diet, so that twelve days after the initial fast about 2,000 calories are taken in the day. A large number of patients will become free from sugar on the fast, and will keep free during the successive increases in the diet. In that case I then cautiously add carbohydrate to the diet—say, 5 oz. of milk first, and then every other day ½ oz. of ordinary bread until glycosuria just returns. The carbohydrate tolerance can thus be quickly calculated.

Say, for example, there was no sugar passed on 3½ oz. of bread, but some appeared when 4 oz. were given; 5 oz. of milk contains 6 grams of carbohydrate, and each ounce of bread contains 16 grams of carbohydrate. Therefore 62 grams of carbohydrate were tolerated in addition to the 10 grams in the so-called carbohydrate free diet.

Having just exceeded the limit of tolerance it will be found quicker to re-establish the balance by giving one day of egg and vegetable diet, then returning to the diet on which sugar appeared, but with only about three-quarters of the previous amount of carbohydrate. After that it is well to give two consecutive egg and vegetable days once a fortnight, preceded by two days of fasting once a month should return of sugar make this necessary. If the carbohydrate tolerance exceeds 100 grams it is only necessary on two consecutive days once a fortnight to halve the amount of carbohydrate taken. Having in this way established standard diet for the individual, I provide for some variety in the diet by giving them a table with some comparative carbohydrate values:

Carbohydrate Values.

1 oz. of bread	...	...	...	[illegible]
2 oz. of potato	...		...	[illegible]
2 oz. of green peas	...	...	...	10 grams
3 oz. of artichoke ...	...	...	...	12 grams
[illegible] apple	...	...	...	[illegible]
[illegible]	...	...		[illegible]

Any permutations and combinations of these can be allowed as long as the total does not exceed the limit arrived at as above. Say this is 60 grams; then, for example, 3 oz. of bread and 3 oz. of artichoke = 60 grams of carbohydrate.

If, on the other hand, sugar does not disappear on this scheme, it is best to repeat the process once or, if necessary, twice more. But cases which do not become free from sugar on the first fast seldom do well. I have not often used the more prolonged fast recommended by Allen because, though it may render the urine free from sugar more quickly, it has sometimes done so at the expense of the patient's general condition. As far as possible I avoid the use of special diabetic breads, preferring to work the patient's tolerance up to a limited amount of ordinary bread. In this connexion it is worth while to take advantage of the fact that a patient's carbohydrate tolerance is highest at breakfast, no doubt because of alimentary rest during the night.

One of the greatest advantages gained by this method of treatment is that we are no longer on the horns of this dilemma—rapid restriction of carbohydrate on the old plan produced toxic acidosis, while failure to restrict adequately allowed the disease to progress. While it is true that sudden restriction of the carbohydrate intake will lead to acetonuria if a liberal diet of protein and fat takes its place, it is also true that cutting down the whole of the diet practically to zero will be followed by a diminution of acetonuria as well as glycosuria. The normal individual who fasts develops some acetonuria because he has to live on his fat; but this is not enough to produce toxic symptoms. In the diabetic this slight fasting acetonuria develops, but this is more than counterbalanced by the drop in toxic acetonuria produced by a diet poor in carbohydrates but rich in fats. It is certainly true that coma occurs much less frequently on this treatment than on the older methods. This plan of re-educating the patient's metabolism from zero, as it were, has yielded in most observers' hands far better results than any previous methods. Nearly 75 per cent. of all cases admitted to hospital are rendered free from sugar for longer or shorter periods, and the average mortality rate is 7.7 per cent., as against the former 23 per cent. (Poulton.) But one has still the unfortunate experience of watching the level of carbohydrate tolerance continue to fall in a good many cases. For, after all, we are not yet attacking the underlying cause, but only the exaggerated metabolism which results from that cause. Not until the sympathetic disturbance can be controlled shall we acquire a mastery over the disease.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF VENEREAL DISEASES.

Mr. E. B. TURNER, F.R.C.S., President.

DISCUSSION ON VENEREAL DISEASES IN WOMEN AND CHILDREN.

OPENING PAPERS.

I.—A FEW POINTS IN RELATION TO THE TREATMENT OF VENEREAL DISEASES IN WOMEN.

BY

MORNA RAWLINS, M.B., B.S.Lond.,

Medical Officer in Charge of Female Venereal Department, Guy's Hospital; Surgeon for Venereal Diseases, New Hospital for Women; Gynaecologist, Female Lock Hospital.

I THINK we are all agreed that this is one of the most urgent medical problems of the day. It is concerned with mother and child welfare. It affects the health of the people, the economic standard of the nation, in that every individual worker affected by this disease is economically less efficient in output, whether intellectual or industrial.

The eugenic problem is greater still, but I must confine myself to the particular aspect of the subject allotted to me—namely, the treatment of these diseases in women.

I propose in the short time at my disposal not to touch on the so-called routine treatment of syphilis about which everyone has heard so much, but to deal with special points in syphilis and also with the more vexed question of the treatment of gonorrhoea in women.

SYPHILIS.

The points I wish to bring forward in the treatment of syphilis are:

1. Treatment of those cases intolerant of arsenic and mercury.
2. Points in the treatment of antenatal syphilis.
3. The need of collaboration and "team work" to produce accurate figures as to the results of treatment in certain specified conditions.

First let us consider those who are intolerant of treatment either by arsenic or mercury. Let me say at once that I rely on sulphur, either alone or combined with iodine: sulphur given in the form of intramine either by intramuscular or intravenous injection, or by the mouth in the form of collosol sulphur or sublimed sulphur.

The following cases occurring in my own clinics, so treated, will support my statement. From January, 1917, to March, 1920, not counting injections given to my cases at the Lock Hospital, approximately 6.000 injections of novarsenobillon or disodoluargol, have been given by me and my assistants. Of these only three cases have shown marked intolerance to arsenic, and all yielded to sulphur treatment. I should like to give details of these three cases.

CASE I.

The patient, aged 25, had five weekly injections of novarsenobillon 0.45 cg., and after the first dose 0.6 cg. After the second injection the patient had a transient rash, and after the fourth injection diarrhoea and vomiting, but she did not complain as she was afraid that the next injection would not be given. Four days after the fifth injection she attended the clinic with an acute general exfoliative dermatitis. After admission into the ward she was found to have albuminuria, oedema of the optic discs (she complained of transient blindness). This was associated with general oedema, neuritis and diaorrhoea. She was given alternate injections of intramine (intramuscularly) with collosol iodine intravenously—three injections of intramine 2½ to 5 c.cm. and four injections of collosol iodine 40 c.cm. to 100 c.cm. The injections lasted over twenty-five days, and the patient was discharged two days later quite well. This patient has remained with no symptoms and a negative Wassermann reaction for over a year.

CASE II.

Unfortunately, there are no notes of this patient, and I have to quote from memory. The patient had three injections of novarsenobillon. She had an attack of diarrhoea and vomiting, which she did not report. Two further injections were given. She then attended the clinic with oedema and dermatitis of the hands, feet, and ears, extending to formation of bullae. She had albumin in the urine. She was in the ward at the same time as the last case, and was treated on exactly similar lines, with similar results.

CASE III.

This patient, aged 42, attended the clinic with marked signs of secondary syphilis. She was given two weekly injections of novarsenobillon 0.3 gram without symptoms, this was followed by an injection of novarsenobillon 0.45 gram. She had a reaction on the same day and complained of headache and shivering; temperature 99°. Five days later she attended the medical out-patient department and was admitted into the medical ward; her pulse was then rapid. She had general oedema over the face and neck; temperature 98°; albumin in the urine. She gave a history of rigor the previous night. She was transferred to the venereal ward the next day, the condition being rather increased. Intramine 3 c.cm. was given intramuscularly, and within three hours the oedema of the face had disappeared; she still had albuminuria, so two more doses were given on successive days, when that symptom also cleared up.

I consider the small percentage of ill effects I have had is due to the following circumstances: (1) I have never left the preparation of the drug to unqualified subordinates. (2) A dose is never repeated at one week's interval if there has been any ill effects (such as headache, fever, diarrhoea, vomiting) from the previous injection. If there has been a reaction I give the patient sulphur by the mouth for a week before the next injection. (3) I dose the patient according to weight and general condition, as distinct from routine treatment.

The value of sulphur combined with mercurial treatment in syphilis has been realized for some time. At Aachen, the intensive mercurial treatment of syphilis has been associated with sulphur water. There is no doubt that patients unable to take even small doses of mercury without symptoms of mercurialism (even after due attention has been given to the teeth) can take this drug in conjunction with sulphur without any ill effects.

Collosol sulphur 1 drachm thrice daily, or sublimed sulphur 1 drachm each night, will go far to prevent these slight symptoms of mercurialism, which, when they occur, are so uncomfortable to the patient. If a patient is unfortunate enough to develop signs of mercurial poisoning, intramine, which, in my experience, acts more quickly than any other form of sulphur, should be given at once. The dose is 2.5 to 3 c.cm. intramuscularly, which can be repeated, if necessary, for several days.

Mercurial Poisoning.

The following cases of mercurial poisoning occurring in my own clinic may be of interest:

CASE I.

A patient who had taken 3 grains of pil. hydrarg. without symptoms for several weeks, and 4 grains of the same drug each day for one week, came to the clinic with ulceration and swelling of the gums, salivation, and foul breath. She was given 4 c.cm. of intramine intramuscularly, alternating with 50 c.cm. collosol iodine intravenously, the intramine and collosol iodine being given on alternate days for four days, when the symptoms disappeared. Since then she has been able to take up to 8 grains of pil. hydrarg. a day without symptoms.

CASE II.

A patient ordered to take 4 grains of pil. hydrarg. a day misunderstood the directions and took 12 grains daily. She developed extensive ulceration and bleeding from the gums, and anuria to the extent of 2 oz. per day. She was treated by three injections of intramine intramuscularly, collosol sulphur ʒiii t.d.s. by the mouth, and (of course) fluid diet. In approximately two weeks she was well.

CASE III.

A patient, first seen in the late stage of secondary syphilis in 1917, was given a course of novarsenobillon injections and treatment with mercury, and then sent back to her private doctor for continued mercury treatment. A few months later she returned to the clinic with a gumma of the neck, alopecia, and a history of being unable to take even one grain of mercury a day without salivation. She was taken into hospital and given an intravenous injection of collosol iodine 50 c.cm., followed two days later by intramine intravenously 50 c.cm., and three days later by collosol mercury 5 c.cm. intravenously. This was followed two days later by another intravenous injection of intramine 50 c.cm. and 8 c.cm. mercury two days afterwards. She tolerated both the mercury injections without adverse symptoms; the syphilitic symptoms cleared up and she has since taken 3 grains of mercury a day with no further recurrence of mercurial symptoms.

Antenatal Syphilis.

Let me now take up my second point, namely, antenatal syphilis. In dealing with the treatment of antenatal syphilis I would like to urge that cases giving a history of miscarriages and stillbirths, even with a negative Wassermann reaction, should be treated with mercury and potassium iodide. I think too much stress is laid on the importance of the Wassermann reaction, and that more reliance should be placed upon clinical signs and history. I have found that intravenous injections of arsenic can be given safely up to the end of pregnancy, and I have not had any cases of post-partum haemorrhage following such treatment. I have begun treatment as late as the seventh month, with the result that an apparently healthy child giving a negative Wassermann reaction has been born with no subsequent syphilitic symptoms.

My third point is that there is a great need for better team work, and that the syphilologist in venereal clinics requires the co-operation of his colleagues in the eye, throat, skin, and nervous diseases departments. Few medical officers working in venereal disease clinics can find the necessary time, even if they have the necessary skill, for careful examination of the special systems. The skin manifestations of syphilis, for example, are so varied and so simulative of other lesions, that unless the officer in charge is also a dermatologist, he should be able when in doubt to utilize the special knowledge of his colleagues to prevent wrong diagnosis, and to serve the best interest of his patient.

GONORRHOEA.

In dealing with gonorrhoea in women we have to consider one of the most insidious diseases, a disease more difficult to treat in women than in men, perhaps because the clinician so seldom sees gonorrhoea early in women, the acute condition sometimes being so slight as to pass unnoticed by the patient. The gravity of the disease cannot be over-estimated, its sequelae are so far reaching, and the difficulty in effecting a cure is so great. Sometimes one drug, sometimes another holds out a real prospect of being a specific for the disease, apparently curing cases on which it is tried, and then one's hopes are dashed to the ground by relapse or recurrence. Here the question arises—Do cases truly relapse, or are some apparent relapses reinfections?

The work on the gonorrhoeal side of a venereal clinic is often disappointing but it can never fail to be interesting. The treatment of gonorrhoea is still in the experimental stage.

In treating a case of gonorrhoea in the female care has to be taken that no infected part is overlooked, otherwise many disappointing results will be obtained. Thus a cervicitis may be treated and clear up, the patient later developing fresh symptoms such as arthritis from an overlooked and untreated affection of the duct of Bartholin or Skene.

In an ordinary subacute case of gonorrhoea I have found various drugs of use. Certain drugs will suit some patients, whilst other patients respond better to a different drug. The most useful have been silver salts—such as protargol 10 per cent., eucalyptus oil in olive oil 40 per cent., and picric acid in glycerin 50 per cent. Of these I prefer, if anything, picric and glycerin, applied two or three times a week with (if daily treatment by packing or swabbing out is not possible) treatment at home by pessaries. I find pessaries of protargol 10 per cent. and sauerin pessaries very useful. In using picric acid and glycerin the vulva, urethra, vagina and cervix should be swabbed in turn, care being taken not to leave a pool of the solution in the vagina. The patient may complain of smarting and pain. This can easily be remedied by passing urine and washing the parts. Occasionally the patient becomes jaundiced, in which case the picric acid treatment should be stopped, when the condition rapidly improves. A cast of the vagina may even be thrown off. Many clinicians advise douching, but I prefer not to use this measure unless the tubes are affected, when I consider warmth given by the douche is of benefit. A douche at high pressure given by a patient to herself in unhygienic surroundings may cause the disease to spread from the cervix and vagina to the uterus, tubes and ovaries, especially in women who have borne children. If douching is ordered the patient should be told to lie on her back with the buttocks slightly raised, the douche-can not to be more than 1½ ft. above the level of the body.

Many cases improve with vaccines. If the medical officer in charge of the clinic is not an expert in pelvic examinations, and is doubtful as to the condition of the ovaries and tubes, I would strongly advise him to refer the case to a gynaecologist before commencing a course of vaccine therapy. Cases complicated with infection of tubes and ovaries, although reacting well as a rule to vaccine therapy, should be started with much smaller doses than uncomplicated cases. Copper or zinc ionization is advocated by some authorities, and here again co-operation between the venereal disease clinic and the electro-therapeutic department is called for.

Infection of the urethra and Skene's ducts, and the duct of Bartholin, is common and very persistent. Skene's ducts and the duct of Bartholin can be fairly easily washed out by means of a syringe with curved blunt pointed needle, and if this fails the duct can be incised and treated with iodized phenol or protargol, or it can be destroyed by an electric cautery. Urethritis usually clears up readily by the application of picric acid locally and urinary antiseptics by mouth.

Some authorities advocate washing out the bladder in cases of urethritis in the female. The female bladder is less liable to infection than the male; there is no back flow, and it seems there is a real risk of setting up a gonococcal cystitis in a patient with gonorrhoeal urethritis by the injudicious passage of catheters. When washing out the bladder I use a catheter made like a miniature intrauterine douche nozzle, and by passing it gradually up the urethra wash it clean before finally entering the bladder. Here again the treatment can be carried out with safety by an experienced person.

To touch on the numerous other complications of gonorrhoea and their appropriate treatment would take more time than I have at my disposal, but I hope the few aspects of the treatment of venereal disease that I have mentioned will help to start a useful discussion.

In conclusion let me emphasize the importance of a high standard of cure. If a high standard of cure is not maintained results will be disappointing. If we all endeavour to maintain a high and common standard, at least we shall have done our best to eliminate possible risk of relapse and infection of healthy people.

DISCUSSION.

Dr. FLORA BUTCHER (U.P. India) confessed to harbouring somewhat conservative views on the subject of the treatment of syphilis. She regarded mercury as the chief drug in the treatment of syphilis, and was accustomed to employ it in the form of hyd. c. creta. Dr. Butcher gave instances of cases of accidental infection occurring in India. She laid stress on the wide variations in tolerance to mercury exhibited by different individuals.

Sir JAMES GALLOWAY (London) wished to emphasize the remarks made by the two previous speakers on the care necessary in the treatment of venereal disease, especially when using the more recently developed "intense" methods of treatment. Miss Morna Rawlins had laid stress on the necessity of making an accurate diagnosis, especially in the case of syphilitic infection, before commencing treatment which involved the administration of powerful doses of arsenic. It was not always easy to be certain of syphilitic infection, even when cutaneous lesions were present, as certain diseases with cutaneous manifestations having no relationship whatever to syphilis were from time to time mistaken to be of syphilitic origin, and treatment carried out forthwith. Certainty of diagnosis, arrived at after consultation with experts, was of utmost importance. Similarly Dr. Flora Butcher had remarked on the unnecessarily violent methods of treatment occasionally recommended in the treatment of gonorrhoea, especially in the case of young women. In this matter he desired to support the warnings given by Dr. Butcher. The medical wards of a general hospital offered many opportunities of testing the value—the rightness and wrongness—of prevailing methods of treatment. For years it had been a matter of great interest to study the results of operations on the gastro-intestinal tract. Many of the bad results of these operations, as well as the more favourable, were to be seen in general medical wards. Patients so suffering required not only prolonged and patient medical treatment but demanded the sympathy of all members of the medical profession. These results were still drifting into our wards from all parts of the country. But recently a new series of "accidents" was claiming attention—namely, instances of serious visceral disease following the newer and very vigorously exercised methods of treatment of which so much had been written both in the lay and the medical press. He wished to mention one or two instances to illustrate the point, and as warnings. Recently he had had under care in the wards of Charing Cross Hospital a woman of about fifty-eight years of age, who was admitted with symptoms of renal disease associated with severe oedema. It appeared that some time ago her husband had been suspected of having syphilis. He was treated by means of injections of an arsenical drug, and a series of injections of galyl had been administered to the patient apparently by way of being on the safe side. Soon after she was found to be suffering from what was described as Bright's disease and came under his care. A critical review of the history gave no indication whatever of syphilitic infection. There were no lesions and no changes in the blood indicating the disease. It could, he thought, be safely said that this patient had not syphilis. But the treatment by galyl had apparently produced disease of the kidneys, and although she improved while under care, permanent damage had been done and ultimate recovery was not possible. Again, in certain circles, both medical and non-medical, the suspicion of syphilitic infection seems to bring about a complete loss of balance and want of exercise of judgement. During the later stages of the war a military officer was suspected to have syphilis. He was promptly treated by a series of intravenous injections of an arsenical preparation. Not only was he treated, but his wife, in whom no indications of syphilis had been noted, was also given a prolonged series of intravenous injections of arsenic, and in both cases antisyphilitic treatment was carried on later without supervision. On reviewing the history of both these cases at a later period, when both the patients were suffering from the effects of the administration of arsenic, mercury and iodides, there seemed to be no proof whatever that either the husband or wife had suffered from the disease. Again, a man who appeared to have had a mild eruption of psoriasis was stated to be suffering from syphilis. On this diagnosis mercury was administered, and the patient developed the unusual but well-known form of mercurial dermatitis associated with erythema and exfoliation of the epidermis. He passed through a very severe illness in consequence. Subsequent investigation gave no evidence whatever that he had ever suffered from syphilis. It was true that he appeared to have been cured temporarily from his psoriasis, but at what a cost! Such cases as the foregoing were unfortunately too common, and he mentioned them to emphasize not only the necessity for certain diagnosis before venturing on courses of treatment such as those carried out at the present time, but also the necessity of prudence and caution in carrying out treatment.

Dr. AMAND ROUTH (London) said that early treatment of gonorrhoea in women along the whole generative track —especially in the newly married—was most successful in preventing such serious sequelae as salpingitis, a condition that led to invalidism and sterility. Why did not the fertilized ova of women infected with syphilis all die within a few days? He had suggested that the chromic ferments protected the child from the infection by granulosing the spirochaetes and preventing them from developing till after pregnancy. This protective power enabled curative treatment to be adopted at the third or fourth month, with the result that healthy children were born at full term. There were several other questions for which he should like to find an answer. How could an apparently clinically healthy woman, who had no history of previous diseased children and might give a negative Wassermann reaction, be diagnosed as likely to have a syphilitic child? Again, could a child treated during pregnancy through its mother be treated during lactation by deriving the arsenic and mercury administered to its mother, or must the child be treated separately? He would like to hear the views of others with regard to these points.

Dr. MARION MACKENZIE (Leeds) urged that the medical profession should teach venereal men and women methods of birth control. Women often became pregnant while attending a clinic. Apart from the risk of defaulting and not completing treatment, it was a sad sight to see expectant mothers in the atmosphere of a venereal clinic. If necessary such women must be taught means of preventing conception.

Mr. KENNETH WALKER (London) claimed that the treatment of syphilis at the present day was extremely satisfactory. In no type of case was treatment more successful than in that of the pregnant woman. What was vitally necessary was that far greater facilities should be afforded for the treatment of syphilitic pregnant women. This, rather than birth control, was the urgent need of the moment. The real problem, however, was the treatment of gonorrhoea. Gonorrhoea was the Cinderella of the venereal sisters, and all speakers showed a tendency to avoid so thorny a subject. Both diagnosis and treatment were matters of great difficulty in female gonorrhoea. As an example of the doubt and difference of opinion that existed one speaker had advocated the use of pure carbolic acid, whilst another had urged that treatment as a whole was too energetic, and that palliative methods were indicated. In one large London clinic the gonococcus had been found in over 80 per cent. of cases that were "clinically" chronic gonorrhoea. In other clinics the gonococcus was comparatively seldom found in chronic cases. A vast amount of knowledge was required before the diagnosis and treatment of gonorrhoea in the female would be comparable to that of syphilis. With Dr. Morna Rawlins's method of treatment the speaker was in general agreement. As a possible method of treatment he would mention diathermy applied to the cervix. This method had been employed at St. Bartholomew's, selected cases being referred to Dr. Cumberbatch for treatment. Although too few cases had been so treated to justify dogmatic statements, the results were encouraging. Where the case was chiefly one of secondary infection, zinc ionization was used as a follow-up treatment. Although electrical methods had, in the speaker's opinion, lamentably failed in the case of male gonorrhoea, it offered more hope to that of the female.

Colonel L. W. HARRISON said that the treatment of gonorrhoea in women seemed to be largely a question of drainage of a dead end. He would urge the importance of assisting nature to eliminate the poison from the deeper tissues. For this reason he was not inclined to apply such strongly caustic applications as had been suggested, but would use glycerin and some antiseptic, with the object of promoting a flow of serum to the surface.

He suggested that research into methods designed to increase the antibody response would be valuable. The aim should be to raise the resistance. The chief difficulty lay in the fact that the gonococcus was a poor antigen. Regarding efforts to raise the antigenic power of gonococcal vaccines, he thought that Dr. Thomson's detoxicated vaccines were better than ordinary emulsions. As an adjuvant to vaccine treatment he considered that the contemporaneous administration of arsenobenzol compounds was worthy of trial. The idea was suggested by Dr. Ainley Walker's work on the effect of arsenobenzol compounds on the antibody response to typhoid and paratyphoid injections in animals. With regard to the test of cure, he would draw attention to the value of cultural methods. In a number of cases he had found that, although an honest search for gonococcus had failed to discover gonococci, the culture had been positive.

Dr. W. H. I. SELLERS (Preston) said that he had hoped to have learnt from the opener of the discussion a good routine method of treatment applicable to most cases of gonorrhoea in women. Could Dr. Morna Rawlins say exactly what procedure she adopted in cases of gonorrhoea?

Dr. E. W. G. MASTERMAN (London) asked whether Dr. Rawlins considered sulphur to be directly useful in the cure of syphilis or merely indirectly of utility in antagonizing intolerance to mercury.

Dr. MORNA RAWLINS, in replying, said that she agreed that mercury was the most important drug we possessed for the treatment of syphilis. She was accustomed to carry it up to the full extent of the patient's tolerance. She agreed with Mr. Kenneth Walker that the antenatal treatment of syphilis gave excellent results. It might, however, be advisable to instruct certain cases in methods of avoiding pregnancy. She had had no personal experience of electrical methods applied to the cervix, and was interested to hear of Mr. Kenneth Walker's experiences. It was for reasons such as these that she had advocated the necessity for team work. In answer to Dr. Masterman she would say that sulphur was both directly and indirectly of value in the treatment of syphilis. She had known cases of syphilis yield to sulphur which had proved refractory to arsenic and mercury. Dr. Sellers had asked for a routine treatment for cases of gonorrhoea in the female. It was a difficult question. Personally she preferred the use of picric acid in glycerin. After washing the external genitalia a Fergusson's speculum was passed, and the cervix, vagina, and vulva in turn subjected to careful swabbing. Where infection was localized in Skene's tubules or Bartholin's gland, a thinner solution of picric acid and glycerin was injected by means of a blunt-pointed needle. She gave vaccines, but before doing so made a careful abdominal examination. If the case was complicated by the presence of an inflamed tube it was advisable to start with a small initial dose. With regard to the matter of diagnosis, the clinical appearance of the genitalia was of great importance. The red macules round the cervix and urethra were very characteristic. The complement fixation test had given very satisfactory results. She could not say that she had noticed any benefit from the use of salvarsan in cases of gonorrhoea complicated by syphilis. Finally, she would like to emphasize again the importance of establishing a high standard of cure.

II.—THE TREATMENT OF SYPHILIS IN INFANCY AND CHILDHOOD.

BY

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THE treatment of congenital syphilis is indeed a matter of urgency. The malady is not only responsible for a great loss of potential life through miscarriages and stillbirths, but it increases the infantile mortality rate in early infancy, and also causes much suffering and invalidism during later childhood.

In the meantime it is absolutely impossible to state with any degree of accuracy what it costs the country through loss of child life and invalidism, but what we do know is sufficiently ominous to warrant us in taking all measures at our disposal to combat it. Unfortunately, too, as a result of the recent great war, matters will become rather worse than better. There is, however, one cause for consolation: we are in possession of knowledge which, if properly applied, would almost wholly eradicate it.

Loss of Child Life Due to Syphilis.

Though this discussion is not one on the frequency and manifestations of congenital syphilis, it may not be out of place to mention a few facts in order to impress the seriousness of the matter on our attention.

Of the loss of potential life through miscarriages and stillbirths it is impossible to form a correct estimate, since such are not notifiable. Dr. Williams of Baltimore,[1] however, found that syphilis caused 20 out of every 1,000 pregnancies to terminate in stillbirths. Our published statistics of deaths only record 2 out of every 1,000 children born alive as due to syphilis, but no one considers these figures adequate. Children dying from syphilis are for many and apparent reasons notified under other causes. Dr. Dittmar states that in Scotland 4,000 people die annually from syphilis, and we know from the British Royal Commission on Venereal Diseases that 75 per cent. of these deaths occur in infants and children under five years of age. According to the Royal Commission, 30 per cent. of the children in the blind asylums of England owe their blindness to syphilis, and Dr. Morax of Paris has informed me that of the blind children in Paris, between the ages of 3 and 13 years, 44 per cent. are syphilitic. Syphilis accounts for from 7 per cent. to 25 per cent. of all cases of congenital deafness, and is in addition responsible, at least according to some authorities, for 50 per cent. of cases of mental deficiency, epilepsy, and other nervous diseases.

The seriousness of the matter is strikingly shown by an investigation carried out by Dr. Kerr Love of Glasgow[2] in connexion with syphilis as a cause of deafness in childhood. This author records the complete histories of twenty-one families. There resulted 172 pregnancies of which 75 ended in stillbirth, and of the 97 children born alive 31 were either deaf or blind.

The burden on the State alone, apart altogether from the misery entailed on the children and their parents, is enormous. The education of a blind child costs seven times, and that of a deaf child, ten times as much as that of the normal child, and, previous to the war, each mental defective permanently housed in an institution cost the ratepayers £40 per annum.

With this short introduction, then, which is merely intended to focus attention on the urgency of the problem, I pass to the subject proper of our discussion—namely, the treatment of syphilis in infancy and childhood.

General Remarks on Treatment.

In all infective diseases, and especially in those of which we have a knowledge of the causes and methods of propagation, the treatment naturally divides itself into two classes—prophylactic and curative. Though I have mentioned these two methods in their proper order of importance and precedence, I will, because it is the older and more generally adopted one, treat of the latter first.

Within recent years we have been supplied, as a result of the experimental researches of the chemiotherapists, with a drug dioxydiaminoarsenobenzol which has improved our results of the treatment of syphilis immensely. In fact to-day the chief interest in the treatment of all forms of the malady centres round the use of this drug. Unfortunately, however, the drug has not been used in infancy as freely as in the case of the adult. Ehrlich himself was in part responsible for this attitude. He expressed the opinion that its use might be dangerous in infancy and childhood because it was such a powerful spirochaeticide, thereby causing the liberation of large amounts of endotoxin. I can say, however, as the result of fairly extensive personal experience, that it seems to have an equally successful field among children and to be devoid of any special danger.

Treatment by Mercury.

Treatment by mercury alone should be discarded. All authorities are to-day agreed that mercury reinforced by salvarsan is the best treatment. The rapidity with which the cutaneous manifestations disappear under salvarsan is most striking. It must nevertheless be admitted that mercury alone will, in the majority of cases, cause a disappearance of the symptoms, and in a certain proportion of them a positive Wassermann reaction to become negative, and to remain so. Its efficacy, however, falls far short of the combined treatment with the two drugs. In a series of cases under three months of age, and treated with mercury alone, my death rate was 71 per cent., a figure with which no one could rest satisfied. These figures too are not exceptional, but are parallel with those recorded by other workers.

The preparation of mercury to be adopted as the adjunct is of no small importance. In my opinion no preparation of mercury is so efficacious as the ointment. I have often seen grey powder (hydrarg. cum creta) administered for weeks without the slightest improvement, but on the adoption of inunction an immediate disappearance of the symptoms. This was in the days when mercury was used alone, but for that very reason one was able to discriminate between the different preparations. Grey powder has the disadvantage of causing green and loose stools, and this may in fact be the reason for its lessened effectiveness by hindering absorption. The only exception to above is the case of condylomata, which react specially well to the local application of calomel.

Treatment by Salvarsan.

Salvarsan may be administered in many ways—intramuscularly, intravenously, or intrathetically in the case of nervous manifestations. It may be given rectally, and it has even been administered through the medium of the mother's milk. Of the latter method of administration I have no experience. That it does act when introduced rectally there is no doubt, but its action is very slow and uncertain, and to my mind this method of administration is not suited for children, as they hardly ever retain it sufficiently long to allow of its absorption.

Of the other two routes—intramuscular and intravenous—I have no hesitation in advocating the latter. With the former induration, with at times necrosis and sloughing, results, and the pain in consequence of the injection seems to be very great. I have tried all methods recommended for avoiding these accidents and drawbacks, but have not as yet come across one which is always successful. The younger infants do not seem to suffer so severely, but the older children simply scream with pain immediately after the intramuscular injection, and when this is given into the buttock, a not uncommon site, they are unable to sit or rest comfortably in bed for days afterwards. Mothers whose infants and children have received both intramuscular and intravenous injections always ask for the drug to be given intravenously. They invariably state that after the intramuscular injection the children are restless and peevish, but that with the intravenous injection no untoward symptoms are encountered, except perhaps occasional vomiting for a few hours afterwards.

Site and Method of Injection.

The site depends on the age of the patient. In infants and children under the age of 18 months the veins of the scalp are the most suitable. These veins in infants, and especially in emaciated infants, are, with the exception of the external jugular, the only ones that are as a rule visible. Another reason for choosing the scalp veins for venepuncture is that the head is the only part of the body which can be effectively controlled without the aid of an anaesthetic. With the proper size of needle (No. 1) and a little practice the operation is one that can be easily carried out. The great secret of this operation is to have the head held immobile, and to have everything for the injection in readiness beforehand. As the operation must be performed as quickly as possible, there is not sufficient time to inject large quantities of fluid, and in consequence concentrated solutions are employed. I am in the habit of using in both the adult and the child concentrated solutions, dissolving, in the former case, as much as 0.6 gram in 10 c.cm. saline or distilled water. For children with a dose of 0.1 to 0.2 gram 3 or 4 c.cm. are ample. I have never seen any accident result from the use of concentrated solutions, and, if the injection is made slowly, the drug is, I think, sufficiently diluted by the blood as it flows past the point of the needle.

The solution of the drug is prepared, sucked into a syringe—the 5 or 10 c.cm. Record syringe is a handy size—which is placed in a position to be easily reached by the operator. The head of the child is prepared as for any aseptic operation. In some cases it may be necessary to cut the hair, but frequently it is sufficient simply to clean the parts with methylated ether.

The child is tightly wrapped in a blanket to control the movement of the body and limbs, and laid on a table with the head resting on a firm wedge-shaped pillow. The head is firmly held in position by the hands of an assistant or nurse, and pressure of the chest by the assistant at the same time restrains any movement of the body. The assistant with the thumb of one hand causes pressure on the vein, so that the distal portion of the vein becomes distended and the more easy to enter. With a needle of the size above-mentioned (No. 1), about 1½ in. long, and the point bevelled at an angle of 45 degrees, the vein is entered. One knows when the needle is properly in the lumen of the vein by the free flow of blood. When one is satisfied that the needle is properly in the lumen of the vein, but not unless, the syringe with the drug is attached, the thumb of the assistant ceases to apply pressure on the vein, and the drug is slowly injected. Pressure for a few moments afterwards is usually sufficient to stop all bleeding.

In spite of all that has lately been written in advocacy of the longitudinal sinus as a convenient site for venepuncture, I am distinctly adverse to its habitual selection. Though the sinus is larger than the scalp veins, it is not always easy to enter, and if the infant is collapsed it may be impossible to perform the operation. If, too, by any chance some of the drug escapes from the lumen of the sinus, owing to transfixion of the wall of the vessel, irritation of the cerebral convolutions, as I have seen occur in one case, may result. And finally, should sepsis ensue, as is possible even with the greatest care in any operative procedure, fatal meningitis results. For these reasons, then, I am not inclined to advise lightly the longitudinal sinus as the seat of election for intravenous injections.

In children over two years of age the veins of the scalp are as a rule not visible, and hence another site must be chosen. In the younger children the external jugular vein is available, and in the older, especially those that are spare, the veins at the bend of the elbow, just as in the case of the adult, may be selected, but it must be admitted that in children between 2 and 5 years of age venepuncture is an operation of some little difficulty. As children cannot be expected to remain absolutely still during such an operation, and it is impossible to immobilize these parts (neck and arm) an anaesthetic is usually required. Many a time I have been tempted to dispense with the anaesthetic, but as a rule the child has wriggled, the needle has either transfixed or slipped out of the vein, the drug has in consequence escaped into the surrounding cellular tissues with resultant induration, thrombosis of the veins, and at times sloughing, not to mention the accompanying pain. After such accidents, too, this field of operation cannot be used on a subsequent occasion, which is a matter of importance, as the operation is one that requires to be repeated many times.

Dosage of the Drug.—In the early days of salvarsan therapy 0.005 gram per kilo body weight was the dose recommended. This means for a child of one to two months of age 0.02 gram salvarsan, or 0.03 gram neo-salvarsan, a dose, in my opinion, unduly small. I am in the habit of commencing in infants with 0.05 to 0.1 gram neo-kharsivan and gradually increasing it, especially in the older children, to 0.2 or 0.3 gram. In infants under six months of age I rarely give more than 0.15 gram. The injection should be repeated once or twice weekly until a definitely negative Wassermann reaction is obtained, after which it is advisable to give one or two further injections. My usual practice is to give one injection weekly.

Analysis of my case records for the children under three months of age would seem to show that the duration of the course of treatment rather than the total amount of the drug given is the deciding factor in inducing a negative Wassermann reaction. The percentage of cases in which a negative reaction was obtained rose steadily with the number of injections given.

In a series of thirty one cases, in which the individual dose varied, but in which the average total amount of the drug given was 0.9 gram, a negative Wassermann reaction was obtained in 75 per cent. of the cases when the course consisted of six weekly injections, in 80 per cent. of the cases receiving seven injections, in 88 per cent. of the cases receiving nine injections, and in 100 per cent. of the cases when the course was extended to eleven weekly injections.

I might here remark that I have not come across the case of an infant in which the Wassermann reaction after being negative has again become positive, although many children have been followed and re-examined six and twelve months, and even three years after the termination of the course of treatment. As one can easily understand, it was found much more difficult to induce a negative reaction in the older children. In several cases of eight and nine years of age thirteen and twenty injections, involving the use of 3.75 and 6.0 grams, failed to produce a negative Wassermann reaction.

Choice of the Preparation of Arsenic.

I have used salvarsan, neo-salvarsan, kharsivan and neo-kharsivan, and am inclined to think that all are equally efficient. For some considerable time past I have only employed neo-kharsivan, which I at first considered toxic, but of late I have seen no bad effects from its use. It is understood, of course, that in all cases (infants and children) mercurial inunction is practised at the same time. In the older patients, especially in the presence of bone lesions, a course of potassium iodide is to be recommended.

General Treatment.

In the treatment of the younger infants and children nutrition is naturally of considerable importance. Infants thrive better while on the breast than on the bottle, and therefore, whenever breast feeding is possible, I advise that it should be carried out. Resort to bottle-feeding should not be made unless for very grave reasons. Consequently congenital syphilitics should be treated as out-patients, unless the circumstances of the mother, perhaps illegitimacy of the child, or some serious complication decide otherwise.

Results of Combined Therapy.

The results obtained by the combined method are better than those obtained by the use of mercury alone, but they still leave much to be desired. In contrast to the 70 per cent. mortality experienced in children under three months of age, when treated with mercury alone, the mortality rate for the same age period with the combined treatment was reduced at first to 37 per cent. and latterly to 26 per cent. This is a considerable improvement, but a result which even yet falls short of that obtained by prophylactic or antenatal treatment.

Prophylactic Treatment.

Prophylaxis or antenatal treatment is the only rational method of treating congenital syphilis. Its efficacy, however, depends on the manner in which it is carried out. It is no new method, as physicians have always treated the expectant syphilitic mother in the hope that a healthy child would be born. It has unfortunately been the rule to employ simply mercury and potassium iodide, and though at times such measures may be successful in obtaining the birth of a non-syphilitic child, they frequently fail in having this effect. The following charts (Nos. 1 and 2) demonstrate two of the results obtained in the author's practice by this method. In one case (No. 1) a healthy child was born immediately after the course of treatment, but through its discontinuation the disease reappeared in the next offspring. In the other case (No. 2) syphilitic children continued to be born in spite of prolonged treatment of the mother extending over the course of three pregnancies.

How different are the results when salvarsan or one of its allies is employed in addition, with the object of reinforcing the effect of the mercury! This is a point which we have already noted in connexion with the curative treatment of the disease, but in prophylaxis the results would appear to be even more striking.

The treatment of the pregnant mother by means of salvarsan was applied in the first instance by Sauvage, who obtained 93.3 per cent. of healthy non-syphilitic children. Fabre and Bourret, who emulated Sauvage's example, obtained even better results, namely, 100 per cent. of successes. Later Galliot[3] collected the statistics relating to 145 women treated with salvarsan alone, and recorded that 91.2 per cent. of the children were healthy.

Treatment of the pregnant mother by salvarsan, reinforced by mercury,[4] I myself have carried out in a certain number of cases (10) and have invariably obtained healthy non-syphilitic children. The number of injections varied between four and eight, and the total amount of the drug employed in each case between 1.2 grams and 3.6 grams. Adams[5] has more recently recorded equally good results, which he has obtained by antenatal treatment with salvarsan and mercury.

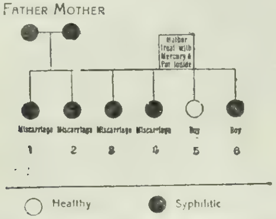

CHART 1.—Diagram showing effect of treatment of mother during pregnancy by mercury and potassium iodide internally on that and the subsequent pregnancies.

One of the striking results of this method of treatment is that not only is the child immediately after the course healthy and non-syphilitic, but that these women continue to bear healthy and non-syphilitic children in spite of the fact that no further therapeutic measures have been adopted. Charts 3 and 4, selected from my personal records, demonstrate this point.

It will be noted that I have only treated the mothers, and further, the mothers only during pregnancy. There are several reasons for this line of action. In the first place, my work as a pediatrist only brought me in contact with the mother, and I had seldom the opportunity of examining or interrogating the father. I was, moreover, through fear of causing family dissension, disinclined to consider the father, but experience has taught me that there is very little likelihood of any such thing resulting. Though on theoretical grounds it would seem advisable, if not imperative, that the father should be treated at the same time, such does not, however, seem essential. In my opinion, at least after a mother has once borne a syphilitic child, all examples of congenital syphilis are examples of maternal infection. Consequently the prime person to be treated is the mother, and my results, I think, entirely justify this view.

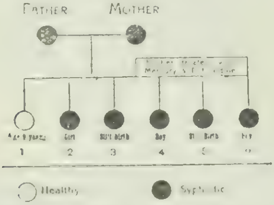

CHART 2.—Diagram of [illegible] syphilitic family showing the absence of effect on offspring by treatment of mother for [illegible] period with mercury and potassium iodide internally.

Notification of Stillbirths and Miscarriages.

There remains for us to consider how to begin treatment at the earliest possible moment, in order to obtain the greatest number of healthy offspring. At present we are only touching, and can only touch, a mere fringe of the diseased families, because in a majority of these cases (that is, the mothers of syphilitic children) miscarriages, stillbirths, or a syphilitic child are the only evidences of the disease. Therefore treatment of these women is usually commenced only after a series of miscarriages, stillbirths, or the birth of a definitely syphilitic child, and much valuable time, as well as potential life, is lost. For me there is only one remedy—namely, notification of all miscarriages and stillbirths, the determination of those due to syphilis by means of the Wassermann reaction, and the immediate resort to the appropriate treatment.

Notification of Venereal Disease.

Notification of stillbirths and miscarriages is simply one aspect of the general question of the notification of venereal disease; but it is an important aspect, and to my mind is warranted by the necessities of the case. In my opinion no antivenereal campaign will be successful without such a measure, and I feel confident that sooner or later it will be adopted. The question has of course been freely discussed within recent years, and much has been said for and against the measure.

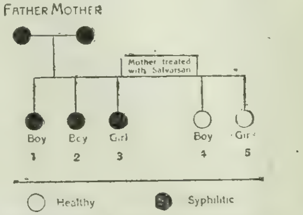

CHART 3.—Diagram showing the effect of treatment of a syphilitic mother during pregnancy by injection of salvarsan and mercury internally on that and the subsequent pregnancies.

It must be admitted that syphilis, from the method of its acquisition (though we should never forget syphilis insontium), stands quite apart from other infectious diseases. Its contraction almost invariably suggests to the public mind some moral declension, and raises the fear that its notification would imply the publication of this fact to the world, and that its disclosure to the husband or wife would be the cause of much family discord. So far as the question of family discord is concerned I have little fear, as the longer I am brought in contact with this type of work the more frequently have both parents desired treatment in order to bring to an end the succession of miscarriages, stillbirths, and diseased children.

Now the popular belief that notification means the shouting of one's malady from the house-tops should be vigorously contested. Notification means no such thing. By notification the knowledge of the nature of the illness is only shared by the patient with his medical adviser, as at present, and a third person, absolutely impartial, namely, the medical officer of health. The measure owes its value to the fact that it gives the authorities the necessary information regarding the prevalence of a particular disease, and enables them not only to find out the foci of infection, but also to offer and to insist on treatment.

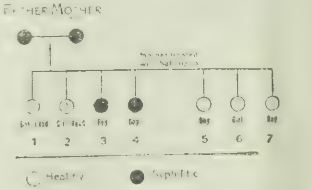

CHART 4.—Diagram showing the effect of treatment of a syphilitic mother during pregnancy by injection of salvarsan and mercury internally on that and the subsequent pregnancies.

One other point should not be forgotten in this discussion, and that is the inconsistency of our notification laws. One great objection which has been raised to the notification of syphilis is that it is a disease apart from all others, yet various health authorities make notifiable ophthalmia neonatorum, which bears the same relationship to gonorrhoea as congenital syphilis does to syphilis.

Gonorrhoeal ophthalmia has been made notifiable, in spite of the fact that its acquisition may be, and usually is, the result of a moral declension on the part of one or both of the child's parents, simply because its consequences far outweigh all other considerations. These consequences are blindness, and yet we know that ophthalmia neonatorum is only responsible for 20 per cent. of the blindness in childhood, whereas syphilis is responsible for 30 per cent., and, according to some authorities, even 44 per cent. of the cases in childhood.

I can well remember the time when notification of tuberculosis was first mooted, and many an interesting debate and exciting discussion I have listened to on the subject. Many prophesied that as great disasters would follow the notification of tuberculosis as are prophesied to-day will follow the notification of syphilis. The great fear was expressed that its notification would mean the public announcement of an inherent weakness in the individual or family, and that the public would not tolerate such a measure. Yet notification of tuberculosis has been adopted, and no one now feels any irksomeness or deprivation of freedom in consequence, and our only criticism is that we cannot take full advantage of the knowledge so gained. Such a criticism could not be levelled against us in connexion with syphilis. It is, in short, a rational measure, and one which has been adopted in certain progressive countries. It is already in existence in several states of America. Recently the *Social Hygiene Bulletin* published reports received from the states in which it had been longest in force, and it is interesting to find that all are pleased with the results obtained.

For me the ideal treatment of congenital syphilis means treatment of the syphilitic mother, but, in order that this may be carried out efficiently, compulsory notification is essential.

References.

[1] *Journ. Amer. Med. Assoc.*, January 9th, 1915. [2] *The Causes and Prevention of Deafness*, National Bureau for Promoting the General Welfare of the Deaf, London, 1913. [3] *Archiv. d. Méd. d'Enfant*, 1913, p. 892. [4] *Glasgow Medical Journal*, May, 1915. [5] British Medical Journal, November 16th, 1918.

DISCUSSION.

Dr. F. Butcher, in opening the discussion on the treatment of syphilis in children, said that when using hyd. c. cret. it was a matter of vital importance to ensure that the drug was perfectly pure and not oxidized, as so frequently happened in hot climates. She had not seen enteritis from the careful use of pure hyd. c. cret., although a certain amount of mild diarrhoea might occur.

Dr. Agnes Dunnett (London) asked what was a satisfactory standard of cure in infants brought to infant welfare clinics suffering from congenital syphilis. With mercurial inunction carefully performed, symptoms often rapidly cleared up, and no fresh signs appeared up to the age of five (the age of attendance at clinics). There was no time to perform blood tests on these infants at the clinics, and it was very difficult to get them to continue attendance. What was the correct treatment for women who repeatedly miscarried, no gynaecological cause having been found and a negative Wassermann reaction having been obtained? Should they be regarded as syphilitic, in spite of the negative Wassermann, and given a course of treatment?

Professor V. Péchère, M.D. (Brussels), congratulated the readers of the opening papers. He had been especially interested in Dr. Findlay's methods, and would like to discuss a few points, although he must crave indulgence for the poorness of his English. Dr. Morna Rawlins had said that she retained a certain amount of fear for the arsenical preparation. He personally had no fear at all in this matter and used arsenical preparations very extensively. The results of treatment of antenatal syphilis were excellent. So also was the treatment of infants with salvarsan. He employed the intramuscular method when dealing with infants, but after having seen Dr. Findlay's interesting demonstration he intended to try his technique and use the veins of the scalp. He feared, however, that although such a method might seem simple to so skilled a worker as Dr. Findlay another might find it less easy. He agreed with Dr. Rawlins about the utility of sulphur in the treatment of syphilis. He had used a new preparation—sulpharsenobillon—and had had excellent results. One of the advantages of this drug was that when given intramuscularly it gave rise to very little pain. He had employed it with great success amongst children.

Dr. E. W. G. Masterman (London) expressed the disappointment he had had in treating congenital syphilitic cases with inunction of mercury, and his appreciation of the new method of injecting arsenical preparations into the veins of the head in infants. His impression was that if congenital syphilis was not cured in infancy it might be impossible to cure it later, if he might judge by the difficulty of getting a negative Wassermann reaction after even a full course of treatment. He suggested that there was at present a great difficulty in honestly reporting deaths as due to congenital syphilis or even "congenital specific disease" (a term which was now well understood by the public). If some means could be found of notifying these cases, so that the term was understood only by the medical profession and the registrar of deaths, many more true returns would be obtained.

Dr. P. A. Hendley (Littleport) said that he would be very interested to know what were the end results in cases of congenital syphilis treated with the arsenic compounds and mercury, especially with regard to the incidence of nervous syphilis? In the matter of notification of syphilis he had always been a warm supporter of compulsory notification, as the adoption of this course would prove an enormous help in our fight with venereal disease.

Dr. James Hudson asked what method of administration Dr. Findlay advised for children of 5. He considered the idea of compulsory notification of stillbirths an excellent one. It was an indirect method of obtaining very valuable information, and would not meet with the same opposition as notification of venereal disease. The latter measure would probably fail.

Dr. Marion Mackenzie stated that in the Leeds Infant Hospital it had been found that novarsenobillon injected about a fingerbreadth below the crest of the ilium, in a line drawn vertically between it and the top of the great trochanter, gave rise to pain lasting only for a minute or two. Neither the small babies nor the older children had ever been known to have the restless nights, pain, etc., mentioned by Dr. Findlay, and certainly never any necrosis. Either Dr. Findlay had been unfortunate in his novarsenobillon or he had gone deeply into muscle, which had resented it. As administered above, the solution was given into a pad of fat, which was reached by going down to bone and then withdrawing the needle a little. This method had the advantage of being extremely easy and rapid. Speaking of stillbirths occurring in venereal diseases, she would like to point out that in taking a history it was important to be sure that the stillbirths were not merely due to difficult labours. Another point she should like to emphasize was the fallacy of accepting merely a negative Wassermann reaction without sufficient treatment having been given. It was very common to meet cases who were under the impression that their babies could not have syphilis owing to their own blood having been said to be negative.

Mr. Reginald Alcock (Hanley) pointed out that in dealing with ante-natal treatment no reference has been made to the pregnant woman who was affected with primary syphilis in the fifth or sixth month. He had had experience of several of these cases, and had found that treatment by an initial injection of 0.45 gram of novarsenobillon, followed by six injections of 0.75 gram, and accompanied by weekly intramuscular injections of 2 grains of mercury, had given most satisfactory results. There was much objection to the notification of cases of syphilis and gonorrhoea in smaller towns, because the medical officer of health was generally a part-time man. This constituted a serious obstacle to notification. The remedy he proposed was to notify either the county medical officer or other central authority, and so preserve the requisite professional secrecy.

Mr. E. B. T[illegible] (President) pointed out the imperative necessity for everyone to cultivate and accentuate the power of diagnosis from clinical observation, so that no one should rely solely on the microscope, test tube, and blood test. He explained the necessity for the earliest treatment of both syphilis and gonorrhoea on the very first appearance of the symptoms. Therefore it was most important that the general practitioner should fit himself to treat, and should treat at once, the cases which came under his observation, and thus cut down the period necessary for a complete cure from years to months. With regard to compulsory notification, he was sure that the medical profession would never consent to divulge professional confidences until it was a statutory obligation to do so, and that such legislation would not come until the public demand was imperative. He thanked the authors of the very excellent papers read and the meeting for the very helpful discussion.

Dr. **Findlay**, in replying, said: The discussion has been so full that it will be quite impossible for me with the time at my disposal to deal with all the points raised. There are, however, three questions—namely: The significance of the Wassermann reaction, the significance of miscarriages, and notification—on which I would like to say a few words. I know that in many quarters, and especially in London, the Wassermann reaction is falling out of fashion, and is not looked upon with the confidence that I think it deserves. Personally I am a firm believer in the reliability and significance of the test when properly carried out. It is not a test that one finds behaving in an erratic fashion. If clinically one has no doubts that the case is one of syphilis, then it is most unusual to get a negative reaction, and conversely if one is certain from his clinical signs that the manifestations are not syphilitic it is very rare to find a positive reaction. If the test is negative I desire very good evidence that a case is syphilitic. In one's student days one used to admire the skill with which certain of one's teachers diagnosed syphilis in the absence of definite clinical evidence, but with experience one has come to the conclusion that it is easy—unfortunately too easy—to say a case is syphilitic in nature; it is much more difficult to say the condition is not syphilitic. This brings me to the second point—the significance of miscarriages. Undoubtedly syphilis is a cause, and, unfortunately, a common cause, of miscarriages, but it is not the only one. If a woman continues to suffer from miscarriage, and gives a negative Wassermann reaction, then I think it exceedingly unlikely that syphilis is the cause, and that antisyphilitic treatment will be of any avail. From an analysis of my own cases 19 per cent. of pregnancies, whether in syphilitic families or non-syphilitic families, ended in miscarriage or stillbirth. I have listened with great interest to the various opinions expressed regarding the advisability or otherwise of notifying syphilis. Our President says that he feels that it will ultimately come, but that the public are not quite ready. Who but the medical profession are best able to judge of the advisability of the measure? It is our duty to educate the public, to show the advantages of such legislation, to dispel any misconceptions regarding its operation, and thus if we believe in it to make its adoption as soon in the future as possible. In any case, as I have said before, there is considerable inconsistency in our attitude to this question, as we are, in fact, notifying one variety on at least a consequence of venereal disease, namely, ophthalmia neonatorum. And, finally, if we turn to countries which have already adopted it, and even this notification by name—for example, certain of the United States—we find that it is giving satisfaction, and has not been followed by any of the great dangers which many of us prophesy.

Demonstrations.

In the afternoon various demonstrations were held. Dr. J. E. **Barnard**, President of the Royal Microscopical Society, demonstrated the technique of dark-ground illumination for the detection of *Spirochaeta pallida*; Dr. **Morna Rawlins** showed instruments and methods of treating gonorrhoea in the female; while Colonel L. W. **Harrison** discussed the question of gonorrhoea in the male. The demonstrations were very well attended.

LAPAROTOMY FOR RUPTURED UTERUS: CAESAREAN SECTION IN PLACENTA PRAEVIA.[*]

By Sir JOHN BYERS, M.A., M.D., M.A.O.,
PROFESSOR OF MIDWIFERY IN THE QUEEN'S UNIVERSITY OF BELFAST.

The following case is a good example of a spontaneous complete intraperitoneal rupture of the uterus occurring in a labour obstructed by a contracted pelvis, subsequently diagnosed, which had predisposed to the death in some form of instrumental delivery of the previous child:

Ruptured Uterus.

Mrs. C., aged 28, was taken in labour on November 24th, 1919. Her previous child was born dead, "instruments having been used." A nurse was with her, and about 1 a.m. on November 25th she was seized with severe abdominal pain, and the nurse, becoming alarmed, sent for a doctor, who, recognizing her serious condition, sent her to the Belfast Maternity Hospital, where she was admitted at 10.30 a.m., and where shortly afterwards I saw her. She was complaining of pain all over the abdomen, which on palpation was very tender. The limbs of a fetus were easily made out situated immediately under the abdominal walls on the right side, while on the left was felt the uterus containing a hard round body. Her face was drawn, and she had the "abdominal facies"; there was no pallor; the pulse was 130 and thready; the temperature was 99° F. There was no vaginal discharge, and on internal examination no presenting part was felt in the pelvis. The abdomen as soon as the patient was anaesthetized with ether was opened, when the placenta and all of the child except the head (which still occupied the cavity of the uterus) were found within the peritoneum. The placenta and the child were removed, when it was seen there was a rent of the uterus—about 6 in. in length—running from the right posterior surface of the fundus of the uterus down laterally through the right lower uterine segment, and it was through this opening that the child's head was easily delivered (the rest of its body and the placenta had already been extruded). The uterus was drawn well over to the left side by Dr. H. J. O'Prey, who assisted me, and the rent in the uterus was carefully sewn up, some trouble being experienced in suturing the lower and deeper parts of the tear. The abdomen was carefully sponged and then douched out with quantities of warm saline and the abdominal wound was closed, no drainage (abdominal or pelvic) being used. The patient rallied well and made an uneventful recovery. The child—a full-term male—was dead.

In a case of rupture of the uterus of a complete nature with the child (whole or in part) or the placenta in the peritoneal cavity, the best course is, as soon as possible, to open the abdomen and to remove the child and after-birth. If the wound in the uterus is not too ragged, and can be brought together, it should be stitched up as in Caesarean section, the peritoneum cleared of blood clot, etc., and, provided no previous attempt at delivery has been made per vaginam, drainage need not be used. If, however, the edges of the uterine wound cannot be suitably opposed and stitched, and if the patient is already in a septic condition, then the whole uterus should be removed, but this procedure adds still more to the patient's risks. In the present case of ruptured uterus the symptoms were more those arising from shock than from haemorrhage.

Caesarean Section in Placenta Praevia.

Mrs. H., aged 30, was sent into the Belfast Maternity Hospital on March 26th, 1920, from the district of Magheragall, near Lisburn, co. Antrim, in her fifth pregnancy. She had experienced several attacks of haemorrhage prior to admission. Placenta praevia was diagnosed, and being near full term, "she was sent to hospital in order that an attempt might be made to save the life of the child." I saw the patient the day after she was admitted. She was in fair condition, pulse 80; the child, which was alive, was in the R.O.A. position, the head being movable above the brim. On internal examination the lower uterine segment was felt enlarged and obstructed by a soft mass, and through the os, which was slightly dilated, the placenta could be felt. Two days afterwards (March 28th) she had a sharp haemorrhage, and immediately afterwards I delivered the child by Caesarean section. There was a little trouble at first in getting the baby to breathe, but it soon came round. The mother made a rapid recovery and she and her infant—a female weighing 7 lb. 15 oz., and 20 in. long at birth—returned home in good health.

That placenta praevia is still a most formidable obstetric complication is clear from the latest statistics as published in Dr. De Lee's *Obstetrics* (third edition, 1918), where it is recorded that of 2,153 women in different centres with placenta praevia 166, or 7.73 per cent., died, while the mortality among the infants was 61.27 per cent. The mothers succumb from bleeding, sepsis, or sometimes as a result of rupture of the uterus caused by the methods used in delivery. The children die from prematurity and from asphyxia due to placental obstruction and placental damage arising during delivery. In every case of placenta praevia we must consider the amount of the bleeding as affecting both mother and child, the length to which pregnancy has gone, and the degree of obstruction offered by the placenta in its bearing on the mother (haemorrhage and sepsis) and on the child (asphyxia). Should labour come on in a case in which the placenta is marginal or lateral and the head is presenting, rupture of the membranes followed by spontaneous or artificial forceps delivery is the procedure indicated, but, even in these cases, stillbirth is often the result, and there is to the mother the risk of sepsis. If the child is dead or is not viable (that is, before the thirty-sixth week) then bipolar version (the method of Braxton Hicks), bringing down one foot and leaving the case to Nature, and using traction on the leg only to control any haemorrhage, if done with full aseptic precautions, is the plan usually adopted.

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[*] Paper read at a meeting of the Ulster Branch of the British Medical Association in Belfast, June 3rd, 1920.

In those cases, however, in which the child is viable—after the thirty-sixth week—two plans have to be considered. The first is what is called metreurysis—that is, the use of some form of rubber balloon (Champetier de Ribes's is the favourite one employed now), which acts so as to dilate the cervix, tamponade the lower uterine segment, and to induce labour, like the child's thigh and breech in Braxton Hicks's method. It was in 1887 that Maurer introduced this manœuvre, which Dührssen, and afterwards the French school, perfected, their idea being that it saved more children than any other then existing plan of treatment. The second and more recent method for managing a case of placenta praevia, when the child is viable, is Caesarean section; and certainly, if the woman is in good condition, the child alive, if the pregnancy has gone beyond the thirty-sixth week, and if there has not been too much bleeding (so as to exhaust the mother), then Caesarean section, in my opinion, gives a better chance for both mother and child, and the case recorded is evidence in support of such a view.

Suture Material.

In both the cases recorded here the wounds—natural and artificial—were sewn up with thirty-day standardized Luken's tanned sterile catgut. In the recent discussion before the Royal Society of Medicine on "Rupture of Caesarean section scar,"[1] while attention was drawn to sepsis and faulty suturing, as causative factors in the giving way of a former Caesarean scar during a subsequent pregnancy or labour, special stress was laid upon the use of catgut, Dr. Eardley Holland pointing out that in 279 cases in which a subsequent pregnancy had gone to, or near to, full term, catgut had been employed, and in 91 silk; in the 279 catgut cases there had occurred 15 ruptures, making an incidence of 1 in 18, and in the 91 silk cases there were only two ruptures, making an incidence of 1 in 45. In other words, the liability to rupture after catgut was two and a half times the liability after silk. "Put in another way, if silk had been used instead of catgut throughout the whole series, and rupture had occurred in the same proportion as in the silk cases, the total number of ruptures would have been reduced to half"; and, in replying at the end of the discussion, Dr. Holland said the most important point revealed in his collective investigation was "the danger of catgut, and he hoped that those who used this material would renounce this dangerous practice." In reading an account of this most interesting recent discussion, I find no information supplied as to the precautions that were taken either in the selection or in the mode of preparation of the catgut used. Some of the speakers spoke of employing "ordinary" catgut (whatever that is), others of "chromic" or "chromicized," and still others of "picric" catgut; while again, one of those most experienced in doing Caesarean sections, reccommended catgut for the deepest layers and for the peritoneal surface, and linen thread or fine silk for the bulk of the muscle. What one would like to ascertain is, what precautions were taken in the selection of the catgut, and as to its special preparation afterwards, so as to ensure that it was reliably aseptic and without any risk of conveying tetanus, and that it would not absorb too quickly in an organ like the uterus with such extraordinarily rapid autolysis or self digestion occurring immediately after delivery. The question is, may not failure in the preparation of the catgut (how easy, in contrast, is it to sterilize by boiling, silk, linen thread, or silkworm gut!) in some such points as asepsis and standardization for too short a period of [illegible] reabsorption be the cause of the failure of catgut in certain cases of Caesarean section to hold firmly together all the parts—especially the muscle layers—of a [illegible] in a puerperal uterus?

In a continuous series of thirty-nine Caesarean sections at the Belfast Maternity Hospital [illegible] septic before admission) the suture material has been (with the exception of a few cases done with [illegible] "iod-aseptic thirty-day" catgut) invariably the thirty-day tanned sterile catgut of Luken. Three cases have been twice "Caesareanised," and one three times. Four cases delivered themselves naturally in subsequent pregnancies (the original Caesarean section having been done in two of them for obstruction to delivery by tumours), yet, up to the present date, we have had no ruptures, nor have we in the repeated Caesarean cases seen any indication of the old "scar." Two methods in the suturing of the uterine wound have been employed: (*a*) Continuous layer suturing by my colleague, Mr. R. J. Johnstone, F.R.C.S.Eng.; and (*b*) interrupted deep and [illegible] sutures placed [illegible] together, with a continuous layer bringing over the peritoneum, so as to bury the interrupted sutures, the plan followed by myself. Like Mr. C. Martin of Birmingham, who presided at the recent discussion, I formerly used silk in gynaecological work, but I gave it up for catgut owing to the trouble it sometimes caused in hysterectomy for fibroids; on two occasions I found, some months after operation, that, owing to the silk ulcerating into the bladder from the uterine stump, it formed the nucleus of a secondary calculus, while I also thought that some obscure cases of sepsis under the same circumstances were also due to the use of silk; at all events, neither of these unpleasant occurrences have since followed the substitution of catgut for silk. What we all want to get is clear scientific as well as clinical evidence to guide us as to whether silk, silkworm, linen thread, or properly prepared aseptic catgut is the proper suture material to use in Caesarean section.

P.S.—In reply to a letter of mine, Dr. Holland tells me in a courteous communication, dated June 18th, 1920, "The fact has come out that the catgut which was used in all the eighteen cases in which rupture of the scar subsequently occurred was chromic."

REFERENCE.

[1] Vide reports in *British Medical Journal*, May 22nd, 1920, and *Lancet*, May 15th, 1920.

THE RELATIONS OF DISEASE AND INJURY.*

BY

A. McKENDRICK, F.R.C.S.Ed., D.P.H.

On analysing the last 500 cases referred for examination under the Workmen's Compensation Act I find that in forty (that is 8 per cent.) of these the main question at issue was the relation of disease to the injuries received.

Only if a relation exists is the employer held liable, and it is easier to assert than to disprove a relation. The cases are certainly medico-legal, but the medical examiner must keep as far away from the legal aspect as possible. The lawyer has a duty to his client, but the duty of the medical examiner is to guide the court and not to influence it. This can only be done by a rigid adherence to known medical facts. It is the elasticity of the medical witnesses' imagination which has merited the phrase "doctors differ." It is the forced admission in court of "might possibly" which gives to the shrewd lawyer his chance to win, altogether apart from the actual merits of the case.

I have heard half a dozen different opinions expressed in court on the same case by six different doctors on this question of relation of disease to an injury. All were agreed that the man was suffering from disease, and all were aware of the alleged accident. One maintained that the disease was directly attributable to accident, another that the disease might not have been caused but had certainly been aggravated by the accident, while a third explained that the accident had acted as a kind of connecting link in the vicious circle. The fourth admitted that the injury "might possibly" have had some bearing on the disease, although he personally did not think so. The fifth said that the effects, if any, of the injury on the disease were negligible, while the sixth maintained that no relation existed between the disease and the injury. What chance had judge or jury, in the face of such conflicting evidence, of coming to a fair and just decision?

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* A paper read before the Edinburgh Pathological Club.

Even a little experience of work in court will suffice to convince anyone of the importance of examining the facts critically from all different points of view before expressing an opinion thereupon. The medical witness is expected to be able to answer questions on the finer points of anatomy, physiology, and pathology. I have been cross-questioned on the subject of fluid pressures. This was in a case where a blood vessel in the testicle was said to have been ruptured as a result of bodily strain. How does the pressure vary in different parts of a system of tubes of variable cross sectional area? If increased rate of flow results in a diminution in pressure, how could a strain which causes increased rate of flow, cause at the same time an increase in the pressure? The medical witness must be prepared to answer such questions.

What is wanted is solid fact, or as near an approach to it as possible. It is no use, when asked a direct question, to answer, "Not in my experience," or "That is my experience." Experience is of value only if tempered with judgement. It is the experience of every medical man that his patient has always some suggestion to offer as to how or why he is suffering from any disease. More especially is this the case where there is tuberculous disease of any bone or joint. It is almost invariably attributed by the patient to some trivial injury. So usual is this that the relation suggested by the patient has come to be accepted as fact by the doctor.

I have watched cases during their course in which such a relation was beyond doubt, but in all the injury was of such a nature as to afford the tubercle bacillus the many weeks of absolutely undisturbed rest necessary for its incubation and growth. In the great majority of cases, however, there is no relation between the injury and the disease, the injury having been far too trivial to afford the tubercle bacillus its necessary prolonged period of absolute rest during its incubation.

Sufficient attention has not been paid to the factor of time. When a tissue is injured there is an effusion, usually of blood, perhaps of serum only. If the circulation is rapidly re-established, none but the most virulent organisms have any chance of establishing themselves. Absorption or resolution is by the lymph stream. Take the slightest form of injury, namely, such slight local exposure to cold as may result from paddling in the water. The circulation is temporarily arrested, there is effusion of serum, and probably diapedesis. Any pyogenic organisms in the blood stream may thus become extravascular, and although the circulation is rapidly re-established the organisms remain outside the blood vessels, and may successfully establish themselves before they are carried away in the more slowly moving lymph stream. If the organisms had been tubercle bacilli they would not have had the slightest chance of development.

The period necessary for the establishment of the acute pyogenic organisms has been short, the effusion has not been of sufficient degree appreciably to increase the pressure locally at the time of exposure, hence no pain. The organisms during their rapid multiplication have not even increased the local pressure before giving off their toxins. Here constitutional disturbance ensues before there is any local evidence of injury or disease. It is this time factor which gives to the two types of inflammation their characteristic clinical signs, and further, it is the time factor which will have to be studied in a consideration of aggravation of existing disease as the result of injury.

In acute inflammations the result of injury there may or may not be an initial period of freedom from pain, but once pain starts it becomes progressively worse. The more rapid the effusion the more severe the pain. How different is the picture presented by tuberculous infection! The injury has been of such a nature as to result in an effusion of such dimensions that its absorption cannot be completed for many weeks. There is bound to be corresponding pain. It may not be very severe, but it is continuous, and after the tuberculous dépôt is fully established and spreading occurs into the neighbouring tissues there is an increase in the severity of the pain. If the lesion be primarily in a joint, there is stiffness, limp, or alteration in the shape of the joint more than actual pain. If, on the other hand, the focus of infection is within the bone near a joint, there is stiffness or limp for a long time, and it is only when the joint cavity is invaded that the characteristic "starting pains at night" are exhibited. The whole process takes months instead of days, or even hours, as may be the case with pyogenic infections. It might be said truly that parents usually seek advice rather because they notice a difference in their offspring than because there has been any complaint of pain or even stiffness.

It might be said that the injuries which predispose to the onset of tuberculous infection are those in which there is either a large effusion or those in which absorption is extremely slow. It is for this reason that tuberculous disease frequently follows sprain of the ankle but seldom follows fracture. In sprain there is a large effusion into the joint cavity, absorption is very slow, and the tubercle bacilli find in the effused material a suitable nidus in which they can grow undisturbed. There is certainly an effusion of blood after fracture at the ankle joint, but this effusion soon becomes permeated by young and vigorous capillaries. Amidst this scene of active reconstruction and repair the slow-growing tubercle bacilli have little if any chance of establishing a dépôt.

A much more difficult problem is presented when we seek to investigate the question of aggravation of existing disease by injury. Here again we must visualize the pathological changes occurring in the tissues and attempt to pair each symptom with its pathological cause.

It is surprising how unobserving most people are with regard to their persons, and how frequently a "lump" which may have existed for years is only discovered by the person after some injury in the neighbourhood; they usually insist that the lump is a result of the accident. In the same way a slight injury may be the means of calling a person's attention to a part which is really the site of disease. This danger of being biassed at the outset by the patient's own statement, in however good faith it may be made, is one of the greatest difficulties in the investigation. The facts must be carefully weighed, and the opinion of the patient disregarded. Here again tuberculous disease looms largely. Fortunately the time factor usually gives information which can be relied upon.

It is reasonable to start with the assumption that an already diseased tissue will be more easily hurt than a healthy tissue. It is reasonable also to infer that the pain experienced will be out of proportion to the violence applied. The pain is practically the same as that which would have been caused by a greater degree of violence upon healthy tissue. It is caused by a local increase in pressure due to effusion. Absorption is slower than normal, and accordingly the pain will continue.

The time of onset of symptoms is another difficulty present, in the question of aggravation of disease by injury. A man is at work, he may be lifting no heavier a weight than he is accustomed to, he has sudden pain in the abdomen, is taken to hospital, and immediate operation shows a ruptured appendix or duodenal ulcer. A workman may have a sudden haemoptysis, fatal or non-fatal, from an aneurysm or from old fibroid phthisis. Whatever he happened to have been doing at the time is most certainly blamed for the occurrence. Such signs or symptoms might easily have made their appearance while the person was at rest in bed. In fact they usually do occur when the patient is doing his daily or nightly routine. To attribute the sign or symptom to strain is quite reasonable from the patient's point of view, but is it right? Is the employer to be held liable for the occurrence, and must he bear the expense of the workman's incapacity or even death? This is a question upon which the medical examiner is called upon to express his opinion.

There are several familiar categories under which the question of relation may be considered.

Disease Caused by Injury.

Cases under this heading are common; the nature of the injury, the time of onset of the symptoms, the course of the disease, and the facts elicited on examination, present a complete clinical picture, which coincide with the known pathological changes which have been taking place in the tissues. The disease in such cases is usually pyogenic in nature and the injury has acted as the predisposing cause.

Disease Aggravated by Injury.

There are many who would say that any disease is certain to be aggravated by any injury, no matter how far removed the site of injury may be from the seat of disease. The argument is only good in so far as it is wellnigh impossible to prove the negative. Cases arising under the Workmen's Compensation Act demand that a more definite relation shall be proved between the injury and existing disease. Sentiment need not enter into the question, because the workman is provided for under the Workmen's Compensation Act in the case of injury, and under the National Insurance Act for disease.

The following is a case of aggravation:

On June 28th, 1912, J. L., a miner aged 50, was lifting a hutch when he slipped and fell on his buttocks; pain was so severe that he could not walk after the accident. He was confined to bed for a fortnight.

On August 4th he said he had never been free from shooting pains in thigh and calf since the accident. X-ray examination showed right sacro-iliac disease. On June 5th, 1913, the *x* ray showed disease to be more advanced, and commencing on the left side.

The company was advised that this was a case of disease aggravated by injury.

The points to be noted in the above case are as follows: (1) Pain at time of accident out of all proportion to the violence; (2) continuance of pain, so severe as to keep him in bed for fourteen days; (3) neuralgic pain in sciatic distribution severe since accident; (4) the man had a previous history of sciatica, off and on, for the previous eighteen months.

In the next case it was attempted to prove that disease had been aggravated by an injury.

In February, 1913, a car conductor says he knocked his testicles against the hand rail on his car. He worked on for two days and had no inconvenience. Three days after the knock the left testicle swelled. There was no pain, and he remained at work for a week. He was then off work for five weeks. He returned to work and worked for a month, then went to the infirmary, where the testicle was removed and proved gummatous. He had suffered from syphilis seven years previously.

The points in this case are: (1) No pain at time of accident; (2) no discoloration at any time; (3) swelling unaccompanied by pain.

The company was advised in this case that the condition was due to disease and that no aggravation by injury could be proved.

Disease Causing Prolongation of Convalescence.

This is fairly common. In fact, it might be said that, other things being equal, the greater the freedom from disease the shorter the convalescence after injury. The following is an extreme case and one in which the company was advised that the prolonged incapacity was attributable to accident:

W. M. was knocked down by a bread van on December 20th, 1916. He was taken to hospital with the right knee much swollen. There was extensive bruising all over the body. There was bleeding from the bowel. On January 30th, 1917, the knee having become septic, the patient was transferred to the surgical ward. He was kept in hospital for nine months. On October 4th, 1917, he had almost totally recovered.

This case seems almost quite straightforward—serious injury, long time for recovery; and it is straightforward from the medical point of view. The insurance company, however, always pays the closest attention to the minute details of the accident. In this case the bread van merely brushed against the man, and he fell rather from fright than from violence. The violence was negligible. In fact, it was not until the knee became septic that he suffered any pain. He stated voluntarily that he was a bleeder; and it is interesting to note, in passing, that his father died from haemophilia. He is unaware of any history of bleeding on the mother's side.

No Relationship between Disease and Injury.

The cases falling under this head are so controversial that only a few which have been decided in court will be quoted.

A. P., a miner, was lifting a derailed hutch on April 26th, 1914. He had no pain, but shortly afterwards, during the course of the day, had pain in the left testicle. A doctor was called in, who advised rest in bed for three weeks. The scrotum was lanced in May.

On June 2nd the case was reported to the insurance company by the doctor as an accident under the Workmen's Compensation Act. The diagnosis was rupture of blood vessel in testicle as the result of strain caused by lifting a hutch. On examination on June 12th the left testicle and epididymis were seen to be swollen and nodular; globus minor especially enlarged; cord thickened and nodular. The seminal vesicles on both sides were enlarged and nodular, worse on the left. Discharge from the urethra on direct smear showed no tubercle bacilli; no gonococci, but many staphylococci.

The points in this case were: (1) No pain at time of alleged accident; (2) doctor opened abscess ten days after alleged accident; (3) full blown tuberculous disease of the whole genital tract forty-seven days after alleged accident. In this case the court decided that the accident as a cause of incapacity had not been proved.

Here is another case of tuberculosis, but of the lungs.

T. H., a miner, in December, 1915, received a blow on the back from a pit prop. He worked on till May, 1916, when he lay off work, and was certified by his doctor as suffering from "heart-strain," as the result of his accident of the previous December. He was off work till November, 1916 (five months).

On September 5th, 1918, after levering up a stone, he spat up a mouthful of blood. He stopped work. On September 27th he complained of ill health, and that he had always been liable to colds in the chest. On examination there was marked evidence of fibroid phthisis; waterfall ribs; mottled roots; small pendent heart; left dome of diaphragm stationary; right apex dull + + +; left apex + +. Clinical signs of fibroid phthisis.

On May 31st, 1919, both domes were poor but equal; otherwise *in statu quo*.

In this case the court decided that the spitting of blood might possibly have been due to exertion, but that the effects of the loss of blood had passed off, and that the man was not entitled to compensation under the Workmen's Compensation Act for his ill health due to fibroid phthisis.

Here is a case of tuberculous disease of a joint.

J. B., aged 15, bruised his right thigh on June 6th, 1918. It was painful at the time, but this soon passed off. On June 13th he had sudden pain in the hip, a doctor was called in, who sent him to hospital.

July 1st, 1918. Starting pains at night; put on extension. On July 16th *x* rays showed tuberculous hip.

May 6th, 1919. Disorganization of head of femur; ankylosis; shortening of limb. Marked tuberculosis of chest.

In this case the court decided that no accident as the cause of incapacity had been proved.

The points in the case were: (1) History of the accident indefinite, the boy giving different accounts to different people; witnesses giving different accounts. (2) Total freedom from pain between alleged accident and onset of pain. (3) Forty days after alleged accident, definite bone destruction.

Many more cases could be quoted of herniae, etc., but sufficient, I think, has been said to show the importance of sticking to hard solid facts. The time factor is one on which the court usually places great weight.

THE London County Council, which has a standing order requiring women employees, with certain exceptions, to resign their appointments on marriage, has agreed that it shall be permissible to employ married women doctors for a period expiring not later than October 31st, 1920, and has instructed a committee to report further on the question of the permanent employment of such women doctors before the end of that period.

ACCORDING to the report of the Special Schools After-care Subcommittee, of 2,282 mentally defectives formerly attending the City of Birmingham's special schools 959 are doing remunerative work. Of these 839 are earning wages which average 28s. 1d. per week; 519 are males earning from 7s. to £5 a week (average 31s. 7d.), and 320 are females, earning from 5s. to 50s. per week (average 22s. 6d.). At ages over 30 only 14 males and 1 female are earning wages.

MEAT DIET IN SPRUE.

BY

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THE following two cases are of interest on account of the manner in which they illustrate the value of a pure meat diet, even in the most advanced and chronic stages of sprue.

CASE I.

A woman, aged 47, married, one child, was admitted to Duff House in 1919. She had been resident in India, with brief intervals, since 1894. She had attacks of sprue-like diarrhoea in 1912 and 1916, each lasting several months, the latter accompanied by soreness of the mouth. In 1918 diarrhoea recurred with large whitish, pasty motions, ulcerated mouth, and emaciation. On milk diet there was some improvement, the buccal ulcers healing and the motions becoming more normal, but no gain in weight followed; the appetite was poor, and flatulence and nausea troublesome. She came to England in February, 1919, but the mouth again became sore, diarrhoea continued, and she grew progressively weaker.

Examination on Admission.

Height 5 ft. 6 in.; weight 5 st. 8¾ lb. The emaciation was extreme. The skin, dry, harsh, and of a yellowish tint, hung in loose folds or formed deep wrinkles as in advanced old age. The mucosae were pale. The tongue was small, pointed, fissured, and of a reddish-yellow colour, showing patches denuded of epithelium which were tender, mastication of hot, acid, or pungent foods causing acute pain. The abdomen was wrinkled and of a doughy consistency. Blood pressure 85 mm. Hg. Blood examination showed haemoglobin 70 per cent.; red corpuscles 1,600,000 and white 2,400 per c.mm.; colour index 2.2. In a stained blood film the red corpuscles were paler than normal and showed poikilocytosis.

The gastric contents, one hour after a test breakfast, gave a total acidity of 36, with 0.05 per cent. of active chlorides. Free HCl was present. The digestion of fibrin was hastened by the addition of 0.4 per cent. HCl. X-ray examination after a barium meal showed that the stomach, slightly hypotonic and elongated, exhibited active peristalsis, and emptied in four hours. There was general delay in the colon, which was dilated throughout its length.

There were, as a rule, two or three motions daily; occasionally more. The stools varied in colour from yellowish-brown to slate grey, being sometimes pultaceous and bulky; at other times liquid or semi-liquid. The average total weight of faeces was about 300 grams a day. The reaction was usually acid, but occasionally alkaline. Microscopically abundant fat droplets and fatty acid crystals were visible. Mr. A. J. Leigh, B.Sc., tested the degree of absorption of fat and protein by analysis of the faeces for three days, during which a standard diet (Schmidt's) was taken. Both protein and fat absorption were found to be deficient, 22 per cent. of food protein and 51 per cent. of food fat appearing in the faeces; the percentage of fat in the dried faeces was 63. The tryptic value of the faeces was somewhat reduced, the figure obtained being 17 instead of the normal 25. Bacteriological examination of the stools showed the presence of *B. lactis aerogenes* in large numbers, *B. coli*, and a few streptococcal chains.

Treatment.

The patient was kept at rest in bed, and, on completion of the preliminary investigations was given a strict meat diet; 1 lb. 9 oz. of beef was taken daily, the meat being minced, sieved, pressed into cakes, lightly cooked with 2 oz. of suet, and taken in five meals of 5 oz. each. After a few days the quantity was increased to 1 lb. 14 oz., given in five meals of 6 oz. Hot water was taken three times daily between meals; tea in the early morning and coffee at 4 p.m., with saccharin if desired, but no milk, cream, or sugar. This diet was subsequently modified as follows:

2nd week of diet.—½ lb. of strawberries with cream daily, and cold roast beef substituted for one feed of meat cakes.

3rd week.—5 oz. fat mutton chop and 1 oz. of sweetbread substituted for equivalent quantities of beef, beef given cold at two meals, minced at one, and in cakes with clear gravy at another; two poached eggs and ½ lb. of strawberries with cream added.

5th week.—Egg flip made with two eggs given three times daily, and ½ lb. of strawberries added.

6th week.—Two slices of bread and butter, and strawberries increased to 1½ lb. daily.

7th week.—Two rusks and butter added. Cold beef 8 oz. substituted for remaining feed of beef cakes.

8th week.—On exacerbation of symptoms all starchy foods, that is, bread, toast and rusks, omitted, improvement following. An additional egg given.

9th week.—Raspberries, grapes, pears, or orange juice substituted for strawberries when latter not available.

10th week.—Fruit omitted on account of diarrhoea.

11th to 13th week.—Eight bananas added gradually.

15th week.—4 oz. of fish with melted butter added at two meals, and a Callard's diabetic biscuit at tea.

16th week.—Cold ham substituted for mince at one meal, and two diabetic biscuits given at tea.

17th week.—Two bananas added.

18th week.—A little starch given again, as rusks and butter at tea. Meat and eggs at last meal reduced to 3 oz. and to one respectively.

19th week.—Number of meals reduced to four daily.

20th week.—2 oz. of bread substituted for rusks at tea, and milk pudding at lunch.

21st week.—2 oz. of toast added at breakfast, and milk pudding with evening meal. One egg flip omitted.

22nd week.—A diet having a heat value of about 2,600 calories—for example:

Breakfast.—Porridge with cream; egg or fish and bacon, toast and butter, tea.

Egg flip and coffee at 12 o'clock.

Lunch.—Joint, sweetbread, or bird, potato, greens; milk, steamed or suet pudding and baked apple with cream; toast and butter; two bananas, water or soda water.

Tea.—Bread-and-butter, biscuits, sponge-cake, tea and cream.

Dinner.—Similar to lunch, but with vegetable or milk soup, fish and jelly added.

The dietetic treatment was supplemented by intestinal lavage, which was employed on alternate days during the first two months of treatment, and proved of value in relieving the irritation of the lower bowel. In the later stages a course of massage and the application of a weak faradic current helped to restore the muscular tone.

Medicinal treatment was for the most part symptomatic only with the exception of a course of yellow santonin, which was given at the start in doses of 5 grains twice daily as recommended by Begg,[1] olive oil being employed as a vehicle. In this case no improvement appeared during its use for four weeks, and it was then omitted. Excessive diarrhoea was controlled by means of opium and bismuth. Flatulent distension, an especially distressing symptom, was relieved by the application of hot packs to the abdomen and by a carminative mixture. At an early period threatened collapse was treated by the addition of ½ oz. of brandy to each egg flip.

Progress.

During the first few weeks the weight dropped to 5 st. 2¾ lb. Weakness and prostration were extreme, and two weeks after admission a short attack of tetany occurred, the hands and arms being involved. The institution of the pure meat diet was shortly followed by a rally. The weekly blood tests first showed an improvement, then the stools; the weight began to rise and the superficial fat to return. Physical and mental energy increased, the tongue lost its soreness, and the gastro-intestinal symptoms subsided. The improvement was maintained continuously with the exception of a few temporary relapses, the most severe of which followed the premature addition of starch food to the diet, and cleared up on its omission.

The diminution in the bulk of the stools was striking. The average weight of faeces a day in the second week after admission was 293 grams, about 2,000 calories of food being taken. The daily average in the sixth week had risen to 603 grams. At this time the amount of food taken was 3,600 calories, and was not well borne, owing to the premature addition of starches which were omitted at the end of the week; the quantity of faeces immediately fell to 370 grams per day. These figures may be contrasted with those of three months later, in the last four weeks of the patient's stay, when the average total daily weight of the faeces was 89 grams, rather below the normal figure for her size, although over 4,000 calories of food were being taken.

On leaving Duff House after a stay of five months there were no symptoms. The patient looked healthy and well-nourished, and both mental and physical vigour were fully restored. The weight had risen from 5 st. 8¾ lb. to 8 st. 7½ lb., an increase of 2 st. 12¾ lb. The haemoglobin content of the blood had risen to 78 per cent., the red corpuscles numbered 4,500,000, and the white corpuscles 8,000. The bowels were opened naturally and regularly once a day, and an approximately normal diet was taken.

CASE II.

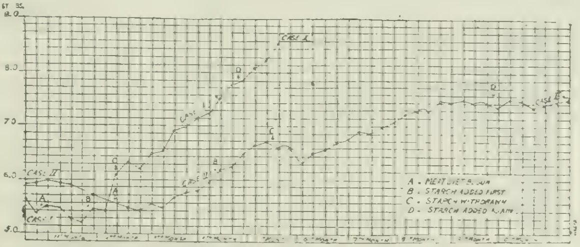
A woman, unmarried, aged 38, when admitted, complained of a "drawing" sensation in the upper limbs, headache, lethargy, fatigue, tired feelings across the middle and discomfort in lower abdomen, sore tongue, irregular action of the bowels, and amenorrhoea. She had had a tendency to pass large pale stools since childhood. Between 15 and 17 she suffered from persistently sore tongue. At the age of 19 (1898) she had a slight attack of malaria in the West Indies. In 1907–9 she suffered from flatulence, discomfort in the lower abdomen, irregularity of bowels and amenorrhoea. In 1909 a diagnosis was made of colitis and anaemia, with a suggestion of Hirschsprung's disease; she was treated by restriction of fats, and the bowels became regular and amenorrhoea was less, but anaemia persisted. Pyorrhoea alveolaris was found, and carious teeth extracted. Streptococci were cultivated from the stools and a vaccine given. Anaemia gradually disappeared. At this time she weighed 8 st. 3 lb., and she describes herself as fat and well. In 1916 there was recrudescence of gastro-intestinal symptoms, with loss of weight, sore tongue, and amenorrhoea. Contraction of the hands on one occasion. Treatment by frequent doses of calomel and diet of peptonized milk was of no avail, and her weight fell to 6 st. 2 lb. Two attacks of tetany during March, 1917, recurring in July and October.

Examination on Admission (1917).

Weight 5 st. 12½ lb. Lower teeth deficient. Mucous membrane of tongue and mouth red and sore with a number of irregular ulcers. Blood 64 per cent. haemoglobin, 3,960,000 red and 2,200 white cells per c.mm., giving a colour index of 0.7. Differential leucocyte count: polymorphonuclears 82 per cent., small lymphocytes 13.8 per cent., large lymphocytes 2.5 per cent., eosinophils 1.5 per cent. and basophils 0.2 per cent. The gastric contents one hour after test meals showed low total acidity with deficiency of active chlorides. A trace of free HCl present on each occasion. Digestion of fibrin not helped by addition of dilute HCl. The stomach was able to produce more acid rapidly, for a sample taken four hours after a meal showed a total acidity of 105 with 0.16 per cent. of active chlorides. Microscopical examination showed an excess of yeast and no sarcinae.

X-ray examination after a barium meal showed that the stomach was hypertonic, and that it emptied in four hours. There was some ileal stasis, chyme being present in the terminal ileum six hours after the stomach was empty. The terminal part of the ileum was seen to enter the caecum high up, and appeared to be curled up in an unusual way. The base of the appendix was dilated, but the rest of the appendix was not penetrated by the barium. The colon was large, but not enormous, nor especially sluggish; segmentation was good. The rectum was congested and irritable, but no definite lesion or anal fissure could be seen.

There were usually two or three motions daily, occasionally more, the total weight averaging about 245 grams a day. The stools were light in colour, liquid or semi-liquid, and acid. The absorption of protein was diminished (14 per cent. lost). The absorption of fat was also deficient (20 per cent. appearing in the motions). Diastase and trypsin were present in normal quantity. The iodoform and methylene blue capsule tests for absence of pancreatic juice were negative. The diastatic reaction of the urine, which is said to be increased in active disease of the pancreas, was normal. The proportion of ethereal to organic sulphates was only slightly above the normal. The amount of nitrogen in the urine was small—7 grams in twenty-four hours. The uric acid was normal—0.6 gram. Indican was present on one occasion only. Bacteriological examination of the faeces showed a predominance of Gram-negative organisms. Of the Gram-positive group there were a few streptococcal chains and very scanty delicate rods which might be *B. bifidus*; monilia or saccharomyces were not seen. Plate cultures gave numerous colonies of the *B. coli* group.



Treatment.

During the preliminary investigations a light non-irritating diet was given, and symptoms relieved as far as possible. Various methods of treatment, including lavage of the stomach and intestines, were then tried for some weeks without success. In the second month a pure meat diet was instituted, beef cakes, prepared as in Case I, being employed. The food value was 1,050 calories a day at first, rising in a fortnight to 1,750. A mixture containing bismuth and opium was taken, at first every six hours, later once or twice daily. The attacks of tetany were controlled by a bromide and valerian mixture and by intestinal lavage.

Progress.

With the introduction of an exclusive meat diet definite improvement began. The severer attacks of tetany ceased. The rectal soreness disappeared rapidly, and the condition of the mouth gradually became normal. The motions became less bulky, and at times less fluid. The haemoglobin content of the blood rose and the weight increased. The further progress is described in the following brief monthly notes:

4th month.—Mouth better. Some indigestion, with at times slight stiffness of arms; latter relieved by enema or by sodium bromide. Bismuth and opium mixture omitted; no diarrhoea. Blood 85 per cent. haemoglobin, red corpuscles 4,110,000 per c.mm. Getting up daily. Weight increasing. Some meat replaced by bacon. Some carbohydrate gradually added to diet, also coffee and cream.

5th month.—Carbohydrate continued. Tendency to sore tongue and later some soreness of rectum; motions more frequent. Lost 1½ lb. in one week. On stopping carbohydrate, coffee, and cream, improvement at once followed. Some diabetic bread and butter allowed.

6th month.—All beef cake gradually replaced by beef. Two oranges daily. Good progress. Still much mucus in stools.

7th month.—Stronger. Walked one mile daily. Weight 7 st. Blood 94 per cent. haemoglobin; red corpuscles 4,830,000 per c.mm. Less mucus in stools. General character of motions improving. Oranges replaced by strawberries. Egg tried but discontinued, as indigestion followed.

8th month.—Test meals showed normal gastric juice. X rays showed that ileum and caecum were moderately mobile. Still ileal stasis. Rate of passage through colon normal. By end of month formed motions began to appear, but with some mucus.

9th month.—Starch again (two biscuits for tea). Intestinal douches omitted. Grapes given instead of strawberries. Some meat replaced by fish. Faecal analysis showed normal assimilation of fat and protein.

10th month.—General improvement continued. Weight 7st. 6lb. Mucus often absent from stools, which were otherwise normal.

11th month.—Continued improvement. Daily value of food about 2,250 calories. Weight still increasing. Recurrence of menstruation after amenorrhoea of eleven months' duration. On leaving Duff House at the end of this month there were no symptoms and the bowels were opened once daily. The average weight of motions had fallen from 250 to 100 grams a day, a normal amount for her size. The weight was 7 st. 6¼ lb., representing a gain of 1 st. 8¼ lb. since admission.

In Case II symptoms suggestive of sprue had been observed in England at intervals from childhood onward, so that a diagnosis of coeliac disease dating from infancy also suggests itself. However, the clinical resemblance between the two diseases, the possibility, indeed, of their identity as suggested by Still,[2] and the occurrence of sprue in other cases in which the patient has not been abroad, justify, in my opinion, the inclusion of the two cases in the same category.

A circumstance worthy of note is the occurrence in the course of each case of tetany, a complication recently described by Surgeon Captain Bassett-Smith, R.N.

In both patients a milk diet had previously failed to cure the disease. The order in which foods were introduced in the diet as progress was made was beef, other meats, fruit (strawberries if available), cream, eggs (if well borne), fish, diabetic biscuits and bread, starchy foods. In both patients the premature addition of carbohydrates, other than those in fruit, was followed by relapse.

Valuable as a pure meat diet has proved, in certain cases its use is rendered difficult or even impossible by the patient's distaste for the beef cakes, or for much meat in any form. Here temperament will often prove the decisive factor, one individual overcoming the aversion by courage and force of character, another proving incapable of the necessary mental effort. Sometimes continued persuasion and infinite patience on the part of nurse and physician are needed.

Manson-Bahr[4] and many other observers have testified to the value of a pure meat diet in certain cases of sprue, but I venture to believe that the extreme initial emaciation and exhaustion of these two patients, together with the steady progress and complete recovery, are sufficiently remarkable to prove of interest to those who may be called upon to treat this, at times, very intractable condition.

I am indebted to Dr. E. I. Spriggs, under whose supervising care the cases were, for permission to publish them. Case I was in my immediate charge throughout. The account of Case II is derived from notes taken by Dr. Pickering, Dr. Long, and Dr. Mary Fergusson.

REFERENCES.

[1] Begg, *Lancet*, 1898, vol. i, p. 185. [2] Still, Ibid., August, 1918, p. 165. [3] Bassett-Smith, Ibid., February, 1919, p. 178. [4] Manson-Bahr, Report on Researches on Sprue in Ceylon, Cambridge, 1915, p. 101.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE PULMONARY OEDEMA OR "ACUTE SUFFOCATIVE CATARRH."

In view of the cases of the above condition recently described in the JOURNAL, the two following cases may be of interest:

Case I.—I was called at 5 a.m. to attend a domestic servant, aged about 20, who had previously been quite healthy. She had had much hard work in attending to an old lady suffering from cancer, whose death the day before had been a great shock to her. She stated that she had wakened suddenly with a feeling of suffocation. I found her quite conscious, with flushed face, rapid laboured respiration, pulse about 120; a pale pink froth was welling up into the mouth. Numerous crepitations were heard all over the chest on auscultation. She was able to cough a little, but brought up froth only, no fluid. She doubtless had oedema of the lungs, but the condition was unknown to me at the time. I concluded that the heart had suddenly begun to fail, owing probably to the strain through which she had been passing. With a little difficulty the patient could swallow fluid, and brandy was given by the mouth.

Strychnine gr. [illegible] and digitalin gr. [illegible] were given hypodermically, and camphor in olive oil was administered later in the day. As the condition did not improve pituitrin 1 c.cm. was injected subcutaneously, but without any appreciable result. The patient's condition remained about the same for more than thirty-six hours, when she became unconscious and died. Neither morphine nor atropine was administered.

[illegible] I had been attending a married woman of fifty since December 24th, 1918, for symptoms of nervous exhaustion, which I attributed partly to the menopause, and partly to overwork. She had severe headaches, sleeplessness, anorexia, tremors, and coldness of the extremities; the reflexes were increased. Her heart sounds were normal, with the exception of a slight accentuation of the second sound in the aortic area. There was no increase in cardiac dullness. The radial arteries were slightly thickened. The urine was free from albumin and sugar. She got up much better after a week's rest. Shortly afterwards she developed a slight catarrh of the upper respiratory passages, with slight expectoration. So far as auscultation could show this had cleared by January 7th. On January 18th she had ventured out for the first time, had told her husband that she was feeling "grand," and had had a hearty tea, when at 8.30 p.m. she suddenly remarked that she was dying, and her son said he noticed a "rattle in her throat." When I arrived, at 9 p.m., she was unconscious and her face was ashen-grey. Auscultation revealed numerous moist sounds, fine and coarse, on both sides of the chest, and on turning her on her side blood-stained fluid not froth poured in a steady stream on to the floor, coming from mouth and nose. The heart was beating regularly and strongly at 110 without any modification of the sounds, and gave the impression of a normal heart fighting against obstruction. The patient's position was altered, to allow of free drainage from the lungs. I hesitated to give morphine to an unconscious woman, but gave atropine sulphate gr. $\frac{1}{50}$ hypodermically, kept her warm, and continued the effort to empty the lungs. A second dose of atropine sulphate gr. $\frac{1}{100}$ was given half an hour later. Occasional auscultation showed that the lungs were rapidly becoming waterlogged. The heart-beats became more frequent, then irregular, and the patient died at 10 p.m., just an hour and a half from the onset of the symptoms. A good deal of the fluid was lost, but I collected about two pints, unfortunately in an unsterilized vessel.

Dr. P. L. Sutherland reported it to be a highly albuminous fluid of specific gravity 1016. The centrifuged deposit consisted chiefly of red blood cells, and contained many Gram-negative bacilli and a few diplococci. A typical *B. coli* was obtained by culture.

Remarks.

1. There was an element of nervous exhaustion in both cases.

2. The heart did not strike one as being primarily at fault in the second case, and there were no adequate grounds to say that the condition had a cardiac origin in the first.

3. Case 1 occurred in a young woman in whom sclerotic changes were unlikely to have taken place.

The condition is described in Powell and Hartley's *Diseases of the Lungs and Pleurae*, fifth edition, p. 316.

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Alvaston, Derby.

FATAL HEPATIC CIRRHOSIS IN A YOUNG MAN.

W. H., a man aged 21, had served some years in the army. His parents stated that he had always had good health and had not drunk to excess. He had not suffered from indigestion. He awoke at 2.30 a.m. on July 1st with severe pain in the left side of the abdomen. He immediately vomited bright red blood. At noon on the same day he had another attack of haematemesis, and was brought to hospital during the afternoon. At the casualty entrance he had a third severe attack of haematemesis.

When I saw him he was very pale and collapsed; the pulse was 110 and thready, the temperature 98°. He vomited 12 oz. of bright red blood at 4 p.m., had another slight attack at 8 p.m., and died at 3.30 a.m. on July 2nd after only twenty-five hours' illness.

I performed a *post-mortem* examination and found the liver to be in a state of advanced atrophic cirrhosis. It was pale, shrunken, had the typical "hobnail" appearance, and only weighed 28 oz. The stomach was full of blood. The cardiac end was eroded in places, but there was no definite ulcer. The spleen was enlarged and congested, weighing 17 oz. Both lungs showed old tuberculous scarring, but all other organs appeared normal.

H. BROOKMAN, M.R.C.S., L.R.C.P.

County Hospital, Bedford.

The first Latin-American Odontological Congress will be held in September next at Montevideo under the auspices of Dr. Balthazar Brum, President of the Republic of Uruguay.

Reports of Societies.

ACUTE INTESTINAL OBSTRUCTION.

A CLINICAL MEETING of the Oxford and Reading Branch of the British Medical Association was held at Newbury on July 6th. Sir JOSEPH SKEVINGTON (Windsor) showed the head of a radius which he had removed with good result: slight lessening of pronation and of extension of the elbow followed. He also read an account of six cases of gastric ulcer operated upon; in one case seven ulcers were present, of which he removed the largest—perfect recovery followed.

Mr. J. L. JOYCE, in a paper on acute intestinal obstruction, said that the mortality of acute appendicitis after operation had been reduced during the last twenty years from 50 per cent. to as low as 2 per cent.; the mortality rate from acute intestinal obstruction, unfortunately, had not shown a corresponding reduction, and as late as 1915 had been quoted as 45.7 in a series of 276 cases coming to operation. Among fifteen cases on which he had recently operated, six, or 40 per cent., had died. Acute intestinal obstruction would always have a mortality, the further reduction of which by improvement of operative technique was doubtful; it was certain, however, that a very large reduction could be obtained by earlier diagnosis and earlier operation.

The six fatal cases came to operation on the average ninety-six hours after the onset of their symptoms; the corresponding average in the nine which recovered was forty-seven hours. The average interval in all the cases of the series between onset of illness and operation was much too long (seventy-three hours).

The speaker believed that only about 50 per cent. of cases of acute intestinal obstruction were characterized by the sudden agonizing pain, shock, and vomiting described dogmatically in the textbooks. Such cases were usually diagnosed at once and operated on early. In about half the cases the pain, though sudden in onset, was not very severe, and had remissions; vomiting might be infrequent at first, and shock might at that stage be entirely absent. To wait for faecal vomiting was to court disaster; too often the patient's life was sacrificed because he did not seem ill—his temperature and pulse were normal, his pain was better, and vomiting for the time had ceased. Physical signs in early cases were often absent. Until a definite diagnosis had been made or operation decided on, morphine should never on any account be given.

Organized Treatment of Crippled Children.

Mr. G. R. GIRDLESTONE read a paper on the organization of the treatment of crippled children, in which he said the main types concerned were surgical tuberculosis; paralyses, especially infantile paralysis; deformity, congenital or acquired; and, lastly, various injuries or diseases of bones, joints, nerves, or muscles. The aim was (1) to provide special hospitals for treatment; (2) to organize after-care for cases discharged from hospital; (3) to ensure that by provision of effective treatment at the earliest possible moment the children might be prevented from becoming cripples at all. In conjunction with treatment it was essential to provide general education and instruction in handicrafts. Both in the case of tuberculous joints and infantile paralysis much more could be done by early preventive treatment than by later corrective measures. Mr. Girdlestone described the organization of hospital schools, such as that at Baschurch, and said that in addition to hospital schools for each territorial area, the establishment of a number of clinics throughout the area was required, chiefly for the purpose of after-care. It was important to secure the co-operation of general practitioners with the staff of the hospitals. Surgical tuberculosis required the same lines of treatment, the same type of hospital, and the same organization of after-care as the other varieties of crippled conditions; if it were not grouped together with them a duplication of every part of the organization would be required.

Mr. VICTOR BONNEY gave an instructive address on "Modern methods in the treatment of difficult labour," in which he said that midwifery would only be improved when in its teaching due emphasis was given to the surgical nature of labour. The speaker discussed the causation of puerperal sepsis, and expressed the opinion that in the interest of the mother resort should more often be made to Caesarean section in certain cases of difficult labour.

Reviews.

ANIMAL EXPERIMENTS AND SURGERY.

MR. WALTER G. SPENCER'S three Hunterian lectures, February, 1920, have been published by the University of London Press.[1] They are full of good reading: "pure crude fact, secreted from man's life"; veritable and verified history, freed from the alloy of theory. It was a happy thought to give to surgeons these chapters of the history of surgical practice. So long as the Royal College of Surgeons has the dead weight of the Hunterian oration, the deposit of more than a hundred funeral sermons, for which it is responsible, it will always be glad to hear about other famous men who were not John Hunter. If only the Hunterian orators might be allowed to praise and commemorate a different man each year—Paré, Larrey, Bell, Astley Cooper, Simpson, Billroth, Paget, Lister, Horsley, and so forth—what a pleasant change it would be for all of us!

The subjects of Mr. Spencer's three lectures are: (1) An account, in historical sequence, of some of the experiments which have had a principal influence upon the development of surgery. (2) Experiments which have led to the application of surgery to the organs and organized structures of the deeper parts of the body. (3) Improvements in surgery.

Perhaps the first and second lectures, which cover a vast extent of ground, are better reading than the third, which links up surgery and bacteriology; but all three are good. The accounts of Galen's work and of the rush of the new learning in the Italian Renaissance, and of the physiological and pathological experiments published in the early *Transactions* of the Royal Society, are especially good. It is strange how Galen stands out, immeasurably ahead of his time, in everlasting isolation; he always has that effect; you find that nobody catches him up till you are at Vesalius. Another figure that stands out is that of Sir Astley Cooper, whose list of subjects in 1836 for his triennial prize at Guy's Hospital is a fine prophecy of the work waiting to be done.

Mr. Spencer scores two good points which must be noted here. He reminds us that these experiments have not only improved surgery; they have also improved medical treatment, and thus "have rendered unnecessary much of what was indifferent surgical treatment." And he criticizes very properly that clause of the Act of 1876 which forbids the performance of an experiment on an animal for the purpose of attaining manual skill. "At any rate, as far as I personally am concerned, the manual skill I gained whilst pursuing experiments on animals has been to me most valuable." He gives unhappy instances known to him of human lives endangered or lost for want of that manual skill which could have been acquired by experiment on animals under profound anaesthesia. It is a far cry from him to an introductory address by Sir James Paget in 1846 at St. Bartholomew's on the responsibilities of practice:

> All is permitted to depend upon the skill of one. Conceive that one yourself: what would be your remorse if, when in their confusion and distress they look to you, you feel helpless as themselves, utterly unworthy of the confidence with which they still lean on you; your hand paralysed by the fear of ignorance, your mind confused in that half-knowledge, whose glimmerings only show that more skill might save the dying man. . . .

Certainly, the young surgeon's first tracheotomy, his first ligature of a large artery in continuity, his first iridectomy, would be better done if he had already done them on animals. It would not give a moment's pain to the animals; and this clause of the Act of 1876 ought to have been relaxed or set aside long ago.

In his third lecture Mr. Spencer makes a brave attempt to cover all the ground that has been gained for surgery in the past fifty years. It is too much for him; the lecture is hardly more than a series of notes for subsequent lectures; we hope that he will give them. He has made us want more. Let him begin again, with Pasteur, and let him describe the working out of Pasteur's discoveries up to the years of the war and in the war. We are too ready to separate, in talk, medicine and surgery. It is a mere professional distinction, a matter of qualifications and appointments and lines of practice. The facts of disease refuse to admit or to recognize this distinction; our familiar talk of "medical cases" and "surgical cases" is rather childish; and some of us, perhaps, are hindered by it from finding the way to "see things steadily, and see them whole."

OTOLOGY.

IT is unfortunate that the fifth edition of such an important work as Dr. DENCH's textbook of *Diseases of the Ear*[2] should have been published without bringing it thoroughly up to date. The portions which have been adequately revised or added afresh, such as the section which deals with the labyrinth, are excellent, but it might reasonably have been hoped that so distinguished an otologist would have presented more fully in a book of this size the results and conclusions of many years' experience. He states frankly in the preface, however, that the main body of the text has not been altered. In the preface to the first edition Dr. Dench wrote as follows: "In advocating operative procedures upon the middle ear and in devoting much space to the subject of middle-ear operations I am aware that I shall not have the support of many distinguished colleagues." Indeed, a large section of the book is devoted to intratympanic operations, which, however, are now seldom performed, though it must be assumed that Dr. Dench himself still practises them. For purposes of reference this is perhaps the most complete account of the subject to be found in a textbook, and the author clearly writes from personal experience. On the other hand, considerably more space is devoted to the manipulations required to remove the incus during the operation of ossiculectomy than is given to the entire treatment of cerebellar abscess, and it must be confessed that a lack of proportion is shown in apportioning space to each subject in accordance with its importance. Functional examination of the ear is well and fully described, and the importance of the subject, which is apt to be neglected, is insisted on, for it forms the basis of accurate diagnosis in many cases.

The section dealing with otosclerosis is obsolete and arouses feelings of regret that the author has not been able to rewrite those parts of the book which deal with conditions upon which modern pathological methods have thrown so much light; by failing to do so the writer has done an injustice to himself and to his book.

It is interesting to note that the author has never reopened the post-aural wound after a radical mastoid operation in order to line the cavity with Thiersch grafts; he advocates primary skin grafting at the time of the operation. The technique of grafting is fairly described, but the desirability of bringing the end of the graft out through the posterior part of the meatus is not mentioned.

The book is described as a textbook for practitioners and students of medicine. Should an already overburdened student have the courage and endurance to attack so large a volume on a special subject he might acquire a headache, but the work deals well with the more medical aspect of otology and with its relations to general medicine, so that it should be useful to the practitioner or the physician. Finally, the book, although by no means up to date, contains a vast amount that is of permanent worth and a wealth of detail that it would be hard to find elsewhere, so that it should form a valuable book of reference for the otologist.

COLLOIDS IN BIOLOGY AND MEDICINE.

THE elucidation of problems in physiology and biology by the application thereto of physico-chemical laws has made great progress in the present century. It is illustrated on every page of Professor Bayliss's important *Principles of*

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[1] *Animal Experiments and Surgery.* Hunterian lectures delivered at the Royal College of Surgeons of England on February 13th, 16th, and 18th, 1920. By Walter G. Spencer, M.S., F.R.C.S. London: University of London Press, Ltd. 1920. (Cr. 8vo, pp. 185. 6s. net.)

[2] *Diseases of the Ear. A Textbook for Practitioners and Students of Medicine.* By Edward Bradford Dench, Ph B., M.D., F.A.C.S. Fifth edition, revised and enlarged. New York and London: D. Appleton and Company. 1919. (Med. 8vo, pp. xxvi + 740; 172 figures; 16 plates. 30s. net.)

General Physiology. The study of colloid chemistry has advanced no less successfully during the same period, and the student now has half a dozen good handbooks in which he may learn about a subject that at the end of last century had barely grown out of original papers buried in scientific periodicals. It is true that colloid chemistry thus blossomed into books mainly for the reason that the technical chemist and practical manufacturer found that there was money in its study and applications. But the physiologist and biologist have profited greatly by the increased knowledge of the physics and chemistry thus gained and generalized; and Professor **BULLOWA**'s translation of the second edition of Professor **BECHHOLD**'s book, *Colloids in Biology and Medicine*,[3] provides the scientific reader with an excellent summary of the applications of colloid chemistry to the phenomena of these sciences.

The book is divided into four parts. The first is a general introduction to the study of colloids; the second details the physical chemistry of the carbohydrates, proteins, and fats under the comprehensive title "Biocolloids," with special chapters on enzymes and immunity reactions. The organism as a colloid system is discussed in the third part; the fourth part has a long chapter on the applications of colloid chemistry to toxicology and pharmacology. The translator has done his work well, and has added notes correcting or extending the original where necessary.

Professor Bechhold gives his readers an account of colloid chemistry that is fairly full, intelligible, and well documented so far as the German literature goes. He is not always successful in emphasizing the continuity of nature in physical chemistry. Nature, as is well known, *nihil per saltum facit*: Professor Bechhold is too much for arbitrary divisions and hard and sharp lines when writing of crystalloids, colloids, sols, and gels. It is not always made sufficiently clear to the reader that all these things pass one into the other in a series of unbroken continuity. In the chapter dealing with foods and condiments the difficulty of making palatable bread from potatoes is noted; the potato lacks gluten, and gluten is essential in bread making, because it is needed to form the framework of the loaf and to contain in its pores the starch grains shattered in the rising of the dough. During the war, we are told, an attempt was made to remedy this lack of gluten by adding to the dough blood or casein dissolved in ammonium carbonate.

TUBERCULOSIS AND PUBLIC HEALTH.

Tuberculosis and Public Health,[4] by Dr. **HYSLOP THOMSON**, is a first-rate handbook for medical men and intelligent laymen who wish to have a clear statement of the aims and rationale of antituberculosis schemes put clearly before them. The early chapters deal with tuberculosis and the health-index of communities, the types of disease and the causes of tuberculosis, and its connexion with housing and with milk. The methods of preventing its spread are indicated, and the importance of early diagnosis in tuberculosis of the lungs is adequately emphasized. The last third of the volume details the current schemes of treatment and control, with due exhibition of the points wherein our modern methods fall short of the ideal; the last chapter points out the economic aspects of tuberculosis, and suggests improvements in the views that now guide administrators who have the matter under their control.

The author is particularly well qualified to write on the question with which this volume deals, and has had no little experience in the treatment of tuberculosis and in its management from the point of view of public health. He writes clearly and concisely, and takes broad views. The book may be cordially recommended to the attention of those interested or influential in all branches of the public control of tuberculosis, as a sound guide in the matters upon which they must come to decisions.

NOTES ON BOOKS.

UNDER the title, *The Diary of a Police Surgeon*,[5] Dr. **GRAHAM GRANT** has collected some twenty-eight short stories of real life in the East End of London in which he has taken part. Many of the cases have attained celebrity in the Central Criminal Court; others were merely of local or transitory interest. But whether gruesome or comic, humorous or pathetic, the stories are all rendered attractive by the author's sympathetic handling, by the lightness of his touch, and by the raciness of his style. To us "The Vendetta" seemed one of the most entertaining, wherein an Italian, wanted in this country for murder, was arrested on landing in Italy on the charge of smuggling tobacco, and sentenced to fifteen years' penal servitude. And when Mrs. Grant went to condole with the fat, coarse, newly made widow, vendor of fruit, whose flirtations in her youth had led to the vendetta, she was met with the remark, "Italian women expect these things. I have a very nice pineapple to sell!" We sympathize with Dr. Grant's disappointment when, anxious to take part in a really good fight, he rushed to the assistance of a policeman in the clutches of a burly ruffian. The assailant, instead of meeting the new attack, merely remarked: "Blimey, it's the doctor," and suffered himself to be led away. There are amusing anecdotes about policemen, such as "Scotty," the twenty-stone policeman, who could run faster than most small boys. Scotty possessed not only a large body and a large heart, but also a large thirst, which led to his undoing; in celebrating his promotion as sergeant he was caught coming out of a public-house at 5 a.m.! Dr. Grant makes many interesting and acute observations on such matters as tests for drunkenness, note-taking when called to cases of supposed murder, and so on. And he is not above describing with gusto instances in which he has been caught napping in diagnosis. He is very proud of his Scottish descent and stubborn pertinacity. Dr. Grant's account of the famous Sidney Street siege perhaps hardly conveys the intensity of the excitement aroused at the time; and he does not even mention the presence at the siege of the Home Secretary of the day, Mr. Winston Churchill. To all readers of short stories we commend this little book, particularly if the reader be a doctor. If he is a layman, we must warn him to be prepared for gruesome details of murder wounds. But the human interest, and the presentation of life as it is in the remote East of London, are irresistible.

The fact that **RAKHALDAS GHOSH**'s *Treatise on Materia Medica and Therapeutics*[6] has reached an eighth edition evidences the value and popularity of this very able and remarkable compendium of the scientific and technical aspects of medicinal substances and their actions and uses. This edition is practically a reprint of the sixth edition of 1915, revised by the same editors, which was adapted to the *British Pharmacopoeia* of 1914. In it a fresh and more scientific arrangement of the subject matter of the book was made and new chapters on vaccine and serum therapeutics and organo-therapy were added. These alterations and additions have been maintained, and efforts have been made to bring this edition up to date. Seventeen years have elapsed since this book was first published, and, although medical science and treatment have undergone great—almost revolutionary—changes during these years, it has been found possible to preserve the original system of exposition which gives the volume its value as a work of reference probably unsurpassed for its size and cost in this or any other language. It will be found most helpful both by students and practitioners, and its systematic arrangement and an excellent index render its contents, as we have repeatedly found, easy of access.

A SECOND edition of the *Index Generalis* of universities, university colleges, libraries, scientific institutes, museums, observatories, learned societies, etc., is being prepared. Particulars are accepted from all nationalities, and should be addressed to Professor R. de Montessus de Ballore, 56, Rue de Vaugirard, Paris (VI).

The seventh edition of Hutchison and Rainy's *Clinical Methods* and the fifth edition of Comyns Berkeley's *Handbook of Midwifery*, will shortly be published by Cassell and Co.

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[3] *Colloids in Biology and Medicine.* By Professor H. Bechhold, [illegible] Authorized translation from the second German edition [illegible] by J. G. M. Bullowa, M.D., [illegible] Fordham University [illegible] New York: D. Van Nostrand Company. 1919. [illegible]

[4] *Tuberculosis and Public Health.* By H. Hyslop Thomson, M.D., D.P.H. London: Longmans, Green and Co. 1920. [illegible]

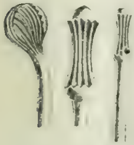
[5] *The Diary of a Police Surgeon.* By Graham Grant, V.D., Lieutenant-Colonel R.A.M.C.(T.), L.R.C.P. and S.Edin., Barrister-at-Law, etc. London: C. Arthur Pearson, Limited, Henrietta Street, W.C. 1920. ([illegible] 6d.)

[6] *A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By the late Rakhaldas Ghosh. Eighth edition, by Lieut.-Colonel B. H. Deare, I.M.S., and Birendra Nath Ghosh. Calcutta: Hilton and Co. 1920. (Cr. 8vo, pp. [illegible] Rs. 4 net.)

APPLIANCES AND PREPARATIONS.

A Concave Burr.

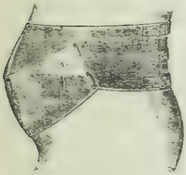
Mr. T. Jefferson Faulder (London, W.) writes: Those who use round-headed burrs for making and enlarging openings into the antrum of Highmore find some difficulty in keeping the burr in action on the broken edge of bone.



This difficulty is obviated by using an instrument shaped as in the illustration, in which the serrations are in a concavity instead of on a convexity. Once in place the burr has no tendency to slip off the edge of bone. In a great many cases the instrument can be used perfectly straight, like a Lichtwitz trocar. It is then most effective and rapid, there being little or no eccentric action. Where necessary (for example, in presence of deviated septum) it can be used slightly curved towards the burr. The makers are Messrs. Mayer and Phelps.

An Obstetrical Belt.

Dr. Bethel Solomons (Gynaecologist to Mercer's Hospital, Dublin) writes: I have always experienced great difficulty in obtaining for my patients an obstetrical belt which was comfortable and economical. Having tried many varieties, I asked Messrs. Fannin of Dublin to make the one which is illustrated here. It consists of two pieces of elastic (silk or cotton). The upper and longer piece, exclusive of straps, is 38 in. in length by 6 in. in breadth, and is fastened at the back with buckles. It may be worn alone during the sixth month. In the seventh month the lower and shorter piece, which is 18 in. in length by 6 in. in breadth, is attached to the other by safety pins, as illustrated. Its position is adjusted to the growth of the fetus (for example, at the end of the seventh month its place would be very little inferior to the longer piece, while at term it would be as in the figure. It will be found useful in antenatal clinics, as the cost is small.



ROYAL MEDICAL BENEVOLENT FUND.

At the meeting of the Committee held on July 13th nineteen cases were considered and £202 5s. voted to the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 60, of M.R.C.S.Eng. who died in 1889. Applicant's only income is £28 a year from investments. She acts as general help in a home in return for food and fire. She suffers from chronic ill health, and has had several operations. Her invalid sister lives with her, and she is quite incapable. Voted £10 in two instalments.

Widow, aged 64, of M.D. who died in 1889. Applicant's only income is £54 16s. from another charity. She lives alone and friends pay the rent. Cannot manage owing to the high cost of living. Voted £5.

Daughter, aged 50, of M.D.Dub. who died in 1882. Suffers from ill health and is unable to work. She receives £50 from friends and £7 10s. from investments. Shares home with a friend and pays part rent. Asks for further help owing to the high cost of living. Relieved five times, £[illegible]2. Voted £5.

Daughter, aged 70, of M.R.C.S.Eng. who died in 1878. Applicant is a trained nurse, but cannot earn much now on account of her advanced age. She has no other income but what she earns, and lives with her sister, who has to keep her. Relieved twice, £30. Voted £18 in twelve instalments.

Widow, aged 71, of M.D.Glasg. who died in 1875. Her only income is £20 from another charity. She lives with her married daughter, who can scarcely afford to keep her. She is crippled with rheumatism. Relieved six times, £73. Voted £18 in twelve instalments.

Widow, aged 59, of F.R.C.S.Edin. who died in February, 1919. Applicant's husband had received help from the Fund. On the death of her husband she took a post as temporary clerk at £2 a week, but has now had to give this up, and asks for help until she obtains another post. No other income. Rent 8s. a week. Relieved once, £5. Voted £5.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W. 1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 45, Bolsover Street, W.1.

THE INFLUENZA EPIDEMIC OF 1918 19.

Mortality Statistics.

As a supplement to the eighty-first annual report of the Registrar-General a report has been issued on the mortality from influenza in England and Wales during the epidemic of 1918–19. The deaths allocated to influenza during 1918 numbered 112,329—53,883 males and 58,446 females. After deducting 7,591 deaths among non-civilian males, the 104,738 civilian deaths correspond to 3,129 per million civilian population, an epidemic mortality not hitherto approached in this country since registration commenced, the cholera epidemic of 1849 (with 3,033 deaths per million population) alone being excepted. During the forty-six weeks, June 23rd, 1918, to May 10th, 1919, the total deaths allocated to influenza were 151,446, including 140,989 civilians, and the corresponding civilian death rate was 4,774 per million per annum. It is well known that during influenza epidemics the mortality attributed to pneumonia, bronchitis, heart disease, and phthisis is increased, and that other deaths than those allocated to influenza are in reality due to that cause. These additional deaths, due to the epidemic but not certified as following influenza, are estimated in the report. In the case of females three modes of estimation giving tolerably concordant results are employed. First, the excess for 1918, quarter by quarter, of mortality from pneumonia, bronchitis, heart disease, and phthisis over the corresponding mortality for 1913–17, is added to the excess of deaths ascribed to influenza. Secondly, the excess of the recorded total mortality for 1918 over the non-epidemic mortality, estimated according to the ratio of deaths from other causes in 1918 to the average of other years, is taken as an index of the number of deaths attributable to the epidemic. Thirdly, a method is tried depending on "the unwarranted assumption that, in the absence of the epidemic, mortality would have been as favourable during the third as during the first and second quarters." For male deaths, the estimation, which was made conservatively, offered additional difficulties; population figures were only available for civilians, and the character of the civilian population had been profoundly changed by enlistment during 1913–17. The figures for the estimated deaths caused by the epidemic from July to December, 1918, are: 59,000 civilian males and 73,000 females—132,000 in all. The total loss of life due to the epidemic in England and Wales during 1918 appears to have been rather over than under 140,000; of these deaths, 112,329 were certified, and the remainder are estimated, to be due to influenza. In the estimation of the deaths due to the epidemic in 1919, May 10th has been chosen as marking the termination of the epidemic. The estimated civilian deaths from January 1st to May 10th, 1919, were: Civilian males, 24,750; females, 26,750. The round figure of 200,000 represents the total deaths in England and Wales attributable to the epidemic in 1918 and 1919.

Age Distribution.

The type of age distribution which had consistently characterized influenza mortality for many years changed suddenly and completely with the onset of the summer epidemic of 1918, and the new type of age distribution continued to characterize the succeeding waves of the epidemic. For comparison of the age distribution of influenza mortality the statistics for females only have been used: allocated but not estimated deaths have been taken into account and the mortality incidence has been standardized. Deaths at ages 0–15, and especially at 15–35, which had formed since 1889 a fairly uniform proportion of the whole number, with a tendency of late years to decrease in relative importance, suddenly increased from 7 to 11 per cent. at 0–15 to 25 per cent., and from 8 to 10 per cent. at 15–35 to 45 per cent. In middle age (35–55) the proportion was comparatively little affected, but showed some increase over the years immediately preceding. Ages of 55–75 and over 75 had for many years provided 60 to 70 per cent. of registered deaths; in the epidemic of 1918 the proportions fell to 10 per cent. (55–75) and 2 per cent. (75 and upwards).

"It may be [illegible] whether [illegible] and [illegible] a [illegible] in the history of any [illegible] to [illegible] that the epidemic of 1918 [illegible] the same as that [illegible] years.

The extent of this alteration—which was not confined to belligerent countries—may be gauged from comparison of the mortality for females in the fourth quarter of 1918 with their average mortality during the fourth quarters of 1914–17; at ages 25-30 the mortality was 540 times as great in 1918, but with advancing age this excess fell, until at 55–60 the proportion was approximately 23 to 1, and at 85 and upwards only about 2 to 1.

The report contains graphs of the age distribution of deaths of females from influenza in each quarter of 1918 and the first quarter of 1919. These show very clearly the two types of age incidence—that prevalent before the 1918 epidemic, with the peak of maximum mortality incidence at ages 70–75, and the new type. characteristically seen in the third and fourth quarters of 1918 with the peak at ages 25–30. It is interesting to note that the curve for the second quarter of 1918 presents the peaks characteristic of both types; the suggestion that this curve is compounded of the old and the new types is supported by examination of the age incidence of influenza mortality during the first and second halves of this quarter; the former mortality conforms to the old, the latter to the new type. It is noteworthy also that the commencement of each of the two later waves of the epidemic was marked by a change in age distribution of mortality similar in nature to (though less extensive than) that noted at the inception of the epidemic; it is possible, therefore, that an abrupt change from decreasing to increasing youthfulness of fatal cases, appearing at a time when the number of deaths occurring gives no sign of an immediate recurrence, may serve as an indication that another wave of mortality is to be expected.

Local Distribution of the Epidemic.

Throughout the epidemic the mortality rates for all classes of area were much the same, but the towns suffered first, and, during the first wave, suffered considerably more than the rural areas. At this time, too, the north and Staffordshire furnished the highest mortality. The third wave also affected the north to a preponderant extent, but during the second wave deaths in the southern county boroughs caused the mortality in the south to be considerably higher than that prevailing elsewhere. Farr, in the report of 1847, noted that in the epidemic of that year the mortality was twice as high in the insalubrious parts of London as in those less unhealthy. The London mortality of the 1918–19 epidemic has been compared among the boroughs arranged both in order of healthiness as measured by the standardized death rate and in order of wealthiness as indicated by the proportion of indoor domestic servants to population. No correlation of mortality with wealth or with health was demonstrable. Farr also observed that in 1847 "influenza attacked persons labouring under other zymotic diseases." In the epidemic of 1918–19 there was no increase either in notifications of or mortality from infectious disease.

Secondary Causes of Death.

The report contains tables and lists giving very full particulars of the way in which every influenza death was certified—a mass of detailed information which, as the report suggests, is less valuable on account of the interest at present attaching to it than for the information which it may convey to succeeding generations. Meningitis was certified most frequently in the first wave and least so in the second; except for males in the third wave, its maximum frequency was at ages 5-10 in all cases. In the first wave 6.7 per cent. of deaths of males and 8.1 per cent. of those of females were attributed to heart disease in conjunction with influenza; in the second wave 2.4 and 3.2 per cent. respectively; in the third 3.1 and 4.5. Deaths from bronchitis, bronchopneumonia, lobar pneumonia, and undefined pneumonia, associated in each case with influenza, numbered, per 1,000 total deaths, for males, 691, 830, and 790 in the three waves respectively, and for females 657, 813, and 758. It has been asserted that the mortality rate was specially high among pregnant or parturient women; the total number of such women recorded as dying from influenza is 2,285. It is calculated, however, that the death rate in pregnant or parturient women, estimated according to the births recorded, was not more than 5.3 to 5.7 which but little exceeds the 4.9 calculated for the whole female population aged from 15-50. Moreover, it is shown that the distribution of epidemic mortality from puerperal causes is totally different from that of the mortality annually allotted to the same causes; the former was caused to the extent of 89 per cent. by abortion and other accidents of childbirth. The certification was such as might be expected if pregnancy did not materially affect the risk of death from influenza, but if fatal influenza led to abortion or premature delivery. The distribution of secondary causes of death, as recorded in various parts of the country, is very uniform and the minor differences exhibited in the three waves are shown in all areas; confirmation is thus obtained of the great similarity in type of the epidemic throughout England and Wales.

ROYAL SANITARY INSTITUTE CONGRESS.

THE thirty-first congress of the Royal Sanitary Institute took place at Birmingham from July 19th to 24th. In his inaugural address the President, Viscount Astor, Parliamentary Secretary to the Ministry of Health, dwelt mainly on the importance of individual effort in the healthy growth of new standards and new methods of public hygiene. The diseases of to-day, he said, had become less community diseases and more contact diseases; the efforts of public health workers must therefore be concentrated on creating in the individual the same sense of responsibility for personal health as existed in the community for communal service. The Ministry of Health was a co-ordination of departments; it was not and never should become a bureaucratic organization forcing upon an unwilling people hospitals and clinics, doctors and nurses.

Sanitary Workers and Preventive Medicine.

In his presidential address to this section Colonel Sir Robert Firth rejoiced that the view of preventive medicine which restricted its scope to environmental questions and the amenities of external sanitation no longer prevailed; the Ministry of Health, he thought, promised well for simplification and unification of public health questions. After reviewing the advances of preventive medicine during the last fifty years, he surveyed the chief regions in which preventive measures were still urgently necessary. An outstanding need at present was the dissemination of knowledge among the people. The ideal for future industrial expansion was that it should be rural; in the place of so-called "garden cities" it was preferable to have industrial villages, whence the factory worker could reach and be a real sharer in the true country; in his spare time he could be a producer from the soil instead of a consumer of cheap luxuries in the town. Meanwhile the towns should contract in place of expanding, and should rise instead of spreading. The driving force behind the Ministry of Health must and would be the medical profession. The problems of preventive medicine arose where the individual citizen lived; the general practitioner, who should be helped and provided with better facilities than he now had, should be the real fighting man of the cohorts of health. The proposals of the Consultative Council of the Ministry of Health formed a great advance, but the centre of gravity of a learned profession ought not to drift into a Government department. The student and the young graduate should be brought more closely into contact with the realities of epidemiology and preventive medicine. Intimately associated with any revision of the public health laws was the question of unity of the administration; the ideal conception was the division of the country into some twelve or fourteen large areas, each administered by a commissioner of health with plenary powers, responsible only to a central health authority in Whitehall, and with deputy commissioners as executives under him in the local areas.

Institutions for the Mentally Defective.

Dr. G. A. Auden, School Medical Officer, Birmingham, reviewed the more important present-day needs for provision of institutions for the mentally defective. For colony treatment two main conditions must be fulfilled: (1) They must command the complete confidence not only of the community as a whole, but in particular of the relatives of the persons committed to them; (2) they must show a financial return bearing some proportion to the outlay involved. There was at present a real danger that committees in pursuing immediate economy of outlay might lose sight of these essentials. Only 19 out of 221 certified institutions had accommodation for more than 100 inmates. Large institutions were necessary.

Industrial Hygiene.

Mr. Neville Chamberlain, M.P., presided over the Section of Industrial Hygiene. In an address on industrial efficiency and fatigue, Dr. Edgar L. Collis prophesied that the nineteenth century would be famous for its study of the machine and the first half of the twentieth century for the study of mankind. From the standpoint of the industrial economist it was important that industrial work should reach the maximum quickly and maintain that maximum hour by hour, spell by spell, day by day, and week by week. The physician knew that fatigue, the result of well arranged work, was a healthy phenomenon necessary to the rhythm of activity and rest. Fatigue should not, however, be sufficient to accumulate or carry over from one period to the next. By the term "ill health" was meant not definite sickness or illness, nor anything which kept the person from work, but that condition in which the liability to succumb to infection or to sustain an accident was increased, and which if long continued would permanently damage some part or organ of the body. The object, therefore, of both the economist and the physician was to obtain a maximum of activity with no accumulation of fatigue. Steps could be taken to increase efficiency and keep fatigue within the limits of health by (1) scientific selection of workers; (2) attention to personal hygiene, ventilation and lighting, and food supply; (3) adapting the form and dimensions of machinery to the requirements of the different workers; (4) devoting attention to the relation of work and rest to the total hours' work per week, and the arrangement of these hours day by day to the length of spells of work and to the use of organized rest pauses.

Maternity and Child Welfare.

The presidential address in this section was delivered by Lieut.-Colonel F. E. Fremantle, M.P., who said that the chief work of future years was to eliminate the ten deaths per thousand births from diarrhoeal disease, and to cut down the remaining eighty-seven to the forty that might be considered inevitable. The supply of midwives was an urgent practical problem; the Midwives Acts, while improving the training and practice of midwives, had made it difficult and costly for women to enter that profession, and the economic changes resulting from the war had hampered the activities of many nursing associations. Dr. W. H. Pooler, Medical Officer for Infant Welfare, Derbyshire County Council, in a paper on infant welfare work in rural areas, said that the health visitors in these areas should have their present districts considerably cut down; in the appointment of visitors combining several functions, fitness for infant welfare work should have the first consideration. The health visitor's personality was almost more important than her training. The provision of material benefits such as the distribution of milk and sugar at welfare centres was detrimental to the work. With regard to medical control, a rota of medical officers was not desirable, but it was wise to employ as far as possible general practitioners who had had post-graduate or other special training.

Housing.

The presidential address to the Conference of Medical Officers of Health was delivered by Dr. John Robertson, Medical Officer of Health, Birmingham, who said that the provision of medical and allied services as recently discussed by the Consultative Council was less important at the moment than the housing question. As one who was getting old in the public health medical service he was more than ever convinced that to improve the health and morality of the people the great masses living in large towns must be given decent conditions of housing. The provision of new houses to make up the present shortage had been taken in hand on fairly good lines. The supply of satisfactory houses for rural labourers, although very difficult, was of the greatest importance; country doctors might do more to expose the evil conditions under which labourers had to live in some bad parts of rural England. In addition, the slum parts of the large towns must be reconstructed; among the slum dwellers there had been a great desire to get something better, and but for the war many fewer slum houses would be occupied. The question must be dealt with on larger lines than were contemplated in the present Housing Acts.

After-care of the Tuberculous.

Dr. H. Gordon Smith, Chief Tuberculosis Officer, Worcester County Council, said that the provision of suitable employment was the most important and at the same time the most difficult problem in connexion with after-care of the tuberculous. The provision of work among the general population was subject to the following difficulties: (1) Competitive labour was highly undesirable for genuine consumptives, whose health was in a state of unstable equilibrium; (2) commercially-minded employers were against employing partially fit men; philanthropic employers had been taxed practically out of existence; (3) many consumptives had an inherent disinclination to work; (4) trade unions caused much trouble; (5) the minimum wage had done much harm by upsetting the basic principle of supply and demand; (6) the present dearth of houses had made removals difficult. No scheme for colonies or settlements could be run on economic lines; it would be necessary for the Government to become the main employer of labour by the tuberculous, and to conduct colonies and settlements on communal lines, sending to the local authority a bill of perhaps half the cost for every consumptive (and his family) taken off its hands. Hopeful cases should go to a sanatorium. When the disease had become quiescent and was not infectious the patient could be drafted to a training colony. The permanently crippled should be advised to gain admission to a village settlement, where, after reasonable trial of rest to obtain quiescence, he should be encouraged to work as much as possible.

PRESENTATION TO DR. J. A. MACDONALD

THE following further subscriptions have been received up to and including the first post on Tuesday, August 3rd, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards the presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

THIRD LIST OF SUBSCRIBERS.

	£	s.	d.
Brought forward from last list of subscribers	508	6	6
Bailey, Dr. T. Ridley, Bilston	1	1	0
Barrow, Colonel H. J. Waller, Weymouth	5	5	0
Bartlett, Dr. T. W., Steeple Bumpstead ...	1	1	0
Baskin, Captain J. L., R.A.M.C. (T.F.), Littlemore, Oxford	3	3	0
Bottomley, Dr. F. C., O.B.E., Bournemouth	1	1	0
Bramwell, Dr. Byrom, LL.D., Edinburgh	1	1	0
Branson, Dr. Clement W., Bournemouth ...	0	10	0
Brown, Dr. W. F., Ayr ...	1	1	0
Bunting, Dr. T. L., Newcastle-on-Tyne ...	1	1	0
Coulter, Mr. R. J., Newport, Mon.	2	2	0
Crawford, Lt.-Col. D. G., I.M.S. (ret.), Ealing ...	1	1	0
Davies, Dr. L. T., Liverpool	1	1	0
Distin, Dr. H., Enfield ...	1	1	0
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Fremantle, Lt.-Col. F. E., O.B.E., M.P., Hatfield ...	1	1	0
Gardner, Dr. Jas., Barnsley	3	[illegible]	[illegible]
Greenfield, Dr. D. G., Rushden	1	1	0
Gloucestershire Local Medical and Panel Committee per Dr. T. G. Miles, Ruardean	5	5	0
Hall, Dr. J. Spenser, Frensham	0	10	0
Handyside, Surgeon Rear-Admiral Sir P. B., K.H.P., C.B., R.N. (ret.), Gullane	1	1	0
Hawkyard, Dr. A., Leeds	3	3	0
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[illegible], Dr. F., Bournemouth	0	10	0
Hillman, Dr. G. B., M.B.E., Wakefield ..	1	1	0
Hewart, Dr. W., Norwich	1	1	0
Jones, Dr. Evan, Aberdare	1	1	0
Laing, Dr. G. D., [illegible] ...	0	[illegible]	[illegible]
Louden, Lieut.-Colonel J. Livingstone, R.A.M.C. (T.F.), Hamilton ..	2	2	0
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Macdonald, Dr. Peter, York (second subscription)	[illegible]	[illegible]	0
[illegible], Dr. [illegible] M. [illegible], Wigan	1	1	[illegible]
[illegible] W., Aberdeen ...	2	2	[illegible]
Mardlow, Dr. W. H., Ilminster	0	10	6
Moore, Dr. Milner M., Eastbourne	1	1	0
Peterkin, Dr. G., Forfar...	0	10	6
Pirie, Dr. R. R., Eastbourne	[illegible]	[illegible]	[illegible]
Randolph, Dr. W. H., [illegible]	1	1	0
Ratcliff-Gaylard, Dr. J., [illegible] ...	1	1	0
Redfern, Dr. J. J., Croydon	2	2	0
[illegible], Dr. R. M., Nottingham ...	1	[illegible]	0
[illegible], Dr. [illegible] Hunter, [illegible] ...	1	1	0
Ryan, Dr. M. J., London	1	1	0
Scarr, Dr. G., O.B.E., Rad[illegible] ...	1	[illegible]	[illegible]
Scott, Dr. A., London ...	1	1	0
[illegible]	1	1	[illegible]
[illegible]	1	1	[illegible]
[illegible] S. [illegible]	1	1	[illegible]
Stretton, Dr. J. Lionel, Kidderminster	[illegible]	5	0
Thomson, Dr. Emily C., Arbroath	1	1	0
Tunstall, Dr. A. E., Bradford	1	1	0
[illegible], Dr. R. H., Curry Rivel...	1	1	0
W[illegible], Dr. C. [illegible], [illegible]	[illegible]	[illegible]	0
W[illegible], Dr. A. H., [illegible] ...	[illegible]	[illegible]	0
	[illegible]	15	6

British Medical Journal.

SATURDAY, AUGUST 7TH, 1920.

THE PROPRIETARY MEDICINES BILL.

The Report of the Select Committee of the House of Commons on Patent and Proprietary Medicines was issued in August, 1914, when the nation was absorbed in the war and had no mind to study problems in domestic legislation, however urgent and important these might be. The Select Committee was appointed by the Treasury in May, 1912, and a full account of its findings and recommendations was published in this Journal on August 29th, 1914. The evidence placed before the Committee had been reported in our columns from time to time, including that given on behalf of the British Medical Association by the Medical Secretary and by other witnesses who had given the subject special attention.

The Select Committee found what the medical profession knew only too well—namely, that there was a large and increasing sale in this country of patent and proprietary remedies and appliances, and of medicated wines. It grouped these widely differing remedies into "(*a*) genuine scientific preparations; (*b*) unobjectionable remedies for simple ailments; and (*c*) many secret remedies making grossly exaggerated claims of efficacy; causing injury by leading sick persons to delay in securing medical treatment; containing in disguise large proportions of alcohol; sold for improper purposes; professing to cure diseases incurable by medication; or essentially and deliberately fraudulent." It found that the third class of nostrums were put upon the market by ignorant persons and often by cunning swindlers exploiting for their own profit the apparently invincible credulity of the public. This, said the Committee, constituted a grave and widespread public evil, and it summed up the legal position by declaring that the law as it stands "is chaotic and has proved inoperative, and that successful prosecution for fraud in the advertisement and sale of secret medicines is fraught with the greatest difficulty . . . that, consequently, the traffic in secret remedies, except as regards scheduled poisons and the grosser forms of impropriety, is practically uncontrolled in this country." The Committee then declared that new legislation, rather than mere amendment of the existing laws, was urgently needed to mend "this intolerable state of things." It asked for a special Department of State to deal with the matter and a special court or commission to sit in judgement on the claims made on behalf of every patent, secret, and proprietary remedy, the composition of which should be disclosed, not to the public, but to the Department. It further recommended that the public should be informed as to the proportion of alcohol in medicated wines, and that false or misleading therapeutic claims should be punished, while the advertisement of nostrums purporting to make what are regarded as impossible cures should be prohibited.

The report was a timely and informing document, and it is sad that six years should have passed before anything was done about it. Now at last a bill has been introduced into the House of Lords by Viscount Astor, Parliamentary Secretary to the Ministry of Health. The bill is "to regulate the manufacture and sale of certain medicines and surgical appliances, and for purposes connected therewith." Its short title is the Proprietary Medicines Bill, and its object is to give effect to the recommendations of the Select Committee. In the words of the Memorandum accompanying it, the bill contains no provisions which were not specifically recommended by the Select Committee, and it includes all their more important recommendations so far as they fall within the province of the Ministry of Health. Provision is made for the setting up of a register of proprietary medicines and appliances, and of the owners thereof, and the sale of any unregistered proprietary medicine or appliance is forbidden. The former term is defined to mean any medicine which is held out as of use for curative or remedial purposes, and which is either sold under a trade name or manufactured by a secret process. The sale is prohibited of remedies purporting to cure certain diseases named by the Select Committee and now set out in a schedule to the bill. These are cancer, consumption, lupus, deafness, fits, epilepsy, amenorrhoea and other diseases peculiar to women, diabetes, paralysis, locomotor ataxy, Bright's disease, rupture; and the Minister may add to this list. It is further made an offence to advertise any article in terms suggesting that it can be used to procure abortion. Any injurious medicine or appliance may be removed from the register by the Minister of Health, but the owner is given a right of appeal to the High Court.

Again, the bill, in accordance with the recommendations of the Select Committee, forbids certain objectionable practices, chiefly in connexion with advertisements. Thus it is an offence for any person to enclose with a proprietary medicine or surgical appliance any written matter (other than a trade catalogue) advertising or recommending the use of some other proprietary medical or surgical appliance. Owners, vendors, or agents of registered remedies may neither invite correspondence regarding ailments nor set up to treat sufferers by correspondence. It is also an offence to publish fictitious, false, or misleading testimonials, or to suggest that a proprietary article is recommended by a duly qualified medical practitioner, without giving his name, qualifications, and, if alive, his address; or to suggest, contrary to the fact, that a proprietary article was discovered, invented, or compounded by a medical practitioner. We may add here that if a duly qualified medical practitioner should allow such publication of his name and address in advertisements of articles of this nature, he would find reason to regret this form of publicity. Other provisions contained in the bill were indicated last week in our Parliamentary Notes, where the subject is referred to again this week in reporting the debate in the House of Lords.

Upon the bill now before Parliament two questions naturally arise. One is: Will it succeed in protecting the public against the vast and cruel frauds of the vendor of quack medicines and appliances? The other is: Will Parliament have the courage and public spirit to pass it into law, without amendments which would destroy its effectiveness? The bill certainly seems to embody a large part of the recommendations of the Select Committee. That Committee expressed the belief that departmental and legislative action as laid down in its report would not inflict injustice upon any patent or proprietary medicine or appliance; that it would, alike by its operative and deterrent effect, afford the public efficient and urgently needed protection against injury and fraud; and that no measures of a smaller scope would secure this result. In going as far as it did in its recommendations, the Select Committee performed a great public service, and it went much further than many had anticipated. The bill may not abolish all the evils of this nefarious trade, but we think the medical profession will regard it as a substantial measure of reform, and one that should be supported. It strikes, of course, at vested interests, and is certain to be opposed, both in public and behind the scenes. The leading opponents will be the makers of secret remedies, who take millions of pounds each year out of the pockets of the public, and that section of the press which prints their advertisements. The Select Committee, in its report, said: "As so large a sum as £2,000,000 or more is spent annually in advertisements of these remedies in one form or another of advertising, the trade is naturally of great importance to newspaper proprietors."

The appointment of the Select Committee was largely due to the persistent efforts, continued over many years, of the British Medical Association and its JOURNAL in regard to patent medicines. The Representative Body in 1915 placed on record its satisfaction with the recommendations of the Select Committee, and instructed the Council, as soon as the time should be considered opportune, to take all necessary steps in pressing for legislation on the lines of the report. In so far, therefore, as the Proprietary Medicines Bill carries into effect these recommendations, it will be the duty and the privilege of the British Medical Association to support by every means its passage into law, and to oppose any attempt to water it down.

CULTURE AND THE PRACTICE OF MEDICINE.

SYMBOLICAL relationships are all too rare in the world of science: the atmosphere is not encouraging. Nevertheless on occasion they flower with a strength sufficient to attract—perhaps by reason of their uncommon nature—something more than passing notice. It is generally agreed that the recent meeting of the British Medical Association at Cambridge constituted one of these occasions, and revealed again the essential inseparability of the practice of medicine and the cultivation of the arts.

It is certain that true progress in medicine can only come through the continuous application of the scientific method; but when this method is carried to the patient, if it is to be thoroughly effectual, it must be tempered by a spirit which science alone cannot give. Such a spirit embraces a love of humanity, a wise toleration of ignorance, a broad understanding of the lives of divers persons, a controlling influence which curbs or stimulates according to need. The list could be enlarged until it included all the qualities which best fit a man for a life of service to his fellows. Great care is needed here or the service will be given consciously with a consequent fall in value. In approaching every case the consciousness should be fully occupied by the scientific method, the rest being at least subconscious. Unless this relation is preserved the patient is deprived of the full fruits of scientific resources, for the conscious mind will have enough to do in grappling with this aspect. But in the background there must always be the modifying hand of cultural influence.

It might be possible to broaden the medical curriculum to include the acquisition of knowledge of a more general kind; but would such a step be advisable? Knowledge so acquired would become part of the armamentarium, and as such would lack the grace which should be its peculiar characteristic. In order to work at its best and in its right place general culture ought to be a matter of individual and private concern. The most that can be done is to place the individual in the environment where opportunities for broadening the mind frequently present themselves in the guise of recreations rather than exercises.

The older universities provide these opportunities in greater measure than their younger sisters by virtue of the tradition they enshrine, the variety and diversity of their schools, and the preservation of the college system, which tends to prevent undesirable segregation of the faculties, and promotes free intercourse between them. This spirit finds recognition everywhere else in the formation of students' clubs open to all faculties, where the common room is a common meeting ground. It is here that non-residents can lay the foundation of a broader culture than they will acquire from a faithful adherence to the official syllabus.

It may be urged that this is very well in student days, but impossible for a man in busy practice to continue. Such objections usually come from those whose cultural interests are in inverse proportion to their banking accounts, and cannot, therefore, be taken seriously. But when a man opines that the Arts have been crowded out of his life, he needs to be told that he is depriving his mind of precious moments of relaxation, and that his work must inevitably suffer in point of efficiency, and in time of performance. A fatigued and overheated mind may, if it will, dip in the cool waters of its choice and emerge refreshed and renewed, with a better zest, a steadier balance, and a keener sense of proportionate values.

In the end culture carries its own armour and needs no defence. It is not aggressive, never making the first attack; but it moves on inevitably by a process of quiet permeation. Wherever it is found there also are the springs of action—a belief in to-day and a hope for to-morrow.

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LABORATORY DIAGNOSIS OF ACUTE INTESTINAL INFECTIONS.

THE exact diagnosis of infections of the typhoid group, of dysentery, cholera, and other specific forms of enteritis, rests largely on observations carried out in the laboratory, and the number and variety of the methods that may be employed is considerable. In the usual course of events a rough process of weeding out is going on with regard to such methods, their fate being determined chiefly by the degree of their clinical accuracy and usefulness. Under ordinary circumstances this process of natural selection is somewhat slow, but the war provided considerable experience of intestinal infections, and the Medical Research Council has rendered valuable service by the issue of a report by its Committee on pathological methods,[1] the object of which is to examine different methods of procedure, and to state their opinion as to which are the best adopted for ordinary laboratory use. The Committee consisted of Sir F. W. Andrewes (chairman), Professors J. G. Adami, W. Bulloch, and Captain S. R. Douglas (secretary), with the following additional members co-opted for portions of the present report: Professors G. Dreyer and C. H. Browning, Drs. J. C. G. Ledingham, C. G. L. Wolf, and Mr. Clifford Dobell. In view of the standing, contributions, and authority of these gentlemen, the report will be read by laboratory workers in this country with interest and appreciation. We should like to have seen the name of Dr. Dudgeon in this list of co-opted members, and also a representative of the pathologists who worked in Egypt, Gallipoli, or Malta; with perhaps a representative of the Navy. In a matter of this kind practical experience is of inestimable value; for, as we have pointed out, that is the final court of jurisdiction in such questions as are here under consideration. The ultimate object which the Committee appears to have in mind is the standardization of laboratory methods, and with that end in view they recommend certain procedures in preference to others, stating their reasons. Simplicity, accuracy, and reliability are the requirements that have guided them chiefly in their task of selection, and regarding the report as a whole it will be admitted that they have discharged this task with much care and tact, and with as much success as the present state of knowledge permits. In Part I, after a brief description of the bacterial flora of the normal intestine, the collection of material for diagnosis is considered. Methods for the isolation of various pathogenic bacilli are then described in detail, differential media and enrichment processes being dealt with at length. The section on amoebic dysentery is particularly concise and valuable. The infections dealt with include not only the enteric group and bacillary dysentery, but acute food poisoning, enteritis due to Morgan's bacillus and *B. pyocyaneus*, and the diagnosis of cholera. This portion of the report is extraordinarily valuable and complete: we know of no textbook that comes near it. Part II is devoted to the principles and practice of the agglutination test, with special reference to the various groups of bacilli concerned in intestinal infections, and it is a model of clear and candid exposition. The technique of agglutination is described in detail, and the somewhat elaborate development of the absorption test as practised by Sir Frederick Andrewes is here set forth. Finally, the merits of Dreyer's technique in carrying out the agglutination test have completely captured the Committee, who are careful to describe the details of that procedure in full, ending up with a history of it by Dr. A. D. Gardner. This report is valuable as a landmark in the progress of laboratory knowledge in its application to the diagnosis of the particular infections dealt with. At the same time we would remind our readers and the readers of this report that bacteriology in its application to medicine is still in a comparatively early stage, and that the views of to-day may not be those of to-morrow. Valuable as the present report is it deals solely with diagnosis. We could wish that an equally authoritative attempt were to be made with regard to the prevention and specific treatment of the important diseases here under consideration.

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[1] Medical Research Council. Special Report Series, No. 51. The Laboratory Diagnosis of Acute Intestinal Infections, including the Principles and Practice of the Agglutination Test. H.M. Stationery Office. 1920. Price 4s. 6d. net.

GUYON.

THE announcement of the death of Jean Casimir Félix Guyon who was born as long ago as July 21st, 1831, in the island of Réunion, recalls to men in the "fifties" a great popular teacher of genito-urinary surgery at the Necker Hospital in Paris. Guyon was appointed interne to the Paris hospitals in 1851, prosector in 1858, and his thesis for the doctorate, on fibroid tumours of the uterus, is dated 1860. He became surgeon to the hospitals in 1862, professeur agrégé the next year, and professor in 1877, being succeeded in the chair of genito-urinary surgery in 1906 by his brilliant but comparatively short-lived pupil, J. Albarran (1860-1912). His clinical teaching at the Necker Hospital has been permanently preserved in his two chief works, *Leçons cliniques sur les maladies des voies urinaires, professées à l'hôpital Necker* (1881), which passed into a second edition of 1,034 pages in 1885, and a third edition, in two volumes, in 1894-6, and *Leçons sur les affections chirurgicales de la vessie et de la prostate*, collected and edited by his former resident, F. P. Guiard. Both these works were translated into German and Russian. He was the author of *Éléments de chirurgie clinique*, a volume of 672 pages, and of numerous articles in *Annales des maladies des organes génito-urinaires*, which he founded and for years edited in conjunction with Lancereaux. On August 3rd, 1900—almost exactly twenty years ago—his friends and pupils presented Professor Guyon with a medal executed by M. Bottée and representing his half profile. Professor Guyon was a Commander of the Legion of Honour, and a member of the Institute and of the Academy of Medicine.

THE SANATORIUM TREATMENT OF TUBERCULOSIS.

IN 1919 the Medical Research Committee issued a report (Special Report Series, No. 33) which demonstrated that the mortality experience of patients discharged from the Midhurst Sanatorium was very unfavourable in comparison with that of equivalent samples of the general population. As remarked in the preface to the report, this finding does not lead to the conclusion that sanatorium treatment is valueless. Of course, the comparison should be between the after-histories of sanatorium patients and of persons of the same class and at the same stage of the disease not treated in sanatoriums. Perhaps the improved records to be kept by practitioners of insured persons may ultimately provide this control; at present there are no data. This fact must be remembered when we consider the results printed in the reports of tuberculosis officers and committees. Dr. Taylor, Tuberculosis Officer, County Borough of Halifax, properly makes the point in his report on "The after-histories of insured persons granted sanatorium benefit during 1914, with a critical review of the facts." He remarks that of 1,914 applicants traced 76.5 per cent. are dead, and of the remaining 23.5 per cent., half are unable to work. But of 17 early cases treated in 1914, only 2 are known to have died of tuberculous disease. Consequently it is no reproach to the theory of the method, still less is it the fault of the committees and their officers that the records of actual results are lugubrious reading. They are, however, lugubrious reading. The County of London Committee records the discharge from sanatoriums in 1919 of 1,484 ex-service males, of 690 civilian males, and of 761 females. Of the first group 699, of the second 294, of the third 293, were unfit for work when discharged; 25, 27, and 23 died in the sanatorium. Midhurst reports that of the 1905–7 discharges, 66.4 per cent. were known to be dead by 1919. The percentage does not fall below 50 until we reach the 1916–17 discharges, of whom 40.1 per cent. were dead by 1919; while of the 184 discharges in 1917–18, 45 (24.5 per cent.) were known to be dead, and 21 had been lost sight of. The statistics of the Newcastle-on-Tyne Insurance Committee are little if at all better. The percentages known to be dead are smaller, but the proportion lost sight of is larger. Of discharges in 1913, 43.4 per cent. were known to be dead in 1919, and 18.3 per cent. had been lost sight of. Of discharges in 1917, 23.8 per cent. were dead, and 11.9 per cent. had been lost sight of. In existing circumstances it does not seem probable that sanatorium benefit can achieve the results which were once expected, and which we all hope may in the future be attained.

PSYCHO-PHARMACOLOGY.

MACHT[1] records experimental investigations of the effects of drugs on psychological functions. In a quantitative study of analgesia produced by opium alkaloids, their effect upon the sensory threshold for pain on various parts of the skin and mucous membranes was noted. In any given experiment after determining the normal pain threshold a drug was administered and repeated readings were taken after its absorption. The six principal opium alkaloids ranged themselves, in respect of their analgesic power, in the following order from the strongest to the weakest: Morphine, papaverin, codein, narcotin, narcein, and thebain. Combinations of morphine and narcotin meconates (narcophin) had a greater analgesic power than was represented by the sum of the effect of its constituents, and a similar action was noted with a mixture of the total opium alkaloids. The various opium alkaloids when applied locally to the skin or mucous membranes were found to have a distinct peripheral effect upon the sensory nerve endings, raising the sensory threshold as shown by the greater stimulation required to produce the first sensation of pain. As in the case of subcutaneous administration it was found that a combination of the alkaloids reinforced each other in their peripheral action. The antipyretics, acetanilid, acetphenetidin, and pyramidon, while not so powerful as the opiates, produced analgesia of central origin. Study of the action of opium alkaloids upon reaction time showed that the simple reactions were less affected than the association tests; thus these drugs influenced especially the higher cerebral functions. The opposite was noted in the case of the antipyretics. The effect of antipyretics on the neuro-muscular test showed that phenacetin, acetanilid, antipyrin, and quinine definitely improved the tapping rate, the improvement after phenacetin and antipyrin being greater than that after acetanilid and quinine; combinations of acetanilid and phenacetin with salol noticeably improved the rate. In studying the effect of opiates and antipyretics on the visual field it was found that the former tended to narrow the field, the latter to increase it. Acetanilid, salol, and aspirin caused a decrease, while antipyrin, pyramidon, and quinine caused an increase of acuity of hearing. Although acetanilid by itself decreased the acuity, an increase followed when it was combined with sodium bicarbonate, and, though impairment followed acetanilid and salol administered separately, in combination they increased the acuity. Studies upon the after-effects of anaesthetics on rats showed that chloroform was followed by a longer period of depression than ether, and that nitrous oxide-oxygen was the least depressing. Of the opiates, morphine markedly impaired the memory habit and activity, while papaverin was the least depressant, but even after large doses the animals eventually recovered their intellectual activities as tested by the circular maze.

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[1] *Johns Hopkins Hospital Bulletin*, May, 1920.

TUBERCULOSIS CONFERENCE IN LIVERPOOL.

The National Association for the Prevention of Tuberculosis will hold its eighth annual conference by invitation of the City of Liverpool in St. George's Hall, Liverpool, on October 7th, 8th, and 9th, 1920. The subjects for discussion include a review of methods of prevention and treatment advocated from time to time, the extent to which these have been followed, and the results obtained; practical difficulties in the carrying out of tuberculosis schemes and the best measures to overcome them; milk as a source of infection, and the preventive measures to be employed. The City of Liverpool affords many special advantages for the purposes of the conference, and the various institutions devoted to the treatment or prevention of tuberculosis will be open to visitors. Authorities on tuberculosis from this country, America, and the Continent will take part in the proceedings. The honorary secretary of the Association is Dr. J. J. Perkins, and the office is at 20, Hanover Square, London, W.1.

HEREDITARY SPASTIC PARAPLEGIA.

V. R. Mason and W. F. Rienhoff, jun.,[1] record four cases in three generations—a mother, two sons, and a daughter of one of the sons—of this rare hereditary disease of the nervous system. Since 1880, when Strümpell reported two cases, the records of about sixty affected families have been published. Usually the malady affects individuals in one generation only, but in seven instances symptoms of the disease were present in more than two generations. In a few instances consanguinity, or mental defect of the parents, may have played an etiological part. The age of onset of symptoms is not constant; infantile, pubertial, and adult forms have been described. The sexes are equally affected. There is much evidence in favour of the assumption that the hereditary degenerations of the nervous system, characterized by ataxia alone (Friedreich's ataxia), ataxia and paraplegia (Marie's ataxia), and paraplegia alone (hereditary spastic paraplegia), are all syndromes or clinical forms of the same morbid entity. The fundamental symptom is a spastic paraparesis, which may eventually involve the upper extremities; in addition, there may be tremor of the tongue, usually intentional, ocular palsies, nystagmus, optic atrophy, disorders of speech, and bulbar disturbances. Diagnosis from disseminated sclerosis is often difficult, but the familial occurrence and the absence of remissions are of help in excluding disseminated sclerosis.

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[1] *Johns Hopkins Hosp. Bull.*, June, 1920.

Medical Notes in Parliament.

Proprietary Medicines Bill.

Viscount Astor, in moving the second reading of the Proprietary Medicines Bill in the House of Lords on July 29th, recalled the undertaking by the Lord Chancellor last year that such a measure would be produced by the Government, and mentioned that the Select Committee which sat for three years put something like 14,000 questions to witnesses. The recommendations of the Committee were, he said, in the nature of a compromise; they were not based on either of the conflicting views; and it was upon this compromise that legislation was sought. Our country was very much behind several of the Dominions and most other civilized countries in this matter of giving protection to the public. The Committee quoted as an illustration the case of a man who came with a certain instrument to Great Britain, and was reported to have made over £60,000 by sales. He went to France, and was there sentenced to three years' imprisonment as well as heavily fined for trying to sell the same instrument. In the bill presented the Government did not propose to protect the purse of the public. A very good case might be made out for preventing profiteering and exploitation, and it was possible amendments might be moved to strengthen the bill in that direction, but it was not drafted with that object. All they were trying to do was to protect the life and the health of the people. Injury might be caused in one of two ways: from delay—through purchase of these medicines and appliances—in going to a proper medical practitioner; and actual harm through the use of the "remedies." Lord Astor went on to say that it was proposed to forbid the advertisement and sale of remedies for diseases mentioned in the schedule, because serious risk was involved if people tried to treat themselves while suffering from these particular diseases. It was not in the public interest that people haunted by fear and suffering, as they often were from these complaints, should be encouraged to treat themselves by using these patent "remedies." Too often the "remedies" touched only a symptom of the disease. A case was quoted in the report of a particular medicine recommended for children with colds, coughs, and bronchial affections. It contained cocaine or the elements of cocaine. Nobody could recommend the continuance of a law which encouraged people to purchase cocaine in order to make their children sleep when suffering from a cough. Lord Astor referred next to the advertisement of remedies for "female irregularities," and of "remedies" intended to secure abortion. It was impossible, he was told, to kill an unborn child without endangering the life of the mother. Some of these remedies were intended to give lead poisoning. The unborn child might be killed by these means; but too often the mother might be also. Very frequently, too, there was danger of blackmail. A case was quoted by the Select Committee of two men who threatened to expose the purchasers of a particular remedy intended to secure abortion. The police intercepted 600 letters, containing, he thought, two guineas each from women. The Assistant Director of Public Prosecutions said it was almost impossible to prove fraud. A woman could not be expected to come forward and say, "I bought this remedy in order that I might be able to commit crime.

I have not been able to produce miscarriage. I have been defrauded." This type of remedy was brought before the public indirectly. There was a case of a bottle being sent with the intimation that powerful and certain action of the medicine contained in the bottle necessitated the warning that the contents should not be taken by those expecting to be mothers. Lord Astor went on to explain the general provisions of the bill as regards registration of proprietary medicines, prohibition when considered too dangerous to health, and penalties for infraction of the law. Touching Clause V—that alcoholic contents of a patent medicine must be given on the label—he said that many of the medicated wines contained as much alcohol as some of the heaviest wines and twice as much as claret. One medicine recommended for use at confinement had been found by the Committee to contain something like 60 per cent. of alcohol, and the rest was apparently pure water; this for producing fine and healthy babies! Coming to Clause X—the definition of a proprietary medicine—Lord Astor said it was necessary that the remedy should be what he might call "puffed," advertised, pushed, in writing, as being beneficial for human ailments, and there must be a monopoly. They excluded from the definition of a "proprietary medicine" those proprietary medicines which were not advertised, pushed, nor puffed in writing as being remedies or having therapeutic qualities. They proposed to exclude, for instance, mixtures the composition of which was known, which were made by well-known and reputable chemists, and which were not pushed for sale on the ground that they had any such special qualities. Neither would they include in the definition of a proprietary medicine any recognized drug or preparation for which no monopoly was claimed. It had been suggested in a newspaper that they contemplated setting up a new bureaucracy. They proposed to appoint only one officer—a registrar—and they anticipated that his salary would be met out of the fees charged to owners and vendors of patent medicines. The committee estimated that something like two millions sterling were spent annually in advertising these remedies and appliances in the press, but he had too high an opinion of the press to think that it would oppose the passing of the bill from self-interest. It was not proposed to prohibit all advertising; it was not proposed to deal with what he had just now referred to as profiteering. The press, as well as the State, had an obligation to prevent fraud and danger to health and life by the pushing of the sales of the "remedies" described. In conclusion, Lord Astor asked for support for the bill because it would deal with a real scandal, and would bring this country nearer to the level of other countries.

Debate in the House of Lords.

Lord Askwith, who followed, thought that Lord Astor had not quite brought out the importance and extent of the industry as a whole. Its importance might be judged from the fact that last year more than £1,250,000 were paid in stamp duty to the Inland Revenue. He understood that there were 10,000 retail pharmacists in the kingdom, apart from the bigger shops, with an enormous number of formulae for making these proprietary medicines. The industry employed a very large number of people; it produced a lot of articles, many of which were extremely useful to the community at large, and although the "remedies" to which reference had been made were to be deprecated, there were others which almost every man, woman and child used in the course of the year. There could not be any one in that House who had not at times derived great advantage from taking a proprietary pill. If that was so it was important that the industry should have the opportunity of considering the bill as affecting its interests. In dealing with an industry of this size Parliament would not wish to create a large number of extra officials—which had been deprecated by Viscount Astor—nor did they wish to impair the usefulness of the industry where such usefulness existed. Nor did they wish its allied industries to suffer unduly. An industry like this relied upon others, such as bottle making, to assist it; and it also did a great deal of advertising.

Earl Russell welcomed the bill, and said he should be glad to see its provisions strengthened. He believed that the Select Committee had gone at some length into a proposal that every patent medicine of this sort should have its ingredients clearly stated on the wrapper. The Committee had reported against this view, but it seemed to him that if their object was to prevent the public from being defrauded the best way of doing so was to have stated in the plainest possible language the ingredients of a medicine, instead of allowing it to be described as having been derived from some mystic root found in some South American swamp by some reputed scientific person. Some such statements would be swept away by the bill, but he should put down an amendment in Committee for the actual composition to be stated in these cases. He also thought that so far from the register being confidential its particulars should be furnished to Parliament in the form of a White Paper. He doubted whether there was any instance of any real secret in these medicines which was not known to the *Pharmacopoeia*, and he thought that this part of the register should be made available to the public. He disagreed with Lord Askwith in the description of the business. So far from regarding it as an "industry," the view he took of practically all these patent medicines was that they were fraudulently pilfering the public for profit; and that the only effect was, as Lord Astor had stated in his speech, to increase the injury and suffering of the poor by postponing the time at which they took legitimate and competent medical advice. He noticed that the schedule did not refer to venereal diseases, and assumed that was because a prohibition was contained in another Act. Even so, it might be well, for completeness, that they should be included in the schedule.

Lord Emmott thought it might be desirable that the passing of the measure should be put off until the autumn session, having regard to the importance of the proposals. He should be glad if he were wrong, but he fancied that the efficient carrying out of the work under the bill would require another considerable bureaucracy. He was opposed to the publication of ingredients of medicines. Let them consider the case of manufacturers who had built up a large trade in a beneficent or innocuous article—a trade which would be absolutely destroyed if exhibition of the formulae became law. The circumstances were different, but he had to deal with matters of this sort when he was Director of the War Trade Department. A compromise was arranged by demanding a disclosure of the composition so far as it consisted of articles whose export was prohibited, and thus full disclosure was avoided. The reason he objected to full disclosure unless absolutely essential was that secrets of this kind being disclosed to officials in public departments created a temptation, if there were any unscrupulous persons amongst them, to make money out of the knowledge.

Lord Shandon said he was unable to see any provision in the bill that the articles sold would be as specified in the register in regard to ingredients and proportions. It was an extremely difficult operation to ascertain the proportions in which any of these drugs, and especially vegetable drugs, were used. It would be absolutely necessary that there should be a department or staff, or other means of keeping watch continually, for evasions of the Act. He did not suppose that there would be a dissentient voice in that House as to the part of the bill dealing with medicines purporting to cure certain diseases. But if there was to be a check upon registration there must be analysis; and if on analysis it were found that the article sold did not correspond with what was registered, there would, he supposed, be a prosecution. In that case the contents of the register would have to be disclosed. He did not know whether the common informer would be entitled to move or not; but whoever moved, action might involve disclosure, and that point would have to be considered.

Viscount Knutsford hoped very much that there would be no delay in passing the measure. There were always good reasons for delaying everything, but the amount of suffering these medicines were causing constituted better reasons for carrying the measure as quickly as possible. He need not trouble the House with the number of instances which had occurred within his own knowledge of people damaged and injured for life, and ruined in nerve by the use of these medicines. Lord Knutsford went on to refer to one matter in regard to which he thought that the bill went beyond what was intended. Clause I provided that a man might not make or sell any surgical appliance unless the appliance were registered. Clause II, as he read it, provided that a man might not advertise any surgical appliance as curative, or as relieving certain illnesses, whether it were registered or not. One of the infirmities which therefore might not be advertised as being relievable by any surgical appliance was deafness. It seemed unfair that a man who had invented a machine which relieved deafness should not be allowed to advertise it. Nobody could cure deafness, and no one should be allowed to advertise that he could; but giving relief was a different thing. Lord Knutsford added that he spoke as a sufferer from deafness, who used a machine.

Lord Riddell said he had every sympathy with the proposal to regulate the trade, but this scheme required a good deal of scrutiny. It seemed that an army of officials would be needed to examine and report upon the various patent medicines and appliances. Unless some adequate measures were taken in that respect the bill would be likely to do more harm than good, as it would engender among the public a belief in the efficacy of measures which at present were not applied. He saw from the report of the Committee that the investigation of the contents of one patent medicine involved 1,607 questions to the proprietors, several chemical analyses, and a sort of legal inquisition as to its contents. As he read the bill, moreover, every false leg, every set of teeth sold under a trade mark, every ear trumpet, and a hundred and one other appliances would require to be investigated and registered by the Ministry. The law in regard to venereal disease showed the danger of passing a measure of this sort hurriedly. There was on the statute book a provision that no advertisement should be published regarding remedies for venereal disease. Many of the best known medical men were interested in prophylaxis or early treatment. They were of opinion that the law prevented them from giving advice on the subject publicly. The other day, according to newspaper report, they held a meeting at which they decided to give advice, although undoubtedly committing a legal offence. Meanwhile they were endeavouring to get the law remedied.

Lord Cowley hoped that the Government would not listen to the advice just given as to delay. The measure was one of great urgency. The people who asked the poorest in the country to buy "remedies" which would do them no good were little better than those who sold bogus five pound notes. It was a scandal they had been allowed to make huge fortunes out of the most undefended portion of the people.

Lord Astor, replying, was grateful for the general welcome given to the bill. It had, he said, been introduced in the Upper House to secure that it should be available for discussion in the Commons when that House met in the autumn. He promised to go carefully into the question as to appliances for the deaf. As for Lord Riddell's apprehension of "an army of officials," the answer was that the department did not intend to have inspectors going all over the country. They would see that injury was not done to the public by what was advertised. They would, generally speaking, see that the ingredients were what they were reported to the department to be before the owner was authorized to put them on the market. He trusted that the bill would be passed in the near future. There would be no attempt to rush it.

The measure was then referred to Committee of the whole House.

Dangerous Drugs Bill.

The Dangerous Drugs Bill, which has been framed to give effect to the International Opium Convention signed at the Hague in 1912, was considered by a House of Commons Standing Committee on Tuesday, July 27th. Mr. Nicholson was in the chair. Sir J. Baird, Under Secretary for Home Affairs, proposed an amendment to Clause 7, which deals with the control of the manufacture or sale of cocaine, morphine, and other drugs, providing that regulations under the section should provide for authorizing any person who lawfully kept a shop for retailing poisons under the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, (*a*) to manufacture at the shop in the ordinary course of his retail business any preparation, admixture, or extract of any drug to which Part 2 of the Act applies, or (*b*) to carry on at the shop the business of retailing, dispensing, or compounding any such drug, subject to the power of the Secretary of State to withdraw the authorization in the case of a person convicted of an offence against the Act or of an offence under the enactments relating to the customs as applied by the Act and who could not, in the opinion of the Secretary of State, properly be allowed to carry on the business of manufacturing or selling or distributing any such drug. The Secretary of State before withdrawing the authorization is bound to consult the Council of the Pharmaceutical Society of Great Britain. Nothing in any regulations made under the section is to be taken to authorize the sale or keeping of an open shop for the retailing, dispensing or compounding of poisons by any person who is not qualified under the provisions of the Pharmacy Acts, or to be in derogation of the provisions of those Acts for prohibiting, restricting, or regulating the sale of poisons. The amendment was agreed to. Sir J. Baird moved an amendment to Clause 13 (which refers to offences and penalties) to the effect that a person guilty of an offence under the Act should be liable to both fine and imprisonment, and in the event of a second or subsequent conviction to a fine not exceeding £500 or to imprisonment with or without hard labour for a term not exceeding two years, or to both such fine and imprisonment, and the court may in addition order the goods in respect to which the offence was committed to be forfeited. This amendment was approved. Sir J. Baird moved a further amendment to Clause 13 dealing with the time within which proceedings can be instituted, and this was agreed to. A new clause was added giving power of arrest of a suspected person.

It was also decided on the motion of the Attorney-General for Ireland that a new clause should be added to the effect that in the application of the Act to Ireland a reference to the Poisons (Ireland) Act, 1870, the Pharmacy (Ireland) Act, 1875, and the Pharmacy (Ireland) Act, 1875 (Amendment) Act, 1890, should be substituted for any reference to the Pharmacy Act, 1868, and a reference to the Pharmaceutical Society of Ireland should be substituted for the reference to the Pharmaceutical Society of Great Britain. The committee stage was completed and the bill was ordered to be reported to the House.

In the third reading of this measure, which is designed to regulate the import, export, and manufacture of opium and other dangerous drugs, Mr. Stewart drew attention to the quantity of morphine exported from Great Britain to the East. He understood that an immense amount was manufactured in this country, most of it in Edinburgh. He was told that when Customs officers managed to lay hands on parcels going into China, they sent a small sample to the local hospitals, and that hospitals got more than they wanted from this gratuitous source. Dr. Murray hoped that the Home Office would use its power of regulation effectively. The bill was then read a third time.

Finance Bill: Charitable Contributions Allowance.

On report on the Finance Bill, on July 26th, Mr. Chamberlain submitted, in accordance with promise, the new clause to afford an Excess Profits Duty allowance in respect of charitable contributions. The clause agreed to is as follows:

> Where, out of the profits of a trade or business, any contribution has been made after the sixteenth day of July, nineteen hundred and twenty, to any trust, society or body of persons in the United Kingdom established solely for the purpose of the relief of the poor or the sick, or for the advancement of education, religion, or for scientific research, there shall, for the purposes of Excess Profits Duty, be allowed, in the computation of the profits of the trade or business arising in the accounting period within which such contribution was made, a deduction in respect of such contribution of an amount not exceeding five per cent. of those profits as calculated for the purposes of Excess Profits Duty (before adjustment for increased or decreased capital, and before making any deduction under this section), and not exceeding twenty per cent. of the amount of such contribution. This section shall not apply to any contribution which, apart from the provisions of this section, would be admissible as a deduction from profits for the purposes of Excess Profits Duty.

In the course of the discussion Sir Martin Conway made an unavailing endeavour to get the percentage of concession changed from five to ten. Speaking on behalf of the universities, he pointed out the very limited character of the benefit. As he understood the clause, supposing a man gave £100,000 of the profits of his business he would have excess profits duty remitted on £20,000, provided that the £20.000 was not more than 20 per cent. of the total profits of the year. Mr. Bigland, in supporting the appeal, said that what the Chancellor of the Exchequer had yielded would not bring in anything like sufficient money to the hospitals of the country. Mr. Chamberlain replied that he had done what all his predecessors had failed to do. He had allowed a man to make a subscription to the universities and hospitals and other institutions and to charge a part of it to the State—had allowed him to take the credit and not to take the whole of the cash. Earl Winterton regretted the attitude of the previous speakers towards the concession. The idea that the future of the hospitals or universities depended upon a percentage under this clause was really absurd. The Council of the British Hospitals Association and Sir Arthur Stanley had never said they were dissatisfied with the concession given by the Chancellor of the Exchequer. Personally he was grateful for it, and thought it was as much as could be expected.

Criminal Law Amendment.

The Joint Select Committee of Lords and Commons on the Criminal Law Amendment Bill, Criminal Law Amendment Bill (No. 2), and the Sexual Offences Bill, has adjourned its sittings until the autumn session. The Committee has met five times, and examined fourteen witnesses, largely going over evidence which was given before a committee that dealt two years ago with similar proposals, and was presided over by the same chairman, Lord Muir Mackenzie, but was otherwise differently constituted. Amongst the witnesses were several medical women representing the Women's Medical Federation. Dr. Helen Wilson again gave evidence. The principal criticism of the bills was against the clause to make communication of venereal disease a penal offence. Dr. Helen Wilson, for example, said that at one time she was in favour of a clause somewhat similar, but after going into the matter more carefully she had come to the conclusion that it was not a matter for criminal legislation. Broadly, the opinion expressed was that such a clause would be very difficult to operate, and that it might tend as a deterrent to submission to treatment, and so do more harm than good. Major Farquharson, whose view was pretty clearly indicated by his questions, aided considerably in elucidating the balance of judgement of these witnesses as to a delicate problem.

Medical Treatment during Demobilization Furlough. Sir A. Williamson, in answer to Captain Coote, on July 28th, said that soldiers on demobilization furlough were entitled to free medical treatment. If the seriousness of a soldier's condition made it impossible for him to report personally, it would generally be practicable for a relative or friend to send the necessary intimation to the military authorities. If this were done, the cost of private treatment up to the time of removal to a military hospital would be refunded. If the soldier were too ill even to arrange for this report, and his relatives were unaware of the correct procedure, a refund of medical expenses would not be refused on that account.

Dentures for ex-Service Men. Mr. Macpherson, on July 29th, informed Mr. Bryant that the Ministry of Pensions had arranged with a panel of dentists throughout the United Kingdom for the free supply of dentures to those ex-service men who, as the result of illness or injuries due to service, required them. Application should be made by the man to his Local War Pensions Committee.

Poor Law Statistics. In a reply to Mr. George Thorne, Mr. Baldwin stated, on July 28th, that for the year 1918-19 the estimated average weekly cost for a person relieved in Poor

Law institutions in England and Wales was 21s. 7d.; the estimated average weekly cost of domiciliary Poor Law relief was 5s. 1d. These averages included medical attendance. For Scotland, the average weekly indoor cost was £1 1s. 11¼d; outdoor 5s. 0¾d. The average cost of a prisoner in penal servitude was £2 2s. 9d., and of a person confined in an ordinary prison £1 10s. 10d.

Nursing Staff of Prison Hospitals.—Mr. Shortt stated, on July 28th, in reply to Major Hill, that before an officer could be appointed to the hospital staff of a prison a special course of training at a prison hospital training school was required, and a report of fitness in all respects obtained. A duly trained hospital staff is in the course of formation at Holloway Prison. It will consist of one hospital lady superintendent, two principal nurses, and forty-eight nurses.

The Dentists Bill.—Dr. Addison, in answer to Mr. Raffan on July 28th, said that the bill for carrying out the recommendation of the Departmental Committee on the Dentist Act, 1878, would be introduced before the recess.

Destruction of Rats.—Asked by Mr. Grundy, on July 28th, whether he was aware that rats were now consuming not only the actual sum of the bread subsidy, which amounted to forty-five million sterling, but at the present price of grain nearly twice the amount, Sir A. Boscawen said that any estimate of depredations must be problematical. But his department was making every effort to instruct local authorities as to their duties under the Rats and Mice Destruction Act, and a considerable reduction in the number of rats had been made in the parts of the country where effective measures had been taken.

Experiments on Animals.—On Friday, July 23rd, Sir John Baird moved an address for a return showing the number of experiments on living animals in 1919 on licences granted under 30 and 40 Vic., cap. 77, distinguishing the nature of the experiments.

DOMESTIC SMOKE.

A SMOKE ABATEMENT BILL, which had the support of various smoke abolition societies and municipalities, was introduced in the House of Lords by Lord Newton in 1914,[1] and the President of the Local Government Board appointed a Departmental Committee to examine the state of the law and to make proposals. The work of the Committee was suspended during the war, but in the early part of the present year it was reconstituted, with Lord Newton as chairman, and in view of the many State-aided housing schemes which are now projected or begun has issued an interim report, dated June 1st, on the subject of domestic smoke. The Committee has arrived at the conclusion that even in industrial areas domestic chimneys contribute at least 50 per cent. of the total smoke nuisance, and that at least 6 per cent. (amounting to two and a half million tons annually) of bituminous coal burnt in domestic fireplaces escapes unconsumed into the atmosphere. Domestic soot contains a higher percentage of tar than factory soot, and is therefore more destructive. Allusion is made to the evil effect of smoke pollution on human health, on vegetation and agriculture, and on livestock and milk; and photographic illustrations are given of the damage to public buildings. The Committee has not attempted to assess the actual economic loss, but quotes the well known Pittsburg figures,[2] which estimate the cost of smoke pollution at £4 a head a year, as well as the report of the Manchester Air Pollution Advisory Board,[3] which found that the extra cost of household washing in a smoky town was £290,000 for a population of three-quarters of a million.

The most important section of the present report is that which deals with methods that might be employed to minimize the production of smoke in new houses, where the present opportunity for constructive reform must not be lost. Since coal burnt in open grates inevitably produces smoke the Committee has examined the value of solid fuels (anthracite, ordinary gas coke, and low temperature coke), mineral oils, gas, and electricity, all of which are smokeless heating agents; it was sought particularly to judge whether their use was practical, hygienic, and relatively economical. Electric cooking and warming, which at present are very expensive, and oil-fired heating, which requires special stoves and special arrangements for ventilation, it is considered, do not at present fulfil these requirements. The report deals at length with gas heating and central hot water supply. Almost without exception the witnesses before the Committee condemned the old-fashioned kitchen range and back boiler as inefficient, wasteful of fuel and labour, and productive of smoke, and the Committee records its opinion that wherever a supply of gas is available a gas cooker should be installed in place of a coal range. Several witnesses advocated gas as the best available fuel for the three purposes of domestic warming, cooking, and hot-water supply; as a modification of the "all gas" house, a separate coke-fired boiler can be installed for heating water, and, in the case of a continuous supply will be decidedly cheaper.

The Committee is satisfied that gas cookers and gas fires properly installed are thoroughly hygienic; the use of gas fires has the advantage that by elimination of chimney breasts and stacks, and by the construction of small flues within the wall, considerable economy in building construction may be effected. A central hot water supply is quite practicable in the case of tenement houses, and should be provided universally. For detached houses also it is desirable, if it can be provided at a moderate cost; practical experiments in this direction ought, it is said, to be encouraged. Members of the Committee visited the Austin Motor Company's village, built in 1917, at Northfield, near Birmingham, where each bungalow and house has its own central heating served by a coke stove, which carries hot water to the radiators by means of a "calorifier" and also furnishes the domestic supply. These dwellings were found to be smokeless, economical of fuel, well ventilated, and popular with the tenants; it was estimated that by the installation of this central heating plant and the provision of a gas cooker in each house a saving of £30 had been effected in the initial structural cost of each bungalow. The amount of coal necessary to maintain the hot-water supply and warm the whole house, in which cooking was performed by gas, was 1¾ cwt. a week. The Committee believes that for the heating of rooms gas fires or hot-water radiators should entirely supersede the old-fashioned open coal grate. It recommends that in none of the houses built with the assistance of the Government subsidy should more than one or, in exceptional circumstances, two coal grates be installed; it appears that even this single coal grate is allowed somewhat reluctantly, in deference to the strong prejudice in its favour which still exists in many quarters.

In common with the majority of those who have studied the question of domestic heating, the Committee was struck by the absence of full and scientific knowledge on this question; one of the most important of their conclusions is given in Section 63, where they say, "We think that the whole subject of hygienic and scientific heating deserves a very much greater measure of public attention than it has hitherto received." The two other most important recommendations of the Committee are that (1) the central housing authority should decline to sanction any housing scheme submitted by a local authority or public utility society, unless specific provision is made in the plans for the adoption of smokeless methods for supplying, where practicable, the required heating; and that (2) gas and electricity undertakings should be given every facility and encouragement to cheapen the supply of gas and electricity, and that the practice adopted by municipal authorities of overcharging in order to relieve the rates should be discontinued.

In judging the value of the report the amount of the additional expenditure which the adoption of its recommendations would entail is, at the present time, a factor of great importance. The Committee has considered this matter carefully. It is pointed out that where it is decided to utilize gas or electricity for cooking and heating, or to install central heating or central hot water supply, considerable economy can be effected in the initial structural cost, but even if in exceptional cases slight additional expenditure is involved it is well worth while.

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[1] [illegible]

[2] [illegible]

[3] [illegible]

England and Wales.

Presentation to Mr. F. C. Larkin.

At the Liverpool Medical Institution, on July 21st, a large and enthusiastic gathering of medical men from Lancashire and Cheshire assembled to do honour to Mr. F. C. Larkin, who has recently retired from the active surgical staff of the Stanley Hospital, Liverpool. The chair was taken by Sir James Barr, Chairman of the Presentation Committee, who called on Mr. F. Strong Heaney, the Secretary, to read the address, signed by 161 subscribers, which was presented to Mr. Larkin, together with Haig's etching of St. Edmund's Chapel, and a cheque. The address referred to Mr. Larkin's long and brilliant career at the Stanley Hospital, his work as honorary secretary of the Lancashire and Cheshire Branch, and as Chairman of the Organization Committee of the British Medical Association, a post which he held during a critical period. The testimonial is in recognition of his long and arduous work on behalf of his professional brethren. Sir James Barr then sketched Mr. Larkin's career as a university teacher, as a surgeon and a worker for the betterment of the medical profession. He dwelt on the factors of character and training which had contributed to Mr. Larkin's success, and pointed to his work for the profession as an example of what men in his position might achieve for their fellows. The chairman was followed by Drs. Barnes, Edwards (Widnes), Gemmell, Nevins, Richardson, Logan, and Paterson, and by Professor Rushton Parker and Mr. Newbolt, each bearing testimony to different aspects of Mr. Larkin's work. Mr. Larkin replied, and after thanking his friends for their presentation gave an interesting account of that part of Westminster Abbey which formed the subject of the etching presented to him.

Post-graduate Courses at Newcastle.

The first post-graduate course held under the joint auspices of the Council of the College of Medicine, the honorary medical and surgical staff of the Royal Victoria Infirmary, Newcastle-on-Tyne, and the British Medical Association (North of England Branch) has just been completed. The course was well attended, and has been in every way a complete success. This success and the wish expressed by a large number of practitioners has encouraged the committee to continue the courses during the coming winter. The syllabus, which is under consideration at present, will be a revised and extended one. A further announcement will appear in this Journal in due course.

Lying-in Homes in London: Proposed New Regulations.

The London County Council will apply to Parliament next session for an amendment of the London County Council (General Powers) Act, 1915, so far as it relates to the supervision of lying-in homes. Four years' experience of the regulations has shown that they are inadequate. The amendments suggested are:

1. That an applicant for registration as keeper of a lying-in home should be required to disclose further particulars about himself and the premises and their equipment.
2. That the power to refuse or cancel registration should be exercisable against a person on the ground that he is "unsuitable," instead of on the uncertain ground, as at present, that he is "of bad character."
3. That no licence should be granted to anyone under 21 years of age.
4. That the Council should be empowered to make by-laws governing lying-in homes, prescribing the records to be kept, the number of patients to be accommodated, and the equipment to be used, and requiring that all deaths of patients shall be notified to the Council.

The requirement to notify deaths is imposed on midwives by the Midwives Acts, but this does not apply in the case of keepers of lying-in homes who are not midwives, and of 237 lying-in homes at present on the London register the number of keepers who are midwives is only 136. The Chairman of the Central Midwives Board, to whom the proposals have been submitted, has expressed the opinion that they are desirable.

Scotland.

Edinburgh Royal Maternity Hospital.

At a somewhat belated annual meeting of the Edinburgh Royal Maternity Hospital, held on July 30th, some interesting figures were given showing the remarkable increase in the hospital's activities during 1919. Bailie Hutchison presided and moved the adoption of the report, referring to the increase of 326 in the number of confinements which had taken place in 1919 in and in connexion with the hospital, and pointing out that of the 2,262 patients attended 1,036 had been delivered inside the building and the remainder (1,226) in their own homes. It had consequently been a difficult matter to find sufficient accommodation for the cases dealt with, and the directors, by acquiring properties within easy reach of the hospital, had made temporary provision for the growing demand, but it was now abundantly evident that the building and equipping of a new and up-to-date hospital was a clamant necessity. Sir Ludovic Grant, in seconding the adoption of the report, spoke with satisfaction of the agreement which had been arrived at between the hospital directors and the university authorities. The closer relations established—details of which were given in the Journal for June 12th, p. 809—would be of great benefit to both institutions. He referred to the favourable features to be found in a record number of patients and in the firm establishment of the antenatal clinics as part of the machinery of the hospital; on the other hand he thought that the statistical part of the report afforded food for anxious thought, and emphasized the utter insufficiency and lamentable inadequacy of the hospital in relation to the city at present and still more to the future needs. Major-General W. B. Bannerman expressed his admiration for the work which was being done in the antenatal department and in that devoted to the care of the venereal diseases complicating childbirth, and stated that in India and in other parts of the world obstetricians looked to Edinburgh Royal Maternity Hospital for guidance in these new developments. They had of recent years begun similar antenatal work in Madras. The total number of attendances at the antenatal clinics during 1919 had been 1,414, as compared with 947 in 1918, or an increase of 467. Of the 1,414 cases, 701 were new cases and 713 were revisits.

The Caledonian Medical Society.

The annual meeting of this society was held in the Committee Room (Prince Charlie Room) of the Public Library, The Wardwick, Derby, on July 24th, under the presidency of Dr. Rutherford Macphail. The society holds annual meetings alternately in England and Scotland, but it has not previously held an annual gathering since 1914. It differs from all other medical societies in these respects: Each member must possess a university degree, and must have Celtic blood in his veins. Further, it devotes special attention to old Celtic literature in relation to medical science. The society has a membership of 300, in addition to some 25 honorary members belonging to other professions. Dr. Macphail, who was President for the second time, took as the subject of his address, "Derby and the 'Forty-five.'" The annual dinner was held the same evening, when the toast of the Society was proposed by Dr. F. Milnes Blumer, Mayor of Stafford. The next annual meeting will be held in Edinburgh, under the presidency of Emeritus Professor William Russell of Edinburgh.

Small-pox in Glasgow.

A report by the Glasgow Public Health Department dealing with the outbreak of small-pox in that city states that up till July 25th 379 patients had been admitted to hospital, all but 11 being from within the city. One hundred of the patients were children under 15 years of age, of whom 73 were unvaccinated. Of the remaining 27 children, who had been vaccinated in infancy, not one died, while 20 of the unvaccinated group died. The percentage death rate among the unvaccinated children was thus 27. The group of those aged 15 and over contained 279 patients; six were unvaccinated and five of these died. Of the remaining 273 vaccinated in infancy, 36 have died. The mortality among the unvaccinated patients of all ages was 34 per cent.; among those who had been vaccinated in infancy the mortality was 12 per cent. It is added that so far no cases have occurred among the medical, nursing and administrative staff engaged in dealing with the patients. Since the beginning of general vaccination in Glasgow 154,410 persons have been vaccinated.

Correspondence.

BONESETTERS *VERSUS* THE SCIENCE AND ART OF SURGERY.

SIR,—I read the letter of my friend, Dr. William L. Griffiths of Swansea, on the better treatment of fractures, published in the JOURNAL of July 24th, p. 139, with great interest. While I agree with his suggestion about Major Sinclair, I do not think he goes far enough in what he says as to the outlook for the better treatment not only of fractures but of injuries to joints also. On that account I suggest that correspondence should be directed to the bigger problem opened up by the title I have put to this letter.

Recent experiences, social and medical, have recalled to my mind how I had myself to go through the mill some years ago in connexion with a branch of surgery—injuries in the neighbourhood of joints—into which bonesetters poke their noses and still hold sway and power. The metropolis possesses a unique body of eminent surgeons, but it has its bonesetters also. Cardiff and Swansea, within my knowledge, and other big towns in the British Isles, according to report, have their share of these men, who enjoy the reputation of being able to do wonders for troubles in bones and joints which are considered beyond the ken of the general practitioner and consultant.

It is worth while to consider why this is so and what has given rise to the existence or evolution of bonesetters. A pregnant phrase in the memorable address given by Sir Clifford Allbutt at Cambridge supplies one of the factors for the solution of the problem:

> The half medieval teaching of Medicine in the Oxford and Cambridge of my undergraduate days was deficient in solids; we were not even examined in surgery or midwifery; but we got far more of the imponderables. . . . The artist and the craftsman live their lives now in an alien world.

How then could a doctor when going through his curriculum acquire the knowledge and the practice in the handicraft of bonesetting which is so necessary? The handicraft of surgery was not thought worthy of recognition, perhaps because people remembered that the barber-surgeon was the father of the modern surgeon.

Another experience was a war recollection revived by Major Sinclair's demonstration of how to deal with fractures. It is a fact that the treatment of fractures by members of the profession during the war was so inefficient that a special department had to be created to remedy the defect. That defect was due to the manner of training the student in the art as well as in the science of surgery. I feel sure that to-day it would be a desirable innovation to establish orthopaedic departments in every medical school on the lines adopted by the War Office in order that the student might learn the methods of the Liverpool school, created by H. O. Thomas and worthily carried on by his nephew, Robert Jones. Yet another experience was recalled by a remark made by the Lord Chief Justice of England at the American Hospital dinner in London a few weeks ago, when he said, "We in London had much to learn from Paris, and vice versa." This brought to my mind the days when Lucas Championnière practised treatment of fractures by massage and immobilization in Paris for a long time before his methods and their success became generally known in this country.

The great problem is how to put our house in order with regard to bonesetting. Its solution practically resolves itself into adequate training in the handicraft of surgery at our medical schools. A method of teaching in the laboratory and workshops by demonstrations and practice on models under competent teachers must take the place of the acquired habit of uncritical acceptance of authority as laid down in textbooks.

Let me take as an example Colles's fracture, the commonest of all fractures in the upper extremity. I confess that for nearly half my career I did not know the best method of treating it. Look up any modern textbook and you will find that the best method of reducing the deformity is not mentioned; in almost every instance a flat wooden splint is recommended. Just fancy in the twentieth century using a flat splint to a rounded surface! It is a regression from the Pharaonic days, for the old Egyptians knew better. The crippling of a hand, due to the methods of treatment, is one of my sad surgical experiences. Even during the war I inspected a hospital where a chauffeur's fracture was in splints at the end of seven weeks! I remonstrated with the surgeon-in-charge, and to emphasize my point invited him to see my own chauffeur, who had had a similar fracture, but was driving a car with the damaged hand within a month after the accident.

Take again the commonest of fractures in the lower extremity, "Pott's"; here also the same observations hold good. The bad setting of this fracture is as unsatisfactory as in the case of Colles's fracture, and later on the orthopaedic surgeon is called upon to remedy, by a serious operation, a deformity which could have been prevented had the training of surgeons been efficient.

Like a good many other surgeons, I have sometimes wondered why bonesetters enjoy the confidence of the public; but, on investigating the facts, I came to the conclusion that it was often the fault of the medical practitioner to whom the patient first went for treatment. Quite recently a well-known man met with an injury to his knee; he was treated at home and recommended by his doctor to a hydropathic establishment; lameness from a stiff joint continued, and he was advised by many friends to go to a bonesetter. Fortunately, he went to an orthopaedic surgeon (Major Alwyn Smith) who was in charge of a military orthopaedic hospital, and was cured within five minutes. It is this type of case that forms the bulk of the "wonderful cures" of bonesetters.

I have had the privilege of seeing war surgery amongst our allies in France, Italy, and Serbia, and the treatment of complicated surgical deformities of limbs in those countries was not any more satisfactory than our own, except in special orthopaedic hospitals.

A beginning has been made at St. Thomas's Hospital to put the treatment of fractures on a sound basis; is it too sanguine to hope that this is the prelude to the establishment of similar clinics in every teaching medical school? Until this is done bonesetters will still continue to flourish, though Mr. Hugh Owen Thomas, the father of the Liverpool school of orthopaedic surgery, said some forty years ago that—

> He felt it his duty to record his experiences of a personal visit to some thirteen unqualified practitioners in the occult art of bonesetting, and that many of them are only successful competitors with shrines, relics, and other nervine remedies, and he certainly would not advocate the addition of even a genuine relic to the surgeon's armamentarium.

A treatise dealing with the best method of reducing fractures and describing the best type of splint to use in individual injuries of limbs would be a great boon to the rising medical generation; alternative methods of treatment should survive only in histories of the surgery of the dead and gone past.

I have been through the gamut of operative procedures for fractures, and, like my friend Dr. Griffiths, have come to the conclusion, though from another standpoint, that there is great need of reform in the treatment of fractures and injuries to joints. I am, etc.,

Cardiff, July 27th. J. LYNN-THOMAS.

VITAMINES.

SIR,—I notice that in the discussion at Cambridge on vitamines Professor Hopkins referred, more in sorrow, perhaps, than in anger, to a recent remark of mine on the vitamine "stunt." I hasten to assure him that in using that expression I did not mean to imply any disbelief in the existence of vitamines or in the part their absence from the diet plays in the production of certain diseases. I did intend, however, to utter a warning against the overbooming of vitamines and their significance in pathology. I pointed out at the time that there have been in the past other dietetic "stunts"—such as the purin free diet—which suffered from too enthusiastic an advocacy, with the result that they have now fallen into an only partially deserved disrepute. I fear this may happen again in the case of the vitamines. When we find one speaker at the Cambridge discussion expressing the view that all diseases are deficiency diseases, and another—oh. shade of Koch!—stating his "firm conviction" that tuberculosis "is a deficiency disease," it will be admitted that such a warning is not unnecessary.

Of course Professor Hopkins and his scientific co-workers are not to be blamed for the "booming and boosting" of vitamines. It is carried on by those individuals—and they are fairly numerous both within and without the ranks of the profession—whose ears are always pricked for the *dernier cri* and who hasten to apply with uncritical minds the incompletely verified hypotheses of the laboratory to the complicated facts of clinical medicine.—I am, etc.,

London, W., Aug. 1st. ROBERT HUTCHISON.

MORTALITY OF VENEREAL DISEASES.

SIR,—Mr. Charles Russ should look before he leaps into an accusation of "serious misstatement." I cannot but express my surprise that an honorary physician to the Electrical Department of the Male Lock Hospital should suppose that the lethal effects of venereal diseases are summed up in the mortality attributed to them in the Registrar-General's report.

In my remarks at the Ministry of Health I pointed out that the deaths ascribed to venereal diseases by the Registrar-General (2,018 in 1919) give a wholly inadequate idea of the destruction of life for which they are responsible. I quoted Dr. Amand Routh, who traces to them 20,000 antenatal deaths, and mentioned that general paralysis and locomotor ataxia, which are of purely syphilitic origin, cause nearly 3,000 deaths annually. I described syphilis as the hidden hand in pathology, which is really accountable for a large proportion of the mortality that is generally believed to be due to other diseases, such as aneurysms, angina pectoris, organic heart disease, cerebral haemorrhage, softening of the brain, Bright's disease, and epilepsy. I followed the late Sir William Osler in giving syphilis the third place amongst the great killing diseases. In the standard statistics of the American Social Hygiene Association it is placed first of all, even above tuberculosis.—I am, etc.,

London, W., Aug. 2nd. JAMES CRICHTON-BROWNE.

SIR,—Unless Dr. Russ's letter in to-day's JOURNAL is intended as a subtle demonstration of the worthlessness of the Registrar-General's report as an index of mortality due to venereal disease, he must be presumed to be ignorant of this fact. The statement that no deaths are ascribed to gonorrhoea in the report is sufficient alone to show this, for gonorrhoea is well known to be one of the principal causes of pelvic inflammation in women, many cases of which are fatal. The deaths certified as due to venereal disease are nearly all hospital cases; in private practice they are seldom if ever certified as such, for reasons which are obvious. Besides, if a man dies from aneurysm, cerebral haemorrhage, or any of the numerous conditions which are due to syphilis, the cause of death is certified as such, and not as syphilis.

Dr. Russ refers to Sir James Crichton-Browne's description of tuberculosis, cancer, and venereal diseases as the "three chief killing diseases" as "a serious misstatement of fact." If there is any misstatement it errs on the side of moderation; he might have said "two" instead of "three." Taking syphilis alone, the only question is whether this comes second or third after tuberculosis. The late Sir William Osler placed it third; other investigators place it second among the killing diseases.

Runeberg of Helsingfors, investigating the mortality caused by syphilis in connexion with life assurance, found that syphilis was a cause of death in 11.4 per cent., and that if cases of cerebral haemorrhage and cardiac disease probably due to syphilis were included the percentage rose to 15. This placed syphilis second to tuberculosis and above pneumonia in this series of cases, the mortality due to tuberculosis being 21 per cent. and to pneumonia 10 per cent. during the same period of time. Audry, in his essay on the mortality of acquired syphilis, arrives at about the same figure, namely, 14 or 15 per cent. These figures only concern acquired syphilis, and do not take into account the vast number of deaths due to the inherited disease. If we include these, and also deaths due to the complications of gonorrhoea, venereal disease will come easily second as a cause of death. Further, if we recognize the fact that syphilis is a predisposing cause of tuberculosis, venereal diseases as a direct or indirect cause, might be placed first among the killing diseases.—I am, etc.,

London, W., July 31st. C. F. MARSHALL, M.D., F.R.C.S.

SIR,—Dr. Russ, in your issue of July 31st, says it is a serious misstatement for venereal disease to be included among the three chief killing diseases, and as evidence mentions that the total deaths assigned to syphilis in the report of the Registrar-General for 1917 amounted to 2,127. But the figures of the Registrar-General cannot be expected to give correct information as regards mortality from syphilis and alcohol.

Sir William Osler, in the Lettsomian Oration before the Medical Society of London in 1917 (fully reported in the BRITISH MEDICAL JOURNAL of May 26th, 1917), stated that in the report of the Registrar-General for 1915 syphilis was responsible for 1,885 deaths, and was placed tenth in the list of killing diseases, whereas by careful study of the figures Sir William estimated the deaths from that disease in that year to have been 60,000, and from tenth place as killer he placed it "at the top—an easy first among the infections." Locomotor ataxy and general paralysis in 1915 accounted for 735 and 2,263 deaths respectively.

Sir Victor Horsley, in a letter to *The Times* in 1914, wrote:

> "Owing to the present system of registration our public health statistics are not only exceedingly faulty but in many cases, such as venereal disease and alcoholism, also utterly misleading."

It is to be hoped that not only in Parliament but also on every local governing body members of our profession will be elected, as it is our duty to help and guide the public in such questions. From my experience during six years as member of the borough council for Paddington, such matters frequently appear on the agenda.—I am, etc.,

London, W., Aug. 2nd. HENRY H. STURGE.

DILATATION OF THE HEART.

SIR,—One cannot help being struck at the present day by the large number of people who are said to be suffering from dilatation of the heart, and the authoritative way in which the diagnosis is made makes one hesitate to raise any doubts. The diagnosis is essentially based upon the increase of the precordial dullness, and a displacement of the impact of the apex upon the surface wall of the chest associated with certain subjective symptoms, and as a matter of fact the mere position of the impulse is held to be sufficient to determine whether there be dilatation or not.

The teaching of to-day is different from what it was ten years ago, but the number of practitioners who "carry on" on the lines laid down by their teachers makes one feel justified in quoting from an address by Sir James Goodhart in 1910, wherein he said: "When the history of medicine for our period comes to be written I incline to think that the Recording Angel will have some criticisms to make upon the teaching of those who, upon the strength of what is a most unreliable method of examination, have insisted so much upon an as-it-was and as-it-is demonstration of the size of the heart."

Insurance companies, advised as they are by teachers at the medical schools, persist by their questions in treating the impulse in relation to the chest wall as constant, irrespective of the many conditions that tend to alter it, and, as this method seems to give a good average of success from a business point of view, it tends also to give it a sort of scientific assurance as well.

Apart from the difficulty of recognizing a small increase of precordial dullness, we must remember that this increased dullness may be due to some disturbance of the pericardium either in the form of an effusion or a more definite form of inflammation, for, as the late Sir William Osler pointed out in his *Principles of Medicine*, a large number of excellent observers have acknowledged their inability to distinguish between pericarditis and dilatation.

As a factor, however small, the suction action due to the negative intrapericardial pressure, to which I drew attention in 1915, requires to be taken into consideration when making a diagnosis, for in health, as a result of that suction, the pericardial fluid is kept at an equal thickness all round the heart. Any disturbance of that suction action, probably associated with a change both in the quantity and the quality of the fluid, is more likely to be revealed than a lesion seated more deeply within the heart itself.

Sir James Mackenzie has stated that "the factors producing dilatation are still obscure, and apart from the mystery associated with obscurity, there is also much room for speculation"; and, I would add, but little ground for authority.—I am, etc.,

Swansea, July 12th. G. Arbour Stephens.

DISLOCATION OF HUMERUS BY MUSCULAR ACTION.

Sir,—This note on a case of dislocation of humerus by muscular action may be of interest following on the report of a case by Dr. F. W. Morton Palmer (p. 126).

R. H. E., a strong powerful man, was for several years the subject of epileptiform convulsions, which invariably occurred during the sleeping hours of the early morning. On no less than four occasions on the cessation of the seizure the right humerus was found to be dislocated (subcoracoid), and on two instances, owing to the strong muscular resistance, an anaesthetic was found necessary for the reduction of the dislocation.—I am, etc.,

W. Eames,

Haslemere, July 20th. Surgeon Rear-Admiral R.N. (ret.)

Sir,—Referring to the paragraph in the Journal of July 24th, p. 126, headed "Dislocation of humerus by muscular action," and the statement of Dr. F. W. Morton Palmer that this complication of an epileptic fit must be rare, may I, as one who has authority to speak on this point, having been medical officer of the large epileptic colony in Maghull for over thirty years, state that this complication of an epileptic fit is by no means rare? I have reduced shoulders both with and without an anaesthetic many dozens of times, and have had many patients in the colony in whom on many occasions this complication has occurred during an epileptic seizure.—I am, etc.,

J. F. Gordon, M.D.,
Medical Superintendent, Epileptic Colony,
July 23rd. Maghull, near Liverpool.

LUPUS AND SYPHILIS.

Sir,—The interesting communication of Dr. H. G. Adamson in your issue of July 24th would have had its value much enhanced had the author obtained, or stated if he had obtained, the results of the Wassermann test in each of his cases.

It has during the past year come under my observation that a number of cases treated unsuccessfully by x rays and other means as "lupus" during a period of years have yielded a positive Wassermann reaction and improved at once under mercurial applications and antisyphilitic treatment.—I am, etc.,

A. Laird, M.B.,
July 27th. Royal Infirmary, Dundee.

In order to settle this point, we have sent a proof of Dr. Laird's letter to Dr. Adamson, whose reply follows:

Sir,—Dr. Laird, in his remarks upon my communication of July 24th upon the treatment of lupus vulgaris by means of the liquid acid nitrate of mercury, makes the suggestion that the good results claimed may have been due to the cases so treated having been, not "lupus," but tertiary syphilis.

Lupus vulgaris is unhappily a too familiar complaint in a London dermatological clinic, and an intimate knowledge of its clinical features renders the diagnosis from syphilis generally easy, and is, moreover, of far more practical value than an appeal to the elusive aid of a Wassermann test.

As the thirty or more cases upon which this treatment has been tried with success were in attendance in the skin department of St. Bartholomew's Hospital, it is, I think, improbable that all, if any, of them were cases of unrecognized syphilis wrongly diagnosed as lupus vulgaris.—I am, etc.,

London, W., July 30th. H. G. Adamson.

THE WASSERMANN REACTION.

Sir,—I have, ever since the introduction of the Wassermann reaction, both in articles and books, emphasized my opinion that while the Wassermann reaction is a most valuable servant it is an unreliable master. This test is not pathognomonic of syphilis and is often contradictory, different results being obtained at different laboratories and on different occasions at the same laboratory with no intervening treatment.

In view of Colonel L. W. Harrison's statement in his recently published *Manual of Venereal Diseases for Students*, page 103, "Excluding the above mentioned diseases one can say that a positive reaction justifies a diagnosis of syphilis," and the Government publications (National Health Insurance, 14, 21, 23, and Report on Public Health and Medical Subjects, No. 1), it would appear advisable to collect and publish the large amount of evidence now available suggesting that the report of a Wassermann reaction test as employed at present is not sufficient evidence alone on which to base a diagnosis of syphilis or to exclude this disease. I therefore venture to appeal to your readers to give me the help of their experience and to forward me instances of apparent unreliability of the Wassermann reaction of which they have personal experience, especially in regard to

1. Contradictory results at different laboratories.
2. Contradictory results on different occasions at the same laboratory with no intervening treatment.
3. Occasions where the clinical evidence and Wassermann reaction have been in opposition—namely:
    (a) Undoubted clinical evidence of active syphilis with a negative Wassermann reaction.
    (b) Cases apparently free from old or present syphilitic infection with a positive Wassermann reaction.

When making my report on the unsatisfactory results forwarded to me by your readers I propose to publish the practitioner's name in connexion with the evidence he or she is good enough to forward me, unless I am expressly requested not to do so.—I am, etc.,

115 Harley Street, W., July 30th. H. Wansey Bayly.

PLEURAL-REFLEX SYNCOPE.

Sir,—Apropos of your editorial of July 3rd upon pleural reflex syncope, I have just received a press cutting of a case of fatal syncope during an operation for empyema, and I think that such occurrences are by no means so uncommon as your remarks would imply.

No doubt much may be accomplished in pleural surgery with perfect safety under a suitable anaesthetic, but when, as is frequently the case, chloroform is selected, and the patient only lightly anaesthetized, the trap is set for the chance of a catastrophe.

I wish particularly to criticize the suggestion which is quoted in your article, that such fatalities are due to a reflex vagal action. There is no evidence to justify such a conclusion; a brief cessation of the heart-beat may sometimes be evoked in animals by a reflex excitation of the vagus centre, but nothing approaching a fatal syncope has ever been recorded. Notwithstanding this, the myth of a reflex vagal death persists in medical literature.

In cases of chloroform syncope the reflex from the pleura, if such be actuating at all, will be motor sympathetic in character; this only affects the heart seriously when the chloroform anaesthesia is light, and, so far as we are at present aware, does not give rise to alarming symptoms under any other ordinary circumstances. There is thus no reason to allow the fear of a reflex vagal syncope to restrain the performance of operations upon the pleura.—I am, etc.,

London, W., July 29th. A. G. Levy.

PUBLIC HEALTH SALARIES.

Sir,—I am extremely glad that my letter of July 17th has given Dr. Heaney an opportunity to correct the incomplete report of his remarks on the above subject at the Representative Meeting.

The British Medical Association, however, by fixing a minimum salary for whole time junior appointments, and by continuing to accept advertisements for these and other whole time appointments that are admittedly underpaid, are a party to the indefinite multiplication of such appointments, and to *the education of the public to underestimate the value of a medical education.* It is this policy of "drift" which is dangerous to the medical profession at the present time. As it stands, the resolution to which Dr. Heaney gave his support is not likely to receive much consideration from recalcitrant authorities in view of the recent difficulties experienced in persuading local authorities to adopt the £500 a year minimum for all junior appointments.

The time has surely arrived for the British Medical Association to adopt a definite policy on a matter which will have far-reaching effects on the future of medicine.—I am, etc.,

W. H. DAVISON.

Birmingham, July 27th.

⁂ Our correspondent perhaps does not appreciate all the difficulties. The British Medical Association has not allowed this matter to "drift," but on the contrary has refused a large number of advertisements because they showed no increase on pre-war salaries. It has adopted a minimum of £500 for junior appointments, and it accepts no advertisement for a senior appointment which does not show a substantial increase on pre-war salaries. It attempted to arrive, in conjunction with the Society of Medical Officers of Health, at a new scale which would cover all medical officers, but this was not approved by the Representative Meeting for reasons which seemed good to a body containing a number of medical officers of health. The Association and the Society of Medical Officers of Health are together to attack this problem in the immediate future, and there is no doubt that a way will be found of improving the conditions of medical officers in the public health services just as has been done for those in nearly every other service.

PROPOSED TELEPHONE CHARGES.

SIR,—I have failed to find any reference in the JOURNAL to the proposed new rates of subscriptions for telephones. At present the rate is £5 for the instrument and 500 calls, those calls used in excess of this number being charged at a defined rate. It is now proposed to charge £7 10s. (in the provinces, with exceptions) for the use of instrument and 1½d. for each call. The excuse is that the small user now pays for the calls of the large user.

Under the new rate the user who makes 500 calls a year will pay over 5d. a call, while the user of 5,000 calls will pay a trifle over 2d. a call! This appears to me to be a case that the British Medical Association might well take up in the interest of the practitioners who are mainly small users.

The most equitable method appears to be a rental which includes a certain number of calls—say, the equivalent to the rental at 2d. or 3d. per call, and all extra calls to be charged at the same rate per call.—I am, etc.,

F. DE COVERLY VEALE.

Mumbles, July 24th.

Obituary.

JOHN GRIMES, M.D., B.Sc.Lond., M.R.C.S.Eng.,

Grassendale, Liverpool.

WE regret to record the death of Dr. John Grimes, of Grassendale, Liverpool, at the age of 77, which took place at his residence on July 25th. He took the B.Sc. degree of London in 1865, the M.B.Lond. and the M.R.C.S. the following year, and the M.D. in 1870. In 1871 he settled in Grassendale and quickly built up an extensive practice. He joined the Liverpool Medical Institution in 1872 and so would have celebrated his jubilee in a couple of years had he lived. He was able to retire from practice at the age of 60 and devoted much of his leisure to public work which he loved, and in which he was eminently successful. The older members of the community remember with gratitude the gracious personality and uniform kindness which marked his practice and which were associated with a recognized skill in his profession. His interest was at all times exercised on behalf of the poorer people, and after his retirement he devoted himself without stint to their service. He was elected as one of the representatives of Garston on the West Derby Board of Guardians, of which he subsequently became chairman, having served on nearly all the committees.

Recognizing the paramount importance of centres for hospital treatment near the homes of the people he worked hard, together with the other local practitioners, to provide a general hospital in Garston in place of the old Local Government Board hospital, which was only for accident cases. Subscriptions were obtained, but it was not until a generous grant from the estate of the late Sir Alfred Jones was secured, together with a grant from the Corporation, that the present beautiful Sir Alfred Jones Memorial Hospital was erected and opened in 1916. Dr. Grimes was made the first chairman of the committee. He was also a member of the executive of the Liverpool Central Relief Organization, and an enthusiastic supporter of the University Extension Movement, being for many years chairman of the Grassendale Society for University Extension. His home was a centre of culture, and for many years was the head quarters of various committees. He was engaged in committee work up to within a week of his death, and may be said to have died in harness. His was a fine character, the type of the general practitioner that has exalted the profession of medicine. He leaves a widow but no children. Prior to cremation a largely attended service was held in Grassendale Parish Church, of which he was for years a sidesman.

THE death took place recently, at the age of 66, of Dr. JAMES ISAAC PADDLE, medical superintendent of the lunatic asylums of Mauritius. Dr. Paddle had a distinguished career, first at the Royal College at Mauritius, and later at University College. London, where he won an entrance exhibition, many gold medals and prizes, and the Gilchrist scholarship. He became a Fellow of the Royal College of Surgeons in 1880 and obtained the B.A., B.Sc., and M.D. degrees of the University of London. On his return to Mauritius he held a succession of posts under the Government, and eventually became superintendent of the Government lunatic asylum—a post which he retained without taking a holiday for twenty-five years. Dr. Paddle died at Bournemouth, during his first leave of absence, from malaria complicated by influenza and pneumonia. Dr. D. E. Anderson (London) writes: Dr. Paddle had a high sense of duty, and was held in great esteem by everybody in the island. He was upright in his dealings, and to his meekness he added the virtue of piety. His judgement was held in high esteem by his fellow practitioners. He leaves a widow and a large family, of whom two sons fought in the war, and one—now a student of medicine—received the Military Cross.

The Services.

STANDARD ARTIFICIAL LIMBS FOR PENSIONERS.

FOR over three years the Ministry of Pensions has had under consideration the standardization of the types of artificial legs supplied to pensioners, the object being to facilitate repair and replacement. Work upon this standardization was carried out last summer by a committee under the chairmanship of Admiral Sir Reginald Bacon, and completed by the Minister's advisers, Sir Charles Kenderdine, K.B.E., Director of Artificial Limb Supplies, Mr. T. H. Openshaw, C.B., C.M.G., F.R.C.S., Mr. E. Muirhead Little, F.R.C.S., Mr. R. C. Elmslie, C.B.E., F.R.C.S., Mr. Michael Longridge, C.B.E., Past President of the Institution of Mechanical Engineers, and Mr. A. D. Bailey, Technical Adviser to the Ministry of Pensions.

The specification of these standard limbs has now been approved by the Advisory Council to the Ministry and Colonel Sir Lisle Webb, K.B.E., Director-General of Medical Services. In a few months all artificial legs of wood or leather supplied to pensioners will comply with the new specification. The method adopted has been to standardize the mechanism of the limb and the metal component parts, leaving the actual form to be fitted to [illegible] limb-maker. [illegible] of limbs which have been thoroughly and extensively tested, and [illegible] have been issued. Further improvements will be made, and the types will be [illegible] tested and proved.

The Ministry has had in hand the problem of providing a lighter artificial leg made of duralumin or some similar metal instead of wood and leather, and one type of this light limb has now received the approval of the advisers. Light limbs have evident advantages for certain cases. The pattern now approved will, it is hoped, be capable of being made by an engineering firm in such a way that only the actual fitting to the man need be carried out by a skilled limb-fitter.

HONOURS.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following medical officers of the Territorial Force: *Army Medical Service*: Colonel Creighton H. Lindsay, C.M.G., D.S.O. *Royal Army Medical Corps*: Lieut.-Colonels James F. MacIntosh, 1st Highland Field Ambulance, and Arthur E. Jerman, 4th London Field Ambulance.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a special congregation held on July 29th the honorary degree of Doctor of Laws was conferred on Dr. J. J. Abel, Professor of Pharmacology in Johns Hopkins University, and on Dr. Harvey Cushing, Professor of Surgery in Harvard University.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 29th, the President, Sir Norman Moore, Bt., being in the chair.

On the recommendation of the Censors Board it was resolved:

> That Frederick Arthur Pring be declared to be no longer a Licentiate of the College, and that he forfeit all rights and privileges of a Licentiate, and that his name be removed from the list of Licentiates during the pleasure of the College.

The following appointments were announced by the President: Dr. F. Parkes Weber to deliver the new Mitchell Lecture in 1921; Dr. Arthur Whitfield the Lumleian Lecture in 1921; Dr. R. O. Moon the FitzPatrick Lectures in 1921; Dr. George Graham the Goulstonian Lectures in 1921; Dr. Thomas Lewis the Oliver-Sharpey Lecture in 1921; Dr. Gordon M. Holmes the Croonian Lectures in 1922.

A grant of £100 was made to Sir F. W. Mott from the Croonian Trust for his researches.

Dr. Eardley Lancelot Holland was admitted to the Fellowship of the College.

The following were admitted to the Membership after having passed the required examination:

> Arthur Cecil Alport, M.D.Edin., Frederic Vivian Bevan-Brown, M.D.Lond., Gerrald Kessick Bowes, M.B.Oxf., Henry Cecil Herbert Bull, M.B.Camb., William Seigfried Dawson, Geoffrey Barrow Dowling, M.B.Lond., Harold Gardiner-Hill, M.B.Camb., Theo Jenner Hooper Hoskin, M.B.Camb., John Inkster, M.D.Aberd., Jack Joffe, M.B.Lond., John William McNee, M.D.Glasg., Thomas Herbert Oliver, M.D.Manch., Roland John Perkins, M.B.Lond., Joseph Harold Sheldon, M.D.Lond., George John Sophianopoulos, Ambrose Thomas Stanton, M.D.Toronto, Hugh Stott, M.D.Lond., Richard James Campbell Thompson, Arthur Peregrine Thomson, M.B.Birm., Alfred Gregson Williams, M.B.Camb., Thomas Pearce Williams, M.D.Lond., Irene Yates, M.D.Lond.

Licences to practise physic were granted to eighty-five candidates who had conformed to the by-laws and regulations and passed the required examinations, and Diplomas in Public Health were granted jointly with the Royal College of Surgeons to thirty-five candidates, whose names are printed below.

The Murchison Scholarship was awarded to Rowland John Perkins, and a special award of ten guineas was made to John Vernon Cannadine Braithwaite *proxime accessit*.

The following appointments were made on the nomination of the President and Council: *Censors*: Dr. H. W. G. Mackenzie, Sir John Rose Bradford, Sir James Galloway, Dr. John Fawcett. *Treasurer*: Sir Dyce Duckworth. *Registrar*: Dr. J. A. Ormerod. *Harveian Librarian*: Dr. T. H. Arnold Chaplin. *Library Committee*: Dr. Dawson Williams, Dr. A. F. Voelcker, Dr. Herbert R. Spencer, Dr. Raymond H. P. Crawford. *Curators of the Museum*: Dr. J. Mitchell Bruce, Sir Seymour J. Sharkey, Sir Frederick W. Andrewes, Dr. William Hunter. *Finance Committee*: Dr. Sidney P. Phillips, Dr. Arthur Templer Davies, Dr. Herbert R. Spencer.

Dr. G. E. Blacker was elected, on the nomination of the Council, a councillor to take the place of Dr. Fawcett, appointed Censor.

Fellows newly elected to any office gave their faith to the College.

Communications were received from: (1) The Secretary of the Royal College of Surgeons, reporting proceedings of the Council of that College on May 13th, June 10th, and July 8th respectively; (2) Dr. Reginald Vaughan Solly, dated June 18th, 1920, asking that the Membership resigned by him in January last may be restored to him.

The President announced that he had awarded the Bisset Hawkins medal to Dr. W. H. Hamer; and that he had nominated Sir William Hale White to serve on a committee appointed by the Minister of Health to advise upon the control of therapeutic substances which cannot be tested by direct chemical means.

A letter was read from the Registrar of the University of Birmingham, asking the College to appoint a representative on the governing body of that University in the place of the late Dr. Samuel West. On the nomination of the President, Dr. Dawson Williams was elected to this office.

A report from Sir Humphry Rolleston and Mr. H. J. Waring, representatives of the Royal Colleges, upon their visit to the examination held at Philadelphia, May 19th–26th, 1920, by the National Board of Examiners, was received and referred to the Committee of Management. The President referred to the great value of this report.

Dr. Sidney Martin, Chairman of the Committee of Reference, presented a complete report of the proceedings of the Committee of Reference. The warmest thanks of the College were voted to Dr. Martin and to Mr. F. G. Hallett, who acted as Secretary to the Committee.

The annual report of the Cancer Research Fund was received and the thanks of the College were accorded to the Executive Committee.

A report, dated June 9th, 1920, from the representative of the College on the General Medical Council, upon the proceedings of the Council at the meeting held in May–June last was received and entered on the minutes.

A report from Sir George Savage, concerning the Chelsea Physic Garden, was received, and Sir George Savage was reappointed a representative on the Committee of Management.

The Committee recommended that Sir Charles Ballance be appointed visitor to the examinations of the Egyptian School of Medicine for the next period of examination.

After some further formal business the President declared the Comitia closed.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on July 29th, when Sir Anthony Bowlby, President, was in the chair.

Diplomas of Membership were granted to the eighty-four candidates found qualified at the recent examinations. The names are given below under English Conjoint Board.

Mr. Evelyn Sprawson, Dental Surgeon at the London Hospital Dental School, was elected a member of the Board of Examiners in Dental Surgery.

With regard to the Primary Examination for the Fellowship, it was resolved that in future the paper of four questions be set in anatomy, and the paper of six questions in physiology, four of which in the latter subject must be answered.

The College, Bishop's Stortford, and Victoria Institute, Worcester, were added to the list of institutions for instruction in chemistry and physics already recognized.

The Lister Memorial Fund.

The following letter was read from the honorary secretary of the Lister Memorial Fund:

> The Royal Society,
> Burlington House, W.1.
>
> I am directed by the Executive Committee of the Lister Memorial Fund to ask whether the Royal College of Surgeons of England would be prepared to become Trustees and Administrators of the Lister Memorial Fund. If they would be willing to do this, it is proposed that they should have the entire administration of the Trust subject to the following provisions:
>
> 1. That out of the General Fund a sum of £500, together with a bronze medal, be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgical science, the recipient being required to give an Address in London under the auspices of the Royal College of Surgeons.
>
> 2. That the award be made by a Committee constituted as follows:
>
> Two members nominated by the Royal Society.
> Two members nominated by the Royal College of Surgeons of England.
> One member nominated by the Royal College of Surgeons in Ireland.
> One member nominated by the University of Edinburgh.
> One member nominated by the University of Glasgow.
>
> 3. That any surplus income of the General Fund, after providing for the erection of a monument, and after defraying administrative expenses, be either devoted to the furtherance of surgical science by means of grants or be invested to increase the capital of the Fund.

A letter of July 21st was read from the Honorary Secretary, Sir John Rose Bradford, reporting the transference of stocks into the name of "The Royal College of Surgeons of England" in pursuance of the undertaking of the College to become the Trustees and Administrators of the Lister Memorial Fund.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the following successful candidates at the final examinations:

> A. N. Aitken, H. S. Baker, W. J. Birchall, S. Blackman, T. L. Bonar, J. P. Brown, G. N. Campoy, L. E. R. Carroll, G. W. Cheater, H. S. Cohen, Sarah A. Cooper, D. Crawford, J. W. Crawshaw, F. W. Crook, K. V. Deakin, S. N. Doboo, G. L. J. A. de Rynck, W. D. Doherty, T. A. J. Duff, R. S. Fawssett, J. Flannagan, Ada M. Freeman, Blanche S. Gardner, A. D. Gill, C. I. C. Gill, Doris E. F. Goodall, E. E. D. Gray, Hilda T. Haggett, Gertrude H. Harre, H. A. Harris, F. Heber, L. W. Heffernan, Sylvia K. Hickson, G. F. W. Howorth, H. V. Jackson, F. J. Jauch, Marjorie M. Jefferson, Doris E. P. Jolly, S. G. Jones, Dorothy

[illegible]

The [illegible] in Public Health [illegible] granted [illegible] the following [illegible] candidates:

[illegible]

CONJOINT BOARD IN SCOTLAND.

THE following candidates, having passed the Final Examination, have been admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

[illegible]

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

FINAL EXAMINATION.—[illegible]

D.P.H.—[illegible]

Medical News.

THE Second International Congress of Comparative Pathology will be held at Rome in the spring of [illegible] under the presidency of Professor Perroncito. Communications should be sent to the secretary, Professor Mario Levi Della Vida, Via Palermo 58, Roma.

DR. NEIL BARDSWELL, medical adviser to the London Insurance Committee, has been awarded the Medaille de la Reconnaissance Française (bronze) for services rendered in Paris in connexion with the treatment of the tuberculous French soldier and the establishment of an agricultural training colony at Epinay, near Paris.

DR. GEORGE ST. GEORGE, of Lisburn, co. Antrim, Provincial Grand Lodge Inspector, Antrim, has received from the members of the lodges under his supervision an address, the jewel of the 32nd degree, and the certificates of an endowed chair in each of the Masonic charities as a mark of appreciation of his many virtues "as a man and a Freemason" of fifty years standing.

AN emergency grant of [illegible] from King Edward's Hospital Fund for London and an extension of the principle of payments by patients have enabled the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., to maintain the greater part of the work of the institution.

A [illegible] conference on work for invalid and crippled children will be held by the Invalid Children's Aid Association and the Central Committee for the Care of Cripples on Tuesday and Wednesday, November [illegible], at the Council Chamber of the Guildhall, London. The subjects for discussion include [illegible] in the United Kingdom for the treatment and education of these children [illegible] suggested by the Central Committee for the Care of Cripples. Further particulars may be obtained from the Conference Secretary, Central Committee for Care of Cripples, [illegible] Street, W. The chairman of the conference [illegible] Sir [illegible].

AT the June matriculation examination of the University of London there were [illegible] candidates successful in the first division and [illegible] in the second division.

THE well known Italian surgeon, Professor [illegible], has resigned his professional duties and retired from practice.

Letters, Notes, and Answers.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is [illegible]

1. EDITOR of the BRITISH MEDICAL JOURNAL, [illegible]

2. FINANCIAL SECRETARY AND BUSINESS MANAGER [illegible]

3. MEDICAL SECRETARY, [illegible]

QUERIES AND ANSWERS.

INCOME TAX

A. W. W. [illegible]

** The inspector in question does not seem to give sufficient weight to [illegible] a central site, garage for motor car, waiting room [illegible] dispensary [illegible] for supply of hot water and [illegible] appliances, etc., and for the adaptation of other rooms in the **house for professional or semi-professional purposes; and** [illegible] the fact that by far the more valuable portion of any residence is that on the ground floor, where the waiting room and surgery are situated. This is a matter to which attention was drawn by Dr. [illegible] in the evidence he gave on behalf of the British Medical Association before the Royal Commission on Income Tax. The report of the Royal Commission stated that "the general [illegible] a sum not exceeding two-thirds of the annual value or rent should be [illegible]" and the Commissioners [illegible] application of the general rule would result in [illegible] has to be remembered that [illegible] In the case of our correspondent [illegible]

C. S. T. [illegible]

[illegible] £ [illegible]

** [illegible]

TOBACCO TREMOR.

"A. B." finds that even moderate smoking (whether pipe, cigar, or cigarette) makes his hands very shaky, especially just afterwards (probably circulatory). He would be grateful to anyone who could tell him how to counteract this without giving up tobacco altogether; he is aware that the latter would be the counsel of perfection. He is a moderate smoker—about two ounces a week—and almost an abstainer from alcohol, which has never been taken at any time other than in strict moderation. The tendency to this shakiness has existed since student days. He is now about 50, and otherwise healthy.

DEPILATORIES.

"IGNOTUS" writes: I have a female patient, aged 26 years, who is much troubled with growth of hair on upper lip and chin. She has tried various remedies, but none are successful in permanently removing the hair.

*** The only satisfactory method of removing hair from the upper lip is by electrolysis. This method has certain drawbacks; a slight degree of scarring is probable, even when the treatment has been properly carried out. Also, a certain percentage of hairs will return, at a later date. In some cases where there is no very marked growth, the unsightly condition may be partly disguised by bleaching the hair with peroxide of hydrogen. Depilatory powders should be discouraged, as they are apt to cause irritation of the skin, and are only a form of shaving.

LETTERS, NOTES, ETC.

TENNIS ELBOW.

DR. JAMES B. MENNELL (London, W.) writes: Mr. E. Muirhead Little's reply to Dr. John G. Havelock's query on this subject in your issue of July 31st was of considerable interest. May I be allowed a short space to supplement it? Reference to treatment rather than to pathology of this and similar injuries will be found in several books other than those mentioned, all works on physical therapeutics, and, unfortunately, not in surgical textbooks. These, as a rule, pass over the treatment of minor injuries in a manner which implies that they are too trivial to merit serious consideration. The result is that comparatively few medical men are acquainted with the technique of their treatment; and the sufferers, wearying of prolonged disability—trivial though it may be—seek relief from the "bonesetter," and often secure it. For many injuries of this nature Wharton Hood's dictum "rub and strap," and then continue to use, often represents the wisest form of treatment. Graduated faradic contraction with a Smart-Bristow coil will generally expedite recovery, and, in cases of some standing, will often be found to present the only means by which the victim can be restored to participation in his favourite game. In many chronic cases even this will not prove adequate and manipulation under anaesthesia may be an essential preliminary to other forms of treatment. In all cases massage is a useful adjunct, but to treat any injury of this type by massage alone is sheer waste of time. Graduated exercises should, however, form an integral part of treatment. Three to six weeks should suffice to restore ability to play again in most cases, provided that osteoarthritic change is not at the root of the trouble. The pathology of "tennis elbow" is a matter for speculation. Sometimes the symptoms appear to be due to a traumatic arthritis of the superior radio-ulnar joint, but more frequently to the rupture of a few fibres of one of the muscles in the neighbourhood. The last case I saw was unusual: the anconeus appeared to have been severely lacerated. There are countless injuries of similar character, the bowler's side and shoulder, the rider's strain, the golfer's shoulder and wrist, the jumper's calf, and the fisherman's wrist and elbow furnish sufficient examples. There are many more. Prognosis depends on the injury. If it is extra-articular the prognosis should invariably be good, provided that the injured part has not been immobilized. Rigid fixation is inimical to rapidity of recovery; graduated use is curative. When the injury is in the shoulder region, a lesion of the deltoid granted adequate treatment offers a good prognosis, but we should be progressively more guarded when dealing with laceration of the supraspinatus, the infraspinatus, and the subscapularis. In America the pitcher's shoulder is regarded with great misgiving. It is due, I believe, to rupture of the tendon of the supraspinatus at its insertion. Were the use of graduated faradic contraction more fully appreciated on the other side, it is probable that the prognosis would not be so gloomy.

DR. T. D. LUKE (Peebles) writes: Like your correspondent, I have been struck with the paucity of literature on tennis elbow. I recall as a student seeing in one of the anatomy textbooks it was due to a sprain or over-use of pronator radii teres. The exact location of the most painful spot in cases casts some doubt on this, and I would suggest a lesion of some ligamentary attachment, as Mr. Little remarks. Naturally different muscles are affected differently, just as two players employ different styles or strokes. I had a patient with this affection in April last, a very active man of 45. I, of course, prescribed *rest*, heat, and massage locally, with occasional sweatings. The patient took all the treatment except the *rest*; he curled for hours (on artificial ice) almost daily in certain competitions, and, strange to say, got better!

FUTURE PROVISION OF MEDICAL SERVICES.

DR. S. J. ROSS (Bedford), in the course of a communication deprecating the publication of a letter under this heading in the JOURNAL of July 3rd, p. 29, writes: "In the supreme struggle which awaits us the advice given by all thinking members of the profession is 'Sink your petty grievances and present a united front.' Therefore I was surprised to read a letter from a colleague making certain charges against the panel doctors as a whole, and further, a reply to the charges by another colleague, which appeared in the JOURNAL of July 31st. We must remember that this JOURNAL is read not only by medical men but by laymen, and there are certain laymen who would gladly seize upon the statements made by Dr. Traylen as clear proof of the failure of the panel system and the desirability of starting a State medical service. Dr. Traylen's letter is an insult to all panel doctors, and therefore to the whole profession. His statements are not even supported by an iota of proof." Dr. Ross adds that he is not now a member of the panel, and therefore writes without bias.

TREATMENT OF CANCER.

"URINOLOGIST" writes: I am especially interested in the question how far I can by an examination of a sample of urine obtain evidence of cancer or of a cancer diathesis or dyscrasia. This question concerns every practitioner, and Dr. Blair Bell (June 12th, p. 787) has expressed himself positively with respect to the necessity of taking dilute hydrochloric acid for a lifetime, after a radical operation for cancer. Joulie expresses himself just as clearly with respect to phosphoric acid. In every case of cancer examined by him the urine was "hypoacide." So Gautrelet in his classification of urines says: "If the urosemeiological curve reveals a lowering of the whole of the fixed elements, with a lowering more especially of acidity and urea, it is question of a cancerous diathesis." Dr. Blair Bell says that "in so long a period as ten years after operation hydrochloric acid has still been absent from the stomach." I surmise without return of cancer and without persistent treatment by hydrochloric acid during ten years. Again, Dr. Elsie Royle in her special work on the urine in malignant diseases, says there is a decreased excretion of phosphates in the urine. Personally, I am interested in the question of the diagnosis of cancer from a simple examination of the urine, as regards acidity and salt, which actually or relatively should alone give a clue to a constant absence of hydrochloric acid in the stomach, wherever the disease is situated. Although the chlorides of the urine at present will not alone afford us the knowledge whether they have been dissociated into acids in their passage through the body, it may be that a few "conative" facts as to salt and acid conditions could afford us a greater certainty in the diagnosis of malignancy in perhaps all its stages. Perhaps some physiologist could tell us how far the stimulation of the vagus which increases the gastric juice affects the condition of its acid constituents.

CORRECTION.

WE regret that in our account (at p. 184) of the opening of the new laboratory at the Liverpool School of Tropical Medicine, on July 24th, the name of the late Dr. Albert Chalmers was misspelt. On that occasion Mrs. Chalmers was awarded a Mary Kingsley Memorial medal in recognition of the work of her husband, the late Dr. A. J. Chalmers, a distinguished Liverpool University graduate, who died this year in Calcutta. An obituary notice appeared in the JOURNAL of May 8th p. 657.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 35, 36, 37, and 38 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 33, 34, and 35.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

OBSTETRIC AND GYNAECOLOGICAL EDUCATION.

BY

HENRY BRIGGS, M.B., F.R.C.S.,
PROFESSOR OF OBSTETRICS AND GYNAECOLOGY, UNIVERSITY OF LIVERPOOL.

A PREMATURE birth on December 25th, 1642, at Woolsthorpe, in Lincolnshire, is historical.

> "A widow, whose husband had died a few months after their marriage, gave premature birth to a posthumous male child. He was so weak that two women, sent to fetch a tonic to revive him, did not expect to find him alive on their return. He was so small that he could have been put into a quart mug. So, in after-days, his mother told him. When he grew to manhood he saw an apple fall from a tree in the Woolsthorpe garden; he pondered the matter, and, by-and-by, he propounded the law of gravitation. Sir Isaac Newton was rescued from his infant danger by his mother's love. But who may tell how many an undeveloped philosopher has perished from lack of an intelligent mother's care?"[1]

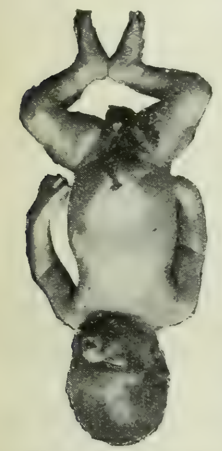

FIG. 1.—A still-birth: unreduced occipito-posterior head moulding. Forceps bruising of the right cheek and temple. The blood stains on the right groin and thigh were due to a loose ligature on the cord.

To-day the loss of a large proportion of babies is reported even after the skilfully conducted and well calculated operations and manipulations of the best obstetric practice. During the past fifteen years the high infantile death rate from preventable causes has been greatly lessened by the activities of local health departments, with incalculable gain to the country. Infant welfare knows no restriction in pictorial illustration, and its attractions are universal; the progress of maternity welfare work, on the other hand, has been repeatedly held up from within and without by formidable obstacles. Of late, however, the Ministry of Health and the Ministry of Education have sought and published full information concerning maternity welfare, and although at present there are many difficulties in the way of capital expenditure, local statutory subcommittees under the Maternity and Child Welfare Act should increase their faith in higher obstetrical and gynaecological service—the core and the backbone of maternity welfare. In the eagerness of enterprise ideas are let loose often only to gather adjectives and succumb; if an idea survives to become a motive and to be carried into actual practice, control makes a collar round its neck. One such collar may be seen in advertisements for pre-maternity clinic medical officers, when it is stated that "every circumstance being equal, preference will be given to women candidates." It has not been shown that women medical students have had in the past any exceptional advantages of training; patients desire, and are entitled to, the services of the most skilful of the available applicants.

The Teaching of Obstetrics and Gynaecology to Medical Students and Graduates.

In London the teaching of obstetrics and gynaecology to medical students and graduates has been dealt with recently in the report of a committee of inquiry appointed by the Council of the Obstetrical Section of the Royal Society of Medicine. To draft a guiding report—appreciative of the present and constructive for the future—is a formidable task. London is of gigantic growth, and complexity is a part of her fate and a good deal of her security. The extent, depth, candour and honesty of the present report cannot be too freely acknowledged.

Regarding the methods at present adopted general agreement is expressed in the report that—

(1) The systematic instruction is generally satisfactory. (2) The practical instruction is defective in several respects: (*a*) From hospitals without a students' midwifery ward students are sent out, often alone, to cases in the district. (*b*) The lying-in hospital merely "signs up" for cases. (*c*) In hospitals with a students' midwifery ward, the small size of the latter and non-continuous attendance by the student, who is rarely in residence, are to be noted. (*d*) The teaching, if any, is given almost exclusively by juniors (the registrar or the resident obstetric officer). (*e*) The average number of gynaecological beds is too limited: restricted attendance by the student at the time taking out his midwifery cases has been observed. (*f*) The consequences of defective practical training fall on the mother and the child—on the mother in the death rate from sepsis and in disabling complaints; on the child in that it is too often left to the nurse's discretion without reference to the doctor. (*g*) The neglect, notably in emergencies, to seek the services of a specialist or of a hospital contributes to the lack of hospital accommodation for women in labour and of suitable public means of transport.

These frank statements disarm all criticism on the need for more efficient practical instruction. The basis of an efficient scheme of training was also outlined, and the report so far carried complete approval.

With regard to reforms required in the future, unanimity in the Council was not secured, and the two propositions that led to the slight dissension are stated in the Alternative Report. They were: (1) The establishment of large centres devoted solely to the study of obstetrics and gynaecology, and not forming part of a general hospital and medical school; (2) the suggestion that the students can only be educated efficiently where large numbers of patients are available.

At this point a halt is dictated by the observation that the adoption of the report, or of any alternative or alternatives, is directly the concern of London—where to introduce harmony by yielding, or giving and taking, is probably not beyond attainment, preferably from within. The general body of the medical profession has proved over and over again the advantages of special departments in general hospitals, especially those with medical schools. Wherever separate centres for obstetrics and gynaecology are essential these centres will be established; their medical officers, after limited tenures of office, will seek other obstetrical and gynaecological posts in general or special hospitals where skilled teaching and training are desired for medical students or graduates and pupil-midwives or midwives.

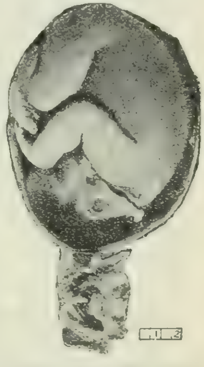

FIG. 2.—Full term central placenta praevia. The dark shading denotes the increased area and distribution of the placenta. (Reduced.)

London will rise to her own gigantic demands. Lesser municipalities may be reminded that the late Sir William Sinclair of Manchester in 1907 pleaded for the establishment of municipal maternity homes. The practising midwives are supervised and the pre-maternity clinics administered by local authorities. In Liverpool 720 in-patients were admitted to the Maternity Hospital in 1918—499 by direct application to hospital, the remainder from the following sources:

Transferred in labour from the outdoor ladies' charity	23
Sent by medical practitioners... . . .	115
Sent by practising midwives after failure to find a registered medical practitioner ...	41
Referred from pre-maternity clinics	42
	221

This analysis establishes the great value of the Liverpool Maternity Hospital for obstetrical training, and shows that in a very large proportion of the cases the difficulties and complexities of labour arose or were first realized during labour. Dr. Stookes, one of the honorary surgeons, has recently summarized[2] the thirty-three years' work done in the present building opened in 1885. Dr. R. A. Hendry has described[3] an illustrative day's work at one of the prematernity clinics. Being given a hospital performing central functions, and in close contact with the University, Liverpool has not completely failed. Extensions are urgently wanted and the hospital board of management is in difficulties, for the building of Sir William Hartley's new hospital cannot reasonably be commenced. Converted houses are the only alternative to expensive temporary wooden sheds which the present site cannot accommodate. Each week ten to fifteen applicants, whose homes or lodgings are overcrowded or unsuitable, are refused admission. Fortunately these cases are normal, and the large Poor Law institution is across the road, so that smooth transference on foot, or by stretcher, is possible. There is this striking contrast: the Poor Law institutions possess wide and open doors, and in some areas are inviting and encouraging paying patients at a time when public health authorities are seeking more beds.

The obstetric assistant, preferably a graduate with distinction, having experience of one or more hospital resident posts, serves under university departmental control, and supervises the practical obstetrical work of the students who reside with him in his official residence—a university hostel—during the period of their attendances on at least twenty labours. Daily attendance at the Liverpool Maternity Hospital is as follows :—

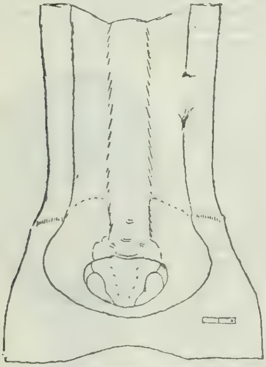
FIG. 3.—Mannikin opened to show the type of contracted rachitic flat pelvis.

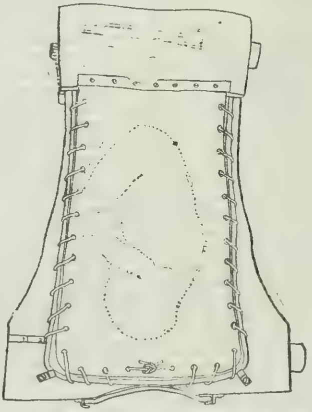
FIG. 4.—The mannikin closed during vaginal examination of the pelvic cavity.

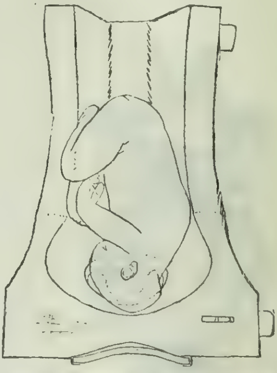
FIG. 5.—The mannikin and fetus arranged for abdominal and vaginal palpation; the fetus held above the brim; forceps not to be applied; 3-inch conjugate.

(1) Ante-natal care.
(2) Out-patient and ward visits at 10 a.m. by the obstetric assistant or the registrar, or both; at 12 noon by the honorary surgeon on duty in his three months' rota. (There are four honorary surgeons, of whom one is the university professor *ex officio*.)
(3) Labours and obstetrical operations at any hour of the day or night.

It is significant that students have almost invariably partly or wholly, given up a vacation to their practical training in obstetrics; these holiday sacrifices recall the overdue remedy, the revision of the whole medical curriculum. It is to be remembered as a reason against too formidable an inflation or isolation of obstetrical and gynaecological educational courses that our students have already attended the systematic lectures on medicine, surgery, and midwifery, and have for at least nine months become familiar with clinical methods in a general hospital, during their medical clerkship (six months) and surgical dressership (three months). Throughout all past inquiry obstetrics and gynaecology have been declared inseparable either in teaching or practice. The constitution of the department of the Liverpool University therefore stands on the ground of long-standing and firm agreement: generous support has been bestowed upon it during twenty years by the University Council, by the Medical Faculty, by Medical Practitioners, and by the Liverpool and District Trained Midwives Association. This concerted encouragement has developed equipment additional to the usual lecture theatre, namely, a practical classroom and a laboratory and a museum, which invite and tempt the students to see and test for themselves (during daily working hours) the normal and the abnormal in fresh and preserved specimens; to practise palpation on mannikins supplied with normal and abnormal fetuses, and to cultivate under trained departmental supervision, familiarity with instruments, appliances, casts and operation methods.

The saving of time in the overcrowded medical curriculum becomes reflected upon clinical clerkship and systematic study, for both of which it is an essential preparation and accompaniment; practical tests have always been prominent in the university final examination in obstetrics and gynaecology. It is thus seen that in the obstetric clinic at Liverpool the recommendations of the General Medical Council have been carried out for twenty years; the result has been a steady improvement in the clinical obstetrical training of all students and an encouraging record of public service of past obstetric assistants. The department is of opinion that the education and training of the pupil-midwives should be provided within its walls, but not necessarily by the same teachers; this will bring to the midwives a more exact acquaintance with the relative extent of the doctor's education and training.

Details are given below of cases illustrating the need for the uses of such an organization as I have depicted.

CASE I.

A male fetus, 10 lb. 11 oz. in weight and 22½ in. in length, stillborn as a result of natal incidents (Fig. 1). The healthy mother, aged 38, had had three early abortions and had borne six living full term children. In her tenth pregnancy, on the computed 270th day, the vertex presented in the R.O.P. position. In the patient's house, in the district of the Ladies' Charity, the obstetric assistant called by the midwife performed a difficult forceps delivery. There had probably been an error in the reckoning of the duration of the pregnancy; protracted gestation and oversize (which are not, however, incontestable) were not suspected at the time of labour.

What ante-natal officer or other medical man would have ventured to advocate Caesarean section in the treatment of the labour unless the patient had been under observation before the suspect stage?

CASE II.

In a case of central placenta praevia (Fig. 2) a fatal haemorrhage, without appreciable dilatation of the cervix or separation of the placenta, occurred in the public ambulance during a journey to the maternity hospital. A full-term uterus and well-grown fetus in the first vertex position above a central placenta praevia amply denote Caesarean section.

What authority could safely and prudently provide against the intervention of this sudden calamity?

CASE III.

A primigravida, aged 31, already three days in labour, arrived in hospital at the 301st day of gestation with a large dead fetus, 8 lb. in weight, *in utero* above the brim of a generally contracted pelvis; the membranes had ruptured prematurely through a 1 in. dilated cervix; the temperature was 102° to 103.8°, and there was a rigor on each of the three days in hospital before the completion of the labour. The fetal head was at once perforated to assist descent; feeble pains were observable and, full dilatation of the cervix being attained two days later, the collapsed head having reached the perineum, the child was with great difficulty extracted. The temperature immediately became normal; the recovery of the patient followed without further complication. The fetus was macerated and had been ten days dead.

In this case the head was above the brim in the primigravida, the gestation prolonged and the pelvis contracted; the lesson is that fetal death and maternal danger could have been avoided by previous examination and consultation. In Liverpool we endeavour to sharpen the dull grasp of history, symptoms, and physical signs by the cultivation in the practical classroom of individual research and repeated experiment. Deformed pelves display their truths and normal pelves stand by them for comparison. We have twelve mannikins in hard wood—teak excels oak, although the slight cracks in the latter can be easily filled with cement. Each mannikin (Figs. 3 to 6) is an accurate copy (made by an expert carver) of a pelvis. It is placed in a dorsal position on a short, stout table, and can be washed and dried. The natural pelvic floor is imitated in each mannikin by a movable rubber diaphragm. In an adjacent cool tank are placed a number of normal and abnormal fetuses in a freshly preserved state. The value of practical trials with forceps on fetuses and mannikins cannot be overestimated. In calmer moments between the class hours facilities for familiarity with the employment of forceps steady the students' individual judgement with regard to patience or haste, and the conditions qualifying for success or disappointment in using the forceps-grip. (In dystocia the application of forceps cannot be commended, except in appropriate physical conditions.) Similarly craniotomy on a dead fetus is an operation demanding repeated trials. Version and intrauterine manipulations, including the manual withdrawal or separation of the placenta, are to be learned by the use of suitably sized clear glass globes placed within the mannikin; for this purpose fresh fetuses and placentae are provided. Without having received these preliminaries in practical training the student carries with him an awkward handicap in any future clinical work that he may undertake in homes or in hospital.

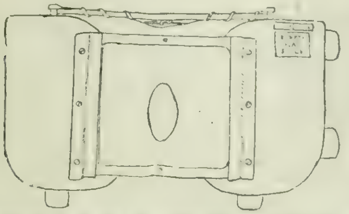

FIG. 6. The galvanized iron frame and the rubber pelvic floor can be removed and cleaned. The iron frame slides under the grooves beneath the fixed iron plates.

Bacon drew a distinction between arts mechanical and sciences of conceit. "In sciences of conceit the first author goes farthest and time lesseth and corrupteth, but in arts mechanical the first devise comes shortest and time addeth and perfecteth." In this brief sketch I have tried to illustrate the use of arts mechanical in obstetrical and gynaecological training.

REFERENCES.

[1] *The Nursling.* Sir Alexander Simpson's Introduction. 1907. [2] BRITISH MEDICAL JOURNAL, November 21st, 1919, p. 701. Ibid., September 2[illegible]th, 1919, p. 385.

TWO uncommon causes of death have lately been reported. A child of 4 died at Blackburn from toxic gastritis, following the eating of about thirty potassium chlorate tablets. A boy of 12 died at Wrexham from poisoning, due to the use of a stem of hemlock as a pea-shooter.

THE Cunard Steamship Company have contributed £10,000 in response to the appeal of the University of Liverpool.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge June [illegible] to July [illegible].

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL MEDICINE.

Professor G. H. F. NUTTALL, M.D., F.R.S., President.

PROBLEMS OF FILARIASIS.

BY

J. W. W. STEPHENS, M.D., F.R.S.,

AND

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HAVING recently had occasion to study the literature of filariasis we found therein many conflicting statements. Our intention in this paper is to draw attention to some of these, as they concern fundamental questions, an accurate solution of which is necessary for elucidating the relationship of *Filaria bancrofti* to those forms of lymphatic disease which are commonly known as filariasis.

TABLE I. *Showing Microfilaria Rate at Different Age Periods.*

Age (Males).	Bahr (1912): Fiji. Population.	Bahr (1912): Fiji. Percentage Infected.	Cruickshank and Wright (1914): Cochin India. Population.	Cruickshank and Wright (1914): Cochin India. Percentage Infected.
0–10	72	1 4	25	24 0
11–20	222	15 7	246	20 3
21–30	212	37.7	233	22 7
31–40	118	47.5	193	27.1
41–50	83	45.7		
51–60	58	44 8		
61–70	39	41.0	58	20 7
71 and over ...				

According to Bahr's data the microfilaria rate for males increases at each age-period up to the 31–40 period, and then remains practically stationary, while according to Cruickshank's and Wright's figures for males the rate is practically the same at all age-periods. If these data represent the actual state of affairs in the two countries the difference is remarkable and requires explanation. The

TABLE II. *Showing Microfilaria Rate [illegible] Signs of Lymphatic Disease and among [illegible].*

Author and District.		Number Examined.	Microfilaria.	[illegible]
Manson (1883), Amoy China	Diseased	65	[illegible]	38 5
	Not diseased ..	605	[illegible]	[illegible]
Bahr (1912), Fiji	Diseased	[illegible]	39	[illegible]
	Not diseased .	[illegible]	1	[illegible]
	Diseased	[illegible]	1[illegible]	[illegible]
	Not diseased .	[illegible]	8	[illegible]
	Diseased	[illegible]	8	[illegible]
	Not diseased ...	154	11	[illegible]
	Diseased	[illegible]	10	33 0
	Not diseased	143	21	[illegible]

* Males over 20 years.
† Males under 20 years.
‡ Females over 20 years.
§ Females under 20 years.

matter is of importance, because if in certain countries the microfilaria rate differs at different age-periods, then the fact must be taken into account in estimating the microfilaria rate of a population and also in comparing microfilaria rates among the diseased and non-diseased.

The data of both these observers (Table II) agree in that the microfilaria rate among those showing signs of lymphatic disease is greater than among those not showing signs, but it is noteworthy that the difference in Manson's figures for the two groups is great (54.5 per cent.), while in those of Bahr the difference is relatively slight, the maximum being 18 per cent. We have been unable to find in the whole of the literature any other comparable data on this important question, and it is obviously one on which much further information is required.

If, however, we limit ourselves to a consideration of elephantiasis cases (a condition which is generally regarded as the most important pathological manifestation of infection with *Filaria bancrofti*) we find that the evidence, whether the microfilaria rate is greater in these or in non-elephantiasis cases, is contradictory.

TABLE III.—*Showing Percentage Infected with Microfilaria amongst Elephantiasis and Non-elephantiasis Cases.*

Author and District.		Number Examined.	Number Infected with Microfilaria.	Percentage.
Manson (1883), Amoy, China	Elephantiasis cases	25	5	20.0
	Non-elephantiasis cases	645	57	8.8
Tribondeau (1900), Society Islands, Pacific	Elephantiasis cases	62	23	37.1
	Non-elephantiasis cases	*38	6	15.8
Bahr (1912), Fiji ...	Elephantiasis cases	47	18	38.3
	Non-elephantiasis cases	1,273	340	26.7
Manson (1907), Cochin India	Elephantiasis cases	14	1	7.1
	Non-elephantiasis cases	74	20	27.0
Cruickshank and Wright (1914), Cochin India	Elephantiasis cases	130	12	9.2
	Non elephantiasis cases	870	197	22.6

* Some below 10 years of age, majority 15 to 25 years of age.

While Manson (1883), Tribondeau (1900), and Bahr (1912) agree that microfilaria is more common in elephantiasis cases than in non-elephantiasis cases, Manson (1907) and Cruickshank and Wright (1914) find the reverse. The close agreement of Manson's (1907) figures for Cochin India with those of Cruickshank and Wright (1914) for the same district is interesting, and we may reasonably infer that they represent the truth, nor have we any ground for doubting the accuracy of the figures of Manson (1883), Tribondeau, and Bahr, but the cause of the discrepancy requires investigation.

Next, if we compare the microfilaria rate and the elephantiasis and abscess rates in different countries we find an absence of any definite relationship.

TABLE IV.—*Showing the Microfilaria, Elephantiasis, and Abscess Rates in Different Countries.*

Author and District.	Number Examined.	Percentage Infected with Microfilaria.	Percentage with Elephantiasis.	Percentage with Abscess.
Manson (1883), Amoy, China	670	9.2	3.7	—
Rouffiandis (1910), Mayotta, Comoro Islands	3,000	—	74.0	Less than 1
Manson (1907), Cochin India	88	24.0	16 0	—
Bahr (1912), Fiji	1,320	27.1	3.56	20 0
Cruickshank and Wright (1914), Cochin India	1,000	20.9	13.0	0.0
McNaughton (1919), Funafuti, Ellice Islands	217	100.0	3 7	—
Croll (1919), South Queensland	4,112	11.3	0.0	—
Brochard (1910), Wallis Islands	4,000	—	50.0	Very common.

Table IV shows, for example, that the filaria rate (of those examined) in Fiji is higher than that of Cochin India, its elephantiasis rate is only about a quarter that of the latter place, and its abscess rate is 20 per cent., while that of Cochin India is nil.

Next, if we consider the manifestations of filariasis exhibited in different countries we find they vary greatly. Table V shows, for example, that in Fiji enlarged lymphatic trunks are nearly ten times as common as in Cochin India; that in Cochin India enlarged inguinal glands are nearly twice as common as in Fiji; that in Comoro Islands 12 per cent. of the population suffer from lymphangeio-varix of the scrotum, none in Wallis Islands, Fiji, or Cochin India; and so on.

Finally, the region of the body most commonly affected with elephantiasis appears to vary in different countries; thus, in Fiji elephantiasis of the arm is relatively common—in 42.6 per cent. of elephantiasis cases the arm is involved; in French Congo elephantiasis of the arm is apparently absent.

Many difficulties surround the filariasis problem, and the examples given above serve, we think, to show some of the directions in which further investigations are required.

TABLE V.—*Showing the Frequency of the Various Clinical Manifestations of Filariasis in Different Countries, expressed as Percentages of the Total Population Examined.*

Author.	Number Examined.	Microfilaria Rate.	Enlarged Lymphatic Trunks	Enlarged Inguinal Glands.	Enlarged Epitrochlear Glands.	Enlarged Axillary Glands.	Lymphangeio-varix of Scrotum.	Chyluria.	Orchitis.	Chylocele.	Inguinal Adenovarix.	Elephantiasis	Abscess.	Fever.	Hydrocele.
Brochard (1910), Wallis Islands ...	4,000	?	?	Common			0			0	0	20	Common	?	Common
Rouffiandis (1910), Mayotta, Comoro Islands	3,000	?	?	?			12	Less than 1		59	76	74	Less than 1	?	
Bahr (1912), Fiji	1,320	27.1	4.7	*25	22		0	0	?	?	0.08	3.56	20	?	?
Cruickshank and Wright (1914), Cochin India	1,000	20.9	0.5	51 4	36.8	22.3	0	0 6	0.9		0	13	0	29.4	7.7

* ? Includes axillary.

FILARIA BANCROFTI IN THE PRODUCTION OF ELEPHANTIASIS AND KINDRED DISEASES.

BY

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IN dealing with this somewhat difficult and complicated subject it will, we think, conduce to clearness and also be advantageous if we express our views in a categorical manner under the following headings:

(*a*) Zoological.
(*b*) Pathological.
(*c*) Statistical.

(*a*) *Zoological.*

The parent filariae are inhabitants of the lymphatic system and may be found living either in the lymph channels or in the glands themselves. From our work on the subject we consider it probable that, by acting as mechanical irritants, or by the excretion of some irritating toxin, either from the cuticle or in the faeces, as we know takes place in other helminthic infections, they produce a local inflammation of the vessel wall and of the glands which they inhabit.

The embryos born in the lymphatics of man, provided they are able to secure a free passage into the circulating blood, do not of themselves produce any obstructive changes; in other words, the embryos of *Filaria bancrofti* are non-pathogenic. That this is the case may be gathered from a consideration of the life-history of filariae in general. It would be greatly to the disadvantage of the parasite if it were otherwise, for, if the embryos were capable of causing grave pathological changes in the host, this fact would necessarily militate against the favourable spread of the parasite from man to man.

Statements to the effect that perfect health of the human host may coexist with a filarial infection have frequently been made, but, if the after-history of such cases were systematically followed up more often than they are at present, it would be found that sooner or later many would develop definite pathological signs of a lymph stasis. We have records to support this statement in our own experience, both from the West Indies and from Fiji.

It is questionable if any helminth, especially those inhabiting the arterial or lymphatic vessels, is harmless. We have only to consider "verminous aneurysms" in horses, the cardiac disease of the dog, due to *Dirofilaria immitis*, the ravages of bilharzial disease, to illustrate the point.

(*b*) *Pathological.*

The part played by the filaria in producing pathological symptoms of lymphatic obstruction is to be considered as follows:

1. During the lifetime of the parasite a narrowing of the lumen of the containing vessel occurs, by a proliferation of the lining endothelium, as well as by a compensatory fibrosis of the vessel wall. Both these processes still further impede the lymph flow and bring about a state of chronic stasis, so that ultimately the lumen of the lymphatic vessel may be totally obliterated.

2. It will be readily understood that, with the narrowing of the lumen of the lymphatics, the free passage of the embryos of *F. bancrofti* into the lymph current to the interior of the body is seriously interfered with, so much so that they may become totally arrested during their passage through the lymphatic glands. This is specially the case in those glands which are situated distally to the point of obstruction; at this juncture the embryos may be destroyed, and during their process of disintegration the inflammation and consequent fibrosis of the lymphatic tissue is increased. That is, the embryos, though not pathogenic in the living stage, become so after death.

The fibrosis of the lymphatic glands, to which little attention has hitherto been paid, is one of the most marked features of the pathology of filarial disease, and of elephantiasis in particular. In microscopical sections of the glands this fibrosis can be demonstrated, and the histopathological picture is further characterized by giant cell formation and eosinophile aggregations. Fairley and others have shown that a similar concentration of helminthic toxins occurs at certain focal points in bilharzial disease.

The effects of the toxins produced during the process of destruction of the adult worms, as well as of the embryos, may be more widely disseminated than is at present thought to be the case. One of us (Manson-Bahr) has already shown that even the lymphatic glands proximally situated to the seat of the parasites may show inflammatory changes, thus suggesting a generalized toxic condition.

Let us consider what happens to the embryos produced by a pregnant female filaria in a lymphatic channel the lumen of which is in the process of occlusion. Owing to the inability of the embryos to maintain a separate existence for any length of time in lymph itself, those which cannot escape into the blood stream must ultimately become destroyed, and in the process produce an acute inflammation of the vessels and glands, a condition known clinically as "filarial lymphangitis." The process described above is a vicious one, because it reacts upon the adult worm itself, and probably, in the majority of cases, causes its death. This is shown, first, by the fact that embryos have been observed to gradually disappear from the peripheral blood, after even one single attack of lymphangitis; secondly, by the discovery of the recently dead or dying worms in the inflamed lymphatic glands after an attack of lymphangitis, as in a case under Manson-Bahr's notice in Fiji.

After death the worm becomes calcified and may be recognized as a calcareous mass for many years afterwards. During the process of calcification the now defunct worm acts not only as an obstruction, but as a chronic irritant to the vessel or gland tissue. The stages of the process of lymph stasis by means of *F. bancrofti* or its products are thus, to our minds, complete; and we may trace this pathological process still further till it ends in the highest expression of lymph stasis, namely, elephantiasis.

It will be readily understood that a lymph stasis of this sort takes several years to complete. It may require the blockage, owing to the abundant anastomosis, of several sets of lymphatic vessels and glands before a well established lymph stasis, with consequent production of elephantiasis, takes place. Elephantiasis, a state which may be considered as the expression of a massive infestation with *F. bancrofti*, takes place only after repeated invasions by the parasite, and only occurs as an indigenous disease in those localities where repeated infestation is possible. The foregoing remarks suffice to explain the absence of filarial embryos in elephantiasis, a point so often emphasized by antagonists to the filarial theory of this disease. In answer to their objections, we would once more emphasize that the parasitic cause of the disease is defunct, but its effects upon the tissues of its host are permanent. When embryos are found in elephantiasis cases, as is known to occur, even up to 25 per cent. in heavily infected areas, this simply indicates a reinfestation with adult *F. bancrofti* in some unobstructed lymphatic channel of the body.

The ultimate result of all parasites which cause inflammation of tissues is the production of fibrosis, and this persists long after the disappearance of the specific cause. A familiar analogy may be cited in the case of urethral stricture following gonococcal infection; the gonococcus may have long disappeared, yet the effects unfortunately remain. Would anyone at the present day seriously aver that the gonococcus is not the active agent in 90 per cent. of all cases of urethral stricture with urinary retention? The analogy may be carried further: a small percentage of urethral strictures are due to traumatism and other causes blocking the urethra, just exactly in the same way that the filarial worm is not necessarily the pathological agent in all cases of elephantiasis. It is obvious that a lymphatic blockage may occur from many causes to quote only a few: surgical removal of the inguinal glands, septic lymphangitis, prevertebral fibrosis, septic absorption from chronic eczema of the legs, may all produce an occlusion of the lymphatic vessels and consequent elephantiasis of the parts drained by these vessels, and so produce a state which cannot be differentiated from real tropical or filarial elephantiasis.

Fibrotic changes elsewhere in the body may be produced by totally dissimilar agents. We need only mention cirrhosis of the liver, which may be produced by helminthic parasites—schistosoma, clonorchis, etc.—by a spirochaete—*Spironema pallida*—by various toxins such as alcohol, but the ultimate result, the production of ascites and cholaemia, is the same.

The chain of evidence that *F. bancrofti* is the cause of tropical elephantiasis may now be considered sufficiently proved on pathological grounds, but Koch's postulates, which Prout has suggested should be applied, cannot be satisfied, for the simple reason that no laboratory or domestic animal is at present known to be susceptible to the parasite, and therefore such a scientific experiment cannot be conducted. It is also hardly necessary to point out that helminths cannot be compared with vegetable micro-organisms in this respect.

(c) *Statistical.*

It has been aptly said that statistics may be made to prove anything or nothing. Mathematical statements based on statistics—if one knows who did the work on which the statistics are based—may be useful, especially to the mathematically inclined, but, at the same time, they must not be allowed to controvert definitely ascertained facts. We must plead that those who base their arguments upon statistics alone, and have arrived at the conclusion that *F. bancrofti* is not the cause of elephantiasis, have not sufficiently studied the pathology of the disease. Would it not be more advantageous to study microscopical sections rather than statistical tables? We maintain that the account we have already given explains many of the statistical anomalies, as, for instance, the absence of the embryos of *F. bancrofti* from the blood in cases of elephantiasis, and also the distribution of elephantiasis nostras in temperate countries.

Viewing the problem in its broadest aspects, there are certain outstanding features—namely:

1. *F. bancrofti* is a tropical and subtropical parasite, as also is elephantiasis a tropical and subtropical disease. Few will be found to deny that the maximum prevalence of elephantiasis, chyluria, lymph scrotum, hydrocele, etc., corresponds almost exactly with the geographical distribution of *F. bancrofti*, though we admit that more intimate knowledge of the regional prevalence of the parasite is still required.

2. The maximum rate of infestation of a population corresponds closely with the occurrence of elephantoid disease—for instance, how else explain Grenada, a West Indian island, with little or no filarial infestation and a corresponding absence of elephantoid disease, while on the other hand, St. Kitts, another West Indian island, with an infestation rate, demonstrable by microscopical blood examination, of 30 per cent., correspondingly shows a very large number of cases of elephantiasis and other lymphatic diseases?

3. One must emphasize the fact that the embryos of *F. bancrofti* must not be taken as the sole index of the infectivity of the population; their absence from the circulation does not necessarily negative infestation by *F. bancrofti*, because it is well known that in lymphangitis, in many cases of chyluria, in filarial abscesses, and in elephantiasis the embryos are often prevented from gaining access to the peripheral blood. Furthermore large numbers of adult *F. bancrofti* have been found in enlarged lymphatic glands without the presence of the corresponding embryos in the blood. This being so, the filarial disease rate must be almost double that of the microfilaria rate of a tropical population.

In order to arrive at a correct estimation of the filarial index of any population one must take into consideration, not only the number of people with demonstrable microfilariae in their blood, but also those bearing clinical evidence of lymphatic disease without microfilariae. If this point is realized it will be understood that wherever the filarial disease rate is high, there also the microfilaria rate is high in proportion. This has been so sufficiently emphasized in our various contributions to the subject that we need not labour the point further here.

DISCUSSION.

Major Black agreed with Drs. Low and Manson-Bahr that statistics were not very reliable as regards the incidence of the disease, and indicated that this unreliability might be due in part to the presence of the microfilaria in the enlarged glands when not present in the blood.

Surgeon Captain Bassett-Smith emphasized the great value of clinical and pathological research and suggested that the employment of different technique by the various observers rendered the statistics of little use. He drew attention to the marked eosinophilia as an indication of the toxicity of the parasite, and to the resistance shown by certain cases to treatment with intravenous injections of arsenic and antimony, even over a period of years.

Dr. D. E. Anderson inquired whether blood counts had been made with regard to the numbers of the white corpuscles other than the eosinophils. Could difference in race be one of the causes of difference in infection amongst the black people? Had observers noticed that Africans were more liable to filariasis than Indians, or was that a mere accident? With regard to the increase of temperature towards evening, could that be due to the fact that the blood must be richer after the three or four meals of the day than after the abstinence of the night? Was the mosquito net the only explanation of the apparent immunity of the white race? In several cases of elephantiasis seen in Mauritius and Madagascar in the eastern hemisphere and in the West Indies and Columbia in the western it appeared that the descendants of Africans were more affected than those of Indians.

Major-General Hehir said that in the Calcutta College Hospital, thirty odd years ago, they had a certain number of cases of elephantiasis scroti constantly coming up for treatment, and that, when once the lesion was manifest, it was exceptional to get microfilaria in the surface blood. In that part of India, also, the obstructions appeared to be centred round the bladder and lower abdominal regions. One of the commonest lesions met with thirty years ago was chylocele, in which at times microfilaria were found. Chyluria was also common, and it was, he believed, in this latter condition that the late T. R. Lewis, the discoverer of the *Microfilaria bancrofti*, found it in 1873.

Dr. Law said that this discussion was useful in bringing out the point that later there might be discovered several new varieties of filaria. In British Guiana there was a total absence of enlargement of the epitrochlear gland. He also drew attention to the work by Dr. Wise, late of British Guiana, published in the *British Guiana Medical Annual*, showing that acute manifestations appeared to be due to the death of the parent worm.

Dr. Spearman asked if the incidence of the disease in men was greater than in women. In the routine examination of bloods at native out-patient dispensaries roughly from 10 per cent. to 20 per cent. of males were found to be infected, while infection in females was rare. He had never seen elephantiasis of the upper arm or breast, nor enlargement of the epitrochlear gland. Elephantiasis of the scrotum was more frequently seen than of the leg. The majority of the infected males were natives of the kingdom of Buganda, who had during the war travelled extensively in the coast belts of British East Africa and German East Africa.

Replies.

Professor Stephens, in reply, said that his joint paper was not intended to discuss the relationship of *Filaria bancrofti* to filariasis, but merely to draw attention to the discrepancies of statement found in the literature.

Dr. Manson Bahr urged the necessity of maintaining a definite standard of work in making further observations on filariasis, in order that any series of observations might be profitably compared. His own observations showed that men in the Pacific Islands were more frequently infested than women, that the ratio varied in different parts of the world, and that this probably depended on the habits of the two sexes in different districts. The same factor held good for the distribution of elephantiasis in different parts of the body. Those natives who were most frequently infested by way of the arms were those most frequently exposed to infestation in this area; for instance, the Fijians generally worked with bare arms in the fields where *Stegomyia pseudocutellaris*, the intermediary host, most abounded.

Dr. G. C. Low emphasized the importance of persons being properly trained before attempting to do filarial work. Unless this was done many serious mistakes were bound to crop up. He quite admitted that many of the so-called statistics on filariasis were not only valueless but even misleading. One must really know the capability of the worker doing the work before one could use his results in forming statistical tables. The whole subject of filariasis was very difficult and very imperfectly understood by many. Some years ago he had tried to induce some harmony into the results of embryo counting by insisting on a standard measurement of blood being used by all, and suggested twenty cubic millimetres as a suitable amount. Another difficulty in estimating a filarial infection in an island or district was that it was not necessary for infested individuals to show embryos in their blood. One must therefore estimate the embryo rate and the disease rate separately, and this was what he had done in the West Indies. For the embryo rate the general healthy population was taken, and then the population was searched for the different diseases, lymphangitis, chlyuria, varicose groin glands, elephantiasis, etc. To anyone who had worked at this subject in detail the part played by the filaria in the production of elephantiasis and the other filarial diseases was plain.

Answering Dr. Anderson, Dr. Low stated that pure white people were quite as liable to infection as half-castes and negroes; Dr. Daniels had shown that the Portuguese in British Guiana were specially liable, and he (Dr. Low) had seen many cases in white people in St. Kitts. There were still many interesting points which required clearing up in the study of filariasis, both as regards the life-history of the worms and as regards some of the pathological points, and he hoped this discussion would lead others to take an interest in the subject and work at it.

TREATMENT OF HUMAN TRYPANOSOMIASIS AND KALA-AZAR BY INTRAVENOUS INJECTION OF ACETYL-P-AMINOPHENYL STIBIATE OF SODIUM.

BY

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THE recent advances of intravenous therapy with antimony tartrate in tropical diseases, both protozoal and helminthic, have been striking and numerous. Both in trypanosomiasis and kala-azar very considerable progress has been reported, and instances of both diseases which have been cured by this drug have been recorded. The chief objection to the use of antimony tartrate in both these protozoal diseases has been the extremely small doses—maximum 2½ grains (0.16 gram)—which can be tolerated by man and the protracted nature of the treatment, in addition to which the trypanosomes, especially *Trypanosoma rhodesiense*, appear to be especially refractory to its action.

It has been felt for some time that the production of an organic compound of antimony, less toxic to the human body and consequently capable of being exhibited in larger doses and therefore more specific to these protozoa, was eminently desirable.

In 1916 Caronia published an account of the successful treatment of kala-azar in children in Italy by intramuscular injection of acetyl-p-aminophenyl stibiate of soda. The original drug was prepared by the firm of Heyden in Dresden. A supply of this compound was procured by Messrs. Allen and Hanburys in the early months of this year (1920), and the salt has since been modified by them under the name of "stibenyl."

Their main object has been to increase its solubility in water and to eliminate the inorganic antimony the original batches they prepared contained. This has now been done, with the result that "stibenyl" is soluble in ten parts of water and contains 34.3 per cent. of antimony. It can be given in large doses to man—0.6 gram (9.24 grains)—it is easily tolerated, and without doubt it will be found that still larger amounts can be borne without supervention of toxic symptoms.

I have so far treated two cases, apparently with success, with this drug, and the results have been so striking that I venture to make them public at this early stage with the view of bringing this drug to the notice of tropical practitioners and with the aim of securing for it a much more extensive trial by those interested than is at present possible. Its application to the treatment of leishmaniasis may mean much to the whole of the tropical world.

The first case is one of intractable trypanosomiasis *T. gambiense*) :

The patient, originally infected in the Belgian Congo in the early days of 1916, has now been under observation for more than four years. The commencement of his illness was acute, with high temperature, unconsciousness, and subsequent delirium. He had exhibited at various times all the clinical phenomena of acute trypanosomiasis—that is, a generalized adenitis, a circinate rash, and various nervous phenomena. Trypanosomes have been extremely scanty in his peripheral blood throughout. Almost from the onset he proved to be extremely sensitive to tartar emetic; the maximum individual dose he could tolerate was 1¼ grains. On various occasions the symptoms of collapse following injection, even after ⅗ grain, were so severe that the drug had to be discontinued. At the end of 1919 his mental and cerebral condition had become very much worse. He was completely prostrated in bed with great muscular weakness and inco-ordination of movement. He developed incontinence of urine and faeces, and this was followed in the early part of 1920 by epileptiform fits, accompanied by screaming, biting of tongue and enuresis. Three of these fits were recorded, the last on March 2nd, 1920. Up to that date he had had during four years: 55 grains of intravenous tartar emetic, 25 grains of soamin intramuscularly, 48 grains of atoxyl intramuscularly (finally discontinued on account of threatening blindness). On March 5th, 1920, injections of stibenyl commenced, first with 0.1 gram working up to 0.3 gram. Injections were given as far as possible on alternate days. Altogether 4.3 grams have been given in this manner. The results have been remarkable; improvement has been progressive, no untoward symptoms following injection have been noted, and he has been able to leave the hospital and go to his home (June 22nd).

Naturally one cannot say at present whether symptoms may not recur in the future, but one is at a loss to ascribe the improvement, save to the drug. Improvement commenced simultaneously with the injection of the drug, and within two months he has had more antimony when given in this form (69.3 grains) than in the whole of the previous four years. Moreover, he has been able to tolerate an individual injection of "stibenyl" at least four times as great as the maximum amount of antimony tartrate he was ever able to bear.

The second case is one of kala-azar in a lascar, diagnosed as such by spleen puncture, recognition and subsequent cultivation of the Leishman-Donovan bodies on May 8th of this year.

The man had been ill, as far as can be ascertained, for the previous three months, with great emaciation and anaemia. Improvement has been striking and rapid since the injection of stibenyl, commencing with 0.1 gram and working up to 0.6 gram. Altogether a total of 2.3 grams have been given; no untoward symptoms have been noted. The temperature fell to normal within fourteen days, and the improvement in his general condition has been remarkable. The spleen, which formerly extended well below the umbilicus, has now receded within the costal margin. The blood condition also shows (June 22nd) remarkable improvement. The haemoglobin has risen from 50 to 75 per cent., the red cells from 3,500,000 to 4,125,000, the leucocytes from 3,500 to 6,000. The mononuclears have fallen from 14 per cent. to 4 per cent. During injection there has been complete absence of any toxic phenomena—no vomiting, nausea, or cough, no precordial pain as is often noted with tartar emetic.

Stibenyl, in the one case in which it was tried, appears to have no effect, curiously enough, on bilharziasis. The patient continued to pass ova with living miracidia after 4.5 grams (68.3 grains). The case was subsequently cured after 16 grains of tartar emetic. Neither had it the least effect in benign tertian malaria in the two cases in which it has been tried.

My best thanks are due to Dr. A. L. Gregg, Medical Superintendent Hospital for Tropical Diseases, and to Dr. G. B. H. Hawes of the Albert Dock Hospital, for the great care they have taken of and the interest they have exhibited in these cases. And I wish to record my appreciation of the enterprise exhibited by Mr. W. H. McCallum for procuring for me the original samples and still further elaborating this drug.

DISCUSSION.

Professor **Nuttall**, opening the discussion on Dr. Manson-Bahr's paper, asked why in Italy when the patient was a child intravenous injections of antimony were given into the jugular vein, and whether this method had any advantages. Dr. **Manson-Bahr** replied that one of the objections of intravenous injection of antimony tartrate in children was the small calibre of the veins, so that it was very useful to know that, as in Italy, the jugular route might be used with impunity. Of course, in fully adult men there was no difficulty, as the median basilic or cephalic veins were so prominent. Sometimes there was a difficulty with fat men, though in these the veins might often be felt by rolling them under the finger. There were no local symptoms after injection when ordinary precautions were used.

Dr. **Wenyon** asked whether Dr. Manson-Bahr was actually dealing with a case of *T. rhodesiense*. The long duration of four years and the small number of trypanosomes found in the blood seemed to indicate a *T. gambiense* infection rather than a *T. rhodesiense* infection. Further, *T. gambiense* infections were much less virulent, and were more easily treated.

Dr. **G. C. Low** thought he was able to answer Dr. Wenyon's question perhaps better than Dr. Manson-Bahr, as he first saw the patient on his arrival in England when acting for Dr. Daniels. The patient acquired his infection in the Congo, and there was no doubt that he was a *Trypanosoma gambiense* case. As regards the new antimony salt, it was too early to say much about it. Tartar emetic was very good in most cases, and he (Dr. Low) had reduced the temperature in kala-azar cases with it in as short a time as in Dr. Manson-Bahr's case. One good of the new salt, if its efficiency were proved, would be the possibility of giving a much larger dose in a shorter time and so shortening the period of treatment. So far, in the treatment of one case, it had failed in bilharzial disease, while the tartar emetic given immediately after succeeded. There should be no pain with the intravenous injections of tartar emetic if given properly. He had to give these injections every day or so and had no trouble whatsoever with them. Professor Nuttall's mention of the use of the jugular vein was interesting, but in adults it was hardly necessary, and it would be very awkward if a fit of coughing, as so often occurred, took place when the needle was *in situ*.

Dr. **Andrew Balfour** asked if Dr. Manson-Bahr had formed any opinion as to how antimony acted in cases of the diseases mentioned. Was the action merely that of a parasiticidal agent, or was it more complicated and obscure? In this connexion it was interesting to note that at present emetine and antimony appeared, as it were, to be running a race for favour in the treatment of such diseases as schistosomiasis and oriental sore. He recently had opportunity of studying the records obtained by certain practitioners in Egypt who had been contrasting the action of emetine and of antimony in bilharziasis. So far it would seem that they preferred the former drug, which appeared to be as efficient as tartar emetic and was more easily administered. Recently, also, Photinos and others had stated that marked success followed their treatment of oriental sore by local injections of emetine hydrochloride. The drug had apparently proved equally valuable in the therapy of American leishmaniasis, the form of the disease in which both skin and mucous membranes were attacked. Now emetine and antimony were very different substances from a chemical standpoint, and it would be interesting to know exactly how they exercised their beneficial action in these conditions, and more especially how the new organic antimony compound acted.

Colonel **S. L. Cummins** said that Dr. Balfour's remarks appealed to him as he had been asking himself the same question. When contemplating the use of antimony in a case of blastomycosis he thought it well to do a preliminary experiment with a culture *in vitro*. An emulsion of *Blastomyces* in contact with a 1 in 200 solution of sodium antimony tartrate for twenty hours was not killed or appreciably diminished. It was perhaps the case that the drug acted not on the germ but on the tissues around it, so modifying them that the body fluids could get access to the germ and so destroy it.

Lieut.-Colonel **Kennedy** asked what was the total amount of antimony which it was safe to administer. A case had now come to his notice which had been under treatment for four or five months without reduction in the size of the spleen. The total amount of antimony given in the form of sodium and potassium antimony tartrate was just over 100 grains.

Dr. **Manson-Bahr** replied that apparently it was not safe to administer more than 2½ grains of antimony tartrate as one individual dose. The point about the acetyl salt was that it could safely be given in four times this dose without producing any serious toxic phenomena. He believed that the action of these drugs was not a direct one, but by reason of the alteration of the blood or serum. With reference to the action of emetine, he had recently seen a case in which a large serous effusion took place into a hepatic abscess, with consequent rapid destruction of the entamoebae and rapid healing of the lesion. This seemed to indicate that it was the effusion of serum which cured the case and not the direct action of emetine. The same might be the explanation of the cure of oriental sore by emetine as recently shown by Photinos (*Bull. Soc. Path. Exotique*). He wished he could explain why tartar emetic killed the bilharzia while this acetyl salt, given in much larger doses and containing therefore a much larger percentage of antimony, did not. Much more work required to be done on the subject before any definite statement could be made.

DIETETIC DEFICIENCY AND ENDOCRINE ACTIVITY, WITH SPECIAL REFERENCE TO DEFICIENCY OEDEMAS.

BY

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The endocrine organs—regulators of metabolism—are profoundly influenced by dietetic defects. This fact has been demonstrated by experimentation on pigeons, guinea-pigs, and monkeys. Animals of these species were fed on six classes of deficient dietaries. The first was deficient in all three classes of vitamines and in suitable protein, and was disproportionately rich in carbohydrates; the second was deficient in B and C vitamines and disproportionately rich in carbohydrates and fats; the third was deficient in B-vitamine and disproportionately rich in carbohydrates and fats; the fourth was deficient in A and B vitamines; the fifth in B-vitamine only; the sixth in C-vitamine only. The effects of these dietaries on the endocrine organs are attributable to three factors operating in varying combinations—namely, (1) deficiency of vitamines, (2) imperfect balance of the food with respect to proximate principles, and (3) the fortuitous occurrence of pathogenic agents in the body. The first two factors came into operation when the first three dietaries were used; they were aided in a proportion of cases by the third factor. The first factor was chiefly concerned in producing the results when the last three dietaries were used; it also was aided in a proportion of cases by the third factor.

All endocrine organs, with the exception of the adrenal glands and the pituitary body, undergo greater or lesser degrees of atrophy and depreciation in functional capacity in consequence of dietetic deficiencies.

The thyroid[*] *and parathyroid glands* exhibit a moderate degree of atrophy, most marked in pigeons when vitaminic deprivation is associated with an excess of carbohydrates and fats and a deficiency of protein. In monkeys, on the other hand, vitaminic deprivation alone causes a considerable reduction in weight of the thyroid gland. The dietetic deficiencies render these organs susceptible to toxic and bacterial action. In these circumstances the parathyroids often exhibit haemorrhagic infiltration of their substance; the thyroid may be similarly affected. This observation has a bearing on the causation of infantile tetany. In guinea-pigs a scorbutic diet causes the thyroid to enlarge; the enlargement is due to haemorrhagic infiltration of its tissues.

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[*] For the effects of certain dietetic excesses on the thyroid gland see paper by author in the *Indian Journal of Medical Research*, January, 1920

The gonads exhibit pronounced atrophy, most marked in pigeons whose food is deficient in B vitamine and protein and rich in carbohydrate. In monkeys atrophy occurs, but in lesser degree; it is least when the food while deficient in B-vitamine is well balanced with respect to proximate principles.

The pancreas undergoes pronounced atrophy in monkeys and pigeons, especially when vitaminic deprivation is associated with an excess of fats.

The thymus atrophies intensely in five of the deficient dietaries. I have no data with regard to the scorbutic diet.

The spleen undergoes pronounced atrophy in monkeys and pigeons, especially when vitaminic deprivation is associated with an excess of fats. In guinea-pigs fed on a scorbutic diet the spleen weighs approximately one-half of the healthy organ.

The pituitary body exhibits in monkeys and pigeons a small but definite increase in weight in males but not in females. When, however, monkeys were fed on a well balanced food, but deficient in B-vitamine, the weight of the organ was less than in controls.

The adrenal glands enlarge in consequence of all six classes of deficient dietaries. They are the most susceptible of all endocrine organs to dietetic defects. They enlarge also in consequence of starvation. The character of the enlargement varies, both as regards histological change and adrenalin content, with the character of the deficient dietary. Thus, the enlargement produced in guinea-pigs by a scorbutic diet is due to haemorrhagic infiltration of the cortex, and is associated with a great reduction of the adrenalin content, while in pigeons fed on autoclaved rice and butter haemorrhagic infiltration of the medulla is especially evident, and the adrenalin content is as a rule also subnormal. When the food of pigeons and monkeys is deficient in vitamines and suitable protein and disproportionately rich in starch the adrenalin content of the enlarged glands is high. It is less high and the enlargement is less marked when the deficient food is well balanced with respect to proximate principles. The adrenalin content of the adrenal glands is thus dependent on the quality of the food. It is also dependent on the presence or absence of concurrent infections; such infections cause the adrenalin content to be low.

Oedema — usually hydropericardium — is frequently associated with massive enlargement of the adrenal glands, and there is then in pigeons fed on autoclaved rice a corresponding increase of their adrenalin content. Oedema did not occur (oedematous degeneration of the auriculo-ventricular band of fat excepted) when the enlargement was not associated with a corresponding increase of the adrenalin content. While 100 per cent. of cases of wet polyneuritis had massive enlargement of the adrenals associated with a corresponding increase of their adrenalin content, 14 per cent. whose adrenals exhibited these characters had no oedema. The following are the average weights of both adrenals per kilo of original body weight:

Healthy controls	91.8 mg.
Dry polyneuritis	151 mg.
Wet polyneuritis	292 mg.

The average adrenalin content in both adrenals per kilo of original body weight is as follows:

Healthy controls	0.216 gram
Dry polyneuritis	0.320 gram
Wet polyneuritis	0.524 gram

The addition of fresh butter to a dietary of autoclaved rice lowers the incidence of oedema in pigeons. The protection against oedema afforded by the fresh butter appears to be complete for the first thirty-six days of the experiment. In 29 pigeons fed exclusively an autoclaved rice 8 cases of *wet* polyneuritis and 5 cases of *dry* polyneuritis occurred up to the thirty-sixth day, whilst amongst 29 pigeons fed on autoclaved rice and fresh butter no case of *wet* polyneuritis and 19 cases of *dry* polyneuritis occurred up to the thirty-sixth day, the experiments running concurrently. After the thirty-sixth day the butter used afforded no protection. By the thirty-sixth day the pathological changes in the digestive and assimilative organs, which result from the deficient dietaries, are well established, and may inhibit the assimilation of those substances on which the protection against oedema is dependent. The lowered incidence of oedema is associated with a lowered adrenalin content of the adrenal glands, although an increase in weight of the organs occurs. The following are the average weights of both adrenals per kilo of original-body weight in—

Butter fed healthy controls	69.7 mg.
Butter fed *dry* polyneuritis	141 mg.
Butter fed *wet* polyneuritis	215 mg.

It will be noted that in butter-fed pigeons of all three classes the average weight of the adrenals is less than in the corresponding classes in non-butter-fed pigeons. The average adrenalin-content in both adrenals per kilo of original body-weight was in—

Butter fed healthy controls	0.25[illegible] gram
Butter fed *dry* polyneuritis	0.[illegible]41 gram
Butter fed *wet* polyneuritis	0.575 gram

Thus, in contrast to cases of polyneuritis resulting from an exclusive diet of autoclaved rice, no increase of the adrenalin content occurs in pigeons fed on autoclaved rice and butter, except when oedema is present.*

Butter varies in its capacity to protect against oedema in pigeons fed on autoclaved rice. Amongst 20 cases of polyneuritis columbarum produced by a dietary of autoclaved rice, onions, and butter, two cases had oedema, or 10 per cent. The butter used was made from the milk of Indian cows fed on *green* fodder. In another series of 20 cases of polyneuritis columbarum produced by a dietary of autoclaved rice, onions, and butter, seven cases had oedema, or 35 per cent. The butter used was made from the milk of Indian cows fed on *dry* fodder. The capacity of butter to afford protection against oedema therefore varies with the quality of the cow's food. A hypothetical "anti-oedema" substance appears to be derived from green fodder. It is unlikely that the two butters differed materially in their protein or fat content. They differed, however, in their lipochrome content, that made from the milk of cows fed on green fodder being richer in this substance. It is suggested that the hypothetical "anti-oedema" substance may be of the nature of lipochromes.

Cocoanut oil does not contain this hypothetical anti-oedema substance, since the addition of this oil to a dietary of autoclaved rice, in the proportion of ½ oz. per bird, afforded no protection against oedema in pigeons.

SUMMARY.

1. Dietetic deficiency has a profound influence on endocrine activity.
2. All endocrine organs, with the exception of the adrenal glands and the pituitary body, undergo greater or lesser degrees of atrophy and depreciation of functional capacity as a result of dietetic deficiencies.
3. The adrenal glands, and in males the pituitary body, enlarge in consequence of dietetic defects; the former greatly, the latter slightly.
4. The adrenal glands are, of all endocrine structures, the most susceptible to dietetic defects.
5. The character of the adrenal enlargement varies with the character of the dietetic deficiency.
6. The adrenalin content of the enlarged adrenals varies with the character of the dietetic defect; it is in excess of normal when the food is deficient in vitamines, in proteins, and disproportionately rich in starch; it is below normal when the diet is scorbutic, and also when concurrent infections are associated with dietetic defects.
7. Oedema is invariably associated with massive enlargement of the adrenal glands in pigeons fed on autoclaved rice. But massive enlargement of the adrenals is not invariably associated with oedema. This association bears some intimate relationship to the adrenalin content of the enlarged organs: when the content is high oedema occurs in 86 per cent. of cases, when the content is low oedema does not occur.
8. Fresh butter contains some substance which tends to protect against oedema. This substance was not present in a cocoanut oil.

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* Kymographic estimations of adrenalin in the enlarged glands confirmed the chemical estimations here given.

9. The hypothetical "anti-oedema" substance in butter has a pronounced influence over the adrenal glands. It appears to exert its protective action against oedema by maintaining their adrenalin content at a low level.

10. Butter varies in its capacity to protect against oedema. This variation is dependent on the quality of the cow's food: butter is richer in "anti-oedema" substance when the cows are fed on green fodder than when they are fed on dry fodder.

CONCLUSIONS.

These observations have a significant bearing on the causation of deficiency oedemas in the human subject.

In an early paper on the pathogenesis of deficiency disease I suggested that oedema was initiated by increased intracapillary pressure consequent on hyper-adrenalinaemia. More extended experience has caused me to alter my opinion. Recent work on the effects of adrenalin does not support this suggestion. It seems more probable that an excess of adrenalin may reach the kidneys direct and interfere with the normal excretion of urine, thus favouring the retention of fluid in the tissues. A number of closely correlated facts point in this direction. Thus, the adrenals are enlarged in human beri-beri and their adrenalin content is high (Ohno); the urinary output in human beri-beri is small, although in general no disease of the kidneys is present; excess of adrenalin introduced into the venous circulation inhibits the flow of urine (Gunning) and causes retention of NaCl in the tissues (Bulche and Weiss); a channel of communication exists between the adrenal glands and the kidneys, whereby the product of the glands may reach the kidneys without either dilution or oxidation in the general circulation (Cow); finally, a diminution of the flow of urine can be produced by the direct action of adrenalin reaching the kidneys by this route (Cow). Adrenalin thus appears to control the excretion of urine; this being so, it is of great importance to be aware of the fact that adrenalin is in its turn controlled by the quality of the food. Other factors in addition to impaired excretion no doubt play their part in the causation of oedema—impairment of endothelial function with associated alterations in vascular permeability, impaired metabolism of proteins and lipoids, and chemical changes in the tissues themselves—all of which are consequences of the disturbed endocrine function and of the disturbed metabolism which are the outcome of vitaminic deprivation and malnutrition.

DISCUSSION.

Dr. J. BARCROFT ANDERSON asked whether Colonel McCarrison was satisfied that, when he found *post-mortem* deviations from normal in the appearances of the adrenals, such deviation was due to the immediate effects of the defective diets detailed, rather than to extra strain being placed on the adrenals by their having to counteract the effects of the deficiencies in the diet.

Surgeon Captain BASSETT-SMITH said that his work on guinea-pigs with regard to antiscorbutic diet was confirmatory of the work done by Colonel McCarrison, but that, besides haemorrhage, marked fatty degeneration of the cells of the cortex was generally present. Further, he stated that he had found similar conditions in animals suffering from infections of trypanosomes so closely allied that the appearances could not be distinguished microscopically. This, he thought, pointed to a toxic cause.

Dr. WAUGH SCOTT said that he had nothing to contribute to the pathological aspect of this discussion, but that he would like to express his gratitude to Colonel McCarrison for the light thrown on his clinical experience in Malaya. Oedema was extremely common amongst patients in that country, and the cause was often very obscure. Such patients, when put on milk diet usually got worse, and he had found a diet largely composed of fresh vegetables to have a remarkably beneficial action in these cases.

Dr. LOW asked what was the condition of the liver in such cases.

Dr. MANSON-BAHR asked Colonel McCarrison if he knew of any observations showing the connexion of so-called war oedema and pellagra. During the early part of 1916 a very high degree of oedema was found amongst Turkish prisoners from Avatra who had undergone great privation and starvation. These cases were at first thought to be beri-beri, but those who recovered developed pellagra. Amongst the German prisoners a degree of oedema was observed by Dr. Enright in association with malaria, but this disappeared after treatment with quinine, while others of these oedematous cases subsequently developed pellagra.

Major-General HEHIR said he should be grateful if Colonel McCarrison would say what was the relationship existing between excessive physical exertion and the acute onset of beri-beri in cases of partial starvation in man.

REPLY.

Colonel MCCARRISON, in reply, said: In regard to the point raised by Dr. Anderson I am, at the present stage of my work, not prepared to give a satisfactory answer. It is a notable fact, however, that the adrenals enlarge at a time when all other lipoid-containing structures atrophy, at a time, too, when the lipoid content of the blood serum is, according to de Longen and Schut, low. The adrenals enlarge in human beri-beri, and their adrenalin content is increased (Ohno). Thus a high adrenalin content is associated with a low lipoid content of the blood, a fact which is in remarkable contrast to the great excess of lipoid, reported by Epstein, in the blood of persons suffering from renal dropsy. The adrenal cortex, if not an actual manufactory of lipoids, is certainly their chief storehouse in the body. It may be that the enlargement of the adrenal cortex is a compensatory attempt to supply a deficiency of lipoids to the blood serum and nervous tissues especially, and that the excessive adrenalin content is a by-product of their activities in this direction. If this were so—and in the present state of my knowledge it is no more than surmise—the adrenal enlargement would be comparable to that of the thyroid gland in the presence of deficient iodine intake or assimilation. Dr. Bassett-Smith has reminded me that I made no mention of the degenerative changes in the cortical cells in the adrenals of guinea-pigs fed on a scorbutic diet. Vacuolation and fatty degeneration of these cells is associated with more or less circumscribed haemorrhagic infiltration of the cortex, and no doubt is responsible in some measure for the low adrenalin output of the organs as a result of scorbutic diet. In reply to Dr. Low, the liver shows little atrophy as determined by weight, but it is often engorged, and its cells degenerated and vacuolated in greater or lesser degree. Vacuolation of cells is more marked when the diet is scorbutic. In fact, the extent of the atrophy of this organ is masked by its engorgement. I have dealt fully with the histopathology of the liver in my Fifth Report on the Pathogenesis of Deficiency Disease to the Indian Research Fund Association, which has been published in the October, 1919, number of the *Indian Journal of Medical Research*. Dr. Manson-Bahr has raised the point of hunger oedema and pellagra. I think that the observations I have mentioned have an important bearing on both these states. And here I may be permitted to emphasize again that the effects on the adrenals, to which I have directed your attention, are the outcome of four factors operating in varying combinations according to the character of the deficiency. Three of these are dietetic and the fourth pathogenic. In practice, when we are dealing with a human dietary which is deficient in vitamines, we are often at the same time dealing with one deficient in suitable protein and disproportionately rich in starch. Both protein and vitamines in sufficient quantity are essential for the maintenance of perfect cellular activity, and it seems to me probable that oedema may be a consequence of a deficiency of either. Certainly with respect to pellagra a deficiency of suitable protein would appear, from the reports of the Pellagra Commission, to be an important factor in the causation. I do not yet know how far the adrenal changes I have recorded have an influence on the specific effects of deficiency of protein, deficiency of vitamines, or both together. With regard to the effects of fatigue in precipitating the onset of beri-beric symptoms, as observed by Major-General Hehir, it may be that this agency exerts its [illegible] action by further exhausting the resources of th[illegible] crine organs. My studies are, however, still [illegible] advanced to enable me to provide complete answers to the points raised by the various speakers. Indeed, it would at present be injudicious to attempt to do so. I prefer still to say, with regard to some of them, I do not know.

SECTION OF PHYSIOLOGY AND PHARMACOLOGY.

Professor F. Gowland Hopkins, F.R.S., D.Sc., F.R.C.P., President.

DISCUSSION ON THE TREATMENT OF DENERVATED MUSCLE AND ON THE "DISUSE" THEORY.

J. N. Langley, F.R.S., Sc.D.,
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Dr. John Reid in 1848 put forward the theory that the wasting and loss of irritability of muscle which follows severance of nerves was due to the inactivity of the muscle—the theory later called the "disuse" theory—and that by stimulating the muscle with the galvanic current the wasting could be prevented. In the following year Brown-Séquard supported this theory in its general form, but thought it possible that the galvanic current besides preventing wasting by doing away with the inactivity of the muscles, might also help to prevent it by a direct action on the chemical changes in the muscles. The disuse theory was widely accepted, and it was acted on. It had in its favour the fact that exercised muscles increased in size and that unused muscles decreased in size. In medical practice, however, the electrical stimulation of muscle gave results which were difficult to harmonize with the disuse theory, and from time to time it was urged that the state of muscle after nerve section was different from that caused by lack of use. But those who criticized the theory had no other of a definite kind; the only one suggested was that the atrophy of the muscle was due to cutting off trophic impulses passing to it by the nerve. The trophic theory was too vague to be satisfying, and the disuse theory remained and still remains the dominant one. On the disuse theory, contraction of the muscle when not produced to excess must largely delay the atrophy, and it must, if rightly carried out, entirely prevent any atrophy from occurring.

A theory which has been intimately connected with the disuse theory, but which is not necessarily a part of it, is that the wasting of unused muscle and the atrophy of denervated muscle is caused by the accumulation of metabolic products. Metabolic products may pass out of the muscle either by the lymph or by the blood. Physiological experiment has shown that from quiescent normal muscle there is very little lymph flow and that the flow is increased by contraction and by massage. It has not, however, been shown that in quiescent muscle there is any accumulation of metabolic products to remove. It is a familiar fact that soluble substances injected into a muscle pass almost at once into the general circulation. Ligature of the lymph vessels of the limbs does not so far as is known delay the time at which absorption begins on intramuscular injection. Absorption by the blood vessels one would think would be able to deal with the metabolic products of the quiescent muscle, and the increased lymph flow which occurs in contraction may be regarded as being only a means of meeting the increased production of such products. It is also known that in normal muscle the after-effect of contraction is increased blood flow, and Barcroft and his co-workers have shown that it lasts for some time after the contraction, but there is good reason to believe that the increased blood flow is due to the increase in the metabolic products, and in that case contraction causes for a not inconsiderable time increase of products which, on the theory with which we are dealing, are injurious. It does not, then, seem probable that contraction benefits a muscle by causing the removal of metabolic products accumulated in consequence of inactivity. On this theory indeed the way to get rid of metabolic products is to increase them. Massage increases the lymph flow in normal muscle, and Lauder Brunton and Tunnicliffe showed that it also increases the blood flow. It is probable that it does the same in denervated muscle. It does not give rise to metabolic products as contraction does, so that if there are metabolic products to be removed massage would be more likely than contraction to be beneficial.

We might, however, discard the theory that contraction and massage delay atrophy in muscle by mechanically decreasing metabolic products, and suppose that it delays atrophy in consequence of the increased supply of oxygen resulting in increased blood flow. This possibility presents the primary difficulty that atrophy is very much faster in the first weeks after section of the nerve than later, and that during this period the blood flow, which is at first greatly increased by section of the vaso-constrictor nerves, remains as a rule above normal.

If we discard this theory also there seems no scope for a beneficial action of massage in the early stage of denervation, but we might still assume that electrical currents which cause contraction do so by directly stimulating the growth of the muscle.

The foregoing statement shows, I think, that whilst there is ground for much argument as to the way in which denervated muscle may conceivably be benefited by various forms of treatment, there is little hope that the argument will lead different schools of thought to a common conclusion. We need further facts of observation and experiment.

Both Reid and Brown-Séquard made experiments on animals and from these they concluded that galvanic stimulation completely prevented the atrophy of denervated muscle. The experiments are for various reasons inconclusive, but it would take too much space to criticize them here. The striking fact is that from 1849 to 1915 denervated muscles in man have been generally, though not universally, caused to contract by electric currents on the theory that this treatment prevented or delayed atrophy, without any definite evidence being offered (so far as I have been able to find) of a successful result, and without any further serious experiments on animals. Recently some experiments on animals have been made. I give a short account of them for your consideration.

A fundamental fact with regard to denervated muscle which has long been known, but the significance of which has been overlooked, is that it is not quiescent. It is in continuous fibrillar contraction. The contractions are not synchronous enough or strong enough to move the whole muscle, but the single fibres contract many times a minute without intermission of the rhythm. There is, then, quite as much ground for considering that the atrophy is due to overuse as there is for considering that it is due to disuse. And if it is due to overuse, it is very improbable that making it contract still more can benefit it.

I and my collaborators, Dr. Kato and Dr. Hashimoto, have experimented on rabbits. I need not give in detail the first experiments made by Dr. Kato and myself,[1] for the conditions of the experiments gave considerable scope for variation in result. The animals were not fully grown, the muscles were weighed in groups instead of singly, and the duration of the experiments varied from nine to seventy-one days. The one clear result was that neither moderate contraction, caused by condenser currents combined with brief massage, nor passive movement prevented extensive atrophy of the denervated muscles. Apart from this we came to no conclusion, but we were inclined to believe that both electrical stimulation and passive movement had some beneficial effect.

In order to test the suggestion of some improvement by treatment afforded by the foregoing experiments two experiments were made by me[2] and two later by Dr. Hashimoto and myself,[3] in conditions in which I think the experimental error was small. The results we may take together.

After section of the rabbit's sciatic in the popliteal space, the gastrocnemius and plantaris muscles lose from 30 to about 45 per cent. of their weight in three weeks; the other muscles of the leg supplied by the cut nerves lose as a rule less weight than the gastrocnemius, and the percentage loss varies within certain limits in different animals. The percentage loss was determined by cutting the nerves on one side in 8 rabbits and weighing the several muscles on the two sides. The limits of the normal difference in weight of the several muscles on the two sides was determined by weighing the muscles of 18 unoperated rabbits.

In the experiments on the effect of treatment the popliteal nerves were cut on both sides. The muscles of one side underwent treatment, and at the end of three weeks or rather more the animals were killed and the several muscles weighed. It was necessary to determine whether in bilateral denervation the corresponding muscles lost weight at the same rate. For this purpose the external or internal popliteal nerves were cut in 6 rabbits, and in three weeks or rather more the animals were killed and the muscles on the two sides weighed. The differences in the weight of corresponding muscles was in some cases rather greater than in unoperated animals, but the results as a whole showed that corresponding denervated muscles lost weight at practically the same rate.

It follows, I think, from these data that if, after bilateral denervation lasting three weeks with treatment on one side, the differences in weights of corresponding muscles is nearly the same as in normal animals, we may safely infer that the treatment has caused little if any delay in the rate of atrophy. It may be noticed that in each experiment seven or eight muscles or groups of muscles were compared; the total number of muscles compared was thirty.

In Experiment 1 the lower leg on one side was stimulated with condenser currents for an hour and a quarter each morning and evening for twenty days, at the rate of about 30 a minute. The stimulating electrode was moved from muscle to muscle to avoid fatigue. The different muscles were stimulated to very unequal extents, so that one or other would contract the optimal number of times. In Experiment 2 the passive movements of flexion and extension of one leg were carried on for half an hour twice a day for eighteen days. In Experiment 3 similar passive movements were carried on for an hour and a quarter twice a day for twenty days. In Experiment 4 the muscles were massaged for half an hour twice a day for fifteen days.

The results did not bring out any definite effect of the treatment. It may safely be said that in all the experiments the gastrocnemius on the treated side lost at least 35 per cent. of its weight. The difference in the weights of the muscles on the two sides was in some cases outside the normal limits, but the variation was not great enough to allow any certain deduction to be made from it; so far as the results went they indicated trifling damage from contraction, and slight benefit by passive movement and by massage.

A considerable number of experiments have been made by Hartman, Blatz, and Kilborn.[4] In 37 rabbits they cut on both sides the nerves to the gastrocnemius, plantaris and soleus muscles. The muscles were massaged by trained masseuses for two to ten minutes a day over periods varying from seven to 190 days. At the end of the period the animals were anaesthetized, the muscles stimulated, and the work done by them on the two sides compared. The muscles were also weighed. Control observations were made on fifteen normal rabbits. The differences which they found on the treated and untreated side were insufficient to warrant any certain conclusion, but so far as they went they indicated that massage was slightly beneficial.

Further experiments have been made by Hartman and Blatz.[5] In these the contractile powers of the muscles of the treated and untreated side were tested from time time after denervation instead of only at the end. The animals were anaesthetized with ether, the leg fixed, weights attached to the foot, and a tracing taken of its movements. The treatment was massage on 58 rabbits for two to twenty minutes' duration daily, and stimulation by the galvanic current in 24 rabbits. The strength of the current used varied in different cases. In these experiments they state that neither massage nor galvanic stimulation appeared to benefit the denervated muscle.

The experiments of myself and my collaborators deal with the effect of treatment on the atrophy of muscle, those of Hartman, Blatz, and Kilborn deal with its effect on contractile power; since in neither was any certain benefit found, it is eminently desirable that treatment in man should not be governed by theoretical conclusions, and that the effect of treatment should be observed with an open mind.

There are one or two other points on the treatment of denervated muscle which deserve mention. It is known that in such muscle connective tissue readily forms. This tissue when first formed is jelly-like, and I agree with those who think it important that passive movement should be carried out at the earliest possible moment, in order to stretch this tissue and prevent adhesions of the muscles and joints. The theory that muscle is injured by moderate extension and flexion is I think erroneous; such injury may occur when parts of the muscle are so fixed by connective tissue that stretching breaks the muscle fibres.

In the later stages of denervation the blood supply to the muscle probably diminishes, and in that case it seems reasonable to suppose that an increase of blood supply will benefit it. A simple and effective way of doing this is the warm bath commonly used. Whether any other treatment is necessary is, I think, doubtful, but as an additional measure I think there is more to be said for massage than for electrical stimulation.

In comparing in man the behaviour of treated and untreated muscles it has to be borne in mind that all the tissues in a denervated area are more liable to injury than a normal area. Continued pressure and excessive strain cause connective tissue growth and injure the tissues so that inflammation occurs. In consequence, patients who are left to their own devices cannot properly be compared with those who are prevented from injuring themselves. Further, any kind of treatment which does not injure is advantageous, since it produces confidence in the patient and thereby improves the general nutrition of the body, and this it can be hardly doubted affects the denervated part.

In conclusion I may say that I regard the treatment of denervated muscle as still in the experimental stage, and it is from this point of view that I introduce a discussion on the question.

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IN the observations which I am about to make I shall understand by the term "denervated muscle" a muscle the nerve of which has been deprived of its functions by injury or disease. Professor Langley regards the treatment of denervated muscle as still in the experimental stage. I think that those who have had no practical experience in the electrical treatment of paralysis, will also conclude, after reading the experiments described by Professor Langley, that electricity is of little or no value in the treatment of denervated muscle. I feel sure that this is not the conclusion of those who have had long experience in the electrical treatment of paralysis. The following statements are quoted from the late Dr. Lewis Jones, whose knowledge of the subject was wide. He said: "It is perhaps hardly necessary to debate the question whether electrical treatment is of use in the treatment of paralysis. But if there are any persons who still dispute the efficacy of electricity and try to maintain the proposition that the recovery from paralysis is due to natural causes and is quite independent of any electrical treatment which may be used during the course of recovery, the following cases may be quoted." He then gave particulars of two cases which were stationary when the electrical treatment was interrupted, but progressed again when the treatment was resumed. In one case the paralysis was due to pressure on the nerve; in the other case the nerves had been divided and afterwards sutured. Dr. Lewis Jones also said: "All those who have had practical experience in the matter have seen cases of nerve injury begin to recover rapidly under electricity, after having been stationary for long periods under 'expectant treatment.'"

A case under my care illustrated this most strikingly. The patient acquired infantile paralysis of both lower limbs at the age of one year. The right limb soon regained power and returned to a normal state. The left thigh regained slight power, but the left leg remained paralysed for six years. No treatment other than the application of a splint, and a form of massage by the nurse, was applied. Electrical treatment was then commenced. After 36 applications during 11 weeks, slight voluntary power was noticed in the peronei. The girth of the leg increased by one inch. The treatment was continued and power returned in the extensors of the toes and in the peroneus tertius. The form of electrical treatment in this case was the rhythmically varied sinusoidal alternating current, applied to the limb immersed in water. This current does not cause visible contraction of muscles showing the reaction of degeneration. This method has been used for many years at St. Bartholomew's Hospital for the greater number of cases of paralysis in which the muscles show the reaction of degeneration. The use of a current which does not cause contraction of these muscles is, according to the original teaching, of no value. The fact, however, remains that return of voluntary power has frequently been noted in muscles which have been long paralysed and have shown the reaction of degeneration, after treatment by the sinusoidal current has commenced. With regard to its mode of action it is possible that the stimulation of the peripheral sensory nerve endings in the skin stimulates the anterior horn cells. If the axons of these cells have been divided this stimulation may hasten the regeneration, or if the axon has temporarily lost its function through disease its recovery may be hastened. I have been able to stimulate the posterior nerve roots of the spinal cord in the lumbar region of the human subject and cause contraction of the muscles of the lower limb, the contraction occurring in the muscles of the *opposite* side.

My experience shows that a paralysed muscle showing the reaction of degeneration will recover (if recovery is possible) when a current causing no contraction is applied to the limb, and recovery has taken place in cases in which no progress had occurred before the treatment. A patient who had paralysis in both forearms was under my care at St. Bartholomew's. One side was treated by the sinusoidal current, the other by the galvanic current. Recovery commenced first on the side treated by the sinusoidal current in which muscular contraction was not produced. After voluntary power is regained, currents which cause contraction should, I think, be used, provided that their application is not long enough to cause fatigue.

Another important precaution should be taken, namely, the protection of the limb from cold. It is well known that cold greatly retards recovery. I do not think that any form of physical treatment will prevent loss of weight of a muscle after section of its nerve. This loss of weight was clearly shown in Professor Langley's experiments. The failure of electrical stimulation to prevent this loss cannot, I think, be taken as indicating that electrical treatment is of no value. The divided nerve should have been sutured and the treatment continued in some of the muscles till power returned. The value or absence of value of treatment by electrically induced contraction would then be ascertained.

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I FEEL sure that all electro-therapists will most heartily welcome Professor Langley's paper. Nothing is more desired by the modern school of electro-therapists than a closer association with the experimental physiologist, for important problems continually arise in their work which can only be satisfactorily worked out in the physiological laboratory. The association would, I think, be mutually helpful, for only by working in collaboration with the electro-therapist can the physiologist ascertain the nature of the questions awaiting solution.

Professor Langley's experiments on rabbits appear to contain little or nothing that is at variance either with the experience or the teaching of electro-therapists in regard to the treatment of peripheral nerve injuries. For the period with which he deals is one with which electro-therapists have little or no experience. His experiments are concerned with the period extending for three weeks after the date of the division of the nerve—namely, with that period during which the nerve is in process of degeneration, and ceasing when complete degeneration has occurred. During the war it was exceedingly rare for a case of nerve injury to pass into the electro-therapeutic department within three weeks of the receipt of the injury, therefore electro-therapists were unable to treat these cases during the period with which Professor Langley deals.

In the treatment of the peripheral nerve paralysis consequent upon anterior poliomyelitis, in some respects an analogous condition, most electro-therapists are agreed that for the first three or even six weeks from the onset of the disease electrical excitation should not be employed, as in the acute condition it is likely to do more harm than good. So to this extent electro-therapists would seem to be in full accord with Professor Langley. Almost invariably complete nerve degeneration has occurred and the reaction of degeneration is fully established before cases of nerve wounds come into the hands of the electro-therapist. These two periods—the period during which degeneration is taking place and the period after degeneration is fully established—are so essentially different in character that it cannot, I think, be seriously argued that the treatment which is suitable for one is necessarily suited to the other.

The fact mentioned by Professor Langley that "atrophy is very much faster in the first weeks after section of the nerve than later" would seem to point to nerve irritation occurring during this period of active degeneration; for we frequently observed during the war that in those cases in which constriction or the pressure of a foreign body caused nerve irritation, the muscular wasting was far greater than in cases of complete nerve section. I should be interested to hear from Professor Langley whether fibrillar contraction is greater during this period; one would expect it to be so if there was much nerve irritation. If nerve irritation exists, as appears to be the case, during the first three weeks following nerve section, electrical stimulation would be clearly contraindicated during that time. To this extent, then, I think that I should be safe in stating, and I believe most electro-therapists would be in accord with the statement, that there is nothing in Professor Langley's experiments, so far as they go, with which we are in disagreement; but when full degeneration is established, and when nerve irritation is a thing of the past, an entirely different problem arises to which Professor Langley's experiments do not necessarily apply.

When all nerve irritation has ceased we claim that by suitable electrical treatment, not necessarily by exciting contraction, we can favourably influence the healing of the wound, heal trophic sores, improve the condition of the skin, replacing its dry, scaly, harsh condition by a state more closely approaching to the normal; we claim also that we can aid the nutrition of the limb by accelerating its circulation and by increasing its temperature. Thus, though we make no claim to affect regeneration of the nerve directly, we must nevertheless influence it by inducing in the limb a condition more favourable to regeneration. Upon these points there is a unanimity of opinion among electro-therapists almost unheard of among any other section of medical men. But these are not merely subjective symptoms favourably interpreted by an enthusiastic electro-therapist. Actual measurements of the limbs showing increase in girth, a reappearance of the growth of the hair on the skin, diminution in the milliampèrage of the galvanic current required to excite a contraction, the increased formation of callus in ununited fractures, demonstrated radiographically by Dr. Barclay as taking place after suitable electrical treatment, are objective signs which admit of no other interpretation than that the nutrition of tissues, lowered by injury or disease, can be improved by modern electrical methods.

I am in agreement with Professor Langley in the opinion he expresses that "there is little hope that argument will lead different schools of thought to a common conclusion." I would even go further, for I fear there is little hope that even experiments on animals will bring about this desirable result. For, as it is open to physiologists to say that the claims of electro-therapists are too vague and inexact, and should be reduced by experiments on animals to terms of grams and metres; so it is open to electro-therapists to express the view that experiments on animals, conducted in a laboratory, are not so valuable as observations based on the treatment of thousands of soldiers made by or under the direct supervision of skilled and experienced physicians. And also it is open to the massage expert to claim that the massage of rabbits' legs has not attained to the same degree of perfected technique as the massage of human limbs by highly trained military masseuses; and, consequently, no reliable conclusion could be drawn from the failure of the former in regard to the efficacy of the latter.

I should like very briefly to allude to the question of the relative value of massage and electricity. Let me very emphatically state that in my opinion there should be no question at all of their relative efficiency, and certainly no rivalry between their respective exponents. They are in no sense antagonistic, on the contrary the one is the complement of the other, they are mutually useful, and in a large number of cases each is indispensable. In dealing with massage, I would like also to emphasize the very great importance I attach to remedial exercises and re-educative movements in the recovery stages of nerve lesions.

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Professor Langley's experiments, taken at their face value, prove that electrically provoked contraction cannot prevent the initial atrophy of muscles after nerve severance. But they do not carry us beyond the first month. I am convinced, on clinical grounds, that a muscle severed from its nerve supply soon ceases to be a normal muscle, and arguments concerning the danger of disuse and the value of electrically provoked exercise cannot be applied to it without modification. The value of rest and relaxation in the case of muscles with a seriously damaged nerve supply was shown many years ago by Sir Robert Jones. His school, however, made the error at one time of condemning, or at any rate of looking askance at, electrical treatment *in toto*. Clinically, I have found that for many weeks, sometimes for months, after nerve injury treatment of the limb in a warm bath, by some form of interrupted current not strong enough to produce visible contractions, is of great value. This is the same treatment as that adopted at St. Bartholomew's Hospital by Dr. Cumberbatch in certain cases of infantile paralysis, for which he claims great success.

I would divide the treatment of a muscle with a severed and sutured nerve into three stages:

1. It should at first be kept at rest and prevented from being overstretched by relaxation splint. This need not, however, in turn overstretch the sound opponents, nor does it preclude daily removal for full passive movements of the joint and very gentle massage. Electrical treatment at this stage should not produce visible contractions of any muscles.

2. As soon as it can be detected, either by electrical tests or by slight return of voluntary power, that motor nerve regeneration has become in part established, the muscle should be made to contract as a whole, preferably by some form of tetanizing current. Such a current, consisting of a rapid series of condenser shocks, may be used long before there is any response to ordinary faradism. This treatment should at first be given while the limb is still on its splint, and the greatest care should be taken to prevent over-fatigue. There is some tendency at present to forget the value of rest and the danger of over-stimulation. This will soon cease to matter as regards war injuries, but may have disastrous consequences as regards the treatment of infantile paralysis.

3. The final stage, when voluntary power is rapidly returning.

The splint may now be dispensed with, and fairly vigorous daily stimulation for a few weeks will hasten the full restoration to normal.

It would be interesting if Professor Langley could tell us how long the fibrillar contraction which takes place in denervated muscle continues—that is, when the nerve is sutured and regeneration takes place normally. If, as he says, the atrophy of the muscle is an over-use, and not a disuse atrophy, the theoretical argument against provoking mass contraction so long as that of the fibrils continues is very strong.

In conclusion, I should like to say that, in concerning ourselves with the treatment of denervated muscle, we must not forget the nerve upon which the ultimate restoration to normal depends. In the case of an ideal operation, when a clean end-to-end union is made in the absence of sepsis or old scar tissue, perhaps little can be done electrically. But even here we must remember that in certain cases the normal rate of growth can be increased by electrical means. When, however, there is any risk of scar tissue pressing upon the new made junction, the application of x rays or radium at the site of injury appears to be called for in theory, and has, in the opinion of many competent witnesses, justified itself in practice.

E. D. Adrian, M.A., M.D.,

Fellow of Trinity College, Cambridge.

If electricity acts merely as a suggestive remedy, it should be possible to find something simpler, cheaper, and more impressive. But everyone who prescribes electricity believes that it causes a definite improvement in the muscle apart from its psychical effects. Electrotherapists say they are unanimously in favour of the application of electricity, but there is by no means an agreement as to the form in which it should be used. For example, Dr. Cumberbatch recommends us not to cause muscular contractions, but to rely upon the sensory stimulation produced by the current. This is surely not the general view; it is usually believed that contractions should be produced, and this form of treatment may well be beneficial, even though it does not delay the muscular atrophy. One would expect electrically induced contractions to maintain the muscle fibres in good mechanical conditions, freeing them from adhesions resulting from the overgrowth of connective tissue. In this respect electrical treatment should be more effective than either massage or passive movements. In the experiments of Hartman and Blatz and Professor Langley, large muscles have been used. In these cases, as in cases of dropped wrist in man, the movement of the antagonistic muscles produces sufficient massage to keep the denervated muscle in good mechanical condition. But smaller muscles, for example, of the hand, do not suffer so much passive movement when their antagonists contract, and are much more likely to suffer by adhesions, and to be benefited by electrically induced contractions.

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In Professor Langley's experiments the treatment was drastic, and was limited to a period of three weeks. No one can prevent the preliminary wasting, but we feel we can prevent later wasting. The rabbit may be able to tell us. Regimen, diet, etc., do not account for the different results obtained in man and animals, because under the same regimen men who were treated got on better than men who were untreated. The problem is complicated, for not only must the muscle be thought of, but other considerations, of temperature, skin, adhesions, pain, etc. must be taken into account. Treatment in the early stage should aim at (1) preventing unnecessary loss of condition and (2) hastening the healing of the wound in the nerve. Treatment in the later stage should be first to keep the general condition good, and possibly and probably to hasten regeneration. For treatment in the latest stages, at and near the return of voluntary power, exercise, electrically provoked, and otherwise, is the really useful thing, together with re education. For the two earlier stages non-contracting treatments are right, uninterrupted galvanic currents for chemical action, and rhythmic sinusoidal for chemical action and reflex action, etc. In the last stages exercising methods are required. With regard to the inactivity theory I agree that it is wrong, and am glad that Professor Langley has said so too.

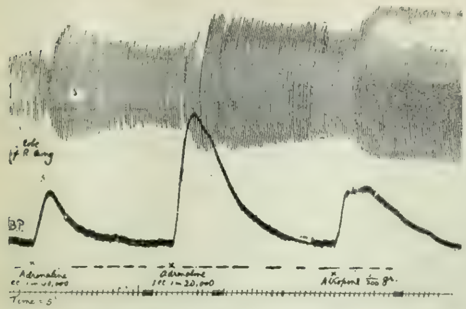
Fr. Roberts, M.D., M.R.C.P.,

Fellow of Clare College, Cambridge.

Agreement has been obtained on the effect of stretching on denervated muscles. It is the unanimous opinion of surgeons that stretching has a bad effect. On cutting the sciatic nerve in a rabbit there is more extensive wasting of the tibialis anticus than of the gastrocnemius owing to the fact that the normal position of the rabbit's foot is one of relaxation of the tibialis anticus. Professor Langley's negative result can possibly be explained by the fact that stimulation of one group of muscles causes stretching of the other. During the war several factors tended to make the electrical treatment unsatisfactory: (1) the migration of patients from one hospital to another, and (2) careless administration. But we cannot always ascribe the beneficial effects observed to the induced muscular contractions since the treatment involves other factors which operate incidentally. There are, first, the psychological effects, and secondly, the prevention of fibrosis and improvement of nutrition by the active movements during the growth of the nerve.

DEMONSTRATIONS.

A demonstration was given by Professor W. E. Dixon on the action of adrenalin on the bronchioles. The quantity of air entering the middle lobe of the right lung and the blood pressure were measured in a decerebrate cat and are seen recorded in the tracing. Two injections of adrenalin were given; the effect of each was to increase the volume of air entering the lung as the result of dilatation of the bronchioles and to cause a rise of blood pressure. The effects were temporary. The third injection was atropine, which produced permanent and maximal broncho-dilatation by paralysing the broncho-constrictor nerves, and increased cardiac rate, and therefore blood pressure, by paralysing the cardiac vagus.



RUPTURE OF VEIN OF DERMOID CYST:

INTRAPERITONEAL HAEMORRHAGE: OPERATION; RECOVERY.

By J. O. BEVEN, M.A., M.R.C.S.,
CAIRO.

The following case is of interest as illustrating a cause of intraperitoneal haemorrhage which must be of considerable rarity, since no mention of it is made in the works on gynaecology with which I am familiar.

A married woman aged 29 was seized with severe abdominal pain at about 7 p.m. on November 24th, 1919. She had been quietly walking home from a friend's house when the pain came on very suddenly, at first on the right side, but soon becoming more general. There was a history of a similar attack in June, 1917, when nothing abnormal was detected in the pelvis, and neither renal or appendical trouble had been suspected. She was kept under close observation, but the trouble cleared up, and by July 10th no sign of it remained. She had had a much milder attack in October, 1918, but had not called in a medical man. She had two children, aged 4 and 2. The first labour was a very difficult occipito posterior, which had called for forceps delivery, and had resulted in extensive laceration. Recovery had been satisfactory, and there was no history of obstruction to labour. In November, 1917, there had been a miscarriage at the seventh month, brought on by the shock of seeing an aeroplane smash. The menstrual history was suggestive. She had been regular till October, when the period had come on ten days late and been very scanty. The November period, also late, had begun the previous day, and was also scanty. When I saw the patient (at 3 a.m.) she was markedly blanched, and in very great pain. There was no air hunger or restlessness; she lay very still, moaning with pain. The temperature was 98 and the pulse 80. There was no distension, but movement was limited, and the lower half of the abdomen was extremely tender and rigid. I could detect no dullness, but the tenderness was too great to allow of thorough percussion. On vaginal examination I found the cervix low, not softened, and the fornices distinctly "boggy." No tumour was palpable, and the uterus, as far as the difficulties of the examination allowed me to judge, was not enlarged. The gloved finger had a little blood on it. The patient retched and vomited after the examination, the vomit containing about half an ounce of bright blood, which I disregarded as being probably pharyngeal.

The sudden onset, combined with the very extreme pain and tenderness, pointed to haemorrhage into the peritoneal cavity, which together with the rather suspicious menstrual history, strongly suggested a ruptured ectopic gestation. On the other hand, the history of the two previous attacks had to be taken into account; if they had been appendical, the present trouble might be due to the rupture of an appendix abscess, though this did not seem very likely. Neither the history nor the signs suggested a perforated ulcer, gastric or other. There was no reason to suspect an ovarian tumour as the cause of the mischief, since none had been discovered at previous examinations, or was palpable now.

In view of all this, I diagnosed a ruptured ectopic gestation, gave morphine gr. ¼, and ordered absolute rest, and an ice bag over the hypogastrium. Seen early next morning with Mr. F. C. Madden, F.R.C.S., the patient's condition was much the same, but the pulse had risen to 96. The morphine had not given much relief. Mr. Madden agreed with my diagnosis, and it was decided to move the patient into the Anglo-American Hospital, Cairo, for operation at once. Morphine was given again, and the eight mile journey in an ill-sprung ambulance was well borne.

As soon as the patient had been prepared and given saline by the rectum, Mr. Madden operated (4 p.m.)

A median subumbilical incision revealed the peritoneal cavity full of blood and clot. On clearing some of this away, a dermoid cyst of the right ovary, the size of a polo ball, was found and delivered. The tumour involved the whole ovary, and the right tube was seen running on the side of the cyst. The long pedicle contained a number of large veins, and near the base of it were three transverse tears. The upper and lower of these were superficial, but the middle one, about an inch long, had opened a vein, from which the haemorrhage was seen to proceed. This vessel was with difficulty secured, as it ran directly into the folds of the broad ligament. The pedicle was finally transfixed near its base, and the tumour removed. The adnexa on the left side were normal.

The cyst showed no signs of torsion beyond the tears in its pedicle, and contained the usual grumous fluid, and rudiments of hair and teeth.

Beyond a little difficulty with the bowels on the fourth and fifth days, the patient made a rapid and uninterrupted recovery.

The striking points of the case are the rare nature of the accident, the rather close way in which the history simulated that of an ectopic gestation with rupture, and the fact that three labours had been passed through without the cyst giving rise to trouble, or even being discovered. This last was probably due to its free mobility and the length of the pedicle.

The two previous attacks of pain were probably caused by slight torsion. The coincidence of the catastrophe with the menstrual period is what one would expect, but apart from this it is difficult to assign any cause for the very acute torsion which must have been required to rupture the pedicle in the manner described. There was no history whatever of violent exercise or a sudden strain. Whether a varicose condition of the veins in such a situation has been described, or ever exists, I do not know. It seems unlikely. In any case the rupture of a vein *per se* would not account for the three tears found at operation.

My thanks are due to Mr. Madden both for his help and for most kindly supplying me with details of the patient's previous illness and confinements.

LIGATURE OF THE FIRST PART OF THE RIGHT SUBCLAVIAN ARTERY FOR TRAUMATIC ANEURYSM OF THE SECOND AND THIRD PARTS.

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Even in the recent war, in which almost every conceivable injury due to direct violence has been met with, lesions of the subclavian artery, requiring ligation of the first part of the vessel, seem to have been comparatively rare, and possibly on this account there is some justification for the publication of this case.

The lesion was accompanied by damage to the brachial plexus, either directly or by concussion, and the later history of this damage is not without interest.

Private B., aged 20, was hit by a piece of shell between the vertebral border of the right scapula and the spine at the level of the third dorsal vertebra, at Arras on April 22nd, 1917. The missile made its exit by a small wound about one inch above the junction of the middle and outer thirds of the right clavicle. The patient was sent to England and reached the base hospital on May 19th with the wounds mentioned soundly healed.

He stated that he had coughed up small quantities of blood for about a fortnight after his injury, and he complained of pain in his chest occasionally, and severe pain and loss of function in his right arm. His voice was hoarse, his right pupil distinctly larger than his left, and his right hand and fingers presented trophic lesions. His arm hung limply at his side and he was unable to move it. Wrist-drop was [illegible] present. There was considerable wasting [illegible] of the limb, and this increased while he was in hospital. He had no cutaneous sensibility in the forearm and hand, and only a very limited amount over the upper part of his arm.

There was a small swelling immediately above the middle of his right clavicle, but no pulsation could be felt in it at first. The pulse at the right wrist was, however, considerably weaker than that at the left. The swelling increased in size fairly rapidly, and pulsation could soon be felt in it. With the increase in size there was diminution in the strength of the radial pulse, and increase in the severity of the pain in the right arm.

Firm pressure on the inner side of the swelling, directed backwards against the transverse processes of the lower cervical vertebrae, produced complete cessation of pulsation in the swelling and loss of the radial pulse. There was no evidence of haemothorax.

Operation.

On June 6th, 1917, an incision resembling the letter J was made, the vertical limb being along the lower two-thirds of the anterior border of the sterno-mastoid, and the curved part being directed outwards, so that resection of the clavicle might be performed if found necessary. The sternal head of the sterno-mastoid was divided about one inch above its attachment, so as to allow of suture at a later stage; it was necessary to divide also a few fibres of the clavicular head of the muscle. The divided portions were kept out of the way by means of tissue forceps.

The anterior belly of the omohyoid muscle was next identified, but not divided, and the common carotid artery was easily found and followed downwards, the internal jugular vein being carefully separated from the vessel and retracted outwards. The vagus nerve was also identified and retracted outwards with the vein.

After some further dissection, the bifurcation of the innominate artery was reached, and it was observed that this point was quite three-quarters of an inch above the inner end of the clavicle, and that the subclavian artery took an upward course before turning outwards to pass behind the scalenus anticus muscle. Possibly the high position of the vessel was due to the presence of the aneurysmal sac behind the muscle, but the site of bifurcation was certainly higher than was expected. A floss silk ligature was easily passed round the artery from below upwards, and when it was tightened all pulsation in the sac ceased. The loop of the ligature was divided, and the vessel was gently tied in two places close together, so as not to divide the tunica intima. The sac of the aneurysm involved both the second and third parts of the artery. It was not necessary to divide the infrahyoid muscles, as these were readily retracted inwards.

The wound was closed in the usual way, after suture of the sterno-mastoid muscle, with catgut, and a small drainage tube was inserted in its lower end.

The operation was not so difficult as was anticipated, but the spare condition of the patient was, no doubt, a very valuable help.

Recovery was uneventful, and there was never any sign of gangrene. The patient was sent to a convalescent hospital, where electrical treatment and massage could be obtained for his paralysed arm, on August 11th, 1917. There was no pulsation in the sac of the aneurysm, and no pulse at the right wrist.

He returned on November 15th with no signs of recovery of his arm; and electrical treatment and massage was continued until January, 1918, when it was decided that the brachial plexus should be explored. Three days before the date fixed for this operation, the patient stated that he could move his fingers, and this proved to be the case. He was therefore brought before a medical board in February, and was discharged as an invalid on February 25th, 1918.

A letter from him in November, 1918, stated that he could move his arm in all directions, and he could put his hand on the top of his head. He could also move his wrist and thumb and first finger, and sensation had returned to these parts. His head movements were normal. He was seen in April, 1919. The movements of the arm and forearm were then normal. Sensation was natural over the arm and forearm, except over the lower third of the area supplied by the ulnar nerve, where it was diminished. There was wasting of the thenar and hypothenar eminences, and some interference with the function of the ulnar lumbricals and interossei. He was able to write, and stated that the movement of his fingers and the sensation in the area mentioned were improving.

I desire to acknowledge my indebtedness to Colonel Carless for his valuable advice and assistance at the operation on this case.

DELMAS reported recently to the Medical and Biological Society of Montpellier a case of some practical interest. A woman who had had three abortions again became pregnant. The serum reaction in her case was negative, but it was positive in her husband. She received a course of neo-salvarsan and gave birth to a healthy infant.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF GALL STONES BY INFUSION OF PARSLEY.

THE following case recently under my care has struck me very much: A lady over 70 years of age had suffered for many years from gall stones, with severe colic and jaundice. In November, 1918, she had a prolonged attack in which she was reduced to the lowest extremity. In the region of the gall bladder was a large palpable mass in which gall stones could be felt.

On November 9th, 1918, she was seen in consultation by a surgeon, who had seen her several times before, and had always advised operation. He recommended operation now as the only possible chance, and with this opinion I agreed. The patient was most strongly opposed to undergoing any operation, and quoted the case of a friend who had been cured when in a similar condition by drinking infusion of parsley. She began using this, taking about 1½ pints daily of an infusion made by soaking a good double handful of fresh parsley leaves in cold water, which was afterwards brought to the boil, strained, and allowed to cool. To put it shortly, this treatment, persevered with practically ever since, seems to have cured her. She remains free from pain and sickness, and the mass felt in the region of the gall bladder has disappeared. She is no longer emaciated, and the general condition is satisfactory.

The whole case is most striking, and it would seem that the improvement must certainly be the result of the treatment, for practically nothing else was done.

Common garden parsley (*Apium petroselinum*) is not mentioned in the *British Pharmacopoeia*, but it occurs in the French *Codex medicamentarius*, where it is inserted along with garden celery (*Apium graveolens*), apparently because with three other aromatic plants they are used for making a diuretic compound called *sirop des cinq racines*. The fruit of parsley, and apparently also the whole plant, contains an essential oil, which is pretty well known under the name of "apiol" as a remedy for dysmenorrhoea. "Apiol" is in most of the pharmacopoeias, but the French pharmacopoeia directs crystallized apiol (the stearoptene from the oil) which is known also as white apiol and sometimes as parsley camphor. I can find no mention of parsley in the many infusions and decoctions given in Buchan's *Domestic Medicine*. In one edition of Squire's *Companion to the Pharmacopoeia* I find an entry about "parsley breakstone," but this is a totally different plant (*Alchemilla arvensis*), belonging to the order Rosaceae; a decoction of the flower heads is said to be diuretic, and it has been given to discharge small calculi from the kidneys and bladder.

At any rate here are two cases—for my patient assures me that her friend's case was equally striking—in which the use of parsley infusion, persevered with, seems to have given immense relief, if not cure, to gall stone impaction.

Bromsgrove. H. CAMERON KIDD, M.B., F.R.C.S.

PREGNANCY AFTER LIGATURE OF FALLOPIAN TUBES.

IN a previous communication (BRITISH MEDICAL JOURNAL, October 20th, 1917) I recorded a case of contracted pelvis which had been treated by Caesarean section thrice; at the last operation, at the request of the patient, sterilization was attempted, both Fallopian tubes having been ligatured with No. 1 Chinese twist and then divided, and the peritoneum sutured over each cut end with No. 1 chromic catgut. This operation was done on June 10th, 1917, and the patient left the hospital on the twentieth day, nursing her child.

In the middle of September, 1919, she had a normal menstrual period, and on January 10th, 1920, she came to me and stated that she had "seen nothing since." Abdominal examination revealed a uterine enlargement of about the size of a sixteen weeks' pregnancy. In March strong fetal movements could be detected, and there could be now no doubt of her pregnancy. She was admitted to the Norwich Maternity Institution on June 18th, and on the 20th I performed Caesarean section. There was little trace of the former uterine incision, but a number of omental adhesions were found; the Fallopian tubes appeared patent and intact throughout. After delivery of a living male child and suture of the uterus I on this occasion ligatured both Fallopian tubes in two places with silk and excised the portion between, about 2 in. in length.

Dr. Lee, in his treatise on *Obstetrics* (1913 edition), states that ligature and division of the oviducts has failed to prevent conception, but he gives no references to any literature on the subject, and I have been up to the present unable to trace any, hence this record.

Norwich. ARTHUR CROOK.

TWO ECTOPIC GESTATIONS IN THE SAME PATIENT WITHIN EIGHT MONTHS.

The following case presents a number of features which, though not very unusual in themselves, form a rather remarkable combination: (1) The fact that the woman was nulliparous; (2) the slight disturbance of menstruation and the complete absence of irregular or excessive vaginal bleeding; (3) the location of the conception on both occasions in the fimbriated end of the Fallopian tube; (4) the fact that in four and a half years of married life the only two pregnancies were tubular and occurred within a period of eight months.

Mrs. E. N., aged 29 years, was admitted to hospital on December 13th, 1919, complaining of acute abdominal symptoms. She had been married over four years, had had no children, and the only menstrual irregularity that could be elicited was that the last period was three weeks overdue. The abdomen was opened in the middle line and a ruptured ectopic gestation found on the left side. A note made at the time says: "Conception apparently in the fimbriated end, becoming peritoneal at an early date." A fetus nearly 2 in. long and the placenta were removed from Douglas's pouch. The left tube and ovary were taken away. Recovery was uneventful.

The same patient was admitted again on June 27th, 1920, complaining of almost identical symptoms—in fact, she herself was convinced that the same thing had happened. Her periods had been regular since the previous operation except that on this occasion the last period was a fortnight overdue. The abdomen was opened again in the middle line and a ruptured ectopic gestation found on the right side. A complete ovum three-quarters of an inch in diameter was found free in the peritoneal cavity and was removed. The fimbriated end of the Fallopian tube was greatly expanded, showing a raw surface which was bleeding freely. The end only of the tube was taken away. Recovery was again uneventful.

London, S.E. R. C. HARKNESS, M.B., F.R.C.S.

INTOLERANCE OF CALOMEL.

The following case of marked idiosyncrasy to calomel may be of sufficient interest for publication:

On the night of April 25th I was called to see H. S., a man aged 65. On arriving I found him to be suffering from intense abdominal pain. He had vomited six or seven times during the evening, and his body was covered with an urticarial rash, which was extremely irritating. On April 24th he was feeling "liverish," and he went to see a chemist, who advised him to take a 1 gr. calomel pill. The patient said that calomel did not suit him as a rule, but on being told that 1 gr. could do no harm, he took the pill.

On the following morning the patient much regretted having taken the pill, as he very soon recognized that he was having the same symptoms as he had had on two previous occasions after taking calomel. He told me that he would have swellings and thickening of the skin in various parts of his body and limbs, and that ultimately the skin would peel off in large flakes. His word proved to be correct. On the following day he had marked oedema of the neck and lobes of the ears, and for the next week he had transient oedema of the forearms, legs, and eyelids. The vomiting ceased after a mixture of bismuth carbonate and tr. chlorof. et morph. co., but the abdominal pain, although less severe than at first, continued for four or five days. On April 26th the urine became scanty and there was severe pain in the right loin. The skin was very dry. His temperature was 99.8° F. and pulse 90. The urine increased in quantity next day and in two days' time was normal, and the pain in the loin had disappeared.

At the end of the week the rash disappeared and a fine desquamation had commenced on the front of the wrists. There was, however, still some oedema of the eyelids and lips. The patient continued to improve, but the desquamation continued for four or five weeks. When last seen—on July 20th—he had quite recovered, but had decided never to take calomel again.

The three similar attacks, following immediately after taking a small dose of calomel, appear to me to make the diagnosis quite clear.

Shanklin. R. F. BOLT.

Reviews.

PLASTIC SURGERY OF THE FACE.

The value of organized team work and concentration of special cases could scarcely be better illustrated than by the work of Major GILLIES and his *confrères* at Sidcup. During the past four years these able surgeons have made an intensive study of war injuries to the face and jaw, and their records, which they now publish in a book entitled *Plastic Surgery of the Face*,[1] mark a real progress in plastic surgery. Innumerable problems of great difficulty have been dealt with and the brilliant results achieved are startlingly revealed by many series of photographs. That so much has been accomplished for these, perhaps the saddest and most tragic of war *mutilés*, merits the highest praise.

The book is prefaced by a brief summary of the principles by which the surgeon should be guided. Attention is drawn to the necessity of making a careful estimate of the actual loss of skin, lining mucous membrane, and bony or cartilaginous structures. Photographs to show the original contour have been found a valuable aid in estimating the extent of the injury. An important point, and one that hitherto has frequently been disregarded, is to replace as early as possible all normal tissue and to maintain it in normal position. At this operation all scar tissue is excised, and to avoid its reformation skin is temporarily sutured to mucosa whenever feasible. The restoration of parts lost is designed from within outwards. The lining membrane is considered first, then the supporting structure, and finally the skin. Omission to provide a lining membrane for mucous cavities is regarded as the supreme cause of failure of facial plastics in the past. To reconstruct the lining mucosa pedicle flaps of skin may be employed, or to replace the vermilion border of the lip flaps of mucosa may be taken from the normal lip. To deepen sulci the authors use a modification of the Esser epithelium inlay-graft. In fashioning the facial scaffold, the replacement should be as nearly as possible in terms of the tissue lost—that is, bone for bone, cartilage for cartilage, fat for fat, and so on. For large cosmetic effects, cartilage is held to be unrivalled. It is readily obtained from the costal cartilage, can be fashioned to the required shape, and remains permanently of the form and size it has when embedded. The covering tissue is replaced either by skin grafts or skin flaps. Whole skin grafts are better cut to the exact size of the gap, in order that normal tension may be maintained. Thiersch grafts, in the form of inlay-grafts, are valuable for ectropion. The majority of defects are made good by tubed pedicle flaps, ascending from the chest or descending from the scalp. They may be made the vehicles of hair, for example, in replacing eyebrows, or of fat, in order to fill a gap in soft parts, or of bone or cartilage. Thus, in reconstructing the nose, the authors first embed cartilage over the glabella: at a second operation, a small flap containing the cartilage is turned down and made to substitute the lining mucosa and bony support of the nose: for the superficial coverings, a long flap, containing the anterior temporal branch of the pre-auricular region, is employed.

The greater part of the volume deals with the subject in a regional manner, and here will be found a mine of valuable clinical detail. Finally, a chapter is devoted to the application of the lessons learned during the war to the problems of facial plastics in civil surgery. A new vista is opened for the treatment of cicatricial ectropion (which in the past has been far from satisfactory), for the repair of the nose destroyed by destructive inflammatory and granulomatous conditions, and for large defects produced by trauma.

It is earnestly to be hoped that the experience acquired as a result of the war in this difficult and highly specialized branch of surgery will be applied to the treatment of those industrial injuries of the face which call for plastic operations, and to the repair of facio-maxillary defects resulting from operations for malignant disease of these parts. The operative technique which is called for in these cases can be carried out successfully only by surgeons who, possessing a natural aptitude for the work, have had special opportunities of gaining experience in its evolution. This is a matter deserving the consideration of the Ministry of Health; it would be well for it to provide beds in a central institution where these cases, which in any single area are comparatively uncommon, could be segregated and treated by men who, like Dr. Gillies, have treated a large number with so much skill and success.

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[1] *Plastic Surgery of the Face.* By H. D. Gillies, C.B.E., F.R.C.S., Major R.A.M.C. London: H. Frowde, and Hodder and Stoughton. 1920. (Med. 4to, pp. 420; 844 figures. £3 3s. net.)

The volume, which is excellently written and abundantly illustrated, is a valuable contribution to surgery, and must be considered one of the war classics.

HAROLD J. STILES.

DERMATOLOGY.

THE third edition of Dr. R. L. SUTTON's textbook on *Diseases of the Skin*[2] adds to the reputation he has gained from his previous writings. It presents to the reader a judicious blend of well prepared information, and while the clinical aspects of disease are thoroughly dealt with, care has been taken to include what may be called the newer conceptions of dermatology, such as anaphylaxis and focal infection in their special relationship to the subject. Beginning in the traditional manner with chapters on anatomy and physiology, a large number of both the more common and rare forms of cutaneous disease are next described. On the whole, these are of similar type to those met with in this country, some little difference only being found, as in respect to blastomycosis, of which no completely accepted instance has as yet been recognized in the British Islands.

Probably the two most important sections are those dealing with eczema and syphilis. Upon the subject of eczema Dr. Sutton has much to say. It may be asserted with some degree of confidence that all will not be in complete agreement with him in his views of this condition, for although he does not subscribe altogether to the opinion of Norman Walker—whom he quotes—nevertheless he goes so far as to say that eczema is only a dermatological scrap-heap, from which from time to time certain diseases that present a characteristic and definite symptomatology are subtracted. Those who hold such opinions can hardly be expected to convey to others a clear idea of the condition they thus describe. And yet, to some at least, the *reaction* termed eczema is a very definite conception. The admirable writings and teaching of the French school, and especially of Brocq and Darier, have succeeded in reducing the problem to relatively simple proportions, principally because the distinction between eczema and eczematization is insisted upon, thereby removing the chief stumbling-block. In making this criticism it is not intended to suggest that Dr. Sutton has failed in his method of dealing with this very difficult subject. He has written a useful chapter wherein the student will find much to help him in both diagnosis and treatment.

To the important subject of syphilis eighty pages are devoted. Here also the same care is shown, and it is interesting to see how completely the views of authorities on the other side of the Atlantic accord with those accepted on this side. In such a book, as would be expected, attention is chiefly devoted to the disease as it appears on the skin and mucous membranes, since it is in such situations that the dermatologist meets with it. A well chosen selection of photographs illustrate the types of eruption; one of these would seem either to have been included in error, or else the text fails to make its significance sufficiently clear. It appears on page 721 and purports to represent the syphiloide post-érosive of Jacquet. This is not a syphilitic condition, as Jacquet was careful to point out; we are therefore somewhat at a loss to understand what it is doing in this galley.

Should the author resent the criticisms we have ventured to make, he may well reflect that his book has proved its success in the most practical and substantial manner it has reached a third edition. The medical reader does not buy indifferent books. We are confident that the reputation achieved by the previous editions will be well maintained by the latest, and that those who seek information on the subject of dermatology will be well advised to turn their attention to the work under review.

PUBLIC HEALTH LAW.

MR. W. ADDINGTON WILLIS, in the second edition of *The Law Relating to Housing and Town Planning in England and Wales*,[3] provides a comprehensive treatise dealing with every aspect of his subject. Housing is affected not only by the six statutes on the subject, but by other Public Health and Land Acts, and the author has done well not to print and annotate the statutes section by section, but to gather the various heads of information into chapters and paragraphs under suitable headings. This method facilitates reference to the sections of the various Acts, and will increase the value of the book to persons concerned with housing schemes. The new edition differs from the first in that it is confined to England and Wales. Full consideration is given to recent legislation down to and including the Housing, Town Planning, etc., Act, 1919. The work makes a wide appeal, for the information it contains is of importance not only to lawyers, medical officers of health, and officers of sanitary authorities, but also to members of those authorities, as well as to owners of housing and building land, who need to possess a knowledge of the details of housing and town planning. The book is provided with tables of statutes and of cases, with references, and with an index and a synopsis. They provide a ready means by which the inquirer can find the information required, and make plain the great scope of the subject of the book.

The appearance of the eighth edition of HAM's *Handbook of Sanitary Law*[4] indicates the large demand there exists for this valuable *vade mecum*. The present edition is edited by Professor H. R. KENWOOD, who has brought the subject matter well up to date without destroying the handy dimensions of the book. It is a marvel of condensation of legal phraseology, and enables the reader to obtain in a concise form a clear knowledge of English sanitary law and its administration. By the use of large and heavy leaded type and of good paper the publishers have assisted the author in rendering sanitary law attractive to the D.P.H. student, as far as the nature of the subject permits. Other advantages of the primer are that it brings to a focus facts which are scattered through various sections and chapters of other works, and classifies and epitomizes the substance of Public Health Law under suitable headings.

Dr. CHARLES PORTER has published a second edition of his handbook, *Sanitary Law in Question and Answer*,[5] of which the first edition was reviewed in our issue of March 4th, 1911. The author's object is to aid the student by formulating short questions arising out of the many Acts that deal with sanitary matters and public health, and answering them in clear and concise language. There are twenty-five sections on the Public Health Acts and twenty-four on allied Acts. The revised answers include a brief statement of the main changes brought about in connexion with public health administration by the Ministry of Health Act, and summaries of other health legislation that has come into operation during the ten years since Dr. Porter's catechism was first published.

CHILD WELFARE.

IT is indubitable that those "engaged in, or training for, work as health visitors, or in welfare centres, crèches, and nursery schools," for whom, according to the description on the cover, *The Child Welfare Movement*[6] is primarily intended, will find Dr. JANET E. LANE-CLAYPON's manual extremely useful. Publishers' notices do not, as a rule, underestimate the value of their productions, but this volume would appear to have a wider use than is modestly claimed for it.

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[2] *Diseases of the Skin*. By Richard L. Sutton, M.D., Professor of Diseases of the Skin, University of Kansas School of Medicine. Third edition, revised and enlarged. London: H. Kimpton, 1919. (Roy. 8vo, pp. 1084; 910 figures, 11 coloured plates. 42s. net.)

[3] *The Law Relating to Housing and Town Planning in England and Wales*. By W. Addington Willis, LL.B.Lond. Second edition. London: Butterworth and Co., and Shaw and Sons. 1919. (Demy 8vo, pp. xliv + 261.)

[4] *Handbook of Sanitary Law*. For the Use of Candidates for Public Health Qualifications. By B. Burnett Ham, M.D., D.P.H. Eighth edition. Edited by Henry R. Kenwood, C.M.G., M.B., F.R.S.Edin., D.P.H. London: H. K. Lewis and Co., Ltd. 1920. (Fcap. 8vo, pp. xxiv + 216. 5s. net.)

[5] *Sanitary Law in Question and Answer*. For the use of Students of Public Health. By Charles Porter, M.D., B.Sc., M.R.C.P.Edin. Second edition. London: Longmans, Green and Co. 1920. (Cr. 8vo, pp. 196. 6s. 6d. net.)

[6] *The Child Welfare Movement*. By J. E. Lane-Claypon, M.D., D.Sc. London: G. Bell and Sons, Ltd., 1920. (Cr. 8vo, pp. 352; 7 diagrams. 7s. net.)

In twenty chapters the author has given clear accounts (from which consideration of historical development is not omitted) of the various branches of child welfare work as carried out in areas of divergent economic constitution. In addition notes are given regarding day nurseries, nursery schools, tuberculosis visiting, pre-natal work, midwifery, and notification of births and of infectious diseases. In each branch of work the existing conditions are concisely and clearly summarized. The author's expressions of opinion may be commended alike for their sound judgement, and for the fairness with which reference is made to views with which she does not agree. Clearly written chapters on Local Government areas, authorities and machinery, are also included in this volume, which those interested in the principles of public health or of sociology will find very useful as a book of reference. Recently issued official figures and suggestions regarding maternity and child welfare, ailments among school children, midwifery services, nursery schools, etc., are quoted in appendices occupying ninety pages, and there is an excellent index.

NOTES ON BOOKS.

SIR JAMES PURVES STEWART'S *Diagnosis of Nervous Diseases*,[7] now in its fifth edition, has long been recognized in this country and abroad as a standard work upon the subject of nervous disorders, and fully deserves the great success its completeness and originality have won for it. To the neurologist it is indispensable; to medical practitioners and advanced students of medicine in search of knowledge on any neurological question of diagnosis it may be recommended as the best book of reference. The style is clear and concise, the illustrations are excellent, and the book is well turned out.

Dr. JOSEPH HEAD states that infection of the teeth and gums is directly or indirectly responsible for half the fatal diseases, and though this may seem a high estimate, his booklet *Everyday Mouth Hygiene*[8] deserves attention. He insists that in order to prevent decay the use of dental silk is essential, as otherwise the spaces between the teeth cannot be cleared from bacteria; the curative action of dental silk is twofold, removal of the mass of infection and, by rubbing the bacteria into the gums, vaccination. The method of using the dental floss is fully illustrated by figures, as is also that of the toothbrush, which should not be more than 1½ in. long or have bristles more than ½ in. long. Stress is laid on the great importance of brushing the gums. In conclusion, there is a chapter on irregularity in children's teeth.

The thirty-ninth volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[9] contains the communications read before the society at its seventh annual congress, together with those of the affiliated societies at their annual meetings. As an abstract of the congress appeared at the time in the BRITISH MEDICAL JOURNAL, it is only necessary here to call attention to the more important features of the volume. The papers of outstanding importance are as follows: The Bowman Lecture on plastic repair of the orbital cavity, by V. Morax; the discussions on (1) visual requirements of aviators, (2) eyesight and education. A paper by William Lister and M. L. Hine on evulsion of the optic nerve forms a very important contribution to our knowledge of this rare condition. Treacher Collins writes on abiotrophy of the retinal neuro-epithelium, or retinitis pigmentosa; while the same author with Leslie Paton contributes an interesting account of a rare condition, angioma of the choroid. Ernest Clarke writes on presbyopia, Mayou on endotheliomata of the orbital periosteum, and the list may fittingly close with the Doyne Memorial Lecture on preventive ophthalmology, delivered at Oxford by Herbert Parsons.

Kirkes's *Physiology* first appeared in 1848, and owed much of its merit to the fact that it was based upon the lecture notes of James Paget. Its fourteenth edition was published in 1896 under the editorship of Professor HALLIBURTON, who has now seen fifteen editions of the book through the press. It soon became evident that Professor Halliburton was more than an editor, with the result that the name Kirkes was dropped many years ago, and the volume is known as Halliburton's *Handbook of Physiology*.[10] Written on the classical lines, this well known standard textbook is full of the facts and figures required by students of physiology, with whom it has always been a favourite for its directness and simplicity. We wish it the continued success it so well deserves.

IN the JOURNAL of July 17th, 1920, we gave at page 86 a short account of the provisions of the new Rent Restriction Act. This is a topic of immediate personal concern to a great many householders, and to those also whose savings are invested in house property. The new Act displaces all the previous Acts, altering the scope of the restrictions as well as the restrictions themselves. Perplexed readers may be glad to know of a pamphlet which aims at setting out in plain language the complicated provisions of the new legislation. Such a work is that entitled *The Tenants' Emergency Charter (Houses, Shops, etc.) under the Rent Restriction Act, 1920*,[11] of which the fifth edition has reached us. This pamphlet deals particularly with statutory rents up to £105, the grounds and limits of increase, fixity of tenure, exceptions, furnished houses, shops and other business premises. In an accompanying circular the publishers strike a note which will appeal to many: "The subject," they say, "is involved, and the Act—like its predecessors—has been framed in the worst possible style of obscure draftsmanship."

The thirty-first volume of the *Transactions of the American Pediatric Society*[12] contains a number of papers and discussions on the maladies of childhood that will be read with interest by medical men interested in the diseases of children. Of particular importance are papers on "Foreign bodies in the air and food passages" by Dr. Graham, and on certain aspects of intestinal sepsis by Drs. Porter, Morris, and Meyer.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from August 4th to August 7th, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

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[7] *The Diagnosis of Nervous Diseases.* By Sir James Purves Stewart, K.C.M.G., C.B., M.D.Edin., F.R.C.P. Fifth edition, revised and enlarged. London: Edward Arnold. 1920. (Med. 8vo, pp. viii + 584; 298 figures. 30s. net.)

[8] *Everyday Mouth Hygiene.* By Joseph Head, M.D., D.D.S., dentist to the Jefferson Hospital, Philadelphia. Philadelphia and London; W. B. Saunders Co. 1920. (Pp. 67; 39 figures. 5s.)

[9] *Transactions of the Ophthalmological Society of the United Kingdom.* With which are affiliated the Oxford Ophthalmological Congress, the Midland, North of England, Irish, and Egyptian Ophthalmological Societies. Vol. xxxix. London: J. and A. Churchill. (Demy 8vo, pp. xlvii + 428; 2 coloured plates and numerous illustrations in text. 12s. 6d.)

[10] *Handbook of Physiology.* By W. D. Halliburton, M.D., LL.D., F.R.C.P., F.R.S. Fifteenth edition (being the twenty-eighth edition of Kirkes's *Physiology*). London: John Murray. 1920. (Demy 8vo, pp. xix + 936; 581 figures, many coloured; 3 coloured plates. 18s. net.)

[11] Published by Oliver and Boyd—London: 33, Paternoster Row; Edinburgh: Tweeddale Court. (2s. net, by post 2s. 2d.)

[12] *Transactions of the American Pediatric Society.* Thirty-first session, held at the Chalfonte Hotel, Atlantic City, N.J., June 16th, 17th, and 18th, 1919. Edited by Oscar M. Schloss, M.D. Vol. xxxi. (Med. 8vo, pp. 270.)

British Medical Journal.

SATURDAY, AUGUST 14TH, 1920.

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THYROID GRAFTING.

THE transplantation of thyroid gland tissue from a healthy person may prove a means of relieving congenital myxoedema due to a deficiency or absence of the gland. There are, besides, cases of acquired myxoedema in which the ordinary thyroid medication is ill-borne, or an excessive removal in the course of an operation for goitre is followed by the appearance of cachexia strumipriva. An article in the July number of *Medical Science*[1] reviews the experiences which have been gained from experiments on animals and in the course of surgical operations, such as were practised by the late Theodore Kocher from 1883 to 1914. The results of experiments on animals are quite definite; no graft survives and becomes established as an actively secreting gland unless it be a transplant from an animal of the same species. A graft from an animal of another species serves the recipient for a short while as a supply of thyroglobulin, but ultimately disappears. The same has happened in all patients in which a graft has been taken from an animal.

It is not a question of providing a temporary scaffold on which the tissues of the host can rebuild a permanent structure, but of ensuring that the graft shall itself survive, hypertrophy, become incorporated, and actively secrete material identical with that of the normal gland. The experiments begun by Alexis Carrel in New York on the cultivation of living tissue *in vitro* show the extreme importance of the influence of the medium in which the growth occurs. Observations made on thyroid gland tissue following transplantation have shown that after a day and a half rapid degeneration starts in the centre of the graft, most advanced in the cells of the blood vessels, and next in the glandular elements, which lose their staining properties and disappear. At the same time the graft is invaded by small round cells, by which its elements are replaced. After three days, if the graft is going to persist, there begins at its periphery a proliferation of the nuclei of the thyroid gland cells; this is followed by cell division and buds are formed; they grow into cylindrical collections of cells, from which new alveoli develop. At the same time, from the border where the tissues of the host are in contact with the graft, new capillaries are formed, which push into the graft between the glandular epithelium. The newly developing alveoli do not exhibit colloid formation for some time; functional activity on the part of the graft depends at first upon the store of colloid transplanted in the original gland tissue.

In order to succeed in implanting active thyroid gland substance the graft must be taken from a human being, and from a thyroid gland which is actively secreting at the time. If the graft is taken from a normal thyroid gland a short course of iodine administration is a useful preliminary in order to ensure that the graft contains a full store of thyroglobulin. Suitable material is supplied by parenchymatous and exophthalmic goitres so long as no degeneration has occurred, for the cells of these growths are actively secreting and possess a certain property of proliferating, like new growths. On the other hand, adenomas and cystic goitres are not suitable, for their cells have lost secreting power, and are tending to myxomatous degeneration. It is probably of great importance that the blood reactions of the donor and recipient should be alike; a natural similarity may be assumed in the case of the father or mother of a child; Kocher laid stress upon examinations of the blood by the methods of Abderhalden and others. The graft must not be damaged by crushing during the transference, nor become infiltrated by blood. It is best transferred directly by two surgeons working simultaneously, one taking out the graft, the other preparing the patient for its insertion. It is only when a surgeon must work singly that the graft should be placed in a sterile salt solution at blood heat; it should remain in it as short a time as possible. In order that the graft may be cut out with the least amount of mechanical injury, it should be taken from the anterior surface of the upper part of a lateral lobe. The piece should be so cut as to include the capsule of the gland, and it should be taken up by impaling it on a fine fork.

So far there is agreement; as to the site for implantation there are differences. The graft may be implanted in Douglas's pouch through a short hypogastric incision. The advantage of this spot is the freedom from haemorrhage, so that there is no danger of the graft becoming encapsuled and destroyed by blood clot. Moreover, there is a rapid absorption through lymphatic channels, and thus both the colloid from the graft, as well as waste products of metabolism, are quickly taken away. A piece as large as half a thyroid gland may be transferred, and this is the only way in which parathyroid bodies can be included in a graft uninjured by bruising. Some deem this important, but there does not appear to be sufficient grounds for holding that parathyroid tissue is an essential ingredient of a successful implantation. The objection to the method is the large size of the graft and the abdominal incision, and also that it does not lend itself to repetition.

Kocher adopted in particular the insertion of the graft into the cancellous tissue of the upper end of the diaphysis of the tibia. A hole is made of a size sufficient to hold a cherry; it is essential that haemorrhage should be arrested, hence the actual insertion of the graft may be delayed; the grafting can only be repeated once again, namely, on the opposite side. Payr inserted the graft into the substance of the spleen. An incision is made in the left hypochondrium, and the spleen drawn outwards; blunt forceps are thrust into its substance and dilated. Then, along the track so made the graft is pushed on a fine fork; sutures are next inserted into the capsule, and over this the omentum is stitched. At the same time other grafts may be inserted into the peritoneal cavity in contact with the omentum, or into the properitoneal or subcutaneous tissue, through the same incision. The spleen, however, may be found so fixed that it cannot be drawn forwards, and great care has to be taken not to set up haemorrhage.

On the whole the best results have followed the multiple subcutaneous implantations adopted by Cristiani of Geneva, who since 1894 has made some twenty-four communications on the subject. A small bit of graft is taken up on a fine fork, a short incision made in the skin of the chest or abdomen, a small three-bladed dilator is thrust in to form a track, along which the bit of graft is pushed on the fork and the incision then closed. This procedure may be repeated in as many places as wished—forty bits of thyroid gland have been transplanted at the same sitting.

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[1] *Medical Science, Abstracts and Reviews*, 1920, ii, 330.

Inserted in this way, the danger of the graft being surrounded by blood is prevented. The objection may be raised that such small pieces are readily absorbed; but if only one or two survive and grow, the object is attained, and at the worst the procedure can readily be repeated.

In all cases after the grafting the recipient should continue to take thyroid extract, until the influence of the grafted tissue begins to show itself. The success which has hitherto attended thyroid grafting has varied in degree; equilibrium may be established by continuing doses of thyroidin which can be well tolerated. After a graft has established itself it may be practicable to omit the thyroid medication for intervals of increasing length.

In one of Cristiani's cases the removal of a goitre had been followed by cachexia strumipriva; multiple subcutaneous graftings restored the patient. After the first graftings the previous dose of thyroid extract was reduced to one-third. Three months later thirty-eight small pieces were transplanted, and the thyroid dose was after this reduced to one-eighth, anything more causing symptoms of hyperthyroidism. The patient married, and had three children; subsequently the dose of thyroid extract was restricted to one-tenth of that before the grafting. In another case, a child aged 3, in whom the thyroid gland was absent, after being grafted from a healthy man aged 18, underwent marked physical and intellectual improvement, and the transplanted pieces could be felt under the skin. In a third case, after excision, only the isthmus had been left, and two grafts were inserted into the subcutaneous tissue. Three years later both of the grafts, as well as the isthmus, had notably enlarged. On exploration one of the grafts was found to have increased ten times in volume, and its histological appearance was that of normal thyroid gland tissue.

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LONDON'S WATER SUPPLY.

The report of the Departmental Committee appointed to inquire into the provisions and effect of the Metropolis Water Act, 1902, has now been published.[1] It contains, besides important recommendations regarding finance and administration, information of considerable medical interest. The Metropolitan Water Board took over in 1904 the control of the public water supplies provided by eight independent water companies and two urban district councils in London and certain of the surrounding areas. The Water Board is responsible for the public water supply of an area of 558 square miles, extending from Hertford in the north to Westerham in the south, and from Northfleet in the east to Hounslow in the west; it includes a few urban and many rural districts in the outer ring of greater London. The revenue of the Water Board is mainly derived from charges—controlled by Act of Parliament—made for domestic and other supplies; its capital debt is met by Metropolitan Water Stock, for the issue of which the Act of 1902 provided. Since 1908–9 there has been an annual deficiency, which grew from £224,153 in 1915–16 to £964,852 in 1919–20; the deficiency of the Water Fund is made good under the Act by an apportionment on the rates of the boroughs and districts of the area controlled by the Water Board. It was the rapid growth of this deficiency and the increasing burden on the rates of the contributory areas which led in 1919 to the institution by the Ministry of Health of the Departmental Committee. The Committee has studied the present provision for storage of water and the additions which are proposed. In 1892 Lord Balfour's Commission, and in 1897 Lord Llandaff's Commission, estimated the increase of population which was likely to occur in London during the oncoming forty years. The reservoir accommodation provided by the Water Board was planned in accordance with the reports of these Commissions; but in 1911, as a consequence of the census, which showed that the anticipated rate of increase had not been attained, the proposed extensions were curtailed. The existing storage accommodation consists of 11,524 million gallons net (12,587 gross). The engineer to the Water Board estimates that in a maximum period of continuous drought (a repetition of the 142 successive dry days of 1899) the present storage, together with the supplies available for abstraction from the Thames, the Lea, and the New River, and from wells, would permit an average daily supply of 287.9 million gallons. This figure must be compared with the average daily call on the Board during the 142 days of maximum demand in 1919—namely, 291.3 million gallons; if a drought like that of 1899 were to coincide with the period of maximum demand, there would be an average daily deficit of 3.4 million gallons. By new works, in progress or in immediate contemplation, the service reservoir capacity will be increased by almost 7,000 million gallons net; when these new reservoirs and certain new wells are in use, the average daily supply in times of drought will be 338.5 million gallons—enough to supply a population of roughly eight million with water at the rate of 42.63 gallons a head a day, which was the average daily demand for each person among an estimated population of 6,832,967 in 1919. The Committee remarks that this additional provision for storage is not to be regarded as extravagant. If the growth of the population of London has fallen short of expectation, the demand for water has become very much greater. From 1905–19 the use of water in London increased by at least 20.4 per cent., while the population increased by 8.33 per cent. only; the increase in the domestic daily consumption represents 12,889,000 gallons. The report upholds the opinion of the officers of the Water Board in attributing a large proportion of this excess to increased waste by the consumer, and rightly directs the attention of the public to this matter. The Committee has been impressed with the breadth and thoroughness of the work of the Water Examination Department, which was set up under the direction of Sir Alexander Houston, and works in close co-operation with the engineering department, under the supervision of the Water Examination Committee. The results of Sir Alexander Houston's investigations into methods of chlorination, the filtrable qualities of various types of water, and so forth, "have not only been valuable from the point of view of health, but have saved the Board considerable sums of money." The quality of the water, it is stated too, has appreciably improved. The Committee's recommendation that, in order that the revenue from the sale of water may meet the expenditure, the charges fixed by the Act of 1907 should be increased—for domestic supply by 5 to 10 per cent.—is not unexpected, and should be received with less chagrin by the public when it is remembered that deficiency in the Water Board's revenue has hitherto been met by authorized levies on the local rates.

THE RESEARCH DEFENCE SOCIETY.

In the last quarterly report of the Research Defence Society allusion is again made to the increased recognition by the public of the rightness of the society's cause. When the society was formed, twelve years ago, "hard fighting against prejudice and hatred" was urgently required. In the report of work during 1917 and 1918 it was recorded that "the old sort of controversy has ceased, for the present at any rate, to be needed. There has been no urgent demand for our propaganda. The public has learned the value and the necessity of experiments on animals, and we cannot actively defend research unless it is actively attacked." It now appears that the opponents of experimental research are seeking to exploit the Women's Co-operative Guild, the Women's Freedom League, and the Girl Guides; a more serious view, however, is taken of the present conjunction of antivivisection with antivaccination. These forces, at one time plainly separate, are now conjoined, with the common idea, it is suggested, that if a doctor puts anything into the patient's mouth it will probably do good; but if he puts it under the skin it is likely to be "animal filth" or "automatic blood poisoning." On this account particularly the Research Defence Society welcomes the affiliation of the Jenner Society, whose honorary secretary, Dr. Arthur Drury of Halifax, has joined the committee. The rights of the conscientious objector, the conditions of granting exemption certificates, and the like problems did not form the chief concern of the Jenner Society, and do not come within the direct range of the work of the Research Defence Society, which announces its intention to "keep out of politics." The society is about to publish an essay by Dr. Mary Scharlieb on vaccination, and has issued an important pamphlet[1] by Sir David Bruce on the prevention of tetanus during the war by the use of antitetanic serum. In this booklet is described, concisely but in terms which can be grasped by the lay mind, the striking fall in the incidence of tetanus which followed the introduction, in November, 1914, of prophylactic injections of antitetanic serum in cases of war wounds; the chart (given in the JOURNAL of July 5th, 1919, p. 16) of this fall is also reproduced. The statement made in one of the antivivisection journals last month that "We see the hand of the Research Defence Society behind the production of *Pasteur* at the Aldwych Theatre" is quoted by the honorary secretary as an undeserved compliment. At the annual general meeting of the society, which took place on June 23rd, with Viscount Knutsford in the chair, Colonel R. McCarrison gave an address on vitamines in relation to health, and Dr. and Mrs. Mellanby showed specimens illustrating the important work which they have done in this field of research. The society desires to make it known that it is prepared to supply schools, social institutes, and literary societies with slides, notes, and references for lectures dealing with the medical and surgical discoveries of the past half-century; letters should be addressed to the honorary secretary, 11, Chandos Street, Cavendish Square, W.1.

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[1] Cmd. 845. H.M. Stationery Office. 4d. net.

GENITO-URINARY SURGERY.

THE last *Transactions of the American Association of Genito-Urinary Surgeons*[2] contain a number of papers of more than ordinary interest. B. S. Barringer describes a case of adenoma carcinoma situated at the apex of the bladder. The growth was not intimately associated with the vesical wall; indeed, at operation the circumscribed tumour readily peeled off from it. Barringer suggests that the neoplasm had its origin in the epithelial vestiges of the allantois. In a paper on hour-glass bladder J. R. Caulk gives an account of two cases in which the bladder was divided into two portions by an indurated fold. An excellent cystogram illustrates the condition present in one of the patients. Treatment consisted in excision of the bladder wall. Caulk gives two valuable hints on the technique of bladder resection: one is that free mobilization of the bladder is a great help in facilitating the subsequent operative steps, the other is the value of ureteral catheterization in keeping the bladder dry. The catheters are brought out through the suprapubic wound. J. D. Barney gives interesting figures of the treatment of vesical calculi at the Massachusetts General Hospital. In the home of the Bigelow evacuator it is perhaps natural that lithotrity is the method of choice. Of 455 cases of stone treated during the past fifty years in 392 the stones were crushed and in 63 removed by suprapubic cystotomy. The mortality of the two groups shows 25 per cent. for the suprapubic cases, 7.25 per cent. for those treated by the lithotrites. The high mortality in suprapubic cases is, of course, due to the fact that the operation was reserved, as a general rule, for the worst cases. The stay in hospital after the two operations is vastly different—on an average eleven days after lithotrity, thirty-five days after cystotomy. It is interesting to note that there were 20 per cent. of recurrences, especially frequent where the previous operation was lithotrity. In the discussion following the paper the majority of speakers upheld the lithotrite, as indeed was to be expected. We observe that one of the contraindications to the use of the lithotrite, besides bladder diverticulum, urethral obstruction, and the large size of the stone, is "the general surgeon's lack of training in the use of the lithotrite and evacuator." Several surgeons spoke warmly in favour of crushing under local anaesthesia. Swinburne has done this forty-six times, Caulk twenty-seven. The last named surgeon has had excellent results from instillations of the Bulgarian bacillus in phosphatic incrustations of the bladder. He injects into the bladder an emulsion made from Hynson-Westcott's crushed tablets. Braasch contributes an exhaustive analysis of the 532 cases of renal tuberculosis operated upon at the Mayo clinic. Seventy-one per cent. of the patients gave evidence of tubercle elsewhere in the body, but the mortality in these was no higher than in those who otherwise appeared healthy. It is noteworthy that of sixteen cases of bilateral renal tuberculosis, thirteen are dead. This finding traverses the statement so often made that if the worst kidney is removed, the other will "clear up." Colston and Waters draw attention to the fact that in renal tuberculosis of old standing calcification often occurs, rendering the kidney clearly visible by *x* rays. Some admirable radiograms are reproduced, including a print showing a calcified pelvic ureter. H. H. Young, Frontz, and Baldwin contribute an exhaustive paper on congenital obstruction of the posterior urethra, and A. R. Stevens and Peters give a comprehensive account of urinary purpura. J. R. Caulk and Fischer describe their experiments on ureteral ligature. The work was suggested by a case in which both ureters were accidentally included in ligatures during the course of a total hysterectomy. The authors believe nephrostomy to be the operation of choice, since the catgut is never absorbed quickly enough to allow the ureter to reopen, and so prevent destruction of the kidney. Ligature of one ureter leads to hydronephrosis, and destruction of the kidney is well advanced at the end of six weeks.

DRIED ANTISCORBUTIC FRUIT JUICES.

THE very valuable and thorough work on vitamines carried out at the Lister Institute during the last few years has frequently been noticed in our columns, and in recognition of certain aspects of it the Stewart Prize of the British Medical Association has been awarded to Dr. Harriette Chick, with whom are associated her fellow workers. Recently, under the direction of Professor Arthur Harden, of the Biochemical Department of the Lister Institute, a long series of experiments have been made on a very practical point, namely, a method of concentrating fruit juices so as to preserve their antiscorbutic properties. From the experiments of Chick and Rhodes,[1] and of Harden and Robison,[2] it appears that the minimum daily ration of fresh fruit juice necessary completely to protect a guinea-pig from scurvy is 24 grams of apple juice, 5 to 6 c.cm. of lime juice, and 1.5 c.cm. of orange juice. It has been shown also[3] that the antiscorbutic vitamine of orange juice loses little of its potency when heated to 100 C. for an hour. It appears therefore that orange-juice is particularly suited to the preparation of dried antiscorbutic vitamine. Harden and Robison, in 1919, evaporated freshly expressed juice at 40° C. under reduced pressure. The juice, reduced in two hours to syrup, was made to occlude large numbers of small air bubbles, and was desiccated *in vacuo;* the residue was a crisp, dry hygroscopic solid. Tests on guinea-pigs carried out when the material was four to seven months old showed that a daily ration of 0.5 gram (equivalent to about 4.5 c.cm. of raw juice) afforded complete protection from scurvy. The minimum daily amount sufficient to afford protection was not determined, but in another communication[4] the authors report that during an experiment lasting eighty-five days, guinea-pigs receiving each day 0.15 gram of dried juice (corresponding to slightly less than 1.5 grams of fresh juice) remained free from scurvy. It seems, therefore, that during the process of evaporation there is no appreciable loss of antiscorbutic vitamines. It is also important to determine whether there is a loss of vitamine during storage of the dried product. With this object Harden and Robison[4] gave a number of guinea-pigs dried orange juice which had been stored for nearly two years in a dry atmosphere at room temperature. They found that 0.5 gram dried juice (corresponding to 4.5 c.cm. raw juice), given daily, afforded protection from scurvy; it seems clear, therefore, that any loss of antiscorbutic vitamine which had occurred during storage did not amount to more than 60 per cent. of the amount originally present. A further series of experiments is contemplated, in which the animals will receive smaller amounts of dried juice which has been preserved for twelve months; in this way it is hoped to ascertain with greater precision to what extent (if any) loss of vitamine occurs during storage. The successful preparation of dried orange-juice on a large scale was reported by Givens and McClugage[5] in 1919. The Merrell-Soule process for making milk powder was employed, the juice, mixed with corn syrup, being forced as a fine spray into a chamber where it met a current of air heated to 75 to 80°. The drying was extremely rapid, and the product, tested in 1 gram doses (equivalent to 3 c.cm. raw juice), effectively protected guinea-pigs from scurvy. Givens and McClugage intend to report on the activity of their preparation after it has been stored for considerable periods; it is desirable also that the effects of administration of smaller doses be observed.

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[1] *The Prevention of Tetanus during the Great War by the Use of Antitetanic Serum.* By Major General Sir David Bruce, K.C.B., F.R.S. London: George Pulman and Sons, Limited, [illegible] W. 1.

[2] *Transactions of the American Association of Genito-Urinary Surgeons*, thirty-first annual meeting, Atlantic City, N.J. Vol. xii.

[1] Chick and Rhodes: *Lancet*, 1918, ii, 774.

[2] Harden and Robison: *Journ. R.A.M.C.*, January, 1919.

[3] Chick and Rhodes: Loc. cit.

BRITISH DENTAL ASSOCIATION.

THE annual conference of the British Dental Association opened last week at Bournemouth. In his valedictory address Mr. Montagu Hopson, the retiring president, declared that the dental profession was ready to take its part whole-heartedly in the public health service suggested in the interim report of the Consultative Medical Council, and to play that part in a national spirit and not in a narrow syndicalist spirit of corporate selfishness. Mr. A. E. Ball of Boscombe, the newly-elected president, in his introductory address, spoke of the lamentable condition of the teeth of a large section of the people of this country. The British Dental Association, he said, had made representations on this subject, but hitherto these had proved of no avail. Discussing the financial position of the hospitals, he held that the cold fact must be faced that sooner or later some of the voluntary hospitals must receive either rate aid or State aid; he thought it better that they should be developed in a national scheme rather than curtail their usefulness on a voluntary basis. On the second day the conference discussed various aspects of a public dental service. Mr. W. H. Jones of Cambridge drew attention to the deficiency in the dental profession of efficient controllers and administrators; he suggested that the best way to remedy this defect might be that adopted by the medical profession in regard to public health administration—namely, the institution of post-graduate courses in dentistry along similar lines to the courses in state medicine. Mr. Wolston Watt of Bourneville discussed the urgent need for industrial dental clinics. He condemned the unregistered dental practitioner who, for his own ends, told parents that it was natural for temporary teeth to decay, and that, in any case, as these had to be shed they were not worth troubling about. Moreover, unqualified persons added to their unrighteousness by discouraging conservative dentistry, holding out the bait of a set of artificial teeth which would neither decay nor ache. Dr. R. A. Lyster, County Medical Officer of Health for Hants, urged the British Dental Association to force the Government to recognize the need for adequate dental research work.

POST-GRADUATE COURSE AT THE UNIVERSITY OF PARIS.

THE Faculty of Medicine of the University of Paris announces a vacation course of practical instruction on "Les notions récentes de clinique pratique et d'application des méthodes de laboratoire au diagnostic," under the direction of Professors M. A. Gilbert and Maurice Villaret, with the collaboration of nineteen colleagues. From September 24th to October 12th thirty-one lectures will be given; they will be delivered twice or thrice daily, together with daily instruction in the hospitals. The course, which will include opportunities for individual practice, will be illustrated by photographs, by cinematograph films, and by demonstrations of instruments and preparations. Foreign as well as French medical men will be admitted; the fee is 150 francs. Particulars of this and of other courses to be given during 1920–21 may be had from Dr. Paul Descomps, Clinique médicale de l'Hôtel-Dieu, Paris.

WE much regret to announce the death, at Bournemouth, on August 8th, of Mr. Sinclair White, C.B.E., consulting surgeon to the Sheffield Royal Infirmary. We hope to publish a biographical notice in an early issue.

Medical Notes in Parliament.

The Proprietary Medicines Bill.

LORDS' AMENDMENTS IN COMMITTEE.

THE Proprietary Medicines Bill was taken through Committee of the House of Lords on August 6th. At the outset Lord Bledisloe expressed the earnest hope that the provisions would not be whittled away. He mentioned that he had been instrumental in the House of Commons in getting set up the Select Committee upon whose findings the measure was based. He recalled the mass of falsehood and fraud which were disclosed before that Committee, and the evidence given of misery, breakdown in health, and mortality following on the deception of ignorant and credulous people. He also emphasized that in no other civilized country was so little protection given to such persons. Earl Russell having referred to several particulars in regard to which the bill does not come up to the recommendations of the Select Committee, Lord Astor replied that certain recommendations had not been included because they were not matters affecting the Ministry of Health—matters, for instance, connected with the Stamp Act. He understood it was very possible legislation on that portion of the Committee's findings might follow if and when the present bill was made law. There was a second recommendation that the Indecent Advertisements Act be amended on the lines of Lord Braye's bill; but that was not in the interests of health, but of public morals. Further, the recommendation of the Committee for giving a period to the validity of names used as trade marks for drugs primarily concerned the Board of Trade. As for registration fees, the opinion was that, having regard to the changing value of money, they had better be dealt with by regulation. Viscount Astor added, on another question, that under the bill the retailer was not made responsible for the ingredients—he was responsible for selling articles as registered. The manufacturer was otherwise responsible

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[4] Harden and Robison: *Biochemical Journal*, xiv, 2, April 20th, 1920.
[5] Givens and McClugage: *Amer. Journ. of Diseases of Children*, July, 1919.

Lord Emmott next raised, on Clause 1, the objection of the trade to the deposit of the formulae of proprietary medicines with the Ministry of Health. That disclosure is, under the bill, to remain confidential save in certain circumstances, but Lord Emmott had down a series of amendments, the principle of which was that the Ministry of Health should be satisfied with a statutory declaration either that the medicine did not contain any article mentioned in the Poisons and Pharmacy Act, 1908, or specifying the article or articles mentioned in the said schedule which were contained in the medicine, and the proportions in which they were used. He asserted that this controversy was really between the medical men and the manufacturers; many doctors wanted a complete disclosure. The manufacturers said that some members of the profession were out to destroy their trade, with the effect, incidentally, of increasing their own remuneration. He was not concerned with that dispute; all he wanted was to see the best arrangements made for the public. The Canadian Bill requiring deposit of formulae was withdrawn last year by the Dominion Government, and the Canadian Act now required a statement on oath that a preparation did or did not contain certain drugs mentioned in the Schedule to the Act. He questioned whether any protection would be afforded by the deposit of formulae. Many of the proprietary medicines were in the nature of harmless soothing syrups. Viscount Astor, in reply, took up first an appeal for postponement of the consideration of the bill. It was hoped, he said, to get the measure through the House of Lords this month, so that it might come before the House of Commons in the first week of the autumn sittings. As for the talk about a large staff being required by the Ministry to enable this work to be carried through, he said many of the proprietary medicines were quite harmless, and therefore it would not be necessary to have a large staff analysing them and going into them in every detail. It was, however, vitally necessary that the Minister of Health should know what they contained. He had too high an opinion of the Civil Service to believe that officials would give away the secrets. As for the suggestion that medical men would benefit from disclosures, he pointed to many passages in the evidence given before the Select Committee to the effect that the profession stood to gain from the public buying a large number of these "remedies," because afterwards they would require more attention. The question of export had been raised, but the bill did not touch export, as there could be direct consignment, and then the articles came under the law of the country to which they were sent. Coming back to the matter of disclosure of contents and proportions to the Registrar, Lord Astor reiterated the danger of excessive doses of substances which were not poison being given to children and others. He had before him a case in which two children lost their lives by taking a patent medicine containing an ingredient which was not a poison. He would not quote a large number of examples, as he did not wish to create a prejudice against the trade in patent medicines as a whole. He had put down an amendment which would be a real protection against the attempt by a trade rival to get at a formula by a trumped up prosecution. The amendment would prevent proceedings against an owner of medicine [illegible] Ministry of Health. Lord [illegible], opposing Lord Emmott's amendment, said that in France, Italy, and [illegible] the real prescription or formula had to be made known to the public. Outside the schedule of the Poisons and Pharmacy Act were many articles noxious to health, and in fact poisonous if administered in more than [illegible] doses. Besides these were ingredients which, though not actually poisonous, were useless for the purposes for which they were recommended. The amendment [illegible] at the end of the bill.

Speech by Lord Dawson of Penn.

After Lord Emmott had spoken briefly in favour of the [illegible] Lord Dawson gave reasons why he held that [illegible] a poison was not only made [illegible]. Remedies were not to be [illegible] according to whether they [illegible]. Many remedies which made for good in [illegible] made for harm in unskilful hands. The practice recently had grown of adding to the scheduled poisons in the Poisons Act was a wholly undesirable practice. That schedule contained many drugs, unfortunately, which were not poisons at all and it produced an undue [illegible] in the public mind to overstate the [illegible] of poisons. The fact was that knowledge tended to [illegible] the composition of drugs more and more precise, and their action became more accurately known and powerful for good and for evil—for good in the hands of people who knew, and for evil in the hands of those who did not. That was one reason why a wide discretion must be allowed to a Government department. On the one hand, no injustice must be done to remedies which were either harmless or (as many of them were) useful, and on the other the public must be protected against remedies which were potentially evil. A patent medicine was not necessarily harmful *per se*, but it might have the effect of masking the early symptoms of serious and grave diseases, and thus the true investigation of the case was delayed. Ultimately there was a very delayed investigation, and it was found to be too late to do anything. He suggested, therefore, one criterion: whether a particular combination of drugs did by having this effect do such harm to the public as to require that the public should be protected. He did not wish to give needless examples, but malignant disease at once came to mind. It was quite easy to assuage the symptoms for six months and thus delay scientific diagnosis and treatment. Then, too, there were drugs exceedingly efficacious if properly handled, but dangerous in the hands of inexperienced people. It was the abuse of the drugs that was the poison. Let them notice, for example, the group of aniline drugs, which was being extended every year. They were extraordinarily dangerous in the hands of people who did not know how to use them. Many of the simple headache powders in the hands of skilful persons were most efficacious; it was common to see people in a collapse who used them without knowledge. So with the remedies for sleeplessness. They were improved and increased every month, and this was one of the most important aspects of medical research—but what was very good treatment in the hands of a skilled man became a drug of a most dangerous character if it were allowed to be sold anyhow to members of the public. There was only one way, in his judgement, of deciding whether a particular remedy needed to be safeguarded in such a way that the public should not derive any harm from it: that was, to look at that remedy all the way round, not only as regarded its individual ingredients, but as regarded the combination of ingredients, and the purpose for which it was used. He wished to make it perfectly clear that he was not against proprietary medicines as such. It was only the public interest which should be the criterion to Parliament and to the profession to which he belonged. There were many patent medicines which might not only be harmless but efficacious. And there was this to be said for patent medicines—they had not only a physiological basis for their efficacy, but also a psychological basis. If a man found his symptoms set forth in lurid print, which described a massed attack by microbes on his entrails, and if he saw side by side with that wonderful picture a remedy that was going to remove it, to give a victory over pain, that inevitably would, if suitably advertised, have a greater effect in cure than the same ingredients prescribed under a prosaic prescription. Supposing that was true, providing that a remedy was harmless, why should they remove the illusion? Therefore they must not neglect the psychological basis of patent medicines. He hoped he had made it clear that he was not against proprietary medicines as such, and he suggested that the most efficient way of discriminating between the good and the harmful was set forth in the bill.

Safeguards for [illegible].

In the subsequent discussion of the clause, Lord Riddell supported the amendment on the ground that the provisions of the bill had not been sufficiently thought out. He objected to the new proposal of Lord Astor to [illegible] to the Ministry of Health without, as he held, sufficiently defining the duty of the Ministry. Lord Emmott, while complimenting Lord Dawson on his speech, was unwilling to acknowledge himself convinced, but said he would not press the amendment to division. He said that if the bill was passed into law the Government might thresh out matters with the trades concerned and the experts. Lord Astor expressed his willingness to hear anything the trade had to say as to any further safeguards to the bill, but he repeated that it was vital to the measure that the ingredients of remedies should be disclosed to the Ministry. Lord Emmott's amendment was then by leave withdrawn and the House agreed to Lord Astor's new provision, to come at the end of Subsection [illegible], and to set forth that proceedings should be taken only by the Minister.

On Clause 2, for the [illegible] sale, etc., of remedies for certain diseases, it was agreed, at the instance of Lord Askwith, to take "Deafness" and "Rupture" from the schedule and to insert in the text of the clause an amendment making it unlawful for any person to sell any medicine or surgical appliance of any kind whatsoever purporting to be effective for the cure of deafness or rupture. The effect of this change is to leave a liberty for sale for relief, as distinct from sale for cure, to be subject to the ordinary provisions of the bill. On Clause 3 Lord Emmott moved the omission of paragraph (c), which was designed to prevent the enclosure of a recommendation of a second proprietary medicine in a parcel in which one is sent. Lord Emmott said that its effect would be that if a cough mixture was being sent a man would be debarred from recommending a gargle. Lord Astor explained that the provision was intended to prevent what were called "trailer" advertisements. The vendors of these proprietary medicines got in touch with people, and if they did not succeed with the first, recommended a second, and then a third, and so it went on. It was because the practice enabled owners of secret remedies to get in touch with nervous people and lead them to self-diagnosis that the proposal was made. The Marquis of Salisbury thought the provision difficult to defend. The whole spirit of the bill was that people would not be misled by a patent medicine containing dangerous drugs. People must be regarded as reasonable and not as idiots. If it were thought that these circulated advertisements contained something objectionable on the other ground with which the bill dealt, he should better understand the provision. Lord Bledisloe acknowledged that the recommendation was one on which the Select Committee did not set very great store, and it was now of less importance since legislation had been passed dealing with other matters. In the circumstances Lord Astor agreed to the withdrawal of the section. Lord Bledisloe proposed a new paragraph to prohibit the proprietor of a patent medicine claiming, by advertisement or otherwise, therapeutic effects grossly in excess of those which were justified by the ingredients. He said that the Select Committee attached great importance to the recommendation. Lord Astor concurred that the proposal would strengthen the bill, but suggested that it should be raised on the Report stage. The Marquis of Salisbury hoped that the Government would not accept the amendment; in his opinion it went much too far. Indeed, it seemed to him that the question of whether therapeutic effects were grossly exaggerated was a matter of doubtful opinion, and they did not want to admit matters of doubtful opinion into the bill. Lord Shandon also thought the proposal went too far. There was scarcely one of those medicines which would not come within the term, for if they took the analyses made by the British Medical Association they were no good for anything. Lord Riddell was of the same opinion, and Lord Bledisloe withdrew the amendment to enable him to consider the matter further before the Report stage. Lord Bledisloe next moved to add to paragraph (*b*) a prohibition against the offer to return money paid if cure, relief, or prevention did not take place. He said that many cases had been brought under the notice of the Select Committee where there were lock-up shops from which letters were collected. The vendor did not, in fact, return the money, and if any communication took place between him and the consumer, all he said was that if the consumer would go on using the remedy long enough he would derive benefit; this was a fraudulent action. The amendment was accepted.

Lord Bledisloe further moved to add a paragraph to prohibit the use of the name of a fictitious person in connexion with a medicine. Lord Astor was unable to accept the proposal, as it would strike at many businesses dependent entirely upon the familiarity of the public with the name. The amendment was withdrawn. On the subsection prohibiting a statement to the effect that a proprietary medicine or proprietary appliance was recommended by a duly qualified medical practitioner without including in the statement particulars regarding the practitioner, Lord Emmott moved an amendment to limit the prohibition to a "false statement." Lord Astor was unable to accept this, as it was most undesirable that remedies should be advertised with names attached to them of doctors who had worthless degrees. It was only fair to the public, if a doctor's name was attached to a remedy, that his degrees, qualifications, and address should be stated. The amendment was withdrawn. Earl Russell withdrew his amendment to require a statement of the ingredients of a medicine to be placed on its wrapper or label. He had come to the conclusion that it would be contrary to the line of the bill as drawn up by the Government. Lord Astor afterwards moved as an addition to Subsection (3) of Clause 4 certain machinery provisions in regard to the register. One of these would prohibit the registrar from disclosing any extract from the formulae book in any proceedings in any court, except proceedings against the persons concerned in the preparation and sale of the medicine. On the regulations clause Lord Astor moved a small addition to maintain the secrecy of the formulae and yet to allow publication of the list of owners of proprietary medicines. This was agreed to. An amendment by Lord Bledisloe was also accepted to require that in the case of any synthetic drug sold as a proprietary medicine, the chemical name thereof should appear on the label and on every advertisement relating thereto. Before this was done, Lord Dawson, on appeal, gave an impromptu definition of a synthetic drug. On the regulation as to the amount of alcohol to be contained in a proprietary medicine, Lord Astor accepted an amendment moved by Lord Askwith to make the definition clearer. As the provision read in the text of the bill, the proportion of alcohol contained in a proprietary medicine would have to be stated on the label when such medicine contained "more than such an amount of alcohol as ought, in the opinion of the Minister, properly to be contained therein, having regard to the purposes for which the medicine is to be used." As revised, the provision will require the statement of proportion to be made on the label when the medicine contains more than "such an amount of alcohol as is in excess of that required, in the opinion of the Minister, for solvent or preservative purposes."

On Clause 6, as to the removal from the register of medicines and appliances, Lord Astor moved an amendment that the Minister should not give public intimation of his intention until the expiration of twenty-one days. Lord Dawson thought it was important there should be some provision that the Minister could refuse registration to any new remedy proposed, without any odium whatever attaching to the owner of that medicine. The Minister might wish to withhold his consent because he thought the preparation was likely to be deleterious to the public health, either because it contained an ingredient which when used by unskilled people might do harm, or because some particular way in which the remedy was presented to the public might quite unintentionally and without any bad faith produce an impression on the public mind leading them to use it and suffer thereby. He thought that this refusal might even be done confidentially. Lord Riddell held that it would be most dangerous that any such bureaucratic powers as Lord Dawson suggested should be given. He much preferred the view of Lord Askwith that, prior to an appeal in the High Court, no action could be taken to a man's detriment. Ultimately Lord Astor's amendment as to twenty-one days' notice was agreed to, and Lord Astor said he would consult the Minister of Health as to whether anything should be done on the lines suggested by Lord Dawson. On Clause 8 (Penalties) it was agreed, on the motion of Lord Bledisloe, to raise the maximum fine from £100 to £500 for offences which were misdemeanours, and from £20 to £50 in cases of summary conviction. Lord Shandon afterwards moved the following as a new clause to meet the danger of injury to owners from publication of formula:

> To avoid unnecessary disclosure of the composition or proportion of the ingredients of any proprietary medicine in the course of proceedings under this Act, it is hereby enacted:
>
> (1) In all proceedings, criminal and civil, a report by an analyst of the Ministry of Health that he has made, or caused to be made, a proper analysis of the medicine, and that in his opinion it is not compounded of the ingredients or in the proportions specified in the register, shall be taken as sufficient *prima facie* evidence of these facts.
>
> (2) In the case of any proceedings before a judge or judges, sitting without a jury, any further evidence shall be heard in camera and under such conditions of secrecy as the judge or judges may direct.
>
> (3) In any criminal proceedings the accused person may elect to be tried by a judge without a jury.

Lord Astor said he did not think there was the danger which Lord Shandon feared of the formula being disclosed. He thought the proceedings would probably turn upon the absence or presence of a particular ingredient which might be prejudicial to health. That particular fact might come out, but there was no reason why the exact composition of the whole of the ingredients should come out at any trial. However, as Lord Shandon was prepared to discuss with him the possibility of framing this new clause differently, he would be at Lord Shandon's service; on this understanding the amendment was withdrawn. The adoption of the schedule, with the omission of "Deafness" and "Rupture," concluded the proceedings in Committee.

New Site for London University.

Mr. Gilbert asked whether the Senate of the University of London had not accepted the offer of the Government of land in Bloomsbury by the date July 21st, by which the President of the Board of Education insisted that a definite offer must be received; whether the Government proposed to proceed with the purchase of the land; and if so, at what cost, and to what purpose would it be devoted. Mr. Chamberlain replied that Mr. Gilbert had doubtless seen the terms of the resolution of the Senate. The Government had hoped that a definite decision would have been reached by July 23rd on the offer made by the Government on April 27th; but July 21st was not irrevocably fixed as the final date for acceptance or rejection of the Government's offer. The Government did not propose to proceed with the purchase opposite unless and until the University accepted the offer. It rested with the vendor of the site to decide whether he would agree to further delay. If he were unable to do so, the University would have lost what the Government considered a valuable opportunity.

Mr. Lorden, on August 10th, asked the Chancellor of the Exchequer whether, as the Senate of London University had not accepted the offer of the Government of a site in Bloomsbury, he would say if, in the event of the Senate of the London University approving Kenwood, Highgate, as a suitable site for the university, the Government would provide similar financial aid equal to the cost of the Bloomsbury site. Mr. Chamberlain replied in the negative. He said the offer of the Bloomsbury site afforded the senate the opportunity of establishing the university close to the British Museum, with its unrivalled facilities for students, and of collecting in one group the central buildings of the universities and the principal constituent colleges. The purpose of the offer was to enable the university to rise to the high level of its opportunities and duties as the metropolitan university of the empire. This purpose would not be secured by the selection of another site not affording the same facilities, and His Majesty's Government would not be justified in calling upon the general taxpayer for such an extraordinary contribution on other grounds.

Census Bill.

On the second reading of the Census Bill on August 4th—a measure which was introduced in the Lords—Dr. Addison mentioned that it gave power in cases where the need arose to enable a census of a district, or a part of a district, to be taken for special administrative purposes, after a period of not less than five years; otherwise the principle of a ten-year census was retained; power was to be taken under this Bill for recurring censuses without further legislation.

Captain Elliot, on behalf of the medical profession, welcomed the bill and the power it provided for the more frequent taking of the census. Mr. Inskip raised the question as to the additional information that might be sought under the larger powers to be obtained under the bill. It had already been stated that before further demands were made they would have to be embodied in the order of the Ministry which would have to be laid on the tables of both Houses of Parliament. Mr. Inskip was not satisfied with that, and referred to the schedule under which information may be sought as to infirmity or disability. Imagine, he said, the head of a family having to cross-examine maids or any other person in the house as to whether they were suffering from infirmity or disability because some medical expert, with the best will in the world, thought it desirable that such a census should be taken. Dr. Addison offered assurance that there was no sinister motive in the schedule scheme, which was arranged really to meet any necessity for information for specific circumstances in a local census. He did not think that his department at present intended to make any alteration in the form of the 1911 census.

In Committee, on August 9th, Dr. Addison agreed to place in the bill a provision that, if additional particulars—beyond those in the schedule—were to be sought, that part of an order should not be valid until approved by resolution of both Houses of Parliament.

Census (Ireland) Bill. The second reading of this measure, which was in the first instance in the Lords, was taken in the House of Commons on August 5th. The Attorney-General for Ireland explained that it provided for a census on April 24th of next year. It contained provision for the appointment of enumerators by the Lord Lieutenant, and provisions for expenses. Captain Elliot, amongst several other members, protested against the bill being taken that night after the [illegible] Bill. There were good jokes, he said, and there were bad jokes; taking that bill that night was a bad one. After having said that people should not have trial by jury it seemed to him going too far for the House to say that, [illegible] for these people, they would count them. The measure, however, had its passage by 95 votes to 9. On August [illegible], the bill was read a third time and passed.

Colonial Medical Services Report. Lieut.-Colonel Fremantle asked [illegible] whether there was at present a shortage of medical officers in the Colonial service, whether this was an [illegible] to the health and development of the colonies, and was largely due to the comparative unattractiveness of the service; whether the [illegible] Colonial Secretary for the Colonies had [illegible] the report of the committee [illegible] the subject, and would he [illegible] he proposed to introduce the required and obvious remedies? Lieut.-Colonel Amery replied that [illegible] the shortage to which reference was [illegible] by no means confined to the Colonial Service. An improvement in the pay of medical officers had already been carried out in the majority of colonies and [illegible]. The Colonial Secretary had recently received the report of the committee referred to. It required careful consideration, and he was not yet in a position to say what action would be taken upon it, or whether it would be published.

[illegible] Major Tryon [illegible] the Ministry of Pensions [illegible] He [illegible] the number of [illegible] he would be [illegible] on the staff.

[illegible] Indian Army Officers. Mr. Montagu said in reply to Mr. [illegible] on August 3rd, that the new rates of [illegible] pay for officers [illegible] from the Indian army were being considered in connexion with a warrant recently issued for the British service, and he hoped to be able to make a statement by the end of the month.

England and Wales.

Tuberculosis Services in London.

At a recent meeting of the London County Council some far-reaching proposals for the improvement of the tuberculosis dispensary services were adopted. These will involve an additional expenditure of £22,000 a year, and the appointment of twenty-five additional whole-time tuberculosis officers and an equal number of nurses. The normal basis of staffing will then be one tuberculosis officer for 160 deaths a year from tuberculosis in each dispensary area. The Public Health Committee presented a review of the Council's scheme since its inception in 1914, and pointed out certain defects in the dispensary system which made it less effective than it might be in early detection and prevention. The residential part of the scheme has also proved disappointing, but measures for improvement, such as a better method of selecting patients, await a later report. The number of beds now occupied under the Council's scheme and that of the Insurance Committee is 2,197. It is considered that the number of available beds should be increased to 2,750 (2,100 for adults and 650 for children), and it is anticipated that with improved facilities for obtaining institutional accommodation, immediate and early prospective requirements will be met. The total number of persons in London suffering from tuberculosis is estimated to be 90,000. The number of approved dispensaries is thirty-five, and of tuberculosis officers forty-one, of whom nine are part-time. The Committee thinks it desirable that contacts of every notified case should be examined by tuberculosis officers who should attend at the homes of the people if necessary, and that an officer should visit the home of every case at least once. The attention of the Ministry of Health is to be called to the need for co-operation between dispensaries and the departments of medical officers of health, and it is suggested that steps might be taken to set aside the technical difficulties which have prevented the medical officer of health of a local sanitary authority from utilizing the services of officers of a tuberculosis dispensary. It is also stated that few cases of doubtful diagnosis are referred by tuberculosis officers to the consulting centres at hospitals, and it is proposed that the existing arrangements at hospitals be varied so that each dispensary may be linked to one of a limited number of specially recognized consulting centres at hospitals which have physicians of special experience in tuberculosis on their staffs and are equipped with observation beds; tuberculosis officers would have access to these beds, and consultations upon their occupants would take place at regular intervals. In order to arrive at a definite diagnosis as early as possible there are to be shorter periods of observation, combined with a more intensive study of each case, full use being made of the facilities for diagnosis at the consulting centre. The practice of giving medicine for trifling symptoms in order to ensure the further attendance of patients at the dispensary, and the practice of treating patients at the dispensary on a large scale and over a long period, are to be discouraged (at one dispensary 1,560 prescriptions were dispensed for a total attendance of 1,855). In connexion with each dispensary adequate arrangements are to be made for following up patients, and treatment at a dispensary, as distinct from diagnosis and consultation, is, as a rule, to be limited to patients whose continued treatment requires special knowledge or technical skill and to those unable to obtain other medical attendance. In every dispensary there is to be at least one evening session a week and a session on Saturday morning or other time outside school hours for children. Opportunities for co-operation between the school medical officer and the dispensary are to be more fully utilized. The view is favoured that part-time tuberculosis officers might be engaged for the remaining time in the school medical service or other public medical work. The Committee also suggests, without making it a definite proposal, that tuberculosis officers should study carefully the needs and convenience of local medical practitioners and arrange periodical conferences with them. The Council, after ten minutes' discussion, agreed to the recommendations, and acquiesced in a proposal that they should be brought into effective operation at the earliest possible moment.

Asylum and Hospital Accommodation in London.

The London County Council proposes to turn the Manor Mental Hospital at Epsom into a certified institution under the Mental Deficiency Act. It will accommodate 1,000 cases of mental defect. Hitherto the hospital has been used as an institution for lunatics, but in view of the fact that another mental hospital has been released from military occupation and is again available for insane persons, and that Manor Hospital adapts itself well to the classification of various grades of mental deficients, and the training of such as are susceptible of improvement, it has been decided to make the alteration. Up to now the Council has had only two small institutions of its own for the reception of mental deficients, and 677 of the patients for whom it is responsible are housed in outside institutions under contract.

The Minister of Health has informed the Council that the Third London General Hospital at Wandsworth Common is no longer required by the military authorities, and has suggested that the buildings and site might be appropriated for the treatment of disease in the civil population. The Council, however, is advised that the retention of hospital buildings on this site is no longer possible without special parliamentary sanction, owing to the fact that the site is an open space which was about to be made over to the public for recreative purposes when the military authorities took possession.

Port Sanitary Administration.

The Ministry of Health has issued statutory rules and orders[1] dealing with the measures necessary to secure improved port sanitary administration generally, and in particular the adoption by port and riparian sanitary authorities of more effective means for preventing the introduction into this country of infectious diseases, such as small-pox and typhus. The new regulations require from port sanitary authorities and their medical officers of health a more extended examination of persons entering the country than has hitherto been undertaken. The medical officer of health is empowered to board any incoming ship and in exceptional circumstances to cause it to be brought to, and, if necessary, moored or anchored. He may examine inmates of the ship and detain them either there or in an appointed place on shore; power is given to clean and disinfect contacts and those found to be verminous, as well as their clothes and belongings. Article 3 of the Port Sanitary Authorities (Assignment of Power) Order, 1912, is extended so as to apply to the whole or any part of a ship. Where extensive cleansing is necessary, it may be carried out by the officers of the authority and at the authority's cost. According to the circular which accompanies the statement of rules, the medical officer of health should examine the body, if still on board, of any person who has died during the voyage on a ship carrying no medical officer. By Article 8 of the rules, the authorities are empowered to provide, where necessary, additional equipment—for example, waiting rooms, disinfecting plant, hospital accommodation, and means of transport. The importance is emphasized of providing an adequate medical staff, with sufficient salaries. Regulations have also been issued for the payment to port and riparian authorities of grants in aid (not exceeding half of the approved net expenditure out of revenue) of expenses of port sanitary administration and of medical inspection under the Aliens Order, 1920.

Australia.

[From a Special Correspondent.]

The New Medical Act.

After striving for thirty years we have at last obtained our wishes. The Medical Bill has become law. It recognizes the principle of the necessity for a five years' course of study. It will no longer be necessary for us to register any foreign degree unless the country from which the diploma originates has reciprocity with the empire in the matter of registration. It will also be possible on application to the Supreme Court to delete from the Register the names of any who may be considered guilty of infamous conduct. Only registered persons will be able to hold certain appointments, and to sign death certificates, and there are also certain penal clauses. Unfortunately the Act does not actually forbid the unregistered man to practise. The proposal that the Government should nominate the whole of the Medical Board, has been replaced by a provision that the university and the medical profession shall each nominate one member, the Government naming the remaining three. In Parliament there were the usual protests from Labour members about creating a close corporation for the medical fraternity, but Labour here is apt to be intolerant of any unity except within its own ranks. There is an additional and a good reason for the exclusion of foreigners in the fact that the number of medical students enrolled during the war increased enormously when an edict went forth that they were to be exempt from active service till qualified. The three medical schools have now an output such as will more than satisfy any wastage from death or retirement of existing practitioners.

The University of Adelaide.

The appointment of the new professors of anatomy, physiology, and pathology has brought to light many difficulties, owing to want of space and want of funds, in the way of giving adequate instruction in the medical school. A certain amount of relief, however, is afforded by a generous donation of £15,000 from the family of the late John Darling. The chair of pathology has been filled by the appointment of Dr. J. Burton Cleland, recently director of the Bureau of Microbiology at Sydney. Dr. Poulton having resigned, Dr. Cavenagh-Mainwaring, F.R.C.S., has been appointed lecturer on surgery; whilst Dr. Pulleine takes the subject of otology, in succession to Dr. Fischer.

Federal Medical Officers' Relief Fund.

The Federal Medical Officers' Relief Fund has now reached the amount of about £11,000. Undoubtedly it would have made a stronger appeal had some idea of the extent of the need for such a fund been made evident. At present very few applications have been received for assistance. In the same way it is noticeable that there has been no call on the funds of the South Australian Medical Benevolent Association.

Correspondence.

PLEURAL REFLEX SYNCOPE.

Sir,—As I have discussed this subject in my *Diseases of the Arteries and Angina Pectoris* I have not felt called upon to discuss it again. But in your issue of August 7th is a letter from my friend and sometime colleague at Hampstead, Dr. Levy, on which I think there is something more to be said. I hope by abbreviation I do no injustice to his statement:—that, although reflex action of the vagus may in animals cause a brief cessation of the heart-beat, nothing approaching a fatal syncope has ever been recorded. If Dr. Levy thinks it worth while to consult the second volume of my work he will, I think, be interested to see that this statement needs some qualification. I will not ask him to accept my hypothesis that death in Angina Pectoris is due to vagus inhibition, an opinion I published in 1893, although it is now widely accepted in the United States and Canada, influentially accepted in France, and "absolutely accepted" by Professor Wenckebach in Vienna, who has just completed the notes of 500 cases of angina. I say, I must not presume to invite Dr. Levy to accept this proposition, yet I would refer him, in the same chapter of my book, to certain experiments by Dr. H. K. Anderson—the present Master of Caius. Dr. Anderson's experiments show how the vagus may bring the heart to mortal arrest, if the organ be in some way and degree enfeebled. In such cases in animals death by vagus excitation is easily brought about, and the enfeeblement need not be obvious. In young cats, as Dr. Levy says, vagus arrest is but momentary; but in old cats—without obvious heart disease—it is, or often may be, mortal. Now in many cases of pleural empyema the heart is at a disadvantage, or perchance intrinsically deteriorated; in such cases, as

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[1] Statutory Rules and Orders, 1920, No. 1234. 1d. net.

I have found by personal experience, irritation of the lung may embarrass or even stop the action of the heart. In my book I have pointed out how and where in the lungs such interferences are more perilous. As I carried the operative treatment of pleural effusions from Trousseau's clinique into Great Britain, when my friend Professor Bowditch carried it into America, my survey, especially of the earlier and less dexterous phases of the procedure, is a fairly wide one. I agree with Dr. Levy, this accident rarely happens, but it is one not to be wholly disregarded. —I am, etc.,

Cambridge, Aug. 9th. CLIFFORD ALLBUTT.

ANTIMONY IN BILHARZIA.

SIR,—In the JOURNAL of July 24th there is a notice to the effect that the British Medical Association has given a grant for research into the treatment of bilharzia cases and allied conditions, with special reference to drugs less toxic than tartar emetic. There is no doubt that in the treatment of bilharzia disease antimony tartrates (potassium and sodium) should be used with great care and only by practitioners who are accustomed to work scientifically and be guided by the results of their work; but let us remember two facts in dealing with the toxicity of the drug in relation to its use for bilharzia disease.

1. Bilharzia disease is unlike kala-azar and trypanosomiasis—its victims are in the majority of cases strong enough to walk about. They are able to stand somewhat more drastic measures than kala-azar and trypanosomiasis patients, who are very often, when the doctor sees them, ill in bed and whose remaining strength renders the question of toxicity of greater consequence. Therefore the toxicity of antimony tartrate in bilharzia disease is not quite so pressing as it is in other diseases wherein intravenous injections of antimony are used.

2. We are aiming at stamping out bilharzia disease from a whole country (Egypt), where it affects practically the entire population, or perhaps even from a whole continent.

Therefore, in seeking for the best antimony derivative to be used as the standard remedy for bilharzia disease (other drugs would be used for special circumstances), we have not only to consider toxicity—we have, in addition, to find something which can be employed on a large scale and under varied conditions.

It [illegible] easily *procurable* and reasonable in cost; [illegible] in hot *climates* where it may have to be stored; [illegible] in water or normal saline solution—a muddy [illegible] is inconvenient to work with; *it colourless*, a [illegible] colloidal antimony obscures the column of [illegible] the syringe, which is the only sure means of telling whether the point of the syringe is in the lumen of the vein; and [illegible] it is a very great advantage to have a derivative which can be boiled, if necessary, over and over again, and thus easily sterilized whenever it is used in an "out station," for instance.

It would appear that the antimony tartrates (potassium and sodium) are not so toxic when used intravenously as when given by the mouth, and I think that a more pressing question than "toxicity" is the finding of a substitute for antimony tartrate where it is difficult or impossible to use the intravenous route—for example, for small children, very stout people, and the very ill and emaciated. It will be of the utmost value if Dr. Cawston discovers something which can be used intramuscularly or hypodermically, or perchance a drug which can safely be given by the mouth in sufficient quantity to kill the parasite in these cases.

The object of my letter is to point out that the degree of toxicity of antimony tartrate given by intravenous injection is not yet ascertained, and that apparently it is not so toxic by the intravenous method as it is when given by the mouth, and I think that we should ascertain the degree of toxicity before trying to discover a "less toxic" remedy.—I am, etc.,

London, W., Aug. [illegible] J. B. CHRISTOPHERSON.

BONESETTERS VERSUS THE SCIENCE AND ART OF SURGERY.

SIR,—The subject raised in your last issue by Sir John Lynn-Thomas is one of the greatest importance to the public, and I venture to offer my own views.

While realizing the pressing need there exists to-day for the better technical training of doctors in the treatment of fractures of the bones of the limbs, I am convinced there is a greater need, which, if satisfied, will in due course bring the requisite training for the doctors. I mean the establishment in every industrial centre of hospitals commensurate with the demand existing for the proper treatment of all injuries, minor as well as major. Whatever view we may hold of the fitness and ability of the general practitioner to undertake the treatment of fractures of the bones in their length or at their extremities, one thing is obvious to all onlookers, and painfully so to the doctor: that is, he cannot make a success of it under the present system of domiciliary treatment, not only because he has had but little if any technical training in the handling of fractures, but because the conditions are against success. I am convinced that not until ample hospital accommodation is available, and the work is placed in the hands of a carefully and slowly trained staff, with everything needful at command, will it be possible to meet with some show of real success the varying demands of a broken leg or arm in its nursing as well as in its treatment. I hold that the satisfactory training of doctors in the special technique in connexion with the care of fractures is impossible in the hospitals of to-day, and not till it is admitted that technical skill is the first essential, and not book learning, will it be realized that as at present run these institutions are not suitable for the work in hand. Unfortunately, knowledge may be gained without skill, but in this particular job skill is absolutely necessary, and it cannot be acquired without practice, carrying with it corrections and re-corrections of errors as they arise. The hospital must, then, become the workshop for the doctor who has gained a licence to practise the art of medicine, and that for the advantage of the community which he is destined to serve; and the community must realize that it needs technically trained doctors of the best. The enormousness of the advantages that would follow upon the establishment of such workshops in every industrial centre is beyond the conception of most people. The saving in the payments under the Workmen's Compensation Act would be very great, and the gain from the maintenance of efficiency in the injured workman I feel sure would surprise industrial magnates. Such is the only way to combat quackery, and bonesetters will lose their job only in proportion to the efficiency with which the doctors come to treat all forms of injuries.

I got my lessons early in life, and have since had from time to time reminders from which I have endeavoured to gain profit. In skill the bonesetter has on occasion got the advantage of me; in knowledge, I trust, I have left him behind. My experience prompts me to advocate the establishment of hospitals for the people, and on such a scale as to be able to give training in skill to the newly qualified doctor, and ultimately such a medical service as the community has a right to expect.—I am, etc.,

Cambridge, Aug. 9th. JOSEPH GRIFFITHS.

CALCIUM IN THE TREATMENT OF TUBERCULOSIS.

SIR,—The interesting point raised by Dr. Allison in your issue of July 31st, p. 187, was anticipated by Robin (of Paris), amongst others, some time ago; and our French colleagues, like some of us, have long been accustomed to give to children suffering from various forms of tuberculosis certain mineral preparations which appear to correspond to their special requirements.

Rather curiously perhaps, one of the most popular and successful of these French preparations is not a laboratory compound or artefact, but simply consisting of ground oyster shells; and ground oyster shells were employed empirically and with success in the eighteenth century in like cases. Rosenstein of Stockholm, for example, whose book on diseases of children was translated into French in 1778, recommended their administration in what mothers now call "consumption of the bowels."

The point is that oyster shells contain not only lime salts, but silicon, fluorine, and iodine, all of which, according to Robin's analyses, are "lost" in the process or stage of "demineralization" that, in his opinion, precedes tuberculosis of children and young people.—I am, etc.,

London, W., Aug. 5th. F. G. CROOKSHANK.

MORTALITY OF VENEREAL DISEASES.

SIR,—Mr. Charles Russ, writing in the BRITISH MEDICAL JOURNAL of July 31st, asserts that Sir J. Crichton-Browne has made a "serious misstatement of fact" in referring to venereal disease as one of the three chief killing diseases. A consideration of the facts will show that it is Mr. Russ who is wrong, and that the statement of Sir J. Crichton-Browne is perfectly accurate. Mr. Russ's assertion is based upon a very serious misconception. He has apparently entirely failed to realize the fallacies underlying the statistics provided by the Registrar-General regarding the venereal death rate. He has, furthermore, omitted to correlate and compare such statistics as there are with venereological experience and with *post-mortem* findings.

The Registrar-General's figures do not represent the number of people who die yearly from syphilis, but merely the number who are *reported* to have done so. Practically, as regards venereal disease they are of little more value than a rumour. The information regarding any cause of death is obtained by the Registrar-General from the death certificates signed by the medical practitioners of this country. The latest returns are not at the moment available to me. The figures for 1915 are, and they will suffice.

The total number of deaths in 1915 amounted to 562,000. Out of these, the diseases selected by Mr. Russ, read in round figures, as follows:

Tuberculosis	51,000
Pneumonia	49,000
Cancer	40,000
Syphilis	1,885

Thus, at the first glance, Mr. Russ appears to be justified in his assertion. But this justification disappears on a closer examination. The above figures merely represent the number of death certificates which have been signed with the words "Tuberculosis," "Pneumonia," "Cancer," "Syphilis," respectively, during the year 1915. It is impossible to postulate that every death certificate is filled in with a full and accurate diagnosis. We know that it is not so. It is considered no disgrace to die from any disease, except alcoholism and syphilis. The general practitioner whose honesty was such as to compel him to insert the word "alcoholic" before "cirrhosis of the liver" or the word "syphilitic" in front of "cerebral haemorrhage" in cases where these adjectives would represent the true state of affairs, would very soon find himself *minus* a practice. Yet we know that they ought to be inserted in very many cases if accuracy is desired. For example, of the 25,423 deaths from cerebral haemorrhage in 1915, the late Sir William Osler calculated that the prefix "syphilitic" should have been used 3,000 times. That calculation, as were all his others, was based upon his vast and almost unrivalled clinical experience. Osler analysed the mortality statistics for 1915, and concluded that a certain proportion of deaths labelled otherwise than "syphilis," were really due to the *Treponema pallidum*. The organism delivers its death thrust principally at the nervous and vascular systems. The following table shows Osler's conclusions:

Disease.	Total.	Number Syphilitic.
General paralysis	2,263	2,263
Locomotor ataxia	735	735
Other cord diseases	2,846	1,500
Cerebral haemorrhage	25,423	3,000
Cerebral softening	1,472	500
Paralyses	2,983	500
Other nerve diseases	15,000	2,000
Aneurysm and aortitis...	1,141	1,000
Organic disease of heart	56,000	5,000
Diseases of arteries	10,000	3,000
	117,863	19,498

The number of stillbirths in a year is not available, but Sir Arthur Newsholme, in his report on *Infant Mortality*, 1916, p. 8, places the number at about 100,000. The percentage of abortions and stillbirths due to syphilis has been variously estimated. Dougal and Bride (BRITISH MEDICAL JOURNAL, May 8th, 1920, p. 632) give it as 8 per cent. in their series of 100 cases at St. Mary's Hospital, Manchester. Bartholomew (*Journ. Amer. Med. Assoc.*, 1918, vol. lxx, p. 291) places it at 30 per cent. Royston in his series (*Amer. Journ. Obstet.*, 1917, vol. lxxvi, p. 582) found that syphilis was a cause of stillbirth in 25 per cent. In an investigation of 1,095 cases Adair (*Amer. Journ. Obstet.*, 1918, vol. lxxviii, p. 687) found that 12 per cent. were syphilitic. A survey of the literature shows the average to be 20 per cent. On Newsholme's estimate, therefore, the number of stillbirths due to syphilis is 20,000 per annum.

Out of 800,000 children born in 1915, 90,000 died within the first twelve months. A moderate estimate is that of all children below the age of 7 years who die in a year, in 10,000 cases the cause is syphilis. We can now compile the following table:

Syphilis (Registrar-General)	1,885
Nervous and vascular syphilis	19,498
Syphilitic abortions and stillbirths... ...	20,000
Infant syphilis	10,000
	51,383

These figures are in all probability an underestimate, but they suffice at once to place syphilis in the position assigned to it by Sir James Crichton-Browne. When, in addition, one considers the well recognized effect of the *Treponema pallidum* in predisposing to other infections—for example, tuberculosis—and its undoubted potency in reinforcing the predisposition to death by intercurrent diseases, it rises still higher in the scale of killing infections. The satisfaction to be derived from the contemplation of the fallacious figure of the Registrar-General is extremely unwise and dangerous. Two things are essential for the collection of accurate statistics—confidential death certification and compulsory and confidential notification.—I am, etc.,

Manchester, July 31st. E. T. BURKE, M.B.

SIR,—It would be out of place to quibble about statistics, for they could not possibly express the truth of the mortality of venereal disease any more than they could definitely decide the mortality of a malady like appendicitis—a malady which is uncommon among the insane. We must all agree that syphilis irrevocably spoils the substratum of the mind and body, whether it is of recent or past date. Again, are we not alive to the fact that once in the blood it vitiates the bricks and mortar, eventually picking out by selection some particular system of the body? May we not also say that it causes senility by plasmic destruction with microscopic and macroscopic changes in the bodily organs?

There are other measures of gauging the mortality of disease than by figures of arithmetical calculation—for instance, visit the Soane Museum, Lincoln's Inn Fields, and examine the painting by Hogarth, "The scene in a madhouse." There you will recognize the general paralytic and other examples of forms of insanity of a past generation, yet true to type to-day. Out of the ten figures in the picture two are at least "syphilitics." And the surgical and medical works in our professional libraries, are they not paged with the deadly consequences of venereal infection? Not least, regard such a terrible facial picture (photograph) as depicted in Rutherford Morison's *Introduction to Surgery*, p. 64, 1910. Surely these delineations alone of human suffering must appeal to those who have at heart the prevention of venereal disease.

Is the figure high enough when we see it stated (Gaucher) that syphilis accounts for a third of human pathology? Thus our duty in preventing this vicious canker-worm by giving our financial and professional support to the Society for the Prevention of Venereal Disease.—I am, etc.,

JOHN FREDK. BRISCOE.

Boscombe, Bournemouth, Aug. 7th.

SIR,—As an index of the actual "cause" of individual deaths, the Registrar-General's report is, of course, of a strictly limited utility. This is mainly owing to the fact that the average death is due to at least a hundred causes, all operating at once, and even with the abundant mass of paper now available for official pronouncements of all kinds, at most two or three of what appear to be the main or most immediate "causes" can be given in each case.

I have not seen the particular report which has given rise to the present discussion, but I should be surprised if, besides gonorrhoea, it has not omitted another of the most important "killing diseases" of our time. I refer to over-eating and general self-indulgence. This is not included, that I know of, in official returns, probably because it is not Greek, and therefore is not "scientific." Still (as all merely unlettered people know) it is one of the most potent causes of death. If people would not eat so much they would not be so ill as they are, and they would also die later.

Another allied scourge (purely psychological this time), which probably disables and slays more than syphilis, tuberculosis, and cancer combined, is loss of the sense of humour. So serious and so glaring has this condition become that even the Government has noticed it. One of the best proofs of the frightful inroads that this psychoneurosis has made into our social fabric is the fact that organized attempts are being made to stay it. Doubtless the subject will before long be taken up by the Ministry of Health. *Quos vult perdere Jupiter prius dementat.*—I am, etc.,

Edinburgh, Aug 7th. A. J. BROCK.

THE PLIGHT OF SOUTH RUSSIAN DOCTORS.

SIR,—The condition of medical men and women here is pitiable in the extreme. In this city the nine Government medical officers (whole time) receive 30,000 roubles a month, which at the present rate of exchange is rather less than £1, scarcely sufficing to procure them one meal a day. They have hardly a decent pair of boots between them, and are very shabby. They are stout-hearted with it all (and this cannot be said of everyone here at the present moment), and that they work conscientiously is shown by the surprisingly low cholera case mortality at the civil hospital of less than 20 per cent.; apart from skilled treatment the mortality is very high.

There is little enough money in the Treasury for the soldiers—an officer gets 30,000 roubles a month with rations, such as they are—but less still for civilians. A sum of £10 a month would suffice to double the "salary" of the Government medical officers, and enable them to get a little more food; with many the staple diet is brown bread and water; and clothes, especially boots, if here in time for the winter, would be a godsend.

Drugs, instruments, scientific books, and periodicals are conspicuous by their absence. Rogers's treatment for cholera is done at the civil hospital with one rusty intravenous needle with three holes in it.

In the course of my work for Lady Muriel Paget's Missions, I make a practice of attending all meetings of medical men and women here, and I am in a position to say, in contradiction of the malicious statement so freely propagated to the effect that all meetings, even of medical men, here are of a political nature, that all I have met and worked with hold strictly aloof from such an unprofitable subject.

Donations of money or clothes will be forwarded by Lady Muriel Paget from 17, Buckingham Palace Road.—I am etc.,

TEMPLE GREY,
Sevastopol, July 2nd, 1920. Late Surgeon R.N.

VACCINAL CONDITION OF SMALL-POX CARRIERS.

SIR,—Dr. Archibald Kidd's letter in your issue of July 31st carries us, I think, a step further. He frankly disavows that infantile vaccination will protect the whole community, its primary object being to protect the child population, and he says (and I agree) that the real point at issue is whether the child population derive sufficient advantage to outweigh the particular disadvantage upon which I base my objection—namely, the tendency of infantile vaccination to spread small-pox by masking the disease.

I, on my part, admit, of course, that infantile vaccination, if efficiently carried out—that is, if the great majority of infants born are vaccinated—does protect the child population. But if a large proportion of children remain unvaccinated, as is the case at present to an increasing extent, then I suggest that it is quite conceivable that the child population *as a whole* is prejudiced rather than benefited. It was the same when inoculation was practised. If every child had been inoculated, inoculation would have been of great benefit, especially at a time when small-pox was very prevalent. But if only a proportion of children were inoculated, they served to spread the disease to those who were not inoculated, so that the child population as a whole was prejudiced. Moreover, the benefit to be derived from inoculation would necessarily diminish as the prevalence of small-pox diminished.

My next point is that, under modern conditions of small-pox control in this country, the risk of children contracting small-pox, even though they be unvaccinated, is very much less than has usually been supposed. Our ideas about this are chiefly drawn from the days when the modern methods of control were not practised, or at least not efficiently. The case of Gloucester is often quoted. There the unvaccinated children suffered cruelly. But those who have studied the details of that outbreak will admit that modern methods of control most certainly were not carried out. In Leicester, on the other hand, in spite of the fact that 90 per cent. of the children are unvaccinated, they have hitherto escaped remarkably lightly. I have been M.O.H. for nineteen years, and during that time I have had to deal with over 700 cases of small-pox, but so far I have never once thought it necessary to close an elementary school (though I once closed a Sunday school). No doubt I have been very fortunate, but my predecessor (Dr. J. Priestley) had a similar experience. This rather supports my contention that it is not so much the unvaccinated as the vaccinated persons who, under modern conditions, spread small-pox.

Again, it must be obvious to all that if we succeed in virtually banishing epidemic small-pox from this country—and the experience of the past fifteen years certainly suggests that we may do this—then the danger of children contracting the disease will become almost negligible, even though infantile vaccination were to go entirely out of fashion. At the same time our children would escape the temporary (and sometimes permanent) ill health which is caused by vaccination, and which in the aggregate comes to a considerable amount.

Of course, in the event of any local or temporary breakdown in our preventive measures—that is, if an epidemic of small-pox should at any time arise in an unvaccinated community and get out of hand—we have always got emergency vaccination to fall back upon. This fact should help to reassure those who still feel seriously apprehensive at the extent to which infantile vaccination is falling into disuse.—I am, etc.,

Leicester, July 31st. C. KILLICK MILLARD.

ADVERTISEMENTS OF PRACTICES.

SIR,—On behalf of those who like myself are trying to buy a practice or partnership, could not some restraining influence be brought to bear on agents and advertisers to have the advertisements bear some resemblance to the practice to be purchased? In these days of high railway fares and increased postage, the amount of time and money wasted because this is not done is considerable. Many to whom I have spoken have, rightly or wrongly, come to consider many of these advertisements as "duds," put in by agents to have the names of medical men, who reply, on their books.

Some agents in their books of instructions ask us, when writing to vendors, not to ask any questions that are answered in the particulars supplied. I have always observed this, but two of my last experiences are typical of many. In the former that I visited not a single figure supplied was correct, and in the latter, the advertisement of which is still appearing, "the nice house available, rent ...... p.a." turns out to be "4 unfurnished rooms as a temporary expedient." Believe me, I am voicing a real grievance, and one that men spoke to me of when I was a vendor. I would suggest that the vendor should sign all particulars as to statements of fact.

When will the British Medical Association feel itself strong enough to undertake a co-operative medical agency itself? The loss from advertisements at first would be considerable, but the subsequent gain in influence and financially is unquestionable.—I am, etc.,

[illegible] EDMUND S. HALL.

A BLIND ALLEY.

SIR,—It was with interest that I read the letter of your correspondent "One of Them" (July 3rd, p. 29) on the status of the assistant school medical inspector and the harm resulting from it. Experience of school work has brought home to me a real apprehension that a branch of the Public Health Service is by the present system being robbed of its most life-giving properties. I hold that there is no more essential service in all public health than that of the schools, for surely, in getting hold of the children we are at the very source of prophylaxis. Yet the school medical officer is regarded as holding the lowest rank in the service, and he knows that so long as he serves the schools he will be looked upon as a perpetual junior. This will not encourage him to give his best years and energies to the work, but this is not the worst. He finds that he is not able to bring the fruits of his experience to the general stock because as the last subordinate in a militarized scheme, he may not speak except through and at the will of, his immediate superior. His Medical Officer of Health is as sacrosanct as any D.M.S. of our R.A.M.C. days, and his Committee as remote as the War Office. He is not consulted in administrative matters even when they concern the branch of the work with which he is most conversant. When we were in the R.A.M.C. we cheerfully submitted to having our prescriptions revised or our treatment reversed by our C.O. This was war. But did military methods, even in war, bring out the best that was in us, and is there any argument for their application to a great peace service? There will be no lack of applicants for posts offered at a salary not ungenerous to those of no experience. But when experience has come, and the doctor has something to give to the general sum of knowledge, will he be content to stop where he can speak only when permitted, and then only through the medium of his accredited mouthpiece? We are all equal before the General Medical Council. Why are we not fit to mingle with our officers and committees, and speak to them face to face? These methods will drive keen and experienced men and women from the school service, and as a believer in its enormous potentialities, I look on this as a catastrophe. Among many already the school service is despised. Is it for its own officers to make it despicable?—I am, etc.,

July, 1920. S. M. I.

MEDICAL RESETTLEMENT.

SIR,—May I call attention to a grievance which is a very real one to me as well as to many others?

I am a general practitioner of thirty years' standing. I left my practice in 1915 and served for four and a half years in the R.A.M.C., being demobilized last March. On my return I find the practice which I had built up in seventeen years practically non-existent; my professional friends were as far as possible loyal, and have returned to me those few patients who remain; but in the four and a half years' absence the exodus, and especially four and a half war years, has been very serious—fully three-quarters of the number—and of course those who have come into their houses have been absorbed into the practices of the doctors who stayed at home.

Finding the straits to which my practice had shrunk, I applied for temporary work on medical boards, or as pension referee, but was told that all these posts were now occupied, but should a vacancy occur my application should receive attention.

Now, four months later, I hear from a professional friend that there are, still serving on medical boards, civilian practitioners who have never left their practices at all, and actually in some cases men who have not even been doing part-time war work, except medical boards during the war.

Is this fair? We gave up much, voluntarily of course, but surely those who remained at home and reaped the harvest of the new comers should be willing to give up the few posts and minor emoluments to those who are finding themselves unable to make both ends meet.—I am, etc.,

August 1st. EX-CAPTAIN R.A.M.C.

Obituary.

JOHN HENRY EWART, M.R.C.S., L.R.C.P.,

Eastbourne.

THE sudden death of Mr. J. H. Ewart on August 1st, at his residence, will be felt as a personal loss by all his brother practitioners and by a very large circle of friends outside the medical profession.

Mr. Ewart, who was 73 years of age, led an active life up to the hour of his death. He was an old Tonbridge boy, and commenced life in the city, but after a short experience there he entered as a student at Guy's Hospital, where he made many lifelong friendships. He obtained the diplomas M.R.C.S. and L.R.C.P. in 1871. When qualified he started practice in Manchester and soon gained the position of surgeon to St. Mary's Hospital for Women and Children.

The loss of both his first and second wives unsettled him, and he came to Eastbourne, where he was before long taking a leading part in professional as well as social affairs, in all of which he attained a lasting popularity. Mr. Ewart for many years represented his Division of the British Medical Association and was on the Central Ethical and other Committees, always showing himself an enthusiastic champion of everything which promoted the honour of the profession; when, a few months ago, he did not seek re-election, a special honour was done him by his colleagues by the invitation, which he accepted, to remain upon the Ethical Committee.

Endowed with a personality which betokened a transparent honesty of purpose, Mr. Ewart commanded the respect and affection of his fellow practitioners, and was able to give them his opinion with a characteristic directness which endeared him to his fellows rather than gave the offence his generous nature never allowed him to intend. A sportsman in the best sense of the word, he loved horses and dogs only a little less than children, whose confidence he always gained and enjoyed. As a Mason he reached high rank, and consistently practised outside the lodge those virtues which he professed within it.

SURGEON GENERAL WILLIAM GERARD DON, who died recently after a short illness at his residence in Canfield Gardens, Hampstead, was born at Stracathro, Forfarshire, in January, 1836, the youngest son of Alexander Don of Ballownie. He received his early education locally, and subsequently studied at the universities of Aberdeen and Edinburgh, graduating M.D. at the latter in 1857, having taken the diploma of L.R.C.S. in 1856. He served as medical volunteer in the *Duke of Wellington* with the Baltic Fleet in 1855 and was present at the bombardment of Sveaborg, for which he received the medal. Entering the army as assistant surgeon in January, 1858, he attained the rank of brigade surgeon in September, 1883, and retired with an honorary step as deputy surgeon-general in April, 1885. In the old regimental days he served for ten years in the 28th Foot, now the 1st Battalion, Gloucestershire Regiment, with which he went through the Mutiny and afterwards with the Royal Engineers. In the Indian Mutiny he took part in the operations against Tantia Topee in Central India, including actions at Raipur and Beilkara, was mentioned in dispatches and received the medal. From 1879 to 1885 he was employed in the War Office and for seventeen years after his retirement, 1885–1902, was senior medical officer of the recruiting staff in London. During the Egyptian war he was engaged in the fitting out of the hospital ships. He was connected with most of the Scottish societies in London, was president of the Caledonian Society in London and a life governor of the Royal Scottish Corporation. Surgeon-General Don rendered great assistance to the British Medical Association in the long fight for the formation of the Royal Army Medical Corps which culminated in its establishment in 1898, and was a frequent contributor to our columns. He published a book on *Recollections of the Baltic Fleet of 1855*, and also one on *Archaeological Notes on Early Scotland*, and edited the Army Medical Regulations of 1885. He married twice and leaves five sons and four daughters.

DR. JOSEPH NEEDHAM, who died on August 2nd, aged 67, received his medical education at the London Hospital and the University of Aberdeen. He took the diploma of M.R.C.S.Eng. in 1875, graduated M.B., C.M.Aberd. with honours in 1879, and became M.R.C.P.Edin. in 1880. He had filled the posts of resident physician and house-surgeon at the London Hospital, assistant to the professor of anatomy in the University of Aberdeen, and demonstrator of histology at the London Hospital and the London School of Medicine for Women. He was anaesthetist to the 3rd London General Hospital, the King George Hospital, and the Kensington Red Cross (Weir) Hospital, surgeon to the Western Division of the Metropolitan Police, receiving the Coronation medal in 1911, and medical officer to the Education Department of the London County Council. He was a member of the Wandsworth Division of the British Medical Association.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examinations indicated:

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I (Physics and Electrotechnics)*: W. W. Boyce, J. P. Bracken, N. H. M. Burke, H. W. Collins, G. E. Dyas, T. G. Evans, W. C. Long, G. T. Loughborough, H. B. Mackenzie, T. Marlin, H. C. Nott, C. M. Rigby, C. A. Robinson, S. W. Shields, J. van Roojen, J. L. Waller, Eva M. White. *Part II (Radiology and Electrology)*: W. W. Boyce, H. W. Collins, G. E. Dyas, T. G. Evans, M. H. Knoch, W. C. Long, G. T. Loughborough, H. B. Mackenzie, T. Marlin, H. C. Nott, C. M. Rigby, C. A. Robinson, S. W. Shields, J. van Roojen, Eva M. White, Justina A. Wilson.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on July 21st. The following were recognized as teachers of the University at the institutions and in the subjects indicated:

St. Bartholomew's Hospital Medical School: Dr. M. Donaldson (Midwifery and Diseases of Women), Dr. F. R. Fraser (Clinical Medicine), Dr. Mervyn Gordon (Bacteriology), Sir T. J. Horder (Medicine), Mr. R. F. Moore (Ophthalmology), Mr. J. E. H. Roberts (Surgery), Dr. B. H. Spilsbury (Morbid Anatomy and Histology), Dr. R. L. Mackenzie Wallis (Pathological Chemistry).

St. Thomas's Hospital Medical School: Dr. J. L. Birley (Neurology), Dr. H. L. Tidy (Medicine).

Westminster Hospital Medical School: Mr. A. F. Edwards (Surgery), Mr. E. W. Gandy (Anaesthetics), Dr. H. J. Norman (Mental Diseases).

St. George's Hospital Medical School: Mr. E. L. Hunt (Bacteriology and Clinical Pathology).

London Hospital Medical School: Mr. H. R. Jeremy (Ophthalmology), Mr. L. C. Lindsay (Surgery).

It was resolved to institute a University chair of Chemistry and a University Readership in Pharmacology at Guy's Hospital Medical School.

It was decided to discontinue certain exemptions for examinations for medical degrees which had been granted during the war. The second examination for medical degrees will be held in December, 1920, but the subsequent examinations will be held in March and July only, as set forth in the regulations.

Sir Wilmot Herringham has been appointed chairman of the Graham Legacy Committee and the Vice-Chancellor, Dr. Russell Wells, chairman of the Site and Accommodation Committee.

Applications for the posts of "Professor of Medicine" and "Director of the Medical Clinic" at St. Bartholomew's Hospital Medical School and at St. Thomas's Hospital Medical School respectively must be received by the Academic Registrar not later than the first post on September 27th. The salary is £2,000 a year for each post.

The senior class gold medals of the Faculty of Medical Sciences has been awarded to Doris L. Durie for anatomy and [illegible] L. G. Hill for physiology.

The following candidates have been approved at the examinations indicated:

M.S. (*Branch I, Surgery*): R. S. Cooper, Maud F. Forrester-Brown, [illegible] C. Lewis, L. C. Mason, G. I. Mellally, B. S. Simmonds, [illegible] Taylor.

The first examination for the recently instituted Diploma of Psychological Medicine will be held in October and November. Copies of the regulations can be obtained from the University [illegible] Registrar.

The D.Sc. degree in Experimental Psychology has been conferred upon A. [illegible] and G. E. Phillips.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

The following appointments have been made: Tutor to Cambridge students, A. C. D. Firth, M.A., M.D., F.R.C.P.; Tutor to Oxford students, Raymond Crawfurd, M.A., M.D., F.R.C.P.; Demonstrator in Dermatology and Sub-Dean of the Medical School, J. A. Drake, M.D., M.R.C.P.

A [illegible] entrance scholarship of £80 has been awarded to E. W. [illegible], B.A., of Downing College, Cambridge.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

The following scholarships have been awarded from October [illegible]: [illegible] to Miss [illegible] Masterman; [illegible] Scholarship to Miss E. [illegible]; Mabel [illegible] Scholarship to Miss [illegible]; [illegible] Scholarship to Miss M. [illegible]; [illegible] to Miss E. H. E. [illegible].

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

The Trustees of the Dr. Jessie MacGregor Prize for Medical Science announce the award of the prize for the present [illegible] period to Miss [illegible], M.B.E., M.B., Ch.B., for her work on [illegible]. The prize, which is open to women medical graduates of Edinburgh University, or to women who have taken the triple qualification, is awarded to the applicant presenting the best record of original work in the science of medicine, done not earlier than three years prior to the date of the award.

The Services.

ROYAL ARMY MEDICAL CORPS APPOINTMENTS.

AN Army Order published on August 9th provides that medical practitioners who are required for service in an emergency shall be commissioned into the Special Reserve or Territorial Force, under the same conditions of service and the same rates of emoluments as apply to officers of those forces; and that, in the event of it being found necessary to grant temporary commissions, officers to whom such commissions are granted shall not receive more advantageous emoluments than those applicable to officers of the Special Reserve and Territorial Force.

Officers of the Special Reserve or Territorial Force who have passed through a Royal Army Medical Corps unit of the Officers' Training Corps will be granted, on first appointment to the Special Reserve or the Territorial Force, seniority of six months if they have by examination obtained Certificate B (Medical) and seniority of three months if they have obtained Certificate A (Medical). On mobilization officers who have obtained Certificate B or Certificate A will be considered for appointments in preference to those not so qualified.

HONOURS.

THE following honours and awards have been granted for valuable services rendered in connexion with the Afghan Campaign, 1919.

K.C.I.E.—Major-General Patrick Hehir, C.B., C.M.G., C.I.E., I.M.S.

C.S.I.—Major-General Harold Hendley, I.M.S.

C.I.E.—Lieut.-Colonel H. Dixon Packer, R.A.M.C.; Temporary Lieut.-Colonel John Francis Haswell, R.A.M.C.; Major Alexander Frederick Babonau, O.B.E., I.M.S.

C.B.E. (Military).—Lieut.-Colonel (acting Colonel) Harold Boulton, I.M.S.; Colonel Percy Carr-White, K.H.P.; Lieut.-Colonel James Geoffrey Gill, D.S.O., R.A.M.C.

O.B.E. (Military).—Captain (acting Lieut.-Colonel) Phirozshah Byramji Bharucha, D.S.O., I.M.S.; Captain Herbert Stuart Blackmore, R.A.M.C.; Major (acting Lieut.-Colonel) William Walker Browne, R.A.M.C.; Major Cecil Edward Bulteel, I.M.S.; Major (acting Lieut.-Colonel) Alexander Cameron, I.M.S.; Temporary Captain Pascal John de Sousa, I.M.S.; Temporary Lieutenant Bhola Nath Gupta, I.M.S.; Captain (acting Lieut.-Colonel) John Patrick Huban, I.M.S.; Temporary Captain Robert Walpole Murphy, R.A.M.C.; Captain Robert Boulton Myles, R.A.M.C.; Captain Forster Heddle Brown Norrie, R.A.M.C.(S.R.); Temporary Captain Aiyappen Padmanabha Pillay, I.M.S.; Captain and Brevet Major Charlie Ryle, R.A.M.C.

M.B.E. (Military).—Temporary Captain Yashwan Bhicajee Ranade, I.M.S.

D.S.O.—Captain and Brevet Major (temporary Major) Eric Edward Doyle, I.M.S.

M.C.—Captain James Edwin Carpenter, R.A.M.C.(S.R.), attached 28th Motor Ambulance Convoy; Captain Denis FitzGerald Murphy, I.M.S.

To be Brevet Lieut.-Colonel.—Major R. S. Kennedy, D.S.O., M.C., I.M.S.

To be Brevet Major.—Captain G. A. Blake, R.A.M.C.; Captain (temporary Major) T. A. Hughes, I.M.S.

MENTIONS.

The names of the following have been brought to notice for distinguished services during the operations against Afghanistan:

Commands and Staff and Miscellaneous.

Colonels H. F. Cleveland, C.I.E., I.M.S.; T. W. Gibbard, C.B., C.B.E., K.H.S., A.M.S.; C. W. Profeit, C.M.G., D.S.O., R.A.M.C.

Lieut.-Colonel and Brevet Colonel (temporary Colonel) A. H. Safford, R.A.M.C.

Lieut.-Colonel (temporary Colonel) H. P. W. Barrow, C.M.G., D.S.O., O.B.E., R.A.M.C.; Captain A. G. Biggam, R.A.M.C.

Medical Services.

Colonels P. Carr-White, I.M.S., F. Stodart, I.M.S.

Lieut.-Colonel (acting Colonel) H. Boulton, I.M.S.

Lieut.-Colonels E. Rost, O.B.E., I.M.S., J. G. Gill, D.S.O., R.A.M.C.

Majors (temporary Lieut.-Colonels) H. M. Brown, I.M.S., A. Cameron, I.M.S.

Majors C. E. Bulteel, I.M.S., D. Coutts, I.M.S., T. S. Dudding, R.A.M.C., J. H. Gloster, I.M.S., L. C. C. Leslie, R.A.M.C., A. A. Meaden, D.S.O., R.A.M.C., W. J. A. St. Romaine, I.M.D., G. S. Watson, R.A.M.C., H. C. Wenckworth, R.A.M.C.

Captains and Brevet Majors E. E. Doyle, I.M.S., C. Ryles, R.A.M.C., J. A. Sinton, V.C., I.M.S.

Captain (acting Lieut.-Colonel) P. E. Bharucha, D.S.O., I.M.S., J. P. Huban, I.M.S.

Captain (temporary Major) C. H. H. Harold, R.A.M.C., Mahomed [illegible], I.M.S.

Captains: H. S. Blackmore, R.A.M.C., W. S. Birch, M.C., R.A.M.C., [illegible] G. Cooper, I.M.S., W. M. Dickson, R.A.M.C.(S.R.), D. Fettes, R.A.M.C.(T.C.), [illegible], R.A.M.C., J. B. Hamilton, I.M.S., [illegible] Law, I.M.S., [illegible] R. B. Myles, R.A.M.C., G. S. Phillips, R.A.M.C.(T.C.), [illegible] H. B. Norrie, R.A.M.C.(S.R.), W. J. D. Smythe, R.A.M.C.

Temporary Captains P. J. De Sousa, I.M.S., R. W. Murphy, R.A.M.C., A. P. Pillay, I.M.S.

Temporary Lieutenant B. N. Gupta, I.M.S.

Some [illegible] assistant and sub-assistant surgeons are also mentioned.

PROFESSOR W. C. RÖNTGEN has been elected an honorary member of the Vienna Academy of Sciences.

THE *Archives de médecine expérimentale et d'anatomie pathologique*, founded by Charcot in 1889, has ceased publication.

Medical News.

THE old students of St. Bartholomew's Hospital and College will hold their annual dinner on Friday, October 1st, at 7 o'clock, in the great hall of the hospital. Sir Anthony Bowlby, P.R.C.S., will preside.

A POST-GRADUATE course of instruction for qualified medical women in the treatment of venereal diseases will be held during the fortnight beginning Monday, September 13th. The course is in connexion with the London (Royal Free Hospital) School of Medicine for Women and the Royal Free Hospital, the Elizabeth Garrett Anderson, and the London Lock Hospitals. Application should be made to the Warden and Secretary, Medical School, 8, Hunter Street, Brunswick Square, W.C.1, from whom all particulars can be obtained.

THE National Council for Combating Venereal Diseases informs us that there is a vacancy for a medical man on the Commission which it is proposed to send to the East Indies and China during the coming autumn. The Commission, which is being sent out under the auspices of the Colonial Office, will be away about four months from the end of October. The Medical Commissioner will receive a substantial honorarium in addition to payment of all expenses. Preference will be given to one who has had experience in the administration and control of a special Venereal Clinic. Applications for further particulars should be addressed to the Secretary, National Council for Combating Venereal Diseases, 80, Avenue Chambers, Southampton Row, London, W.C.1.

THE King has consented to become Patron of the People's League of Health, which was founded and organized by Miss Olga Nethersole, and has a large and representative medical council. The head quarters are at 7, Hanover Square, London, W.1.

AT the meeting of the Council of the Metropolitan Hospital Sunday Fund, held on August 5th, the chairman announced that the amount available for distribution was £110,000, or £25,000 more than the previous record in 1918.

THE grant of £15,500 from the surplus Red Cross Funds allocated by King Edward's Hospital Fund to the Great Northern Hospital is for a nurses' home, new kitchen, and other essential improvements. The scheme the hospital has in view includes new casualty and out-patient departments, and additional wards.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"TAXPAYER" inquires what repayment can be claimed on a net taxed income of £376 18s. 6d. from investments, etc.

*** The gross income before deduction of tax appears to be approximately £540. On that basis our correspondent would be entitled to repayment as follows:

	£	s.	d.
1. To reduce 6s. rate to 3s. 9d.—that is, 2s. 3d. in £ on £540	60	15	0
2. Abatement of £100 at 3s. 9d.	18	15	0
3. Allowance for wife £50 at 3s. 9d.	9	7	6
Total amount repayable	88	17	6

The fact that the capital from which the income is derived was saved from earnings does not entitle "Taxpayer" to the "earned" rate of income tax.

"A. C. P." inquires as to the assessment of the following income:

	£	s.	d.
Medical officer, pay and bonus	840	0	0
Pension	324	0	0
Interest, not taxed before receipt	50	0	0
Interest which is taxed before receipt	35	0	0
	1,249	0	0

*** The assessment would be as follows:

		£	s.	d.
Total income		1,249	0	0
Deduct 10 per cent. allowance for earned income—that is, 10 per cent. of £1,164 ...	=	116	8	0
Total assessable income		1,132	12	0
Deduct—Allowances, self and wife ...	£225			
Child	£36—	261	0	0
Total income chargeable to tax		871	12	0
Amount of tax chargeable—£225 at 3s.		33	15	0
£646 12s. at 6s. ...		193	19	7
		227	14	7

From this sum has to be deducted the life assurance allowance, and also the allowance in respect of the Widows' and Orphans' Fund, if the particular fund has complied with the usual conditions. Our correspondent should fill in the declarations with regard to wife and child, notwithstanding the limitation with regard to total income mentioned on the form, for that limit no longer applies. The tax payable on his pension and on his pay should be so arranged as to yield, together with the tax deducted from his income from taxed sources, the total liability.

RESEARCH AND THE GENERAL PRACTITIONER.

DR. W. J. BAIRD (Bury) writes: The disabilities of the recent war have given an impetus to research and have made us revise opinions held hitherto on many subjects. As one engaged for many years in general practice, I have felt that the problems and results of research work should be presented to us in the form of special lectures at our local medical societies, as we have so little time at our disposal for study, and in the majority of cases no access to special publications. For example, one might mention the question of vitamines, the endocrinic glands, the functional psychoneurosis, cardiac disabilities, trench nephritis, and the sequelae of the various tropical diseases encountered daily amongst army pensioners. Lectures on such subjects given by those engaged in actual research would prove helpful, not only to the general practitioner, but stimulating to his general interest in the public welfare. There are many practitioners who for obvious reasons cannot avail themselves of post-graduate instruction at universities, and the above suggestion is advanced in view of contingencies which are bound to arise once the Ministry of Health takes an active part in medical administration.

*** The British Medical Association has been endeavouring to supply the want our correspondent feels. British Medical Association lectures have recently been given on most of the subjects he mentions, and reports of the lectures have appeared in our columns.

LETTERS, NOTES, ETC.

PENSIONS APPOINTMENTS.

WE are informed that the Ministry of Pensions intends to make one or two appointments in connexion with the work at their limb-fitting hospitals which would suit a disabled R.A.M.C. officer. Certain preliminary tuition will be necessary in order to pick up the technical side of the work, but it is considered that a month's training at Roehampton will suffice. We understand that there are two such posts vacant at a salary of about £600 per annum, and are glad to know that the Ministry of Pensions intends to appoint men who have been disabled by the war and who are consequently unable to stand the strain of ordinary practice. Inquiries should not be addressed to this office, but to the Medical Department, Ministry of Pensions, 14, Great Smith Street, S.W.

TENNIS ELBOW.

DR. J. A. NIXON, C.M.G. (Clifton, Bristol), writes: The query by Dr. Havelock on this subject sent me back to Sir James Paget's *Studies from Old Case Books* (Longmans, 1891, p. 7). In the lecture on periostitis following strains he refers to lawn tennis elbow. I am not sure that anything more informing has been written.

DR. F. BRYAN (Ipswich) writes: I am glad to see that this prevalent "trivial ailment," ignored by textbooks, is being discussed. I would suggest that a predisposing cause of its frequency is that many of us, ladies especially, have during recent years been compelled to carry heavy parcels and suit cases, often for considerable distances. This has produced a strain on the extensor muscles arising from the external condyle of the humerus. It is in this region and in the radio-ulnar ligament that the seat of pain lies. Limitation of tennis, rather than cessation of the same, seems beneficial;

[illegible] important is the avoidance of carrying weights which cause a prolonged effort, as opposed to an intermittent one, on the part of the muscles. This is borne out, again, in the case of Badminton, which, because of quick extension efforts very frequently repeated, accentuates the pain of a previous tennis elbow more than does a game of tennis.

MYOPIA.

DR. ARTHUR T. BLEASE (Altrincham) writes: In the JOURNAL of July 24th, p. 126, I note a short report of a paper read by Dr. H. M. Traquair before the Edinburgh Medico-Chirurgical Society in which he refers to the success attending the correction of myopia in patients who complain of difficulty in near vision. This is the first time I have seen this point alluded to, and I should like to support him by saying that his experience corresponds entirely with my own. Many of these patients suffer much from headache, which is completely relieved by glasses which exactly correct the defect. I have no doubt the scientific reason advanced by Dr. Traquair is the correct one. Although, as Dr. Traquair says, the danger of over-correcting myopia in young persons by examination without atropine is greatly exaggerated, this should not, in my opinion, lead to the ordering of the first lenses for a myopic child without previous use of atropine. The danger is really on the other side, for by straining, and also by partial closing of the lids or by looking obliquely through the lens in the trial frame, a child can mask some small portion of his myopia, and certainly 1 or even 1.5 dioptres of astigmatism; the prescription will then under-correct the myopia. This last is a very grave error, far worse than, say, half a dioptre of over-correction, because I am certain from the results in my own practice in my very early days, when under-correction was generally recommended, that if we keep the correction just behind the actual myopia the myopia will increase, whereas if we fully correct the myopia and astigmatism (if any), the myopia, as a rule, will not increase or only very slowly. I note that Dr. Traquair recommends full correction in myopia.

My excuse for wishing to emphasize these points is that the cases of low myopia with trouble in near vision are associated with much discomfort to the patient, and are often not cured because the surgeon has adopted the view that myopia is not a cause of headache and eyestrain symptoms; and also that the necessity for an examination under atropine and full correction of both myopia and astigmatism is not fully realized. I myself, from the age of 11 until I was able to correct my own error of refraction (at an age when atropine was not so necessary), suffered from very poor distant vision, because two leading ophthalmologists thought they could manage my case without atropine, and therefore overlooked the fact that in addition to the spherical lenses they ordered I required a 2 D cyl. in one eye and a 2.75 D cyl. in the other. I know of other similar cases among medical friends and ordinary patients. One of the latter had been told by a very eminent oculist that if he continued his studies for a learned profession he would probably be blind before he could pass his examinations. This opinion appeared to be based upon his extremely bad vision with the lenses prescribed, in which on one side the spherical correction was too high, and on both sides the cylindrical correction was about half of what it should have been and wrongly inclined. If in a case of this kind the parents complained of their son's damaged prospects, it would, I think, be difficult for anyone, especially a professed expert, to show that he had used reasonable competence and care in the absence of an examination under atropine.

DR. [illegible], Leeds Education Committee, [illegible] as to whether close [illegible] myopia [illegible] that a careful examination of the sight of [illegible] children who are [illegible] in this city and so [illegible] that not one has [illegible] up to [illegible] myopia. Many cases [illegible]

[illegible]

DR. [illegible] [illegible]

[illegible]

DR. [illegible] writes: The report in the [illegible] [illegible] [illegible] [illegible] Recently I had two cases [illegible] [illegible] [illegible] up 101° F. [illegible] strepto[illegible] [illegible] Another case began with injection of one tonsil and adenitis on the same side. The membrane spread to the other tonsil. Here, again, after 20 c.cm. of antistreptococcal serum and 4,000 units of diphtheria antitoxin the disease was cut short in four days. Smears showed no pneumococci but diplococci—I believe a short streptococcus. The fever in this case also reached 101° F. and the patient had a serum rash and arthritis lasting a couple of days. Both made rapid recoveries. I believe the affections of the throat were due to the lowered vitality after the patients had influenza some time before.

REDUCTION OF DISABLEMENT PENSIONS.

"PENSIONER" writes: In paragraph 5 of the Parliamentary Notes in the JOURNAL for July 31st, p. 182, is published an answer by the Minister of Pensions in reply to a question in the House with reference to reduction of disablement pensions, in which he states "No alteration was made in a board's original estimate of the degree of a man's disablement without further reference to the board, or the authority of a superior board, after a fresh examination of the man."

I was recently resurveyed at Cheltenham Terrace and awarded 30s. disability for two complaints from which I am suffering, and both aggravated by service in the late war. At the survey not a single relevant document in my case was forthcoming, although ample notes on my case were in possession of the authorities, who presumably thought fit not to send them for information of the board. As a result the board gave me 20s. for one and 10s. for the latter, but expressed no opinion as to the cause of the latter (whether it was aggravated by or attributable to service). The medical advisers at head quarters therefore without referring it back to the board, or by the authority of a higher board, reduced the award from 30s. to 20s. (I learnt this from actual application in writing to head quarters.) When one compares this procedure with that stated by the Minister as being the routine that is carried out, it is obvious that the two methods are diametrically opposed. Comment is unnecessary.

THE OYSTER'S CONSOLATION.

(Lines suggested by an antivivisectionist's appeal against the cruelty of eating oysters alive.)

I cannot laugh, I cannot wail, I cannot even droop a tail;
I cannot say how much I feel, I cannot squirm, I cannot squeal.
No eye have I for mute appeal, no tears a down a cheek to steal;
No brow to dew with anguished sweat, no ear to hear, no mind to fret.

Sprinkled with pepper black or red, I calmly lie as if in bed;
I cannot even raise a quiver when forks are bedded in my liver.
But ah! I have a dainty taste, a palate all around my waist;
So all day long to feed I strive, and swallow all my food alive.

Can I complain if hungry man adopts this very simple plan,
Meting to me the self-same measure by bolting me alive with pleasure?
Yet, pity me not with frantic screech, the opening knife my vitals reach—
Swallowed by epicure or glutton, I am stone dead, as dead as mutton.

H. RAYNER.

CORRECTION.

THERE was a misprint in our report (page 197) of Dr. Amand Routh's contribution to the discussion in the Section of Venereal Diseases, "chromic" appearing in error for "chorionic." The sentence should run: "He had suggested that the chorionic ferments protected the child from the infection by granulosing the spirochaetes and preventing them from developing till after pregnancy."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 31, 32, 33, 34, 35, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 29, [illegible] and 31.

THE appointment of certifying factory surgeon at Nottingham (North) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Order must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

HERBERT WILLIAMSON, M.B., F.R.C.P., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

OUR meeting this year is one of peculiar importance, for we see on the horizon the dawn of a new era in obstetrics. We have realized that in the interests of the State—nay, in the interests of humanity itself—it is desirable to amend and to amplify the training of those who are to succeed us in the practice of obstetrics. The State is awakening also to the fact that in the past it has failed to discharge its debt to the mothers of the race and has grossly neglected the things which make for their safety and happiness; there is to-day a sincere desire to correct these errors, and the questions involved are receiving an earnest and disinterested consideration such as has never been accorded them before.

I will indicate briefly why the subject of puerperal sepsis has been chosen for our discussion this morning. In the first place we have come to realize more and more that obstetrics is essentially a branch of preventive medicine. I do not think it is speaking too strongly to say that it is the most important branch of preventive medicine. The dangers of childbirth are to a great extent preventable, and the more clearly this idea is grasped and acted upon by the medical profession and the general public the lower will be puerperal mortality and morbidity. We are fortunate in having for the opener of this discussion the representative of obstetrics upon the Advisory Council of the Ministry of Health, who has thought clearly and spoken fearlessly upon this aspect of the question.

In the second place, from amongst the horrors of war there has emerged a clearer conception of the principles of wound infection, and particularly of muscle infection, than we ever had before. It is essential that we should without delay apply the knowledge we have gained to the treatment of that infected muscle, the septic puerperal uterus.

In the third place, it seems that the time is ripe for a discussion on the methods of treatment at our disposal and for an attempt to determine which of them are useless or harmful and should therefore be discarded, and which of them are of value and should be pursued.

Those who have undertaken to open the discussion have done so, I know, with a grave sense of responsibility and with a single-minded desire to ascertain and to state the truth. I am confident that the debate which follows will be animated by the same spirit of scientific inquiry.

DISCUSSION ON PUERPERAL SEPSIS.

INTRODUCTORY PAPER ON PREVENTION AND TREATMENT.

BY

VICTOR BONNEY, M.S., M.D., B.Sc.Lond., F.R.C.S.Eng.

THE solution of the problems how to prevent and how to cure septic infection of the puerperal uterus necessitates the correct answering of three fundamental questions:

1. What is the original source of the organisms?
2. How do they get into the uterus?
3. What is their exact situation by the time they have produced symptoms of sepsis?

1. *The Original Source of the Organisms.*

In nearly all severe cases of puerperal sepsis the streptococcus, either alone or in conjunction with *B. coli communis*, is the predominant organism. The infection may be either autogenous or heterogenous—that is, the organisms may have been resident in the patient before the confinement, or may have been introduced from without during its course or afterwards. Which of these two happenings, infection from extrinsic sources, or infection from intrinsic sources, is the commonest? A consideration of the facts leads me to hold very strongly that the infection in most cases originates from an intrinsic source, but this is not the view which up to now has been generally held.

Infection from extrinsic sources was no doubt the cause of the epidemics of puerperal sepsis which in the past periodically decimated lying-in hospitals, and which the introduction of antiseptic midwifery has succeeded in abolishing, and at the present day it is certainly still operative in those instances where a series of cases of puerperal fever occurs in the practice of a midwife or doctor. But, speaking broadly, the occurrence of the disease at the present day is sporadic, not epidemic, my experience being that the case to which one is called in consultation is most often the first disaster of the kind that has befallen the doctor after many years of successful obstetric work.

The conveyance of septic organisms from one patient to another in the practice of home-conducted midwifery requires a degree of carelessness, or rather dirtiness, which is surely uncommon nowadays, and moreover such conveyance postulates special circumstances of propinquity and time which only generally obtain in institutions where a number of patients are gathered together under one roof. Thus between the attendance on a septic case yesterday and a confinement to-day the morning bath and several washings of the hands intervenes, quite apart from any active antisepsis. The streptococcus of high virulence is a delicate organism which dies rapidly in the open air, and which is easily overgrown in an incubator by other organisms even at the temperature of the body, and still more readily at room temperature. For its experimental inoculation to be likely to be successful it requires to be transplanted direct from one culture medium to another, and this is probably true of the accidental inoculation which causes puerperal fever. Further, the prevention of infection from without is a relatively simple matter, for the wearing of boiled gloves and the sterilizing of all instruments and appliances renders its occurrence unlikely even in institutions, and still more so in home-conducted labour, where proximity to septic conditions does not as a rule obtain.

Now antiseptic measures, more or less of this kind, are almost universally used in obstetric work at the present day and have been for many years; yet when we examine the result, we find to our surprise that although the epidemics of puerperal sepsis that were common in the days before antisepsis scarcely occur now, yet the yearly mortality due to the disease, not only in this country but in all countries, shows a very unsatisfactory degree of diminution as compared with the results obtained by antisepsis in surgery.

Besides the fatalities a much larger number of grave cases short of death occur. It is impossible to compute this number accurately, but I believe it is not far from the mark to say that for every one woman who dies, four are more or less seriously ill, and besides these there are a very much larger number of cases of slight fever, often seen in lying-in hospitals as well as in general practice, nearly all of which are probably due to minor degrees of sepsis.

The obvious deduction to be drawn from these facts seems to me to be, that the antiseptic precautions in use up to the present time have been efficient in preventing that mode of infection in which septic organisms are conveyed from one patient to another, but that there is some other mode, far more common, for which they are inadequate.

Do organisms capable of producing puerperal sepsis commonly pre-exist in the woman? The answer is Yes; they can be constantly isolated from the lower bowel and perianal skin. The extensive study of infected gunshot wounds during the recent war showed that the more virulent bacteria isolatable therefrom were, in general, excremental in origin—that is, they were derived either from the individual's own faeces, or from the faeces of some other individual, or from the faeces of some animal in the form of manure.

Of the large variety of organisms that make up the bacterial content of the large intestine there is scarcely one which is not potentially pathogenic. The possibilities of *B. coli communis* and the coliform bacteria generally are well known to every surgeon in this connexion, and this group of organisms has been very thoroughly studied and classified by bacteriologists. Less is known about the streptococci, their varieties and the relation borne by these varieties to one another, but *Streptococcus faecalis*, which is constantly present in the bowel, may be the causative organism in appendicitis, pelvic inflammation, suppuration after operations on the abdomen, and puerperal and post-abortional sepsis. The streptococcus found in the uterus in cases of puerperal sepsis is, however, of the *faecalis* variety only in a proportion of the cases; but on the other hand other varieties of streptococcus, such as *erysipelatosus*, can on occasions be isolated from the bowel.

In the vast bacterial tract of the large intestine the character of the organismal content is probably continually altering: a purgative, for instance, probably changes it by producing conditions favourable to one organism and not to another. A septic state of the teeth, mouth, or throat, an unsuspected suppurating appendix continually discharging into the caecum, a catarrhal patch on the colic mucosa, or a chronically inflamed pile—any of these are potential sources of organisms which, having obtained entrance into the uterus, may set up the most virulent puerperal sepsis.

As I have pointed out, there exists a zone of skin, with the anus as a centre, over which intestinal organisms are spread with a lessening intensity from centre to periphery. The ano-perineal skin is the most heavily infected skin area in the body, as you can prove for yourself by streaking a sterilized needle over it and then streaking the needle over an agar plate. From the vulva and entrance to the vagina, as one would expect, bowel organisms can be isolated, and it is inconceivable that anything could be passed into the vagina without carrying them into it, although under normal circumstances the upper part of that canal contains but few or apparently none of them. Under conditions of disease, however, streptococci, gonococci, *B. coli*, and other pathogenic organisms may be resident there, certain of which undoubtedly are originally derived from the bowel.

It may be asked, If it be true that the commonest cause of puerperal sepsis is faecal infection, why has so simple an explanation of the continued prevalence of the disease been generally overlooked till now? The answer is that the appreciation of the evil potentialities of intestinal organisms is of comparatively recent date.

When, at the Royal Society of Medicine in May, 1919, I put forward the view that the greater number of cases of puerperal sepsis were due to infection by organisms derived from the bowel, I encountered strong opposition; indeed a layman present at the meeting might well have [illegible] with the impression that the members of the [illegible] would be divided into two groups, "anophiles" and "[illegible]." The principal arguments of those who [illegible] the outlet of the intestinal canal from the [illegible] [illegible] appeared to be, first, that though [illegible] it had always been next door to the [illegible] with it, and therefore [illegible] harmless; and secondly, that [illegible] of perineal lacerations frequently [illegible] take place as a rule.

[illegible] I would reply that [illegible] It is true that [illegible] contamination [illegible] by intestinal organisms [illegible] for instance [illegible] and all operations on the [illegible] But the [illegible] when intestinal organisms are [illegible] which their presence is entirely [illegible] which has been gradually [illegible] of surgical experience, obstetricians would [illegible] had midwifery been taught and practised [illegible]

In the past surgeons played their [illegible] on the [illegible] which operations [illegible] about the anus and rectum [illegible] faecal infection [illegible] I have seen, and you have probably seen, the contents of the bowel [illegible] the peritoneum and [illegible] wound in the course of an [illegible] resection. But accumulating experience has shown that, though in many cases this free and easy technique is followed by good recovery, yet untoward happenings and disasters are far too common, and that the more care is taken to protect the peritoneum and abdominal wound from any chance of contamination by the contents of the bowel, the greater the number of perfect recoveries.

It is the same with appendicectomy. Observe the care taken by the surgeon to protect the edges of the abdominal wound from infection from the stump, not because in the past, before such precautions were taken, good results were rare, but because the adoption of such precautions has definitely improved the results.

There are certain operations in which the risk of faecal infection is particularly illustrated, notably abdomino-perineal resection of the rectum, in which the recovery of the patient chiefly depends upon the care taken absolutely to exclude bowel organisms from the operation area; and radical extirpation of carcinoma of the cervix, in the course of which a penetrating wound of the rectum is almost invariably followed by severe and not infrequently fatal sepsis.

It occasionally happens that the obstetric surgeon has the opportunity of observing the processes of puerperal sepsis going on, so to speak, beneath his eye—namely, in cases in which a Caesarean section has perforce to be performed late in labour, when the uterus is already infected. Anyone who has had experience of post-operative sepsis in such a case, and compares the phenomena with those undoubtedly due to infection by intestinal organisms such as may be observed after operations for suppurative or gangrenous appendicitis, cannot doubt that the processes at work are due to faecal infection.

My argument, then, is that that method of infection of the birth canal wherein septic organisms are conveyed from individual to individual, has received disproportionate attention in the past, with the result that the antiseptic measures taught and practised to-day are framed and directed towards the prevention of infection from extrinsic sources, whilst the prevention of the more common type of infection—namely, that by organisms resident in the woman before the confinement—has received but little consideration.

The principle of antiseptic surgery as conceived by Lister was the creation of aseptic conditions, in the wound primarily, and therefore as a corollary in all that surrounded or touched the wound. Now the problem of how to achieve such conditions is not an easy one, even in regions of the body most favourable for its accomplishment, and exceedingly difficult in the case of the vagina, which as regards the technique of antiseptic midwifery should be considered as a wound. The use of boiled gloves and sterile instruments renders impossible the conveyance of organisms from one patient to another by the attendant's hands or tools, and the draping of sterilized cloths and towels prevents infection from organisms on the bedclothes and other surrounding objects, but unless steps can be taken to render the vagina and the approaches to the vagina aseptic the Listerian principle is unfulfilled.

To prevent the conveyance of organisms from the adjacent skin into the wound the up-to-date surgeon attaches towels or sheeting in such a way as to cut the skin out of the operation area altogether. It is impossible fully to apply this method to the vagina in labour, but at least the anus should be excluded in all operative and other cases, by tying over it, either by clips or stitches, a large gauze pad soaked in a strong non-irritant antiseptic.

The recent introduction of the antiseptics belonging to the aniline and chlorine groups goes far to place at the service of the obstetrician the means of achieving sterility of the vagina and its approaches. Professor C. Browning and myself showed that practical sterilization of the ano-perineal skin could be effected by the use of "violet green"—a 1 per cent. solution of equal parts of crystal violet and brilliant green in half and half alcohol and water—and I have suggested that this antiseptic should be used to paint the vagina and its approaches prior to any operative procedure, and that it should be used as the lubricant every time a vaginal examination is made. A 2 per cent. solution of iodine is already used in this way by certain advanced practitioners, but as a rule nothing more deadly to bacteria than a weak solution of lysol or one of the mercurial salts is employed. The solution of iodine has a definite value as a bactericide, but the others named, having regard to the brief period over which they are applied, have, I believe, none.

The conduct of assisted labour as an aseptic operation is rendered more difficult in this country by the adoption of the side posture, which gives a poor exposure of the parts for purposes of sight and touch, and, by placing the anus nearest to the attendant, renders more likely the conveyance of bowel organisms into the vagina. For all purposes, except Caesarean section, even for examination only, the lithotomy position is preferable.

2. *How do the Organisms get into the Uterus?*

The most obvious manner in which the organisms could obtain entrance into the uterus is that they should be carried directly there on hands and instruments. That this sometimes happens there can be no doubt, and it is especially dangerous when the introduction takes place after the expulsion of the placenta and membranes has left the uterine wall bare to direct infection. But in far the larger number of cases of puerperal sepsis no introduction of anything into the uterus has taken place, the most that could have happened being the implantation of organisms into the cervix or vagina. In many instances the delivery has been normal, and no interference has been practised until the head was on the perineum, whilst occasional cases of sepsis occur in which no intravaginal examinations have taken place at all, the child and placenta having been born before the arrival of the attendant.

It is therefore certain that organisms transplanted into or originally present in the vagina must in some way be transported into the uterus subsequent to the labour. In this connexion I would draw your attention to the very remarkable address in surgery delivered by Mr. C. J. Bond at the meeting of the British Medical Association at Leicester in 1905.

> He detailed certain experiments carried out by him, which showed that minute particles of indigo, carmine, or litmus placed in the cervix and upper vagina, could be detected in the Fallopian tubes in about twenty hours afterwards, having been apparently carried up by an ascending current in the secretion from the wall of the uterus. He also showed that these substances placed in the rectum appeared at a caecal fistula three days afterwards, having traversed the whole length of the colon; and, given by the mouth, could be detected in the discharge from a cholecystotomy fistula in two to four days.

There would, indeed, appear to be a current along the surfaces of these canals flowing in the reverse direction to the main stream of the contents, analogous to that along the bank of a swift flowing river, and which, as on Speyside, allows your gillie, wading close inshore, to easily pull the boat from which you fish up to the head of each "stream," a feat one would have deemed impossible on first looking at the cataract of water coming down.

The important bearing of the results of his experiments on the mechanism of infection generally did not escape Mr. Bond, and in a subsequent paper (BRITISH MEDICAL JOURNAL, March 20th, 1913), he specifically suggested that in gonococcal and pneumococcal peritonitis the organisms were probably transported from the lower genital tract in this manner. Bond's work, I suggest, offers a complete explanation of the fact that the symptoms in a large proportion of the cases of puerperal sepsis appear much later than they should do if the disease was due to direct implantation of organisms on the uterine wall during labour.

There is another possible route of infection, namely, the transmission of organisms direct from the bowel to the uterus across the peritoneal cavity or to the vagina through the recto-vaginal septum.

The passage of organisms through the bowel wall into the peritoneum takes place in many cases of peritonitis, but I do not believe that puerperal sepsis is caused this way, for *post-mortem* examination invariably indicates that the infection of the tissues has begun on the placental site, and moreover the theory of transperitoneal transmission would not account for the undoubtedly much greater frequency with which sepsis occurs after labour in which intravaginal manipulation has taken place. That organisms may pass through the recto-vaginal septum is probably true in those cases in which a breach of the tough vaginal epithelium has occurred, but even then a method of transmission to the uterus is required before the placental site can be infected.

3. *The Situation of the Organisms in the Uterus.*

The situation of the organisms by the time the symptoms of sepsis are produced is of the utmost importance in regard to curative treatment, and I would again reiterate the fact, which I have emphasized strongly in previous papers, that as a rule puerperal sepsis is *not* associated with the retention of gross fragments of placental tissue in the uterus. From any uterus recently delivered a small amount of débris can be scraped away, but it is quite rare, in a case of sepsis after full-time delivery, to find a definite mass of retained placenta. This does not apply to septic miscarriage in which retained portions of the ovum are quite commonly found; but the point is that uterine sepsis, taking all cases into consideration, both those after labour and those after miscarriage, occurs quite as commonly with a completely as with an incompletely emptied organ.

I press this point because the presence of retained placental tissue has been made a great deal too much of in the pathology of puerperal sepsis, chiefly owing to the docile acceptance by English obstetricians of the, I believe, totally erroneous assertions of certain German observers some twenty years ago, so that to-day "something retained in the uterus," and "the germs that flourish on dead tissue" are stock clichés in the mouths of medical students and student-midwives, and are received as evidence of knowledge by their examiners.

The erroneous conception of puerperal sepsis as a condition usually dependent on the presence of retained placental products has naturally led to erroneous ideas concerning its treatment, notably in regard to the scope of usefulness of uterine douching and exploration. Were the organisms causing the symptoms commonly located in tissues easily removable from the uterus the problem of the curative treatment of the condition would be a simple one, but unfortunately this is not so. The organisms are situated *in* the uterine wall, almost from the beginning of the infection, and very shortly afterwards attain, *via* the veins or lymphatics, to positions deep in, or beyond it.

Of the various routes of infection, that along the veins draining the placental site is the commonest and most important, and since, as a rule, the placenta is situated in the upper segment, it is along the ovarian veins that the infection most commonly spreads. The phlebitis thus set up is often accompanied by a lymphangitis affecting the tracts of connective tissue surrounding the ovarian vessels in the upper parts of the broad and ovario-pelvic ligaments, and producing a thickening of these structures which when marked can be detected on palpation. The occurrence of rigors probably always indicates involvement of trunk veins (usually the ovarian) in the septic process.

Extension of the organisms along the lumen of the Fallopian tubes, causing pyosalpinx, though common in post-abortional sepsis, is rare after full-time delivery, probably owing to the fact that the communication between the tubes and uterine cavity, temporarily non-existent during later pregnancy, is not re-established until a week or more after labour. Ovarian abscess is, however, much commoner, the infection making its way into the ovary through the veins and lymphatics of the hilum.

Active peritonitis is unusual, and when occurring is usually localized round a suppurating ovary or tube, but passive peritoneal infection is present in a large proportion of the fatal cases. In such the peritoneal cavity will be found to contain a blood-stained fluid, a hanging drop of which examined with a $\frac{1}{12}$ in. objective is seen to contain numbers of streptococci though the peritoneum is scarcely injected. The organisms in these cases probably find their way into the peritoneal cavity by lymphatic conduction.

The metastatic or blood-borne lesions that may occur are very various, but need not detain us now. Pneumonia, pleurisy, and pericarditis are the most important of them.

The problem of the curative treatment of puerperal sepsis is a very difficult one. The patient is suffering from the effects of an acute toxaemia originating from organisms sequestered in the uterine sinuses, veins, and lymphatics, and perhaps in other situations still more remote from the uterine cavity, and the task set us is to remove or kill the organisms and to neutralize their toxins, or at least prevent either of them reaching the general circulation.

The placental site infected by bacteria originally derived from the bowel or elsewhere is, from the pathological stand [illegible] comparable with the infected wounds of the [illegible] war, [illegible] excepting the infrequency of gas gangrene, which is due to the fact that the gas-forming bacteria flourish chiefly in striped muscle. When, however, we try to apply to the primary lesion of grave puerperal sepsis the methods of treatment which were employed with such success in infected war wounds, we encounter many difficulties.

These methods of treatment were of three kinds:

1. Immediate sterilization by strong antiseptics before the infection had time to become profound.
2. Progressive sterilization by the continuous application of an antiseptic.
3. Immediate excision of the whole wound before the organisms implanted in it had time to multiply.

The application of the first method to puerperal uterine infection has its best scope in those cases in which it is known at the time of labour that the uterine cavity has probably been infected by intrauterine manipulation or instrumentation, for in such the immediate application of some strong non-irritant antiseptic will probably destroy the infecting organisms. For this purpose flavine or one of the antiseptics of the chlorine group, such as Milton's solution, are admirably fitted.

By the time, however, that symptoms of sepsis are apparent the organisms have, as a rule, penetrated sufficiently deeply into the uterine wall to be beyond the reach of any known antiseptic. The common practice of giving an intrauterine douche to cases exhibiting marked pyrexia, with the idea of washing out or killing the organisms in the uterus, is, I believe, useless and harmful. The antiseptic used is so weak that when mixed with the uterine discharge it is doubtful if it could have any lethal effect on organisms merely in the cavity, and certainly none on those which have invaded the uterine wall, whilst the manipulation necessary not infrequently disturbs infected thrombi and spreads the infection. The violent rigor that too often follows this procedure indicates [illegible].

Progressive sterilization, after the method developed by Carrel, is with difficulty applied to the uterus, for it is not easy to arrange irrigating tubes so as to be sure of the an[illegible] every part of the infected surface, and fur[illegible] the principle properly, very thorough cleaning up of the infected area, together with the removal of all dead and damaged tissue, is required. The placental site [illegible] to [illegible] of thorough cleaning up, at all [illegible] when the infection has become profound, whilst ex[illegible] is impossible, short of removing the uterus, and by the time such a drastic step appears justifiable the organisms have nearly always spread beyond the uterine wall.

Exploration of the uterus, followed by digital or instrumental emptying, is very frequently carried out in cases of puerperal sepsis, and in so far as the operation removes a certain proportion of the infected tissue and organisms, and [illegible] contact between the antiseptic subsequently applied and the organisms still remaining in the uterine wall, [illegible] has reason on its side. Against its performance, on the other hand, is the fact that where the infection is deeply implanted it is not only an inadequate procedure, but the manipulation involves the risk of dislodging infected thrombi from the veins and sinuses and spreading or generalizing the infection.

If emptying the uterus could be carried out quite early during the puerperium [illegible] to be followed by the [illegible] manner, it would, I think, be the means of [illegible] the infection in many cases. [illegible]

When a small mass of placental tissue is retained in the uterus, [illegible] in post abortional sepsis, its removal is [illegible] proper. [illegible] on the whole [illegible] than that which follows full time delivery, in which, as I have stated and may repeat here, it is quite the exception to find pieces of the after-birth left behind.

The third method, namely, excision of the wound before the infection has time to develop, and which was the culminating achievement in the treatment of war wounds, is inapplicable to the placental site, for it would necessitate the performance of hysterectomy at the close of every confinement in which there was a possibility of infection.

We have at present, therefore, no surety of defeating the causative organisms of puerperal sepsis either by surgery or by the direct applications of antiseptics, and so in many cases have to fall back on some other method of attack. Thus we can endeavour to raise the body resistance by means of vaccines so that Nature herself can repel the invasion; or by antiseptics introduced into the circulation try to destroy, or at least check, the growth of the organisms; or we can attempt to neutralize their toxins by antidotal serums, or prevent the entrance of either into the general circulation by operatively blocking or removing the channels along which absorption proceeds.

It is not my purpose in this paper to enter into a detailed examination of these various methods of treatment, for I opine that the introducer of a discussion should indicate the main points around which it should centre rather than discuss them in detail himself.

My views as to the value of vaccines and the intravenous injection of antitoxic serums, antiseptics, colloidal metals, and so forth, are frankly pessimistic. I have, of course, like other people, seen cases in which remarkable improvement followed such treatment, but conversely, I have seen a much greater number in which no effect at all was produced, nor can I remember any instance in which I felt sure that the improvement was due to the treatment. It is very easy in cases of puerperal sepsis to confuse *post* with *propter hoc*, for the vagaries of the disease are many, and sudden abatement or disappearance of the symptoms is not at all uncommon without any treatment whatsoever. Unless we bear this in mind and temper our enthusiasm with cold facts, those of us of sanguine temperament are very apt to rush into print with "A case of Puerperal Sepsis successfully treated by the Intravenous Injection of Boot-blacking," or some other novelty, and thus set another hollow ball rolling for a brief while. Though I am a pessimist with regard to the success achieved by these methods up to to-day, I am an optimist as regards their future development, from which I have no doubt the ideal treatment of puerperal sepsis will spring.

Turning now to the attempt to prevent the bacteria or their toxins from reaching the general circulation, I must say I am favourably impressed with the results obtained by ligaturing or excising the ovarian leash of vessels and the lymphatics that accompany them, which, as we have seen, are the main route of bacterial invasion and toxin absorption. I have performed the operation now on quite a number of occasions, most often in cases of post abortional sepsis in which a definite thickening could be felt in the line of the ovario-uterine and ovario-pelvic ligaments. As a rule I remove the whole of this thickened tract from the side of the uterus up to the highest accessible point in the line of the ovarian vessels. The immediate cessation of the rigors, and the general amelioration in the patient's state which has on all occasions followed, must be due to the operation, and not to any coincident but chance improvement. Save on one or two occasions, I have performed the operation only where a thickening could be definitely palpated, but the results I have obtained encourage me in the future to extend its scope to certain of those cases in which no such physical signs can be made out.

To sum up then, puerperal sepsis is a variety of wound infection in the treatment of which both operative measures and the direct application of antiseptics have a very limited scope, and our efforts to find some other way of efficiently attacking the organisms have been only very partially if at all successful, up to now.

The conclusion we reach, therefore, is that as matters stand to-day, prevention is to be more relied on than cure. The finding of the substance, whatever its nature be, that is the real antidote for puerperal sepsis is probably reserved for some laboratory worker of the future, but in the prevention of the disease every practitioner of obstetrics can take a hand.

THE SURGICAL TREATMENT OF PUERPERAL SEPSIS.

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A STUDY of the statistical tables of the Registrar-General dealing with the question of puerperal infection reveals the fact that the science and art of obstetrics does not in this respect reach the high-water mark of perfection at which it aims, and that even to-day the risks of sepsis to the parturient woman are very real. When we consider also the degree of chronic ill health that exists as the result of what I may term "latent" puerperal sepsis, or, in other words, the sequel of an infected uterus, we may well pause to ask whether there is room for change or improvement in the existing everyday methods of treatment. It is to this end that I ask you to consider for a few moments certain points in the surgical treatment of puerperal sepsis which have in my hands proved useful during the last few years. You will notice that I say "last few years," for it is during this period, and directly as a result of war experiences, that my views upon the treatment of puerperal sepsis have undergone a somewhat radical change. Previous to 1914, in common with the majority of English obstetricians, with the exception of Eden, Jellett, and Sinclair, I regarded the use of the curette when dealing with the septic uterus with great suspicion, and in fact expressed the opinion on one occasion that I considered it in this connexion to be an instrument of great danger. Since then I have modified my opinion, and to-day have come to the conclusion that in conjunction with subsequent thorough sterilization of the uterine cavity it can afford very considerable assistance.

Quite early in the war the similarity between the pathological conditions existing in a deep infected muscular shell wound and the septic puerperal uterus appealed to me very forcibly. It was with great interest, therefore, that I followed and took part in the investigation of the various therapeutic measures adapted to the treatment of these wounds, having determined to apply the same in obstetric work when a favourable opportunity offered. In the case of shell wounds about the perineum and buttocks the similarity is extremely close since the infecting agents are in many cases identical, namely, organisms of the coliform and streptococcic groups. Now if the evolution in the treatment of the large muscular shell wound throughout the campaign is traced it will be found to follow very closely the reasoning underlying the methods adopted in the time-honoured treatment of a septic uterus. In the early days of the war resort was made simply to periodical irrigation with various antiseptic solutions such as iodine, mercury perchloride, potassium permanganate, carbolic acid, and so forth. In those days it would have been considered gross malpraxis to attempt removal of the infected area by excision or otherwise, in consequence of the danger of breaking down the leucocytic zone and carrying organisms to the healthy tissues beyond the septic focus. Next came the period when it was deemed advisable and customary to irrigate the septic cavity with normal saline, with the idea of preserving the vitality of the body cells, and so calling in the aid of nature rather than placing reliance upon antiseptics. As a logical sequence to the employment of normal saline followed the use of hypertonic solutions suggested by Sir Almroth Wright. Of these, many were tried, including sodium chloride, magnesium sulphate, glucose, and glycerin, and enthusiasts of the hypertonic methods proclaimed the evolution of the "salt-pack" as the acme of successful treatment of septic wounds. I may say at once that the latter never appealed to me from a scientific standpoint, and when I returned to England and saw at home the results of treatment by the salt-pack method I did not feel inclined to adapt it to the treatment of the puerperal uterus.

APPLICATION OF CARREL'S METHOD.

The greatest advance in septic wound therapy was undoubtedly made when Carrel introduced his method of continuous irrigation in association with the use of hypochlorite solution, and excision of the necrotic area. In this method I at once saw great possibilities in its application to the treatment of uterine sepsis, and it is the method which I now employ whenever occasion arises. So far my results have been such as to warrant a continuance of the method and in marked contrast to those obtained previously. During the past two years fifteen cases of very severe sepsis have been treated by this method in hospital and private practice, with only one death. This patient was almost moribund when admitted to hospital and she died the following day, so that the method can hardly be blamed.

The technique which I employ as a routine may be detailed as follows:

A general anaesthetic is administered, and the vulva shaved and thoroughly sterilized. A copious vaginal douche of hypochlorite solution is then given, the patient being in the lithotomy position. The cervix is seized by volsellae and the whole of the uterine cavity systematically and very carefully curetted with a sharp curette. It is most essential to exercise the greatest care in this procedure owing to the softness of the uterine wall and the risk of perforation. For this reason the operation should not be delegated to or performed by anyone unmindful of the dangers incurred. The reason why I prefer the sharp to the blunt curette is the one advanced by Pinkham, namely, that if curettage is employed at all, it must aim at removing as much as possible of the infected focus. The blunt curette will remove loose portions of membrane and soft necrotic areas of decidua, but will not suffice to detach very adherent masses of retained tissue. Following curettage, it is not uncommon for fairly smart haemorrhage to occur. This must be controlled completely before the Carrel tubes are introduced. In some cases it is necessary temporarily to pack the uterine cavity. In other instances the application of absolute alcohol upon a Playfair's probe will suffice. Haemostasis, however, must be complete or the blood will block the small rubber tubes and defeat the end of the Carrel treatment. About four to six tubes are introduced, care being taken to place them at varying heights within the uterine cavity. For this reason the preparation of the tubes should be done by the surgeon at the time of the operation and not delegated to a house-surgeon or theatre sister. They should also be sufficiently long to traverse the length of the vagina in order that the connecting transverse glass piece may rest upon the pubes to facilitate subsequent nursing details. The tubes are kept in position by packing the vagina lightly with strips of bismuth or plain gauze. Finally the vulva and perineum are well covered with some emollient such as vaseline in order to avoid excoriation. Treatment is commenced by filling the apparatus with Dakin's solution and applying a clip to the tube of entry. A pad of gauze and absorbent wool is placed over the vulva and the glass T tube attached by a pin to the abdominal binder. Subsequent treatment resolves itself into injecting fresh solution into the apparatus at regular intervals of two hours. The patient's temperature falls within twelve hours as a general rule, and within a few days it is usual for the tubes to be expelled by involution of the uterus. Should the tubes become displaced, however, and be expelled whilst the temperature is still raised and the uterus subinvoluted it is necessary to replace them. This may be done upon the second occasion without having recourse to an anaesthetic, since there is no necessity to sterilize the genital tract or curette the uterine walls. There is usually no difficulty in introducing the tubes if the patient is placed in Sims's position, provided that sufficient assistance is available. This is usually the case, since the condition calling for treatment of this kind as a rule necessitates the patient being in an institution.

FOR AND AGAINST CURETTING.

In discussing the method it may be asked what are the risks, if any, that are incurred. These appear to depend largely upon the question of curetting. The reasons that may be urged against curettage of a septic puerperal uterus are the following:

1. The impossibility of removing the whole of the infected material.
2. The destruction of the protective leucocytic zone, explained by Bumm and others.
3. The opening up of lymphatic and venous channels and inoculation of micro-organisms into the same.
4. The risk of perforation of an extremely soft uterus.
5. The possibility of severe haemorrhage or air embolism.

With regard to the impossibility of removing the whole of the infected material this is probably true. At the same time there can be no doubt of the advisability of eliminating as much as possible of the necrotic infected decidua and shreds of membrane. As regards the destruction of the protective leucocytic zone it is interesting to note that in 1910 Pinkham, in the *American Journal of Obstetrics*, had come to the conclusion that the zone acted as a nidus for pathogenic cocci rather than a protection against further extension of the inflammatory process. If care is taken to sterilize thoroughly the uterine cavity and to keep the surface subsequently clean by the constant application of hypochlorite solution, the risks attached to the use of the sharp curette appear to be diminished considerably. It is the *continual* application of antiseptic solutions, in contradistinction to the intermittent sterilization of the uterine cavity by the older method of intrauterine douching, that constitutes the element of safety.

With regard to the possibility of opening up lymphatic and venous channels and inoculating micro-organisms into the same, this is certainly a point which demands careful consideration. If the risk of pyaemia, thrombosis, or parametritis was increased by the use of a sharp curette, then this would be a very definite contraindication to its employment. My own experience up to date is that the risk is not increased. In the case of those patients in whom septicaemia or pyaemic symptoms developed, organisms were already found in blood culture at the time of the initial curettage. A further interesting point to me is that the only case of parametric abscess in my series developed in one of two patients in whom curettage was not employed. The general condition of the patient when admitted to hospital was such that I did not think it advisable to take her to the theatre, and Carrel's tubes were introduced in the ward, without the usual routine attempt at sterilization of the genital tract.

As regards the question of perforation of the septic uterus, this I do consider to be a real risk.

It happened in the case of a patient admitted to the General Hospital, Birmingham, suffering from an extreme degree of uterine sepsis, due to a large portion of adherent placenta retained for fourteen days following labour. A house-surgeon in attempting to remove the adherent placental tissue perforated the uterus. Alarmed at the accident he simply drained the organ and did not introduce Carrel's tubes. The patient died.

A case such as this teaches a very important lesson—mainly, I think, the importance of delegating the treatment of these cases, if indeed at all, only to experienced men who thoroughly appreciate the risks attached. The attempt to sterilize thoroughly and efficiently a septic uterus is not an easy proceeding and unattended with danger. The friability of the uterine wall in some of these cases is extreme, and if the sharp curette is employed the hand that uses it must exercise a delicate touch. Better by far discard its use unless this principle is observed in the closest detail.

As to the fifth reason which has been urged against the advisability of curetting the septic uterus, namely, the possibility of severe haemorrhage or air embolism, I have already referred to the former. Bleeding is often somewhat brisk, but I have not found it alarming, and always easily controlled by a very temporary uterine plug. It is essential that there should be no active haemorrhage in progress at the time that the tubes are introduced into the uterine cavity. Care should be taken therefore in the technique of introduction not to injure the uterine wall. Otherwise the orifices of the tubes will become plugged and uterine irrigation prevented.

INTRAVENOUS MEDICATION.

The next point I wish to raise for discussion is the possibilities of intravenous medication in these cases of puerperal sepsis when organisms have reached the blood stream—in other words, puerperal septicaemia and pyaemia.

[illegible] 1914 both [illegible] and [illegible]

For the past twelve months I have been employing as a routine a solution of flavine 1 in 1,000 in normal saline, intravenously, in cases of puerperal septicaemia and pyaemia. Flavine has the advantage for intravenous injection that it is a non-protoplasmic poison and has no effect upon the red or white corpuscles. I administer it in doses of 10 to 15 c.cm. intravenously into the median basilic vein, employing the same technique as for arsenical preparations in the treatment of syphilis. As a rule one injection is given per diem, but in severe infections two are administered, one in the morning and one in the evening. So far I have been very pleased with the results, recovery having taken place on each occasion. Until, however, I am able to submit a long series of cases no real advance in treatment is claimed. With any new therapeutic agent it is well to be sceptical until its true value is proved. As Sippel very rightly says, no method has ever been invented which has not been said to have, and really has had, great success, for nature, with or in spite of the method, has effected cures though the method did not do so. This cannot be emphasized too much, and although it is only right and essential to medical progress that new drugs and methods be exploited, a note of warning should be sounded against accepting such without careful investigation and confirmation. It is in this spirit that I have ventured to submit these few observations and suggestions.

INTRAVENOUS PROTEIN THERAPY IN PUERPERAL SEPTICAEMIA.

BY

A. E. GOW, M.D., F.R.C.P.Lond.

In the treatment of cases of severe septic infection, for which as yet a sure remedy is lacking, no therapeutic stone must be left unturned, and any procedure which holds out a prospect of benefit is worthy of trial. The lines of treatment are various, and must be directed to the whole patient as well as to the specific lesion.

There are few diseases in which nursing plays so important a part, and consideration of this fact should never be omitted when the general treatment—rest, food, drugs, and hygiene—is being outlined. General treatment must not be directed solely to alleviating symptoms, but also to anticipating, as far as is possible, their onset. It is, however, with only one phase of the specific treatment that I am able now to deal.

Apart from the direct introduction of such antiseptics as mercuric chloride and eusol into the blood stream in suitable cases, we may attempt the destruction of bacteria or their toxins by the use either of specific or non-specific agents. Amongst the former are to be counted vaccines, especially sensitized vaccine, and antiserums; in the latter category are peptone and other "foreign" proteins. It is by the judicious employment of substances in both groups that the best results are likely to be obtained.

With the introduction of intravenous injection of "peptone" as an accessory to sensitized vaccine a considerable step forward in the treatment of pyogenic septicaemia has been made, and it is with this aspect of the problem that this communication is principally concerned.

Of the various preparations of "peptone" on the market, Witte's is the best for the purpose, probably because it contains a higher percentage (about [illegible] per cent.) of primary albumose. Owing to the difficulty in obtaining Witte's peptone at the end of last year, Messrs. Allen and Hanburys prepared for me a substance containing 96 per cent. of primary albumose; calculated as primary albumose this was relatively more toxic to rabbits than Witte's peptone, but I have not used it in the treatment of human infections.

The solution for intravenous injection is made up as follows:

To 10 grams of Witte's peptone in a clean beaker is added about [illegible] of hot freshly distilled water and the peptone made into a paste by stirring with a glass rod; the paste is [illegible] of hot distilled water with about [illegible] c.cm. [illegible] added. The volume is then made up to 100 c.cm., [illegible] added and [illegible]. The hot solution is filtered through a [illegible] filter paper and [illegible] into a sterile flask, [illegible] heated for [illegible] minutes on a boiling water bath. [illegible] the flask [illegible] with a sterile rubber cap.

The first dose of such a solution which may be given intravenously to a septicaemic adult is from 8 to 10 c.cm. The quantity is increased by 2 c.cm. every other day or so until 16, 18 or 20 c.cm. are given at a time. The injection must be made slowly, and for that reason I employ Nolf's technique, using a Record syringe and a very fine bore needle—with a No. 28 it is impossible to introduce the solution too quickly. In cases of puerperal septicaemia the injection of peptone tends to cause an immediate and rapid fall in blood pressure, a rise in the pulse frequency, and if the patient has a leucocytosis, it rapidly induces a high degree of peripheral leucopenia—all these phenomena being of very short duration. Now of these changes, which take place simultaneously, the easiest to record as a guide is the pulse frequency, and whilst the injection is in progress the nurse keeps count of the radial pulse, calling out the number each quarter of a minute. If this exceeds thirty-four the injection is temporarily suspended. It is well to have a hypodermic syringe containing 1 in 1,000 adrenalin at hand, though I have never had occasion to use it.

As a rule the patient experiences no abnormal sensations during the first few injections, but with later ones there may be a slight fullness in the head, a little cough, "pins and needles," a transient sharp stabbing pain in the bottom of the back or a little nausea. A rigor may follow during the course of an hour or so.

Now the occurrence of a rigor is an excellent sign, for it appears to be followed invariably by marked clinical improvement, and often this first induced rigor marks the turning point of the disease, and even in such conditions as infective endocarditis it leads to temporary benefit.

Up to the present I have not had the moral courage to treat a case of streptococcal septicaemia solely with peptone, nor should I feel justified in so doing when sensitized vaccine is available; but peptone injections may be started at once while the autogenous vaccine is in preparation.

Though I am convinced that in peptone we have a very valuable adjunct to sensitized vaccine, I make no extravagant claim that it always brings a septicaemia to an end, and caution any who may look for a dramatic and sustained fall of temperature after its use that most times they will be disappointed. I say "most times" advisedly, for in one case of puerperal pyaemia of three months' duration the temperature, which had been swinging between 99° and 102°, became subnormal within forty hours of the rigor, consequent on the first intravenous injection of peptone. Peptone may be regarded, then, as a useful accessory to other forms of treatment, helping the acute case to become localized, and in the subacute, where subcutaneous vaccine alone is often of little avail, the two may be combined with the greatest advantage; in the absence of general peritonitis it tends to prevent abdominal distension, and if present to remove it.

With regard to autogenous vaccine in cases of puerperal infection, the causal organism—most frequently, though by no means invariably, *Streptococcus pyogenes*—can generally be isolated more quickly from a carefully taken intrauterine swab than from cultivation of the blood. (A vaginal swab is useless.)

Blood-agar plates are inoculated and films made as soon as possible from the uterine swab, and sufficient growth for vaccine purposes is usually obtained after twenty-four hours' incubation at 37° C.—only rarely is it necessary on account of gross impurity to subcultivate from single colonies. If a streptococcus be seen in the films, a "stock" sensitized streptococcus vaccine made from several strains isolated from puerperal fever should be given while the autogenous vaccine is being prepared (two to three days). The sensitized vaccine, whether stock or autogenous, may be administered either intravenously or subcutaneously; in bad cases the former route is to be preferred.

Subcutaneously an average dose is 100, 250 and 500 million on three successive days; intravenously considerably more may be given to begin with—say 500 million. Rarely does such a dose alone cause any rise in temperature or other appreciable disturbance, but if at the same time an intramuscular injection of the serum used to sensitize the coccus is made, a rigor may ensue, and an "artificial" rigor, as previously mentioned, is of good omen. If the intravenous route for the vaccine is chosen, the same or an increased dose, according to circumstances, may be injected on the third day.

The intravenous injection, whether of vaccine or peptone, should not be made directly a feed has been given, but when the patient is as near the fasting state as possible. In saying this I do not forget that, in the condition under consideration, the stomach should rarely be empty, and that one cannot expect the doctor to rise in time to deal with his patient regularly at 6 a.m. There is so large a therapeutic programme to fill the patient's day that it is a real problem how best to arrange it without causing unnecessary disturbance and undue fatigue, or, more particularly, encroaching on the fitful demands of that great healer, sleep.

SERUMS AND VACCINES IN THE TREATMENT OF PUERPERAL INFECTION.

BY

H. LEITH MURRAY, M.D., Ch.B.Aberd.,
Surgeon to the Hospital for Women, Liverpool; Consulting Gynaecological Surgeon to the David Lewis Northern Hospital, Liverpool.

THE President of the Section set me a difficult task when he invited me to summarize the present position of the treatment of puerperal infection by serums and vaccines. Other forms of inoculation treatment are developing; colloidal metals and, as you have heard, intravenous protein injections, both specific and non-specific, are being recommended. As yet it is too soon to define their relative utility.

In any illness so acute as puerperal fever can be, it is at times difficult to be truly scientific. There is no time to "wait and see" the result of any one method of treatment, and possibly at the present time it may be best, in certain cases, to advocate a beneficent blunderbuss rather than one high velocity bullet which fails to hit the mark.

The literature is not so satisfactory as to tempt anyone to employ serums or vaccines to the exclusion of other forms of inoculation treatment. My endeavour to-day will be merely to guide along right lines those wishing to try them. In doing so I must point out that specific inoculation is compatible with every other form of general treatment.

The literature, as I have indicated, is almost chaotic. A general summary would give a monotonous recurrence of "disappointing" and "encouraging." But a close scrutiny of certain carefully prepared papers does seem to give us reason to believe that there is a sphere for specific inoculation. A deal of harm has been done by casual and undetailed references to the use of the agents under discussion. I cannot say that the methods I am to detail are the best possible, but I do know, on general grounds, that there is a big difference between giving 10 c.cm. of polyvalent antistreptococcus serum hypodermically to a moribund patient and giving 50 c.cm. of the same serum intravenously and suitably diluted with normal saline to a patient whose general condition, or leucocyte count, shows that some reaction is taking place.

Every published reference to serum treatment should be accompanied by details of the patient's condition, the local condition, the amount of serum given, and the method of inoculation; anything short of this is meaningless and positively harmful. Possibly in this paper I might be laying myself open to a similar criticism did I not make it clear that it is less a personal experience than a simple exposition of methods.

Let us see, then, what basis in clinical observation can be found for specific immunological treatment. I would insist, first, on the need for precise diagnosis, both clinical and bacteriological, but especially the former. Three instances will illustrate the need.

Time and again I have been asked to see cases where very elaborate steps were being taken—serum or streptococcal vaccine, or both—and great anxiety experienced, much of which could have been avoided if an examination of the urine had been carried out and the pus there present demonstrated. Puerperal pyelitis can be a very serious and, from complications, a fatal disease, but the majority of cases react to vaccines—or even to hexamine given in a rational manner—most satisfactorily. It is a condition very liable to be overlooked, as the bladder may remain uninfected and no urinary symptoms develop. The organisms at work in this rather subtle infection are usually coliform or staphylococcal in character, and an autogenous vaccine administered *non vi sed arte* is of the very greatest service. It may be assisted by alternating the reaction of the urine between acid and alkali from time to time. While the urine is acid, hexamine may be given in rapidly increased doses up to the limit of tolerance.

To treat such a case without accurately diagnosing it is as remiss as to direct attention to the acute general symptoms arising in another type of case while omitting to disinfect a focus resulting from an infected laceration. I need not further enlarge on this second instance of the importance of accurate diagnosis.

As a third instance I wish to mention puerperal infection complicated by peritoneal infection. If the powerfully protective capacity of the peritoneum cannot arrest such a process, serums or vaccines are little likely to do so, and the intervention of a surgeon is called for.

With the ground thus cleared it is now possible to discuss methods of immunological treatment for certain types of strictly wound-infection occurring after delivery.

First and foremost let me urge that steps be taken early and not late. There is no more tragic sight than the acutely conscious woman who talks rationally, does not feel particularly ill, and yet is insensitive to the prick of the inoculating needle. Probably nothing can save her; she is analgesic because she is septicaemic. Such cases are not rare, and are so rapid in development that a few hours may show a difference. Every case, therefore, developing acute symptoms in the early days after labour should be forthwith treated as if it *might* develop into the condition I have mentioned. Some cases, no doubt, are doomed from the beginning, but let us see to it that everything possible (of an advisable kind) be done while there is still the probability of reaction on the part of the patient. If any palpable local swelling be detected a day or two later on, good and well; such reaction is less in proportion to the infection than to the strength of resistance, and, in the interval, treatment will have been aimed at the more serious case where no such reaction is going to take place.

The bulk of cases of acute puerperal infection have been proved bacteriologically to be due to a streptococcus. This organism is first in importance and frequency, and the textbook figures of 40 to 50 per cent. in pure and 60 to 70 per cent. in mixed culture are probably fairly accurate. As an agent causing general infection the percentage is much higher. In one elaborate series of cases 46.4 per cent. of 196 cases gave a positive blood culture, and of these 93 per cent. were streptococcal. This figure of practically 50 per cent. of positive blood cultures must not be taken as representing the total of generalized blood infection. A blood culture from which no growth is obtained does not necessarily signify a sterile blood stream. It has been customary to divide puerperal infections broadly into toxaemic and septicaemic groups, but the distinction is merely between a grave and a *very* grave condition. A positive blood culture is largely a matter of technique and choice of time, combined perhaps, in some cases, with a certain amount of good luck. A blood culture, therefore, in a case of puerperal infection should be taken under the most auspicious circumstances, namely, during a period of high temperature (preferably during a rigor); the blood should be inoculated immediately into a considerable bulk of media and rapidly transferred to an incubator. A few cubic centimetres of clotted blood posted to a laboratory are much less likely to be helpful.

A final pathological point which it is necessary to emphasize is expressed in the dictum that a generalized blood infection does not of necessity predicate a maximum of resistance. In other words, although an organism has been demonstrated in the blood stream, it may still be possible to influence a favourable reaction by local inoculation.

Coming now to the more practical aspect of treatment of acute cases, excluding pyaemic local septic lacerations, peritoneal infection, and pronounced local swelling developing in the first week after delivery, it will be clear, from what has already been said, that treatment should be begun early, and, in the first instance, should be directed against the streptococcus.

Serum Treatment.

Inasmuch as blood culture requires time, and in that precious interval it is not only legitimate but highly advisable to give antistreptococcus serum. Let it be given in large quantity, 50 c.cm. intravenously, and diluted with not less than an equal amount of normal saline solution. If no improvement results in twelve to twenty-four hours the inoculation should be repeated, using, if possible, the brand of a different maker.

Antistreptococcus serum is a bacteriolytic serum, and, unlike antidiphtheritic serum, requires a key to unlock its action. This key, found only in *fresh* serum, is known as complement. When we give a bacteriolytic serum we are relying on the patient to provide this non-specific fresh element. It was at one time thought that complement was liable to become more or less exhausted in acute infections, but more recent work has not confirmed this. Still, it may be advisable to combine with these injections 5 c.cm. of fresh sterile guinea-pig serum, or of fresh normal horse serum. I have invariably ordered this latter when available, but the inevitable delay (two days) in procuring it has been a handicap, and I cannot definitely say that it has been of use

The first of these intravenous inoculations may conveniently have as a preliminary the extraction of blood for culture. A positive result gives an opportunity for utilizing vaccine treatment, which, in the case of streptococcal infection, should be assisted by further doses of serum administered subcutaneously.

Vaccine Treatment.

I can hardly believe that a stock vaccine is ever advisable in acute cases—except possibly as a preliminary to the preparation of an autogenous vaccine, and after demonstration of the causative organism. A vaccine is a powerful poison, and inoculations would represent a repeated addition to the intoxication unless a reaction directly bearing on that intoxication were presumable.

Autogenous vaccines, on the other hand, appear to be of distinct service, and, according to one careful observer, reduce the mortality of definite septicaemia from 85 to 95 per cent. to 55 per cent. Small doses should be given, and preferably, in streptococcal cases, with serum, as outlined above. It would be inadvisable more particularly to indicate dosage. Each case should be judged on its merits and have the treatment controlled by one who, whatever his ordinary designation, is at heart a clinical pathologist.

The most encouraging results of all are forthcoming in cases where the patient is making a fair fight—that is to say, in cases where the course tends to be somewhat subacute. In these cases it is more difficult, unfortunately, to obtain a blood culture, and the basis for vaccine treatment should always, if possible, be a blood culture. As the gross variation of post-partum intrauterine cultures proves, it is a difficult matter to take an uncontaminated intrauterine culture, and, furthermore, there is evidence that, even in afebrile cases, the placental site is soon invaded by pyogenic organisms. Failing a positive blood culture, and with serious symptoms persisting, a vaccine prepared from an intrauterine culture may legitimately be employed; the material, however, should be obtained by one accustomed to the procedure.

There remains for discussion that group of cases in which symptoms develop, as a rule, during the second week and are notable for acute exacerbations (rigors). These are vascular in origin and pyaemic in development. The staphylococcus appears to be, relatively, more frequent in this form of infection; but, absolutely, the streptococcus is, as in septicaemia, the most commonly found organism.

In these cases autogenous vaccines, best obtained by venepuncture during a rigor, are sometimes almost miraculously successful. If a streptococcus be isolated, serum should be given in addition.

Pyaemic infection is frequently subacute or even chronic, and, failing a good result from treatment by vaccine or vaccine *plus* serum, an opportunity is presented for utilizing a method of passive immunity very rarely possible in more acute infections. This involves inoculations of a vaccine of the causative organism into a person of suitable blood group (commonly a close relative) and subsequent injection of this immunized serum into the patient. It appears to be a procedure worthy of trial.

It will be noted that I have given no indication of the dosage of vaccines. This is a deliberate omission. Stereotyped doses and intervals have been the bane of vaccine treatment. Nor have I distinguished between ordinary vaccines sterilized by heat or antiseptic, sensitized vaccines, and detoxicated vaccines. At the present time these alternatives are scarcely more than matters of personal predilection, and it would be unwise to dogmatize.

As to the inoculation in vaccine form of organisms devitalized but not absolutely killed, I can say but little. No doubt in many cases, when the administration of a vaccine is hurried on by reason of the urgency of the case, an incompletely sterilized suspension is inoculated, and it has, on occasion, perhaps appeared that the case did particularly well. Still, as a deliberate procedure the method is open to objections, and cannot be recommended.

The very tentative views put forward in this short paper will have made it obvious that much work remains to be done on the subject under discussion.

I cannot too strongly urge that the present method, whereby notified cases are frequently treated by the unaided officers of zymotic hospitals, is very far from ideal. Only those of us who are called in to see these cases in private consultation know the feeling among practitioners. Public health authorities must be brought to appreciate that, whatever may be done in the case of tuberculosis, an expert on the treatment of puerperal fever cannot be created in six months.

To each city hospital where cases of puerperal fever are admitted there should be attached a keen young obstetrician, in touch with a pathological laboratory and competent to undertake such surgical treatment as may appear to him advisable. Furthermore, he should be subsidized by the local authority. This meeting of the Section appears an opportune moment to make comment on the unsatisfactory arrangement at present in vogue.

DISCUSSION.

LEWIS GRAHAM, M.S., F.R.C.S.,

Birmingham.

AT the Women's Hospital, Birmingham, since 1913, 889 cases of puerperal sepsis have been admitted. Of them 164 cases died. Various special methods of treatment, such as vaccine and serum therapy, intravenous injections of galyl and magnesium sulphate, Carrel and hypertonic saline irrigations, have been tried, but without any conspicuous success. Injury to the uterus during treatment, such as tearing of the cervix or curetting, appears to be definitely harmful. Cases require watching for secondary complications in the heart, lungs, and other organs. Where cases die, useful information in the guidance of future cases may be obtained by routine *post-mortem* examinations. Except on the preventive side, the hope of the future appears to lie in a combination of effort by the bacteriologist and the surgeon. Such cases should be sent to women's hospitals and not to ordinary "fever" hospitals.

EARDLEY HOLLAND, M.D., F.R.C.S.,

London.

MR. EARDLEY HOLLAND said that he was more interested in the prevention than in the treatment of puerperal infection. He was in complete agreement with Mr. Bonney that in many cases—it was impossible to say how many—the source of the infecting bacteria was the patient's own perineum and vagina, and that infection occurred from the transportation of bacteria into the cervix and cavity of the uterus by vaginal examinations or by use of forceps or other obstetrical operations. This must be distinguished from auto-infection in its narrow sense; it was infection of the patient by her own bacteria, but introduced by external agencies. The treatment of severe cases of puerperal sepsis at present held out little hope; but prevention, on the other hand, was full of hope. One of the most important principles in prevention was to avoid introducing anything into the vagina during labour, except in cases of absolute necessity. He believed that vaginal examinations themselves, by transporting bacteria from the lower part of the vulvo-vaginal tract upwards into the uterus was a common source of infection, and he believed that routine vaginal examinations ought to be abolished altogether. There was scarcely a woman in this country who did not have a vaginal examination made during labour, unless she was fortunate enough to have the baby born before the arrival of the doctor or midwife. Personally, for the last eight years he had employed rectal examinations, and had discarded vaginal examinations altogether. Rectal examination had all the advantages of vaginal and none of its disadvantages; it carried with it no risks of infection, and with practice it revealed just as much information as vaginal examination. The recto-vaginal septum was thin and lax, and the state of the cervix, the sutures and fontanelles, the degree of descent of the head into the pelvis, and even a prolapsed cord, could be felt with the utmost clearness. Furthermore, rectal examination was infinitely less trouble, for none of the aseptic ritual, so necessary in vaginal examination, was required, and the number of examinations need not be restricted. The only reason for his speaking was to make the strongest plea for rectal examination instead of vaginal.

AMAND ROUTH, M.D., F.R.C.P.,

London.

DR. ROUTH said he had not been converted to the view that puerperal infection was often due to intestinal organisms, as individuals were usually immune from infection by organisms normally existing in their own tissues. Exceptions, however, seemed to be *B. coli* cystitis and pregnancy pyelitis. The cases of unclean Caesarean sections alluded to by Mr. Bonney were due not to autogenous intestinal infection but to heterogenous germs introduced during previous attempts at delivery. Most cases of infection could be prevented by douching out the uterine cavity immediately after labour with strong iodine solution if a finger or instrument had been passed into the uterus. If the temperature rose next day, the patient should be put under an anaesthetic and the uterus explored digitally, obvious pieces of placenta or membranes removed, and a big swab of gauze swept round to remove smaller débris of mucosa. Another swab saturated in a 1 in 4 solution of iodine should then be applied especially to the placental site. This would kill all germs in the placental site, and almost always prevented true septicaemia developing. If there were fixation of the uterus or if parametritic induration were present, the case was a hopeful one showing strong local resistance, and much more likely to be relieved by antistreptococcic serum or an autovaccine. Finally, if a case were apparently hopeless, or running high temperatures at the end of the first week, strong doses of liq. ferri perchlor. ɱxx every two or three hours often resulted in rapid dropping of the temperature by increasing the patient's resistance, and thus saved her life.

FRANCES IVENS, M.S., M.B.,

Liverpool.

MISS IVENS drew attention to two points: (1) Preventive measures, (2) serum therapy. She thought more could be done to prevent autoinfection from the intestinal tract if a more thorough preparation of the patient were made when labour began, and if the nurse were instructed as a routine measure to prepare or shave the patient as if she were going to have an operation. A good deal had been learnt about wound infection during the war, and some of this knowledge could be applied in the effort to prevent local puerperal sepsis from developing into puerperal septicaemia. Miss Ivens found in a series of observations that badly infected war wounds, when treated early with polyvalent serum, developed septicaemia in very few instances, and also that some apparently hopeless cases of septicaemia, due to a haemolytic streptococcus, recovered when treated with massive and repeated doses of serum, just as did cases of gas gangrene with antigangrenous serum. The serum employed was that prepared at Alfort by MM. Leclainche and Vallée from horses rendered immune to the organisms *commonly* found in war wounds—namely, varied strains of staphylococci, streptococci, the colon bacillus, *B. pyocyaneus*, etc. She suggested that the same principles be applied to puerperal sepsis in its different forms. A reliable serum, adequate dosage, and exact bacteriological findings were needed. The polyvalent serum could only be regarded as an urgency measure until the specific organism was isolated from the blood and placental site, when the specific serum could be pushed. As regards the favourable prognosis in cases of abscess development, it had been observed that cases of septicaemia where a fixation abscess developed did well, and it was now the speaker's practice to endeavour to produce such an abscess by the subcutaneous injection of turpentine.

J. PRESCOTT HEDLEY, M.B., M.Ch., F.R.C.S.,

London.

I AM convinced that autogenous infection does occur, but it is dangerous to make too much of this method of infection in the teaching of obstetrics unless it is clearly pointed out that the woman's own organisms are carried into or higher in the vagina by examination. The treatment of puerperal infection is most unsatisfactory, and the numerous varieties of treatment advocated show this to be the case. It is extremely difficult to say in any case what the prognosis is, and therefore whether specific or vigorous treatment is really necessary or not; most unexpected recoveries occur without much treatment beyond good nursing. In sapraemic cases the great majority of patients will recover without vigorous treatment, but in those where the pulse is very rapid, the uterus undergoing involution and the discharge watery and irritating, the outlook is very grave. For years now I have always avoided intrauterine interference in these cases for fear of spreading the infection. Mr. Whitehouse's results are striking and encouraging, but it is possible that he has been fortunate in meeting with a series of favourable cases. The results in septicaemia cases are so bad that I am encouraged to give his method a thorough trial.

A. LAPTHORN SMITH, M.D.,

London.

IT is my own firm conviction that nearly all of the 1,200 or more deaths from puerperal sepsis every year could be saved if every one of the million confinements were carried out with the same precautions of asepsis and antisepsis by every practitioner as are used by every surgeon in every surgical operation. Before deciding that a woman with septic symptoms after a confinement really has puerperal sepsis I would urge that we make sure that it is really puerperal. Once I was called to a very ill woman 100 miles away who had been curetted by another doctor the day before, but it did not do her any good. I lifted the clothes up and found her abdomen with many rose-coloured spots. I said nothing—it was a case of typhoid. The woman recovered in spite of all. Three times I have been called to very ill women with high temperatures and tender abdomens. The practitioners were most careful men, therefore I looked for some other cause, and found it an hour or two later at the hospital when I removed a suppurating or gangrenous or perforated appendix. These women all had histories of previous attacks of appendicitis—one had actually been in the hospital for operation, but was not operated on.

Prevention is better than cure. The old English doctors, who for the last two hundred years have ordered a weekly dose of castor oil and an enema when labour begins, were giving correct treatment, as colon bacilli increase enormously with constipation. The rectum can be made as clean as the mouth. But more important than the colon bacillus is the streptococcus. By wearing rubber gloves in every confinement the doctor and nurse would cut out nearly all the causes of infection. Should doctors douche before delivery? As a rule, no. But if the husband of the woman is a rag and bone man, handling erysipelas and scarlet fever and diphtheria rags in ash barrels, it would be worth while to take special precautions by douching. I have been called to such a case, and had a very anxious time as the woman had erysipelas. Drainage should be effected by sitting on a commode. Abolish the bed pan. The vagina in the dorsal position holds 4 to 8 oz. of culture fluid; sitting up six times a day keeps the vagina empty. We always drain an abscess cavity elsewhere, why not put a tube into the uterine cavity when it is an abscess cavity? The abscess cavity connects directly with the peritoneum. Asepsis, antisepsis, and drainage are the three watchwords of surgery; let us make them three watchwords of obstetrics. If we repaired lacerations of the cervix and perineum on the spot we would have much fewer portals of infection [illegible] of morbidity. I do not believe very much in bichloride in the uterus. My favourite plan is to wash out with a copious intrauterine douche of half a gallon of plain boiled water at 100° F., then swab out the cavity with very strong almost saturated permanganate of potash; no microbe can live in it. I cannot too strongly recommend this antiseptic; it is non-toxic. After this I put a tube in the uterus, or if not available I use a strip of mild iodoform gauze lying loosely packed and projecting out to the vagina. Then one ounce of boracic powder or more in the vagina and a dry pad to hold the boracic powder in. Then I make the patient sit up. The Chairman has asked us to state definitely whether we should curette or not. I am definitely opposed to the sharp curette, because it opens up more avenues of entrance, and the uterus is very soft, easily perforated, and all the good can be done with permanganate of potash. The bit of membrane or placenta is not the cause; the placental site is the place to disinfect. I support Dr. Holland's suggestion that rectal examinations should be used instead of vaginal ones. Lastly, do we not sometimes pay too much attention to the disease and forget to look at the woman? Is a woman who is the picture of anaemia in a proper condition to fight auto-infection or hetero-infection? Citrate of iron and quinine sometimes works wonders.

R. C. BUIST, M.D.,

Dundee.

THERE are two problems in regard to puerperal sepsis: the preventive and the therapeutic. Does the preventive problem overrun in time the therapeutic? Is it possible to prevent further infection? May the therapeutic solution offered impair the concurrent preventive problem? From this arises criticism of methods by douching and still more of curettage.

In the therapeutic problem there are two parts: (*a*) Counteraction of the infective organism by direct methods; (*b*) counteraction by indirect methods which reinforce the patient's resources, general or specific. The essential condition of specific reinforcement by autogenous vaccine is diagnosis. In arguing from results two facts should be remembered: (1) There is a natural history of puerperal sepsis with a natural response of the patient to the attack; (2) it needs a very long series of cases to be so free from chance that it has established a definite norm for the recovery rate under any individual method of treatment.

R. J. JOHNSTONE, M.B., F.R.C.S.Eng.,

Belfast.

MR. JOHNSTONE wished to emphasize the fact that before any rational system of prophylaxis or of treatment could be adopted a clear conception of the pathology of puerperal sepsis must be in the mind of the clinician. He thought too much emphasis had been laid on the condition of the body of the uterus itself. In his experience a large number if not the majority of cases of puerperal sepsis when carefully examined showed clinical signs of inflammation of the lower part of the vagina and perineum, of the cervix and of the lymphatics of the broad ligaments, while the body of the uterus was comparatively free, as shown by the absence of tenderness on palpation and of purulent or foul discharge from the cervix. In these cases, which were often of a very virulent type, the uterus itself was probably the most healthy part of the genital tract, and the condition was strictly analogous to that of an infected wound with an ascending lymphangitis going on to lymphatic septicaemia. As to the causative agent of the inflammation, he regarded the infection in the vast majority of cases as being derived from the patient herself, and mainly from the chronically infected skin of the perineum. Such a view did not absolve the patient's attendant from the duty of observing all possible aseptic precautions. Practitioners and midwives had now, in his opinion, learned fairly well how to sterilize their hands and fingers, they must learn in addition to be equally efficient in sterilizing the patient's vulva and perineum. He had lately been trying the results of using as an antiseptic agent a saturated solution of picric acid in alcohol, as it was a more powerful antiseptic than iodine, penetrated more deeply into the skin, and was not so easily washed away by the flow of secretion which took place during the first and second stages of labour. In regard to the treatment of sepsis when established, his attitude was not so much pessimistic as timorous. Any surgical procedure, even curetting, carried out in infected tissues and in a septic patient with powers of resistance to organisms already low, was fraught with danger, and he felt that while cases which were putting up a good fight against invasion by septic organisms would very probably immunize themselves if left alone, those who were going to do badly were just as likely to have their last chance of combating the infection removed by the massive inoculation, inevitable when a breach of infected surfaces was surgically made, as to have that chance improved by an attempt to limit the progress of the continuous infection by surgical removal of the infected tissues. There were occasions when interference was indicated, and he would curette a uterus from which a foul or purulent discharge was flowing. He had not yet met with any cases in which ligature of the ovarian vessels seemed to be clearly indicated, but he intended to try Mr. Whitehouse's application of the Carrel-Dakin method. He relied mainly on the promotion of drainage by posture, douches, etc., and on keeping up the patient's strength by good nursing. His experience of serum and vaccines had not been very encouraging, and he had almost ceased to employ them.

FREDERICK EDGE, M.D., F.R.C.S.,
Wolverhampton.

THERE is little or no puerperal sepsis in nature. It is caused by the endogenous germs of the patient being carried up into the uterus by the hand or glove of the doctor or nurse. This is most fatally done in the third stage. Intrauterine manipulation nine times out of ten is unnecessary, or necessitated by previous mismanagement and want of patience. Bad suture of the perineum, especially the portion within the vagina, leads to absorption and septicaemia. Every case of puerperal sepsis should be examined thoroughly under ether and the uterus washed out to make sure that nothing is left in it. This also enables one to eliminate other abdominal and pelvic causes of sepsis. Douching, except in hospital or under strict conditions once only after intrauterine manipulation, should be forbidden. And, lastly, the patient should get out of bed twice a day to empty the bladder and bowels, and consequently the vagina and uterus. One practical point in conclusion: I have found that opening the pouch of Douglas causes no extra risk even when there is a normal peritoneum. That is to say, in doubtful cases one need not fear causing peritonitis when there is reasonable cause for exploring the pelvis.

Reply to Discussion.

MR. BECKWITH WHITEHOUSE, in reply, said that in bringing forward his suggestions he had fully expected to meet with a certain amount of opposition. In fact, he thought that he might very well have brought a veritable hornets' nest about his head! There could be no doubt, however, from the results of the discussion, that there was room for considerable improvement in both the prevention and the treatment of puerperal infection. Upon referring to the figures available in the annual reports of the Medical Officer of Health for Birmingham he was sorry to see that the mortality rate to-day was about the same as it had been for the last ten years. In the figures supplied by the Women's Hospital, Birmingham, and to which Dr. Graham had referred. the mortality for 1918 was 30 per cent. This was a very high figure, and pointed to the necessity for ascertaining whether it was possible to lower this mortality, which seemed to be associated with the older and more generally recognized methods of treatment. With regard to the use of the curette he was fully in accord with the opinion expressed by the President, and he did not wish it to go out from the Section that he advocated its general employment in all cases of uterine sepsis. The method of treatment which he had detailed was essentially one to be carried out in an institution, and by individuals who were mindful of their responsibility. Curettage was merely an asset to the Carrel-Dakin method, and it should not be used unless it was intended to establish continuous uterine irrigation at the same sitting. He quite agreed that he might have been extremely fortunate in the results so far attained by the Carrel-Dakin and intravenous flavine methods. One would be wrong to dogmatize upon a few cases, and he did not wish to go any further at this stage. The treatment must stand or fall upon the results of future experience. The point in particular, however, which he wished to emphasize was the importance of early treatment. The earlier the patient was taken in hand the more likely was treatment to be successful, whatever method was employed.

President's Summing Up.

DR. HERBERT WILLIAMSON said: With your permission I will summarize briefly the lessons I think we should learn from this discussion.

First, I commend to your earnest consideration Mr. Bonney's views upon the importance of paying more attention during labour to the skin of the ano-perineal region. Bacteriologists have established the fact that bacteria normally present in the intestinal tract are sometimes the only organisms grown from the tissues of women dead of puerperal septicaemia, and have shown that the *Streptococcus faecalis* may become haemolytic. I am convinced that cases of septicaemia are not infrequent in which the woman is infected by organisms from her own intestinal tract. I think there is a misapprehension in the minds of some of the speakers. I am certain that nothing is further from Mr. Bonney's intentions than to imply that the responsibility of the accoucheur is diminished by the knowledge of these facts; on the contrary, he points out a danger which is often overlooked and urges us to struggle towards a still higher ideal of asepsis.

The second point revealed by the discussion is our very imperfect knowledge of the morbid anatomy of puerperal sepsis. Without this knowledge accurate diagnosis is impossible, and without accurate diagnosis we cannot apply rational treatment. I plead for careful and systematic work in this field of research. The *post-mortem* material, alas! is too plentiful, but it requires more thorough study, and, above all, we need correlation of the morbid anatomy and the clinical phenomena. As has been pointed out by Dr. Leith Murray, it is a grave misfortune that cases of puerperal sepsis are usually treated in fever hospitals by those who have had no special training in obstetrics; this material should be available for increasing our knowledge.

Thirdly, the question of curetting the septic uterus. I do not say it should never be done, but I do say that as a routine practice it is a dangerous procedure. I will draw your attention to the fact that Mr. Whitehouse advocates it only when the patient is in a hospital or nursing home, when the operation is performed by an expert and is followed by continuous irrigation.

Lastly, we must conclude that the treatment is lamentably unsatisfactory and that it is the duty of obstetricians to improve it. If in every large centre throughout the kingdom obstetricians would engage in a combined research, if each group would attach to itself a clinical pathologist, if they would decide upon a definite line of treatment to follow for a given period, and at regular intervals would meet together to discuss new points which had arisen and compare their experiences, if they would cause careful *post-mortem* examinations to be made in their fatal cases and correlate the morbid anatomy with the clinical symptoms, I believe that definite results would be obtained and the appalling mortality revealed to-day would be materially lessened. Is it too much to hope that such a scheme may be devised as the result of to day's meeting?

DEMONSTRATION ON THE DIASTASE CONTENT OF THE URINE IN TOXAEMIAS OF PREGNANCY.

BY

R. L. MACKENZIE WALLIS, M.A., M.D.,
CHEMICAL PATHOLOGIST, ST. BARTHOLOMEW'S HOSPITAL.

THE presence of a ferment capable of digesting starch solutions when added to urine has been known for a very long time. The subject received new interest when, in 1909, Wohlgemuth published his method of estimating the amount of diastase in the urine. He showed that in pancreatic disease the diastase content of the urine was markedly increased. Since these observations were recorded a number of workers have all obtained confirmatory evidence, but the best and most complete work is undoubtedly that of Corbett in this country. He showed that there is normally a certain amount of diastase in the blood, and that the same quantity is excreted by the kidneys. If there is an increase of diastase in the blood then there is a corresponding increase in the amount of diastase in the urine, provided that the kidneys are functionally unimpaired. The slightest damage to the renal epithelium leads either to a great diminution of diastase in the urine, or an increase depending upon the permeability of the kidney. Geyelin came to similar conclusions as regards the influence of the kidneys in the removal of diastase from the blood. Wohlgemuth and Noguchi found an increase of diastase in both blood and urine where injury to the pancreas had occurred. The results of Corbett are also striking, and there seems to be no doubt that a high diastase value of the urine is in favour of pancreatic disease, whereas a normal or low value points to a normal pancreas. Some writers, however, have suggested that these high values are only obtained in the acute stages of the disease. These observations represented the general trend of opinion when I first commenced my work upon the subject. The analysis of my results will be given later, and compared with the various other tests that have been applied. In carrying out the estimations I have followed the technique devised by Wohlgemuth in certain particulars.

Technique.

A twenty four hours hourly collection of the urine is made into clean stoppered glass bottles, and the estimation is carried out as rapidly as possible after the full amount has been collected. The urine should be as free as possible from contamination and where a twenty-four hourly specimen is unobtainable I generally advise a six hourly collection or better still a twelve-hourly collection. Apart from the fact that there may be a slight rise in the diastase content of the urine preceding a meal followed by a fall immediately afterwards and lasting for from three to four hours, the rise is so slight that it is almost negligible except when attempting to obtain normal standards of diastase excretion. For practical purposes it does not matter whether a fresh specimen, or a twenty four hours hourly sample of urine is used. To preserve the urine when facilities for carrying out the test are not immediately available toluol is added. This will not affect the diastase, and in fact specimens may be kept for months or even years without showing any alteration in their diastase content. All other forms of preservative must be avoided since I have found that in most cases they lead to immediate destruction of the ferment.

For the actual test only 2 to 3 c.cm. of urine are required. The apparatus and chemical reagents required are:

1. Ten clean dry test tubes made of good glass of equal bore, and of uniform thickness.
2. Standard [illegible] burettes, Ostwald pipettes of 1 c.cm. and 2 c.cm. capacity, and a [illegible] pipette graduated in one hundredths of a degree.
3. [illegible]
4. A [illegible] prepared solution of starch made by dissolving 2 [illegible] in 100 c.cm. of pure 10 per cent. [illegible] chloride. [illegible] of the starch [illegible] placed [illegible] made up to the mark with [illegible] water. [illegible] per cent. [illegible] of [illegible] chloride [illegible] the [illegible] for diastase estimations recorded in this paper.
5. A [illegible] solution of iodine. This has to be made up fresh as required, since it does not keep well, particularly in the summer [illegible] in the dark [illegible] normal [illegible] solution is made by diluting 2 c.cm. of the iodine solution up to 10 c.cm. with distilled water. A specially prepared dropping pipette is always used with [illegible] the same number of drops of dilute iodine are added to each tube [illegible] the estimation.
6. A [illegible] water bath which is maintained at a temperature of 39° C. [illegible] regulator.
7. A wire cage to hold the test tubes in place when immersed in the bath.

The tests are carried out as follows:

The ten test tubes are placed in a stand and numbered in sequence. 1 c.cm. of the urine to be tested is added to tube No. 1 [illegible] to tube No. 2, and so on, according to the table below. Each tube is then made up to a volume of 1 c.cm. with distilled water. We have now a series of ten test tubes containing various decreasing quantities of urine but each of equal volume, namely, 1 c.cm. It has been found that by careful manipulation and using a good pipette this method of [illegible] gives rise to only a slight error, at least [illegible] to affect the estimation.

We have now the following series of dilutions:

(1) 1 c.cm. urine.
(2) 0.5 c.cm. urine.
(3) 0.2 c.cm. urine.
(4) 0.1 c.cm. urine = 1 c.cm. urine diluted with 9 c.cm. water.
(5) 0.08 c.cm. urine = 0.8 c.cm. urine diluted with 9 c.cm. water.
(6) 0.06 c.cm. urine = 0.6 " " "
(7) 0.04 c.cm. urine = 0.4 " " "
(8) 0.02 c.cm. urine = 0.2 " " "
(9) 0.01 c.cm. urine = 1 c.cm. of 1 in 10 diluted with 9 c.cm. water.
(10) 0.008 c.cm. urine = 0.8 c.cm. of 1 in 10 diluted with 9 c.cm. water.

All these tubes are now inserted into the wire cage and placed in the water bath for fifteen to thirty minutes. This serves to bring the temperature of the mixtures up to the required level, and further, activates the ferment present in the urine. The [illegible] starch [illegible] in a burette [illegible] into each tube [illegible] and after mixing the tubes are replaced in the wire cage. The wire cage is placed in the water bath and allowed to remain there for half an hour, after which time the cage is withdrawn and placed under running water to cool the tubes to arrest any further ferment action. The ten tubes are replaced in the test tube stand in their original order. By means of the fine dropping pipette two drops of the freshly prepared iodine solution are added to each tube and the mixture shaken.

If the urine is normal tubes 1, 2, and 3 will show a golden yellow colour, indicating that the 2 c.cm. of starch solution added has been completely digested by the diastase present in the urine, whilst tube 4 will have a reddish colour with no tinge of blue, tube 5 a violet tinge, and all the remaining tubes will be deep blue. In such a series tube 4 will give the reading required, since it is the tube where the starch has been digested as far as the dextrin stage. This red-coloured tube is taken as the limit tube when the above dilutions are used. After considerable experience with this method I prefer to adopt this reading rather than the somewhat indefinite mauve limit in Corbett's modification.

The calculation of the amount of diastase in the urine is now a simple matter, the results being expressed in terms of units of diastase. Thus tube 4 gives a red coloration, and shows that 0.1 c.cm. of the urine has digested 2 c.cm. of a 0.1 per cent. solution of starch in half an hour at a temperature of 39° C. Therefore 1 c.cm. of urine will digest

$$0.1 : 2\text{ c.cm. starch} :: 1\text{ c.cm.} : x.$$

This gives a diastase content of 20 units, or, in other words, 1 c.cm. of the urine is capable of digesting 20 c.cm. of an 0.1 per cent. solution of starch in half an hour, or expressed numerally:

$$d\,\frac{39^\circ}{30'} = 20 \text{ or } d = 20 \text{ units.}$$

In dealing with urines from cases of pancreatic disease and the toxaemias of pregnancy, the above method possesses many advantages since the ten tubes give a wide range, and the differences are generally so large that minor errors of dilution, changes in volume of the urine, saline constituents, reaction, and presence of abnormal constituents have very little influence on the result. Thus we see how important it is to adopt a technique with freedom from any external sources of error, and any attempt to depart from this procedure either on the lines of simplification or amplification invariably meets with failure. After an extensive trial with this test on many hundreds of specimens of urine, it has been possible to fix a standard for normal healthy individuals. The normal average value has been found to be 16 units—the maximum being 33.3 and the minimum 10 units—a sufficiently limited range from which to determine whether a given urine is normal or abnormal. The present paper deals with the use of this method for the diagnosis of the toxaemias of pregnancy, where we expect to find an increase of diastase of such a degree that any sources of fallacy are promptly ruled out. All possible fallacies have been considered, and since these apply more especially to the diagnosis of renal insufficiency they will not be given here. The results of these investigations have been already published in papers by the writer dealing with acute nephritis as met with in France during the war.

The scheme of procedure adopted in the maternity department of St. Bartholomew's Hospital is as follows: All cases where albumin has been detected in the urine are investigated on these lines, but where there is great urgency an analysis of the blood and urine is made.

1. A catheter specimen of urine is examined for albumin, casts, and the diastase content.
2. Blood analysis for non protein nitrogen, urea, sugar, etc.
3. Cerebro-spinal fluid for urea, etc.
4. Urea concentration test according to MacLean.
5. Complete urinary analysis on a standard diet.

Normal Pregnancy.

The results of such examinations have shown that in normal pregnancy albumin and casts are absent, and the diastase content lies within the normal limits, 10 to 33.3 units. The blood analysis shows a normal value for urea, namely, 0.02 to 0.05 gram per cent. The blood sugar is also normal, but in cases of glycosuria in pregnancy this is slightly raised. The urea concentration test shows the usual values of 2 per cent. of urea or more. A complete analysis of the urine does not yield any data of value except for purposes of comparison. The chief point elicited is the fact that the normal pregnant woman is in a state of unstable equilibrium as regards carbohydrate metabolism, and the least disturbance evokes the production of acetone bodies, and their appearance in the urine as such.

Toxaemias of Pregnancy.

In the toxaemias of pregnancy the chief feature noted is the very high diastase content of the urine. Apart from diseases of the pancreas this is the only condition where such high values have been found for diastase in the urine. All attempts to incriminate the pancreas have so far failed, and of my "tripod" of tests for pancreatic insufficiency, only the diastase test has yielded positive evidence. There is no abnormality to be found in the blood analysis of these cases, the urea and sugar content being normal. In contrast to the true toxaemias of pregnancy, it is of interest to note that in the much more common neurotic vomiting of pregnancy the urine shows a normal diastase content. The vomiting of course leads to the immediate production and elimination of acetone bodies, and with it a high ammonia coefficient. The ammonia coefficient is often very much higher than in the cases of true toxaemia, and in consequence does not give results of any value either for diagnosis or prognosis. The blood analysis in such cases shows normal values, the urea usually being subnormal.

The most striking differences are to be found in the cases with nephritis in pregnancy, and here the value of the investigations is emphasized. Many of these patients are suffering from chronic parenchymatous nephritis ranging from a mild to a more severe form. The urine shows albumin with very little globulin, casts are generally present, and the diastase content is usually below the normal 10 units. The blood analysis is also of value as the urea content is generally on the high side of normal and in the more severe cases markedly raised. A urea content of over 0.1 gram per cent. should be regarded as unfavourable and such cases are liable to develop uraemia with a fatal termination. The urea concentration test is of value in the mild cases as giving one a ready means of assessing the degree of mechanical damage to the kidneys. It is never tried unless a blood urea estimation has been made previously in view of the danger of increasing the excess of urea already present in the blood and body fluids generally. In ordinary cases of nephritis in pregnancy the urea concentration test has yielded results of value and the results are comparable with the general clinical condition of the patient.

The above conclusions are based upon a fairly complete examination of twelve undoubted cases of toxaemia of pregnancy, and fifteen cases of nephritis in pregnancy. A large number of cases of normal pregnancy and pregnancy with complications have been similarly investigated. The scheme outlined above has been followed in many of these cases, and the results speak for themselves. The mortality from toxaemias of pregnancy and nephritis in pregnancy has fallen to *nil* during the past eighteen months. The observations have taught us that all fits are not eclamptic fits, but may be uraemic, and that the treatment is different in the two conditions. The treatment of true toxaemic vomiting and pre-eclamptic albuminuria of pregnancy along the lines of neutralizing the toxin or toxins circulating in the blood is at present being pursued. I hope that in the future the early signs and symptoms of toxaemia may be recognized and the distressing sequelae prevented. In the diastase test we have apparently a simple and ready means of attaining this end. I wish to express my indebtedness to Drs. Williamson, Barris, and Donaldson, of the maternity department of St. Bartholomew's Hospital, from whom I have received every assistance and encouragement. The actual laboratory work has been done in the pathological department of the hospital under the guidance and with the whole-hearted support of the Director, Sir Frederick Andrewes.

THE DIAGNOSIS OF SPINAL MENINGEAL TUMOUR AND ITS PRACTICAL IMPORTANCE.

BY

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THE diagnosis, especially the early diagnosis, of spinal meningeal tumour is important practically, because by early operation partial or almost complete recovery may sometimes be obtained.

By operative treatment in cerebral tumour permanently satisfactory results are obtained only in a very small percentage of cases. In spinal meningeal tumours the permanent results of operation are very much more frequently satisfactory, and a considerable number of recoveries have now been recorded. Cases of spinal meningeal tumour are rare, and are usually seen, at the early period, by general practitioners. This is the period for successful treatment, and if the practitioner or physician fails to remember the possibility of the symptoms being due to a spinal meningeal tumour the case may be lost. An operation performed after a long period may be too late, and though the tumour may be satisfactorily removed the paralysis may remain. Unfortunately many chronic spinal diseases cannot be arrested by treatment, but in the few that can, early diagnosis is most important. The diagnosis of spinal meningeal tumour is often difficult, and can only be definite after careful neurological examination, and a consideration of the various other spinal affections which might produce somewhat similar symptoms.

In this article the term "tumour" will be used in the clinical sense, and under it will be included meningeal new growths (tumours pathologically), hydatid cysts, gummata, and localized meningeal tuberculous masses. Frequently the exact pathological nature of a spinal "tumour" cannot be decided clinically; the symptoms may be the same in all of these affections, and an operation may be desirable in all forms.

CHARACTER OF TUMOUR AND PROGNOSIS AFTER OPERATION.

Sir William Gowers suggested the removal of spinal meningeal tumours in 1886, and considered the operation would be less dangerous than the removal of a brain tumour.[1] Soon afterwards he advised the operation in a case which he diagnosed as spinal meningeal tumour. The operation was performed by Sir Victor Horsley. The result was permanent and complete recovery.[3] Sir William Macewen also reported successful cases of removal of "connective tissue tumour" in the same year.

Since that date many cases have been operated upon, often too late, but sometimes successfully. I have collected from medical literature eighty-six cases in which the operation may be considered very successful, since it was followed by recovery from the spinal symptoms to a great extent or almost completely.* In this list were included only cases in which practically complete recovery, or very marked improvement, had occurred and been maintained for a long period, so that the patient could walk again. A much larger list could have been collected if less successful cases had been included.

The percentage of permanently successful cases is no doubt small and cannot be estimated from the recorded cases in medical literature, since unsuccessful cases are not recorded. Success depends on early diagnosis and early operation, and also on the surgeon's special skill in spinal operations. No physician or surgeon meets with a large number of cases of spinal meningeal tumour, and few have published the results of a series of very many consecutive cases.

In all cases of spinal meningeal tumour, if specific treatment has failed and the diagnosis is definite and the level of the lesion can be localized, operation is justified, unless special contraindications are noted. The 86 successful cases which I have been able to collect would all have ended fatally, or remained permanently paralysed, if they had not been operated upon. This list is sufficient to demonstrate conclusively the value of operation for spinal meningeal tumour.

It may be asked, Why operate when the tumour, if found, will probably be malignant, and if removed will probably soon recur? But this is not correct. Unfortunately, many of the tumours are malignant, but a greater proportion are non-malignant if we use the term "tumour" in the clinical sense, and include under it cysts, gummata, etc., which produce the same symptoms clinically, and very often cannot be diagnosed from tumours in the strict pathological sense until removed.

Statistics furnish a definite answer to these objections.

1. In 100 cases of spinal meningeal tumour (new growths) which I have collected from medical literature the character of the tumour was as follows:

Spinal Meningeal Growths.

Malignant 52 per cent.—		Non malignant 48 per cent.—	
Sarcoma	30	Fibroma	18
Fibro sarcoma ...	11	Myxoma	13
Fibro myxo sarcoma ...	1	Fibro myxoma	1
Myxo sarcoma	1	Psammoma	9
Psammo sarcoma ...	1	Lipoma	5
Glio sarcoma	1	Angio lipoma	1
Glioma (?)	2	Lymph-angioma	1
Endothelioma	5		

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* Brief notes and references for each case are given in my book on *Diseases of the Spinal Cord* (second impression), London, 1911, and in my abstracts in the *Medical Chronicle*, 1911. References to cases after 1911 may be found in the *Review of Neurology* (Edinburgh) and in the *Journal of Nervous and Mental Diseases*.

If we include fibro-sarcoma amongst malignant tumours, we have 52 per cent. malignant and 48 per cent. non-malignant growths. Further, the growth is usually solitary, and very often it can be easily enucleated or removed if non-malignant. The tumour usually grows slowly. In the malignant cases metastatic growths in other organs very seldom occur. Spinal meningeal tumour is very rarely associated with growths in other parts of the body.

2. As already mentioned the symptoms caused by "tumour" in the clinical sense are often practically the same as those of tumour in the strict pathological sense. "Tumour" in the clinical sense includes cysts, gummata, and tuberculous masses, and in such cases the prospects of successful operation are much greater. In 100 cases of operations, unsuccessful and successful, which I have collected from medical literature, the character of the "tumour" found at the operation, using the term in the clinical sense, was as follows:

Character of "Tumour" in Cases Operated On.

Malignant 55 —		Non-malignant 45—	
Sarcoma	23	Fibroma	14
Fibro-sarcoma	17	Fibro-angioma	1
Fibro-myxo-sarcoma ...	1	Myxoma	1
Myxo-sarcoma	1	Fibro-myxoma	2
Psammo-sarcoma ...	1	Psammoma	6
Glio-sarcoma	1	Lipoma	1
Endothelioma	11	Angio-lipoma	1
		Gumma	1
		Lymph angioma... ...	1
		Hydatid cyst	17

Thus in the cases operated upon the "tumour" found was most frequently sarcoma, hydatid cyst, fibro-sarcoma, fibroma, endothelioma, psammoma.

In addition to the lesions just indicated in this table non-parasitic cyst, serous meningitis, and localized tuberculous masses have been occasionally found, and successful results have followed the operation.

3. The records of cases published in medical literature show that successful results, permanently or for a long period, have been obtained, not only in non-malignant tumours, but also in many cases commonly regarded as malignant.

In 75 *cases in which the operation was successful* and followed by recovery from symptoms almost completely or to a marked extent, so that the patient could walk again, the character of the "tumour" was as follows:

Character of "Tumour" in Successful Cases.

Malignant 39		Non-malignant 36	
Fibro-sarcoma	15	Fibroma	13
Sarcoma	9	Fibro-angioma	1
Fibro-myxo-sarcoma ...	2	Myxoma	1
Myxo-sarcoma	1	Fibro-myxoma	2
Psammo-sarcoma ...	1	Psammoma	5
Glio-sarcoma	1	Lymphangioma ...	1
Endothelioma	10	Angio-lipoma	1
		Hydatid cyst	10
		(Cyst not parasitic) ...	2

Thus we see that successful results were obtained not only in non-malignant cases, but also in many cases of fibro-sarcoma and sarcoma.

Exploratory operation is sometimes justified even in cases in which root symptoms are absent, or in which the symptoms are not quite typical of meningeal tumour. In such cases a growth has occasionally been found and removed with successful results.

EARLY DIAGNOSIS.

The facts just put forward are sufficient to justify the operation for meningeal tumour and to demonstrate its value. This being allowed, the great importance of early diagnosis is evident.

Symptoms.

Attention may be drawn to several features in the symptomatology. Briefly stated, the symptoms of a spinal meningeal tumour are usually (1) root symptoms (pains, often unilateral at first, later bilateral), followed after weeks or months by (2) symptoms of compression of the spinal cord, which may be unilateral at first (Brown-Séquard's paralysis), but are usually very soon bilateral (paraparesis and paraplegia).

The root symptoms are chiefly pains in the sensory distribution of one or two or a few spinal nerve roots, which may be followed in course of time by diminished sensation in the same area as the pain. This pain may be a girdle pain, or pain in one limb, according to the seat of the lesion, and may be followed by localized anaesthesia, or by paresis or paralysis of muscles in one limb, or by both. The pain may be very severe, and may continue for weeks or many months before paresis is noted. The symptoms of compression of the spinal cord in some cases develop slowly, the legs becoming weaker day by day until they are completely paralysed at the end of some weeks or months; in other cases (after the root pains have been severe for weeks or months) complete paralysis may develop rapidly in the course of a few days.

A point of much interest is the condition of the reflexes. At the early stage of paresis or paralysis (from compression of the spinal cord by a meningeal tumour) for a time the chief reflexes may be normal. I am inclined to think they remain normal for a longer time after paralysis has developed than in other spinal diseases. Thus I have found the legs partially and then completely paralysed, and yet for a short period the knee-jerks normal, and no ankle clonus, and no Babinski reflex to be detected. At this stage sensation may be normal, but later the vibrating sensation* may be lost, though other forms of sensation are felt normally. Later the Babinski reflex may be obtained and afterwards ankle clonus. Symptoms of spastic paraplegia develop; or in other cases the knee-jerks and all reflexes are lost and the legs are flaccid. Anaesthesia to touch, pain and temperature develops, and, early or late, the bladder becomes paralysed, and a sacral bedsore may finally develop.

The root symptoms do not extend upwards, and the paralysis, though it increases in intensity (sometimes very slowly, sometimes rapidly), does not extend upwards, or extends upwards only slightly. The symptoms are those of a lesion localized to one or two or a few segments of the cord. They indicate, as the disease advances, increase of the "cross section" intensity of the lesion, without extension upwards in the long axis of the cord. We sometimes find pain on percussion of a vertebral spine, and the patient may suffer pain in the back a little below the level of the growth.

This course of development, root symptoms followed by symptoms of transverse lesion of the cord, is not noted in all cases. Root pains may occasionally be absent, if the growth compresses the cord between spinal roots where the interval between adjacent roots is greatest, as in the dorsal region. But in such cases the mode of advance of the paraplegia is important; the paralysis increases in "cross section" intensity, but does not extend upwards, or does so only to a very slight extent.

DIFFERENTIAL DIAGNOSIS.

In general practice spinal meningeal tumour is often wrongly diagnosed because the disease is rare and is forgotten in considering the differential diagnosis. This is especially the case at the early period, when the chief or only symptoms are "root pains."

We may consider the differential diagnosis in three groups of cases:

I. When "root pains" are noted and paralysis has not yet developed.
II. When paraplegia has developed and has followed definite root pains.
III. When paraplegia has developed, but root pains have been indefinite or absent.

I. *Diagnosis before Paraplegia has Developed, when Root Pains are the Chief Symptoms.*

At this early stage the diagnosis is most difficult, and usually only a probable diagnosis can then be given. The early diagnosis had been stone in the kidney, gall stones, flatulence, and intestinal colic in cases I have seen. In other cases at first intercostal neuralgia has been diagnosed. The following are instances of such cases.

CASE I.—*Root Symptoms similar to Intercostal Neuralgia, followed after Three Months by Gradually Developing Paraplegia.*

A man aged 60, had suffered for three months from pain along the course of the intercostal nerves from the fourth to the sixth on the left side, more recently on the right side also at the same level, without any signs of paresis. But for ten days before I first examined him increasing weakness in the legs had been noted. On examination: Slight weakness in movements of legs, knee-jerks slightly increased; no ankle clonus; no Babinski reflex. Vibrating sensation greatly diminished, almost lost, both legs.

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* In a small percentage of cases at operation the growth is found to be within the spinal cord. Also in this case the operation recommended by Elsberg may sometimes be carried out—the extrusion method—in two stages.

* Tested by a large vibrating tuning fork, the foot of which is placed on the malleolus or on the inner subcutaneous surface of the tibia.

A month later: Paresis of both legs; Babinski reflex both sides; ankle clonus on right side. Abdominal and epigastric reflexes lost; vibrating sensation lost, right leg, below the knee.

Five days later: Ankle clonus and Babinski reflex on both sides. Vibrating sensation lost on both legs; cutaneous sensation very slightly diminished below level of nipples.

I was unable to see the patient after this date, but I heard that he died five months later, complete paralysis of the legs and of the bladder and rectum, and a large bedsore having developed.

CASE II.—*Continued Pain at the Upper Part of Abdomen at first considered ? Flatulence and ? Colic: Paraplegia developed after Seven Months.*

A man aged 65. Continuous pain around upper part of abdomen, between umbilicus and xiphoid cartilage, for four months. Troublesome flatulent dyspepsia and constipation; the pain, however, was very severe and of girdle character. The possibility of the girdle pains of spinal meningeal tumour was carefully considered at first, but no other signs of affection of nervous system, and no impaired sensation in distribution of lower dorsal nerve roots could then be detected. The pain continued and three months later (about seven months from the commencement of pain) retention of urine developed suddenly and was associated with paresis of legs. At this stage the reflexes were normal, but the vibrating sensation was lost in the legs (previously it had been normal). A few days later the Babinski reflex was obtained on each side and the paresis increased to total paraplegia. Anaesthesia to all forms of sensation developed and affected the legs and lower part of the abdomen up to the level of the umbilicus. Ankle clonus developed. A bedsore commenced over the sacrum and extended rapidly. Death occurred in a few weeks.

Cases I and II are examples of the characteristic symptoms of the disease—root pains of long duration, followed in the first case by gradually developing paraplegia, in the second by paraplegia of rapid onset.

Occasionally we may be able to give a "probable" diagnosis of spinal meningeal tumour at the very early stage from the nerve root symptoms, before paresis or paraplegia has developed. This may be possible when the root pains are bilateral and are in the sensory distribution of only a few spinal roots, and are associated with diminished cutaneous sensibility exactly limited to the distribution of these sensory nerve roots. (Tabes should of course be excluded.) In such a case exploratory operation may be occasionally justified and may verify the diagnosis thought probable.

The following is an example of such a case:

CASE III.—*Meningeal Tumour (Sarcoma): Diagnosed and Removed before Paraplegia Developed.**

A man consulted me in the crowded out-patient room on account of "pain in the stomach." Fortunately, he was not dismissed as a case of dyspepsia or intestinal colic. The common causes of abdominal pain could, on examination, be excluded, and on careful inquiry the pain was found to be a girdle pain below the umbilicus and just above each groin. The pain was of three months' duration. He was able to walk quite well; no paresis could be detected and the reflexes were normal except that a Babinski plantar reflex was detected on each side.

A few days later diminished cutaneous sensation was detected on the lower part of the abdomen and upper part of the front of the thighs—roughly in the area supplied by the twelfth dorsal and first and second lumbar nerve roots. Over this area touch with cotton-wool could not be detected. Over the same area sensation for warmth and for pain was lost. In addition, sensation for pain and for cold was lost over the left leg. The bladder and rectum were not affected.

I concluded that the symptoms were probably due to a spinal meningeal growth, which was compressing the twelfth dorsal and first and second lumbar nerve roots and causing the pain and diminished cutaneous sensation in the distribution of these roots, but that the growth had only slightly compressed the spinal cord. An exploratory operation was performed by Professor Sir W. Thorburn, who found a spinal meningeal growth much more extensive than was indicated by the symptoms. This was removed partially, but it was so extensive that the whole of it could not be removed. On microscopic examination I found it was a sarcoma.

Later, unfortunately, paraplegia developed.

In this case the "probable" diagnosis proved to be correct, and had the growth been less extensive and nonmalignant satisfactory result might have followed.

If the root pains are in the arm, cervical rib, primary brachial neuritis, intrathoracic aneurysm, or growth have to be considered in the differential diagnosis.

X-ray examination for signs of cervical rib, aneurysm, or intrathoracic growth may be helpful. From "primary" brachial neuritis the diagnosis at first may be almost impossible, but later this disease can be excluded. In "primary" brachial neuritis the pain is diffuse, and not associated with paralysis, wasting of muscles of the arm, anaesthesia, or changes in the reflexes. The diagnosis of "primary brachial neuritis" can, however, only be regarded as definite when recovery has occurred. If the root symptoms should at first have the characters of brachial neuritis, the longer they continue the more probable is the diagnosis of early meningeal tumour. In cases of pain due to a cervical rib, the localization of pain and diminished sensation in the distribution of the first dorsal nerve root, wasting of the small muscles of the hand, and *x* ray examination are often diagnostic.

The following are notes of a case at first regarded as possibly "primary" brachial neuritis:

CASE IV. *Gumma of Cervical Dura Mater.*

J. K., aged 38, consulted me on account of pain in the left arm of three months' duration. The pain was dull and aching in character, and often very severe. It was diffuse (all over the arm, and not localized to the sensory distribution of any nerve root). There was no wasting or paresis of muscles, no changes in reflexes, no signs of affection of the spinal cord. Syphilis was denied, but later a Wassermann blood reaction was obtained, and antisyphilitic treatment given. After many months in hospital he returned home, no signs of spinal cord affection and no paresis of arm muscles having been observed. Though the question of early meningeal spinal tumour was often considered no definite indications were detected. After being at home for a few months the left arm became rapidly paralysed, and then the left leg, and afterwards the right arm and leg: both legs and both arms becoming paralysed in less than a week.

On examination then the condition was as follows: Complete paralysis of both legs; paralysis of all the muscles of both arms except the deltoid, biceps, and supinator longus; paralysis of intercostals and of the bladder causing retention of urine; breathing entirely diaphragmatic. Anaesthesia to touch, pain, and temperature on the legs, abdomen, and thorax (up to the second rib) and on the inner side of both arms and hands and of both little fingers; impaired sensation over all the rest of left hand except thumb. Owing to the risk of death from complete respiratory paralysis if the changes in the cord spread upwards even to a very slight extent, operation was considered advisable. This was performed by Professor Sir William Thorburn. A "tumour" was found originating from the dura mater in the lower cervical region. This was removed. On microscopic examination it was found to be a gumma.

Rapid improvement followed. The paralysis of the bladder and intercostals and of the right arm and the anaesthesia soon disappeared. But the legs remained paralysed and gradually became spastic. The knee-jerks became increased; Babinski reflex and ankle clonus developed on both sides. In course of time he was able to perform feeble movements with the legs, but was unable to stand. The small muscles of the left hand gradually became wasted and remained paralysed, but the other muscles of the left arm gradually recovered. He finally left the hospital with spastic paresis of both legs and atrophic paresis of the muscles of the left hand.

From sciatica the diagnosis may occasionally be almost impossible at first, but in spinal meningeal tumour (in such cases usually in the region of the cauda equina) the sciatica soon becomes bilateral and other nerves beside the sciatic nerve become affected later: bilateral anaesthesia and paresis in the distribution of the sacral and lower lumbar nerves, and paralysis of the bladder develop.

II. *Diagnosis when Paraplegia has Developed after Definite Root Symptoms.*

In these cases the differential diagnosis from other spinal affections causing paraplegia has to be considered. Only the main points can be mentioned here.

From spinal syphilitic affections the diagnosis is often difficult, as the symptoms in the different forms of spinal syphilis vary much. A history of previous syphilis, a Wassermann blood reaction, improvement under antisyphilitic treatment, definite syphilitic lesions in other systems besides the nervous system, would all be in favour of a spinal lesion being syphilitic, but would not be conclusive. Certain peculiarities of the spinal symptoms in the various forms of spinal syphilis, in addition to the indications just named, would, however, increase the probability of these affections, and be helpful in the diagnosis. In acute syphilitic "myelitis" root symptoms are absent or slight, and the onset of the paraplegia is rapid. In syphilitic meningo-myelitis and in meningeal gumma the root pains (especially in the former) are over a wider

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* Reported in detail in the *Clinical Journal*, 1919, No. 12.

area and not limited to one or two spinal segments. Also we often find signs of other and more diffuse changes, or of several spinal lesions, and often the development of symptoms is not so steadily progressive; periods of sudden increase or diminution of the symptoms often occur. In rare cases the symptoms of gumma are practically the same as those of meningeal tumour, and if such cases have resisted antisyphilitic treatment, or if urgent symptoms have developed, as in Case IV, operation is justified.

In spinal pachymeningitis the pain is usually bilateral from the first, and has a much greater vertical extent than in meningeal tumour. A long duration and considerable improvement are in favour of pachymeningitis.

Localized serous spinal meningitis has frequently been mistaken for spinal meningeal tumour, but the former affection has little tendency to advance; great fluctuations occur in the symptoms, which also indicate a considerable vertical extent of the affection.

From myelitis the diagnosis is usually easy. If marked root pains limited to a few spinal segments occur for a considerable time before the paralysis, this is in favour of meningeal tumour. In myelitis such symptoms do not occur, or they are slight and are only noted for a very short time before the onset of the paralysis. In meningeal tumour, after the root symptoms have been noted for a considerable time, the paralysis may develop either slowly or rapidly. In myelitis the paralysis usually develops rapidly. Symptoms indicating extension of the lesion in the vertical direction would be in favour of myelitis.

In spinal caries the root pains are not so severe, and are of shorter duration; the root pains and paralysis are nearly always bilateral from the first, or become so exceedingly rapidly. Hence root pains, which are very severe, and are unilateral for a long period, are in favour of meningeal tumour. Pain or tenderness extending over a number of vertebrae would be in favour of meningeal tumour rather than caries. Often pain is caused or increased by pressing on the head or shoulders, or by spinal movement, in caries, but not in meningeal tumour as a rule, and when increased by movement in the latter disease the increase is slight. One or more prominent vertebral spines are often detected in caries (and generally so in cervical caries), or the x-ray examination shows signs of caries. Rigidity of the back and localized spinal hyperaesthesia to a sponge soaked in hot water, signs of tuberculous disease in other parts, psoas abscess, or abscess near the spine, evening elevation of temperature, and general wasting, would all be points in favour of caries.

The diagnosis from tumour in the vertebrae may be very difficult. Localized tumour or deformity in the spine, if caries can be excluded, pain increased by movement, and [illegible] in movement, would be in favour of vertebral growth. In this disease pain on movement is greater than in meningeal tumour. Marked localized tenderness on pressure or percussion at the seat of the growth is almost always [illegible]. In meningeal growth it is often entirely [illegible]. [illegible] in vertebral tumour the patient suffers from pain in the spine as well as in the distribution of the [illegible] affected. X-ray examination may show [illegible] of a growth connected with the vertebrae or [illegible] growths may be found in the back or in other parts of the body.

[illegible] malignant and metastatic, which [illegible] in other parts of the body [illegible] occur in the spinal cord or [illegible].

The symptoms of tumour within the spinal cord (intramedullary) are those of a transverse spinal lesion of gradual [illegible], and root symptoms are usually absent or slight. [illegible] for pain and temperature, whilst [illegible] is preserved, would be in favour of tumour within the spinal cord. The differential diagnosis is often very difficult, but on [illegible] we should remember that tumours developing within the vertebral canal [illegible] the [illegible] and [illegible] the spinal [illegible].

In the diagnosis of meningeal tumour from syringomyelia [illegible] growth within the cord [illegible] the following points are also of service. Root symptoms (pains, etc.) are usually absent in gliosis. Vasomotor and trophic symptoms in the skin, bones and joints are in favour of gliosis. In gliosis, as the changes advance, the symptoms indicate an extension of the disease chiefly in the vertical direction; in extra-medullary tumour chiefly in the transverse direction. If the symptoms are for a very long period those of Brown-Séquard's paralysis, or if the symptoms increase exceedingly *slowly*, or remain for a very long period stationary, these would be points in favour of gliosis.

The diagnosis between meningeal tumour affecting the cauda equina and tumour within the cord, at the conus terminalis, is very difficult; but severe pain, pain preceding other symptoms, and asymmetrical anaesthesia later, are points in favour of the former disease.[3]

III. *Diagnosis when Root Symptoms have been Indefinite or Absent.*

As already stated, Schultze and others have shown that pain is sometimes absent or slight in meningeal tumour. When, however, the symptoms indicate that the lesion of the spinal cord is progressive and transverse; that it is steadily increasing in "cross section" intensity, but that the upper limit of the lesion remains stationary, or at least extends upwards very little, we are justified in suspecting extramedullary spinal tumour. This opinion is supported by the results of exploratory operation in a number of cases.

Lumbar puncture may occasionally be of service, since tumour cells have been found in the puncture fluid in rare cases of meningeal tumour. Yellow colour of the puncture fluid (xanthochromia) is regarded by some observers as an indication of spinal tumour, especially if associated with increase of globulin but without increase of cells.

Signs of tuberculous disease, evidences of syphilis, or hydatid cysts in other parts, may give some indication as to the probable form of the spinal meningeal "tumour."

Hydatid.—The symptoms of spinal meningeal hydatid cyst are practically the same as those of meningeal tumour, but the diagnosis is sometimes possible when hydatid cysts are found in other parts of the body. Occasionally a small subcutaneous cyst has been found on the back close to the spine, and when punctured hydatid hooklets or scolices have been found in the puncture fluid, and operation has revealed also spinal meningeal hydatid cysts. Spinal hydatids are usually meningeal, and most frequently extradural. They are particularly suitable cases for operation. In the 75 successful cases of operation for meningeal "tumour" already tabulated, 10 were hydatid cysts.

The following is a brief abstract of a case:

CASE V. *Symptoms of Meningeal Tumour caused by Spinal Extradural Hydatid Cysts. Operation: Partial Recovery.*[4]

A woman had severe pain in the back and dorsal region for three weeks, then complete paralysis of the legs gradually developed with anaesthesia of the legs, abdomen, and lower part of thorax up to the fifth rib. A small subcutaneous cyst was detected in the back to the left of the third and fourth dorsal vertebral spines. It was punctured, and the fluid was found to contain hydatid hooklets. A diagnosis of other meningeal hydatid [illegible] within the vertebral canal was made. Dr. [illegible], surgeon to the Ancoats Hospital, operated and removed fourteen hydatid cysts, which were in the vertebral canal on the outer side of the dura mater. Improvement followed rapidly. In twelve months she was able to walk with the aid of a stick. When last seen, six years after the operation, she felt quite well. The legs were spastic, but she was able to walk to the hospital with the aid of a stick, and was still slowly improving.

SUMMARY.

In the diagnosis of spinal meningeal tumour the following points may be specially emphasized:

1. Persistent localized root symptoms (girdle pain or pain in one limb), *followed after a considerable time* by paraplegia of gradual or rapid onset, should always lead to a very careful consideration of the probability of spinal meningeal tumour, especially if the cord symptoms increase in "cross section" intensity but do not ascend, or only ascend very slightly.

2. In certain rare cases the root symptoms (pains) may be absent, but in such cases the motor and sensory cord symptoms steadily increase in "cross section" intensity but do not extend upwards.

3. Persistent abdominal or thoracic pain, if bilateral or of a girdle character, even if signs of paresis of the legs cannot be detected, should lead to a careful examination of the chest or abdomen for zones of diminished sensation

(tested by cotton-wool). If such should be detected, and if they correspond to definite root areas, meningeal tumour should be carefully considered. Also brachial "neuritis" of very long duration should lead to a careful consideration of the possibility of spinal meningeal tumour.

Spinal meningeal tumour is a rare disease, but not so rare as is generally believed. Closer consideration of this affection in the differential diagnosis at the early period of chronic spinal diseases would lead more frequently to its early recognition and to early successful operation.

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THE OCCURRENCE OF URTICARIA AFTER SPECIFIC FEVERS.

BY

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WHEN in general practice some years ago I frequently noted the occurrence of urticaria after specific fevers, especially pneumonia and clinical influenza. Other practitioners tell me they have noticed the same phenomenon, so perhaps it is worth recording.

The eruption usually occurs within a day or two after the temperature has become normal, but sometimes a few weeks later; it may be so transient as hardly to be noticed by the patient, or, on the other hand, persistent and troublesome. I estimate that it occurred in quite 20 per cent. of my pneumonia cases, but as a number of these were not observed with sufficient accuracy to be sure the eruption was not present at some time or other, it is possible the percentage is considerably higher. Sometimes a slight pyrexia coincided with the rash, and occasionally also pains in the joints.

Illustrative Cases.

CASE I.

Fig. 1 shows the chart of a male patient aged 22. On December 22nd, 1912, he had a rigor; typical signs of pneumonia were detected on December 24th in the right upper and middle lobes. The temperature subsided by crisis on December 28th–29th, but there were a few slight fluctuations subsequently. On December 31st a sparse blotchy erythematous and urticarial eruption appeared over the abdomen and limbs; on the limbs confined mainly to the extensor aspects of the elbows and knees. By January 4th the rash had gone.

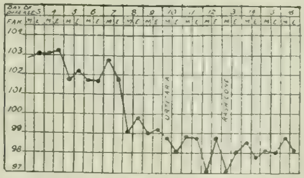


FIG. 1.

CASE II.

Fig. 2 shows the chart of M. M., a well built railway worker of 46. At the onset there was a rigor, then headache, malaise, pain in the back and limbs, and epistaxis (twice). Definite signs of pneumonia were first detected on the seventh day of the illness at the right base. The temperature subsided on the eleventh and twelfth days by a rather prolonged crisis; the attack was a severe one. Ten days later, the twenty-second of the disease, general muscular pains were complained of. The calves and biceps were noticed to be tender to pressure on the twenty-fifth day, and from this to the forty-seventh there was occasional slight pyrexia. All pains disappeared, and there was an uninterrupted recovery after the forty-seventh day. On the fifty-first day an itching, coarsely macular rash appeared, mainly a pure erythema, but in places urticarial, and with much the same distribution as noticed in the previous case. Within twenty-four hours the eruption had disappeared.

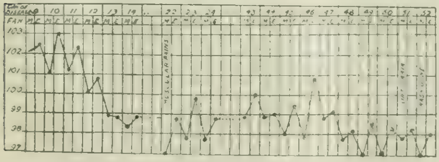


FIG. 2.

CASE III.

W. S., a man aged 29, had an attack of influenza with pyrexia lasting about seven days, but never exceeding 101°. On the eighth day, the day after the temperature had become normal, an erythematous and urticarial eruption appeared, lasting about thirty-six hours.

I have noticed a similar occurrence in several influenza cases; it seems unnecessary to give details. The eruption was of much the same nature and distribution as already described, but varied in extent and duration. Other rashes were noticed occasionally about the time of onset of the disease, but this was a late eruption. I have also seen a similar urticarial rash six days after the onset of varicella in a girl of 14; and again eight days after the first appearance of a measles eruption.

In the following cases, for the account of which I am indebted to Dr. Parkinson of Horncastle, post-febrile urticaria was not such a transient affair as in those already narrated.

CASE IV.

A man, aged 65, with no previous history of urticaria or of any other illness, was attacked suddenly with headache and generalized pains, especially in the back of the neck and behind the eyes. The temperature ranged from 101° to 102° for two days, then gradually subsided to normal. The attack seemed a typical influenza. Seven days after the fever subsided a severe urticarial eruption appeared on the arms, legs and abdomen. Some of the patches might have been called "urticaria gigas"; and there was also dermatographia. The trouble resisted treatment by dieting, calcium salts, aperients and local applications for over six weeks. At the time of its disappearance he was taking 3 grains of ichthyol three times a day, but it cannot be stated whether this was connected with the disappearance or not.

CASE V.

O. C., a girl, aged 21, developed a severe sore throat, with pains in the back and limbs, which was at first thought to be diphtheritic, but later streptococcal. The temperature rose to 103°, but subsided in a few days; joint pains, however, persisted for fourteen days. Ten days after the temperature had become normal a severe, typical urticarial eruption appeared and lasted for a week, subsiding ultimately under treatment with aperients and alkaline baths.

Discussion.

The question of coincidence must of course be considered when dealing with such a common condition as urticaria. Out of 8 cases in which the previous occurrence of urticaria was investigated, a positive history was found in one only. On the whole, I think coincidence can be excluded in the majority. Nor can it be said that the eruption was a drug rash, for widely different treatment had been adopted in some of the cases.

1. The time at which the eruption occurs suggests its association with the development of immunity, as if the mechanism of immunity, after defeating the invader, proceeds further, and urticaria results.
2. The concomitant occurrence of joint pains and slight pyrexia suggest anaphylaxis, which might be related to the disposal of pathological by-products after resistance has developed.
3. The relation of urticaria to calcium salts and of calcium metabolism again to immunity gives food for further speculation.

I could find no mention of this post-febrile urticaria in any literature available to me at the time these observations were made, nor, to my knowledge at any rate, has anything since appeared on the subject.

THE Red Crescent, which takes the place of the Red Cross in Turkey, developed considerably during the war. It had under its charge 17,110 beds, in which [illegible] wounded cases were treated. It also opened popular kitchens, in which 35,000 indigent persons were fed, and an infirmary and out-patient department for children.

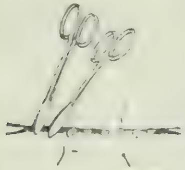
A NEW Spanish journal devoted to [illegible] and syphilis, entitled [illegible], has recently been founded at Madrid under the editorship of Dr. Sicilia.

SKIN APPOSITION WITHOUT SUPERFICIAL SUTURES.

BY

FRANK HATHAWAY, M.D.,
Surgeon, King Edward VII Hospital, Windsor.

WHEN closing an incision it is only necessary to bring the edges of the skin accurately together. A good scar depends upon accurate skin apposition. A method which will do this without sutures will save time and trouble. I have found I get more perfect scars by the following method: Put two or three deep sutures, depending on the size of the wound, through fat and skin, but do not tie them. Take each end of the incision with a pair of artery forceps and pull taut. Rapidly clamp the skin edges with artery forceps, starting at one end; the forceps are to be about a quarter of an inch apart, and should take each skin edge accurately in its grip. The forceps hold in their grip about a quarter of an inch—of skin above, and skin and fat below. The forceps are carried along the whole length of the incision, and are held by an assistant as they are clamped. When the last is in position, the first is taken off, and then the second, and so on along the whole length of the incision. The skin will be found to be tightly glued together. The deep sutures are then tied over a roll of gauze, as in an ordinary bonbon dressing.



The advantages of skin clamping are (1) accurate skin apposition with no turning in of skin, (2) rapidity, (3) very few stitches to remove. The results in my experience and in that of those who have tried this method are excellent, and a most perfect scar can be obtained.

It might be asked: "Is there no sloughing of skin?" I have used the method extensively and never seen sloughing happen. The mark of the artery forceps remains for about fourteen days, and then disappears.

The disadvantage is that occasionally a part of the wound gapes and requires a suture, and I have not found it successful in very fat people, over the symphysis pubis, and in [illegible] tissue. On the other hand in certain places, such as the neck, where the incision is in the line of cleavage of the skin, no deep sutures are necessary, skin clamping being alone sufficient.

I first tried this method some years ago with circumcision, clamping skin and mucous membrane without any sutures, and finding the result admirable I have extended it to every variety of incision. I experimented with an instrument made with a blade one inch in length, but have not found it nearly as successful as simple artery forceps.

My partner and colleague, Mr. H. L. Martyn, F.R.C.S., who has often used this method, and is most enthusiastic about it, has kindly prepared a drawing reproduced above showing the artery forceps in position.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FREE GAS IN THE PERITONEUM AND SUBSEQUENT SUBCUTANEOUS EMPHYSEMA.*

It is recognized that general subcutaneous emphysema is a rare complication of perforation of the stomach from ulcer. [illegible] was the first to call attention to cutaneous emphysema after solution of continuity occurring in the stomach or the intestinal tract. He showed that perforation of the gastro-intestinal tract, followed by the entrance of gas into the free abdominal cavity, may lead to cutaneous emphysema if at the same time the parietal peritoneum is injured as, for instance, after perforating wounds of the abdominal wall and the intestine, or traumatic lesions of the parietal peritoneum and the intestines, even without perforation of the abdominal wall. In the case here recorded there was nothing in the previous history suggesting a gastric or duodenal ulcer, and the patient had not sustained a recent trauma. That it was a perforation is, I think, obvious, but it was surely of an unusual type, and the sequelae were remarkable.

E. W., male, aged 54, was admitted into the Royal South Hants and Southampton Hospital on October 31st, 1917, with a diagnosis of intestinal obstruction. The history he gave was that he had had no action of his bowels for four days prior to admission, and he had occasional vomiting, indefinite pain and increasing distension of his abdomen. His temperature was normal, pulse 90. On examination, his abdomen was greatly distended and tympanitic all over. There was no visible peristalsis. On palpation there was indefinite tenderness, but nothing else to specially note. Rectal examination was negative. An enema was returned unaltered, and no flatus was passed. From the age of the patient, the history, and the physical signs, the provisional diagnosis was adhered to and laparotomy was forthwith performed. A middle line incision below the umbilicus was made, and as soon as the peritoneum was opened there was an immediate rush of odourless gas and the abdomen went down flat. There was a singular lack of fluid in the peritoneal cavity, and the intestines were collapsed. A perforated gastric or duodenal ulcer was sought for in vain, and no other lesion could be discovered to account for the free gas. As there was no fluid or other infective material present the abdomen was closed without drainage.

A remarkable thing now happened in that twelve hours later the patient was almost unrecognizable. The incision into the peritoneum had permitted the escape of gas into the subcutaneous cellular tissues, and the gas had infiltrated in these tissues from head to foot. His eyes were closed with the swelling of the lids, and breathing was becoming difficult. He was taken down to the theatre immediately, some stitches were removed and a tube inserted into the peritoneal cavity. Thereafter he made an uninterrupted recovery, the emphysema rapidly clearing up. The tube was removed on the sixth day, the wound healed rapidly, and he was discharged from the hospital on December 1st, 1917.

I am indebted to Mr. J. R. Keele, senior surgeon to the hospital, for permission to publish the case.

H. G. G. NELSON, M.D.Edin.,
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ARREST OF GROWTH IN "INOPERABLE CANCER OF THE JAW."

I SHOULD like to draw attention to the changes that have taken place in two cases of inoperable cancer of the jaw under my treatment in this hospital.

1. H. M., aged 68, was admitted on May 12th, 1919, with an epithelioma of the dorsum of the tongue, accompanied by very enlarged glands in the neck. He was unable to take anything beyond small quantities of fluid. He gave a history of severe haemorrhage, and his condition had been reported inoperable at the General Hospital. Two days later I was called to see him for severe haemorrhage, and found him apparently dying. I injected a phial of pituitary extract [illegible] into the growth of the tongue, and all bleeding stopped at once, and did not recur. I noticed a decided decrease in the size of the glands, and no further enlargement or ulceration of the growth. I gave him some further injections. He put on flesh; no enlargement of new glands occurred, and he could take food with comfort. He remained nine months in this state, and then secondary nodules in the liver appeared, and although the primary growth became no larger, the one enlarged gland increased in size. He died on April 7th, 1920, [illegible] eleven months after the [illegible] severe haemorrhage in this hospital.

2. J. F. B., aged [illegible], admitted March 10th, 1920, had been seen at the Bristol Royal Infirmary and General Hospital, and pronounced inoperable by the surgeons. He had a large growth involving the tongue, extending up the left side of the lower jaw, and there was a fungating growth on the neck; all the tissues of the chin were infiltrated and presented small truffle-like excrescences. He gave a history of frequent and severe haemorrhages, and he had a further severe one in the ambulance on the way to this hospital. The growth had first been noticed sixteen months previously. He was emaciated, very bloodless on admission, and there was a horrible fetor of the mouth. I was again called to see him because of a very severe haemorrhage. I at once injected a phial of pituitary extract into the growth round the tongue; the bleeding ceased at once, and the [illegible]. This has continued under injections given [illegible] a week. He can now move his tongue freely, and [illegible]. The growth in the neck has shrunk to the size of the [illegible]. There [illegible] purulent discharge, but [illegible] from the [illegible]. He can eat solid food, has put on weight, has [illegible] appearance and there is no haemorrhage. These injections cause a little pain at the time, [illegible] lasting two minutes [illegible], and then [illegible] quite all right. Sections of the growth made at the Royal [illegible] demonstrated malignancy [illegible]. He has little [illegible] enlarged gland.

I venture to record these two cases in the hope that others will try this treatment, which is almost painless, and which may lead to further experiments for the relief of these terrible cases, and possibly solve the problem of prevention of the recurrence, through the glands, of malignant growths after operation.

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* [illegible] of the Stomach.

R. H. NORGATE, M.R.C.S., L.R.C.P.,
Medical Superintendent, Bristol Poor Law Infirmaries.

Reviews.

RHEUMATISM AND ARTHRITIS.

PROFESSOR STOCKMAN's researches on chronic rheumatism and fibrositis are so well known that the reader will naturally be attracted to his recent work on *Rheumatism and Arthritis*,[1] and will there find the results of much investigation—pathological, clinical, and literary—clearly and independently set forth. Acute rheumatism is first dealt with, and in the division of the cases into two clinical types—(*a*) the more acute with prominent joint symptoms, very amenable to salicylates, and not so prone to relapses or sequels as (*b*) the less acute, prone to attack the periarticular and other fibrous structures—a sharper distinction is drawn than has previously been the custom. In this connexion Professor Stockman advances an interesting speculation: he asks whether the two clinical forms, like typhoid and paratyphoid, may not be due to different strains of the causal organism. In discussing the pathology, Professor Stockman suggests that the rapid disappearance of acute synovitis is due to local immunity resulting from the accumulation of antibodies in the joints. The subcutaneous nodules are shown to be structurally identical with the warty excrescences on the cardiac valves and the myocardial lesions.

The other ten chapters contain records of much original investigation; this is notably the case in the section on chronic rheumatism or fibrositis, in which the histology of the indurations due to inflammatory hyperplasia of the white fibrous tissue is minutely detailed and well illustrated. It is pointed out that these fibrous thickenings in chronic muscular rheumatism were described in 1816 by William Balfour of Edinburgh, who also recommended frictions as the proper treatment, but that this observation was neglected for nearly a century, until, in fact, 1904, when the late Sir William Gowers introduced the term "fibrositis," and the author published a detailed account of the whole condition, including its histology. It is due to various causes—namely, rheumatic fever, tonsillitis, influenza, gonococcic septicaemia, and mucous colitis.

A chapter is devoted to panniculitis or subcutaneous fibrositis, in which there is chronic inflammation of the alveolar tissue of the panniculus adiposus, including the nerve filaments and blood vessels. It is essentially the same as fibrositis, with which it may be combined, but it is commoner. There are multiple painful fibro-fatty tumours, and when combined with obesity some of these cases have been recorded as Dercum's adiposis dolorosa, which, however, is a syndrome covering several conditions of different etiology. In 1891 Josephson described panniculitis, but until recently it has not been recognized out of Sweden. Dupuytren's contraction is described in a separate chapter, but without any reference to the association with pads on the fingers pointed out by Sir A. E. Garrod.

Chronic non-suppurative arthritis or chronic articular rheumatism, though regarded as probably part only of a general infection, is on clinical grounds divided into (1) rheumatoid arthritis and (2) chronic infectious arthritis, the latter containing the cases called Still's disease. It is noteworthy that the author does not insist on the importance of focal infections from the point of view of either etiology or of treatment.

Although heading his chapter on the subject "Purpura rheumatica," Professor Stockman regards this condition as probably a general infection with a well marked tendency to cause small haemorrhages and synovitis, thus agreeing with J. H. Pratt in his masterly article in Osler and McCrae's *System*, where the mistake of regarding rheumatism as a factor is clearly exposed.

In the account of gonorrhoeal rheumatism treatment by vaccines is described without any enthusiasm, but no reference is made to protein shock therapy by the intravenous injection of typhoid vaccine. The article on chronic osteo-arthritis, or arthritis deformans, is clear and copiously illustrated. Other chapters deal with Heberden's nodes, arthritis of known causation, coxa vara, hypertrophic osteo-arthropathy, and nervous arthropathies. The historical matter forms a valuable and attractive feature of a monograph rich in personal observations.

ANATOMY AS IT SHOULD BE.

WE are by no means straining the meaning of our words when we say that Professor WOOD JONES, in his *Principles of Anatomy, as seen in the Hand*,[2] has placed to his credit one of the most notable contributions ever made to the literature of British anatomy. Although his outstanding ability has been known to his immediate colleagues for years past through his scientific memoirs and books, this is the first occasion on which he has made an appeal to the medical profession as a whole, an appeal which, in our opinion, should place him in the first rank of British anatomists.

This book of his challenges comparison with a book which was a classic in its day—Sir Charles Bell's *The Hand, its Mechanism and Vital Endowment as Evincing Design*, published in 1833. In both books the hand is used as a text for a series of crisp sermons; but whereas Bell used the hand as a mere pretext for a series of rambling anatomical excursions among living and extinct animals, our present author sticks closely to his text, and uses the anatomy and mechanisms of the hand as a means of expounding the principles with which medical students and medical men must be familiar if they wish to understand the structure and working of the human body. In both books we find that their authors are excellent draughtsmen; in both we find ease and felicity of expression; in both there is the same record of acute personal observation made during a close study of living mechanisms; in both there is the same profound desire to fathom the secrets of the brain and nervous system. The differences between the two works are largely the result of the times in which they were written: the one appeared in the pre-Darwinian period when anatomy was studied for evidences of a designer; the other has appeared in a period when anatomists are using anatomical characters as signposts to man's origin. Hence, in our modern author, we find an eye which is alert to "signpost" anatomy; he recognizes that each feature and structure of the hand has its own history, and that it is the business of the anatomist to unravel these histories.

But Professor Wood Jones is imbued also with a spirit which is being revived among British anatomists—to study the living body in order to discover the functional significance of its structural characters. In reality this is a return to a pre-Darwinian point of view, to the outlook of Hunter and of Bell, and there cannot be a moment's doubt as to the gain which is to accrue to modern medicine from such a revival. The reader has only to turn to the later chapters of this book, where the author deals with the muscles and movements of the hand, and with the hand as a sense organ, to see how much practical medicine is to gain by the modern revival of functional anatomy. No doubt the circumstances under which this volume came to be written have determined the practical nature of its contents, for it represents the substance of a course of lectures given to officers of the R.A.M.C. at the special military hospital at Shepherd's Bush.

A brief extract will serve to show the outstanding character of the book—one taken from the chapter on "The Hand and Brain."

> We will not agree with anyone who lauds the human hand as an example of human anatomical advances and perfection, but we will agree with any admirer of his own species who claims that as a cortically controlled structure the human hand affords striking evidence of Man's superiority over all the other members of the mammalia. It is not the hand which is perfect, but the whole nervous mechanism by which movements of the hand are evoked, co-ordinated, and controlled. In one thing Man certainly shows marked anatomical advance from conditions of basal mammalian simplicity—in one feature every monkey and ape compares but ill with him, and this is the wonderful development of the cerebral cortex.

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[1] *Rheumatism and Arthritis*. By Ralph Stockman, M.D., Professor of Materia Medica and Therapeutics in the University of Glasgow and Physician to the Western Infirmary. Edinburgh: W. Green and Son, Ltd. 1920. (Pp. 132: 110 figures. Price 15s.)

[2] *The Principles of Anatomy, as seen in the Hand*. By Frederic Wood Jones, Professor of Anatomy in the University of Adelaide. London: J. and A. Churchill. 1920. (Med. 8vo, pp. 325; 2 plates, 123 figures. 15s. net.)

This extract serves to illustrate the attitude adopted by the author towards the anatomical problems of the human body. While several of his statements—particularly some relating to the anatomy of monkeys and anthropoids—are open to criticism, such defects in no wise detract from the service which Professor Wood Jones has rendered to medical students, medical men, and teachers of anatomy, for he has written a book which will repay all of them to read and digest.

RECONSTRUCTION THERAPY.

A PERUSAL of Dr. DUNTON's book on *Reconstruction Therapy*[3] will give some idea of the amount of enthusiasm, thought, and energy which has been put into the study and practice of this handmaid of medicine in recent years in the United States. Dr. Dunton is instructor in psychiatry in the Johns Hopkins Hospital, and his primary interest is in the treatment of the mentally afflicted, for whom he strongly recommends occupational treatment, both physical and mental; but he is equally an advocate of physical training for all sorts of cripples, and recommends the appointment of a special director to organize and superintend it in every large general hospital. The uses of games and other amusements also come within his scope. The design and equipment of workshops and prosthetic appliances are dealt with in separate chapters, as are occupations for the feeble-minded and for the blind. On all these and other subjects Dr. Dunton has useful information and valuable advice to bestow, while further help can be obtained by consulting the copious bibliography at the end of the book.

Mr. TIMBERG's little book on *Home Exercises for Spinal Curvatures*[4] contains plain and explicit directions for the performance of a number of exercises of the trunk and limbs, which are likely to be at least as beneficial to the normal boy or girl as to those who suffer from spinal deformities. It can hardly be expected that such exercises should exert much influence on a curvature which is already accompanied by structural changes, but they cannot fail to benefit the muscular tone of the body and the general health of the patient. Mr. Timberg is certainly wise not to recommend any more specialized exercises for home use, because even the experienced surgeon or physicotherapist cannot always be sure that a given asymmetrical exercise does all good and no harm, and that while correcting one feature of a complex deformity it may not aggravate another. This danger can only be averted by the constant watchfulness of the trained observer. The illustrations are very clear, and the programmes of exercises at the end of the book should prove useful to those who wish to prescribe courses to their patients.

MANUALS OF OBSTETRICS.

IN preparing the second edition of his *Manual of Obstetrics*,[5] Dr. EDWARD P. DAVIS has subjected the original text to careful revision, and has made some valuable additions. He has been careful to impress upon his readers the paramount importance of asepsis in obstetric work. Not only has he inserted a special chapter on the subject, but refers to it in describing each manipulation. The criticism to which the volume as a textbook for students appears to be open is that sufficient prominence is not given to the main essentials. By this we mean that a reader not already conversant with the subject might have difficulty in picking out the most vital points, while much space is devoted to matters of relatively small importance from the practical point of view. As an example, it may be noted that the operative treatment of eclampsia is discussed in a few lines and the part played by retained products in causing *post partum* haemorrhage is merely mentioned. Since so much interest has recently been aroused in the use of scopolamine-morphine in labour, we should have been glad to find more on the subject. Dr. Davis provides a concise account of fetal pathology and injury, but he has not done justice to the subject of infant feeding, which ought to receive attention in an obstetric textbook. The treatment of infant restlessness and discomfort with castor oil or by intestinal irrigation is not generally to be recommended; the meconium has an important physical action, and Nature does not normally dispose of it until something is ready to take its place. The book is clearly written, though there are several unnecessary repetitions. There are a good many illustrations, most of them diagrammatic, and three coloured plates.

Dr. JOHN HIRST, too, has written a *Manual of Obstetrics*,[6] designed for the student. The description of his technique in the management of obstetrical cases is clearly set forth, and the illustrations will help the student through many difficulties. There are, however, some statements open to criticism. The author considers vaginal plugging useless for the control of accidental haemorrhage, and prefers rapid delivery. Unless efficiently carried out, vaginal plugging is indeed useless, but if the method taught at the Rotunda Hospital is followed, the results are known to be satisfactory. In a persistent occipito-posterior presentation rotation of the head with forceps is not without danger. A fetal mortality of 30 per cent. in breech deliveries is too high; old statistics would, no doubt, give that figure, but in these days the mortality (in labour) even with primiparae cannot be more than 11 per cent. We doubt the policy of giving diluted condensed milk to infants in the interval before the mother's milk appears. Nature has so arranged that not even human milk is available for a day or two, and the giving of a foreign substance such as condensed milk at that period of life may upset the child's digestion. Diseases of the puerperium are well discussed; in cases of puerperal sepsis the use of antistreptococcal serum is advocated. The various operations performed in obstetric practice are clearly described and the indications for their performance are carefully outlined. The reference to the use of forceps in cases of uterine inertia, however, is very questionable, because no distinction is drawn between primary and secondary inertia.

NOTES ON BOOKS.

DR. ESTHER HARDING's thesis for the M.D.London degree, on *Circulatory Failure of Diphtheria*,[7] is a genuine piece of work based on the observation of 8[illegible]0 cases of diphtheria at the Plaistow Hospital and inspired by the late Dr. John Biernacki, to whom it is dedicated. In addition to much clinical research the thesis shows a thorough knowledge of the literature and evidence of much thought in the discussion of the complex problems of circulatory failure in the infectious fevers. In diphtheria the specific gravity of the blood rises in spite of the fall of blood pressure, and oligaemia due to escape of the fluid content of the blood into the tissues is the fundamental factor in the circulatory failure, the oligaemia of the central nervous system being of the greatest importance.

SIR EDWARD SCHAFER'S *Essentials of Histology*,[8] first published thirty-five years ago, has now reached its eleventh edition. The merits of this manual are now so well known that praise is superfluous. It serves both as a guide giving directions for the practical work of the student of histology and as a textbook of moderate dimensions, comprising all the essential facts of the science. For purposes of class work the arrangement in fifty lessons is preserved; a few preparations whose omission (although they are not suitable for class use) would injure the completeness of the work are also included. The appendix contains full directions for the preparation and use of preserving and staining reagents, only those methods are recommended on which the author's experience has proved that reliance can be placed. The excellence of the numerous coloured and other illustrations is well known.

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[3] *Reconstruction Therapy.* By William Rush Dunton, jun., M.D. [illegible]

[4] *Home Exercises for Spinal Curvatures.* By Gilbert Timberg [illegible]

[5] *A Manual of Obstetrics.* By Edward P. Davis, A.M., M.D. [illegible] plates. [illegible] net.)

[6] *A Manual of Obstetrics.* By John Cooke Hirst, Associate in [illegible] Pennsylvania. Phila[illegible] W. B. Saunders Company [illegible] net.)

[7] [illegible] *Failure of Diphtheria.* A thesis approved for the [illegible] the Univer[illegible] 10s. 6d. net.)

[8] *The Essentials of Histology* [illegible] By Sir E. A. Schafer, F.R.S. Eleventh edition. London: Longmans, Green and Co. 1920. (Med. 8vo, pp. [illegible]; [illegible])

Professor E. BRESSLAU'S *Mammary Apparatus of the Mammalia*[9] is an admirable summary of the views which have been developed by this zoologist as a result of prolonged study of the milk gland and its accessory structures. The book is extremely well put together, and can be read from cover to cover with enjoyment. After examining Semon's embryos of *Echidna*, the spiny ant-eater, and many of Professor Hill's marsupial embryos, as well as much other material, he finds that there is an essential unity common to all the three great divisions of the mammalia—the monotremes, marsupials, and placental mammals. In all of these the earliest rudiment—the "primary primordium," as he awkwardly describes it—arises in the same region and is the precursor of nipple and mammary gland. This is of very great importance, for some zoologists maintain that the mammalia are not a natural group at all, but that they arose from two independent reptilian sources. Bresslau believes that they are a natural group, but that the placental mammals arose, not from any marsupials, but from pouchless "metatheria," ancestors of the modern placentals and the modern marsupials. The monotremes, too—now represented only by *Echidna* and the duck-billed ornithorhynchus—are specialized animals, collaterals and not ancestors of the other groups. Professor Bresslau supplies an interesting explanation of those anomalous structures, misplaced nipples or breasts, which occur in such places as on the buttock of man. It appears that in certain squirrels the primary primordium divides, and part of it wanders across the surface of the body; consequently a part at any rate of the mammary apparatus is produced in two places from the one primordium; it is suggested that something of the same nature may occur as a rare anomaly in man. Whether this be so or not we are glad to call attention to the great interest which the study of comparative embryology and pathology certainly has for the student of mankind.

MR. ALEXANDER SMITH'S *Intermediate Textbook of Chemistry*[10]—fuller than an elementary book and shorter than a college chemistry—is a comprehensive and well written volume that may be recommended to general readers in search of a manual of chemistry to add to their libraries as well as to students of chemistry. It is clearly written, up to date, and full of well chosen information, both theoretical and practical.

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[9] *The Mammary Apparatus of the Mammalia in the Light of Ontogenesis and Phylogenesis.* By E. Bresslau, late Professor of Zoology in the University of Strassburg. London: Methuen and Co., Ltd. 1920. (Cr. 8vo, pp. 151; 47 figures. 7s. 6d. net.)

[10] *Intermediate Textbook of Chemistry.* By Alexander Smith, Head of Department of Chemistry, Columbia University. London: G. Bell and Sons, Ltd. 1920. (Demy 8vo, pp. 526; 115 figures, 3 plates. 8s. 6d. net.)

MINE RESCUE APPARATUS.

SECOND REPORT OF RESEARCH COMMITTEE.

AN extremely interesting second report has recently been issued by the Mine Rescue Apparatus Research Committee of the Advisory Council of the Department of Scientific and Industrial Research.[1] The members of the Committee are Mr. William Walker, Chief Inspector of Mines, Dr. Henry Briggs, and Dr. J. S. Haldane, F.R.S. Part of the terms of reference to the Committee gave it the task of determining by experiment what improvements in apparatus are possible, thus rendering it incumbent on the Committee to prove that it was feasible to devise a compressed-oxygen rescue apparatus which complied with the very strict requirements of the first report. The present report is divided into four parts: the first physiological, wherein are noted some important new physiological facts; the second an investigation of deaths due to rescue apparatus; the third raising the question of Home Office approval of mine rescue apparatus; the last entitled Miscellaneous.

Part I gives an excellent summary of the physiology of respiration; and the first feeling of the reader that the subject is treated as if respiration were merely a mechanical process depending on the physical laws of diffusion, is speedily corrected when it is stated that certain phenomena seem only to be explained by the view that the living cells of the lung epithelium possess the faculty of secreting oxygen from the air and handing it forward at enhanced pressure to the blood. Attention is called to the entirely incorrect view that oxygen is a "dope" and that the breathing of highly enriched air results in a rapid burning up of the tissues accompanied by excitement and violent bursts of physical energy, or that it is followed by depression and lassitude. It is necessary to breathe air containing over 80 per cent. oxygen continuously for two days before evil effects make themselves felt. The curious thing is that the dope view persists even among rescue station instructors, and that many airmen have an antipathy to what they consider to be the drug-like properties of this gas.

Oxygen and Physical Fitness.

Perhaps the most interesting observations recorded in this part of the report are those by Dr. Briggs, which throw quite a new light on fatigue. It is known that many men who are not in good physical condition derive great benefit during exertion from the enriched air of a rescue apparatus; they can walk faster and more comfortably than when breathing ordinary air. On the other hand, miners and men in good training seemed to derive little or no benefit from the enriched air. With ordinary air an analysis of the expired air of men in good physical training showed during exertion a much higher percentage of CO_2 and a lower percentage of oxygen than in the case of men not in good training. In other words, less air is breathed by men in good training for a given consumption of oxygen or amount of work. When the enriched air of a rescue apparatus was used, an analysis showed little or no alteration of the percentages of CO_2 and oxygen in the case of men in good training. But with men not in good training the percentage of CO_2 in the expired air became as high during exertion as in men in training; so that for them the amount of air breathed for a given rate of work is considerably less with enriched air than with ordinary air. The explanation given is that when, during muscular exertion, a far larger amount of oxygen has to be taken, there is not time in the men not in good training for the haemoglobin to become fully saturated by diffusion alone if ordinary air is breathed: the epithelium lining the alveoli must also actively pass oxygen inwards. The activity of the epithelium can be increased by practice; and this is the case with miners and other fit men, so that they receive no benefit from enriched air. In the unfit man the epithelium fails to pass in the proper supply of oxygen for exertion unless the diffusion pressure is raised by the enriched inspired air. Dr. Briggs applied these new facts as the basis of a method of testing physical fitness during the war, and the physiological response of a man to oxygen during muscular exertion was used as a test of whether or not he was in good training as regards his lungs, and by inference, in ordinary cases, of his general physical fitness.

Standardization of Types.

Parts II to IV of the report are not of the same interest to medical readers. With regard to Part II, we may point out that deaths should not be said to occur through the use of rescue apparatus when they are due to the wearer removing the mouthpiece, or turning off the oxygen, or improperly adjusting the apparatus. In its first report the Committee recommended that the Home Office should institute a scheme of testing rescue apparatus; the Committee now (Part III) lays down the conditions an "approved apparatus" must fulfil. The attitude of the Committee in this respect seems judicious: "We do not," the report states, "think that standardization, in the sense of prescribed uniformity of construction, is to be recommended. We prefer that the field for invention and inquiry should be left open rather than be circumscribed by a hard-and-fast specification." The most the Committee desires is that "the manner of testing should be standardized."

Part IV discusses a number of practical difficulties that have been encountered in the choice of materials for apparatus and in construction. There are two appendices: in the one a compressed oxygen rescue apparatus, designed by Dr. Briggs, is described; in the other some ergometric fitness tests are set out.

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[1] H.M. Stationery Office. 2s. net.

WOMEN STUDENTS AT CAMBRIDGE.

The admission of women to degrees at Oxford leaves Cambridge at present in the position of being the only British university which refuses its degrees to women. It may therefore be of interest to our readers to give a short account here of how things now stand in this matter at Cambridge, and to preface this with an outline of the various stages in the relationship of women with that university.

Just over fifty years ago a College for Women was founded in a hired house at Hitchin, and four years later it moved to Girton, near Cambridge. From the beginning it was designed to hold, in relation to girls' schools and home teaching, a position analogous to that occupied by the universities towards public schools for boys. In 1873—the year in which Girton College was opened—an association for promoting the higher education of women at Cambridge was formed to carry on and develop the lectures for women first started in 1870; and part of Newnham College was opened in 1875. Two years before that women were first admitted to and passed a university tripos examination, and in 1881 the privilege of examination for tripos was conceded by the Senate to Girton and Newnham students. The Senate, however, in 1879, and again some twenty years later, rejected proposals for the admission of women to titles of degrees.

During the past forty-five years the position of women at Cambridge has greatly improved; but, although admission to examination and instruction was conceded, they still attend lectures and courses "on sufferance," and it is only in the last ten years or so that the physiological laboratories have been open to them. The very strict rules of the women's colleges imposed severe restraint on social intercourse between men and women students; but these have been greatly relaxed since 1914, and there is now, we believe, a fair amount of "fraternization." The exclusion of women from degrees is of most practical significance in the case of medical degrees, although it is a distinct drawback to most women in looking for employment. In 1918 women qualified by examination for degrees were eligible to be placed on the register of university parliamentary voters, and the Sex Disqualification (Removal) Act of last year contained a clause specially empowering the universities to act in the matter of admission of women. Oxford has grasped the nettle, but the sister university still seems to hesitate.

The Two Reports.

In December, 1919, the University of Cambridge appointed a syndicate to consider the relation of women students to the university. The syndicate was instructed "to consider whether women students should be admitted to membership of the University, and if so with what limitations (if any), and alternatively to consider, if women students are not admitted to membership, by what means the University could co-operate with the Women's Colleges or other bodies in the conferment of degrees on women students." In May, 1920, two reports were presented, each signed by six out of the twelve members of the syndicate. The reports are expected to come up for consideration early in the Michaelmas term.

Report A recommends the admission of women to the full membership of the university, but not to the men's colleges, and subject to certain limitations. That women are [illegible] as members of public hostels recognized for the purpose, or in the future as members [illegible] and the [illegible] the conditions of their [illegible] the Council of the university. Women would be eligible for all university offices except that of [illegible] The scheme proposed would have [illegible] recognized as public hostels under their [illegible]

Report B is a more elaborate document. It reviews, in turn, the proposals of Report A, the practice of existing universities, and [illegible] proposals for admission of women to membership of the university under a system of dual control, and finally recommends the creation of a separate university for women. The proposals of Report A are rejected on the ground that the admission of women to the university on equal terms with men will entail a further demand for admission to the men's colleges, and also on the ground that the question whether the same type of education is equally suited to men and to women has yet to be decided, whereas there is some danger that the "woman's vote" in university matters might favour "accuracy of routine work" at the expense of "originality or high qualities of scholarship" to the detriment of men's education. Further, a doubt is expressed as to the benefits of the admixture of undergraduates with women students, and the expediency of its extension. In relation to the practice of existing universities attention is drawn to the isolation of Cambridge as the only remaining "men's university" in this country, and the persistence in America of separate colleges for the education of women in addition to the women's colleges affiliated to the men's universities and the mixed universities. The final recommendation of this report is prefixed by a scheme acceptable to the majority of its signatories as a basis for compromise. Under this scheme women would be admitted to the university, subject to the creation of a Senate consisting of a Men's House and a Women's House, for the separate regulation of the two elements in the university. In view of the rejection of this scheme by the advocates of a mixed university, the report recommends the creation at Cambridge of a separate university for women. This recommendation is designed to preserve Cambridge as "a university whose courses of study are designed and controlled in the interests of men," whilst providing for the inauguration of a university similarly governed by and in the interests of women. Accordingly Graces are proposed embodying approval of the incorporation of Girton and Newnham into a university and the continuance of the facilities and privileges already conceded to the women by the university, and a general offer of assistance in the development of the new body.

Memorandum on the Reports.

A memorandum issued by the Committee for promoting the admission of women to full membership of the university supplies at once the arguments in favour of Report A and a comprehensive criticism of Report B. Of the latter it points out that, in the face of the refusal of the women's colleges to adopt its suggestions it "amounts in fact to a recommendation to do nothing." Apart from this, the contention that admission to the university is the prelude to a demand for admission to the men's colleges is unsupported by evidence, and formally repudiated by the heads of the women's colleges. The constitution of the university as a federation of autonomous colleges would facilitate rather than hinder its extension to include the women's colleges. The method of Report B in dealing with the educational question is held in effect, "to beg it, with a presumption in the negative," and that despite the weight of fifty years' experience in the English mixed universities and the reassuring evidence from America in regard to the influence of women on the university curriculum. For, according to a quotation in Report B, the American women's colleges "are organized and conducted quite like our separate colleges for men, and the curricula and degrees are practically identical with those in the men's colleges." Moreover, the real question at issue is not whether there should be separate universities for men and women, but whether Cambridge should adopt that system. Finally, as regards the social question, so lightly touched on by the advocates of separation, but of such fundamental importance, the Committee emphasizes the facts of the existing situation. And it is on these facts that the case for equal membership for men and women is based. In all but the concession of equal rights Cambridge is already a mixed university, and this situation is in no way touched by the recommendation for a separate university, of which the members would remain at Cambridge and enjoy all existing facilities. The great practical danger of the situation, that of overloading the resources of the university, is left untouched, and the check provided in Report A, under which the university would regulate the number of women admitted, is lacking. The separate system, in short, it is argued, entails useless and expensive duplication of machinery, with no corresponding advantage except the control of men's education by an exclusively male body. Equally unsatisfactory is the proposal for the creation of an intricate machinery of dual control, proposed by way of compromise. Both ignore the fact that, beyond the universities, in the public and professional life for which they prepare their members women are now working with men on terms of equality, and that the best preparation for life under such conditions is presumably to be found in an atmosphere of common intellectual work. "If we are to take the facts of the existing situation into account" (as suggested by the signatories of Report B), "must we not decide that the university should admit its women students to full membership, not as a privilege, not even as an act of justice, but as a matter of high educational and national policy?"

British Medical Journal.

SATURDAY, AUGUST 21ST, 1920.

HEALTH ADMINISTRATION IN LONDON.

THE General Purposes Committee of the Metropolitan Asylums Board has recently had under consideration a scheme proposed by the London County Council for the administration of the health services in London. The report of the Committee throws an interesting light on the proceedings of public bodies in the pursuit of their ideals; and the private citizen, although unlikely to hear much of the polite controversy now going on between the L.C.C. and the M.A.B., is entitled to inquire how far the limitations of his pocket are taken into consideration by the ambitious members of the County Council on the one hand and the supporters of the policy of maintaining the Asylums Board on the other.

The establishment of the Ministry of Health, with its purpose of bringing under one Minister of the Crown and one Government department the health functions exercised or supervised by various Government departments, has stimulated the London County Council to prepare its own scheme for a corresponding redistribution and rearrangement of London health and medical authorities. The usual evidence of overlapping and of deficiencies is given; and the Council then proceeds to set forth proposals for reconstruction which involve the division of all health services in London between the Council and the metropolitan borough councils, leaving the County Council the statutory authority for health services, with power to organize and supervise the services for which the borough councils are to be allowed to remain responsible. The financial proposals involve a standard Government grant of 50 per cent. of the expenditure on health services otherwise falling on the rates, the full cost of the work of inspection and supervision to be borne by the public, while the individual who benefits by treatment is to be charged a portion of the cost when he is in a position to pay.

In the process of elaborating this scheme the Council came up against the Metropolitan Asylums Board, not because it overlaps or is deficient, except theoretically, but because the manner of its appointment is anomalous, and it is not under the control of the Council. The Council recognizes that the Board has indeed performed its duties very efficiently, has a highly competent staff, and has worked in friendly co-operation with the Council; it recognizes also that the experience in hospital management of some of the members of the Board is such that they might even be possible ornaments of the Council. It is argued, however, that it would be more symmetrical if the institutions and staff, and even some of the desirable members of the Board, were transferred *en bloc* to the London County Council.

The Metropolitan Asylums Board, after expressing its appreciation of the great services rendered by the Council to the metropolis, and its especial appreciation of the friendly and complimentary references by the Council to the work of the Board, proceeds to advance reasons against being devoured at one gulp by the Council. In the first place, it appears that the Council did not include the Board amongst the authorities (the corporation and the borough councils) invited to forward their views on the proposed Gargantuan feast. The Board appears to forget that the fatted calf is not usually consulted on the mode of death it would prefer. Undeterred by the fate with which it is threatened, the Board goes on to offer observations on the proposals of the Council as affecting the whole question of London government, and on the particular proposal to transfer the management of the Board's institutions to the central governing authority for London. Under the first heading it is pointed out that the question of a single administration for Greater London, as distinguished from the present County, is bound to be raised in the near future; and that therefore the question of absorption might wait till this is settled. The comments on the particular transfer of the Board's institutions contain many excellent reasons against the proposal. It is suggested that the 144 members of the County Council have quite enough work to do already, and that in other directions more work is being added; that the 73 members of the Board are up to the eyes in work, so that many have to give their whole time to their duties; that co-opting some of these 73 on to County Council committees will not work satisfactorily; that directly-elected bodies are not always most suitable for specialized work.

The overburdened tax- and rate-payer will probably be inclined to support the Asylums Board in its contentions, if only for the reason that its report ends with the statement that "all experience shows that any belief that a reduction in expenditure would follow the proposed centralization of administrative work is illusory." In this connexion a story which has reached our ears with regard to one of the new great Government departments concerned with coordination seems apropos. It appears that in order to investigate the causes of a recent disaster in a provincial town, seven different departments of this great Ministry sent down seven different inspectors to report on the disaster; and that not one of the seven knew that the other six were going! Two arguments used by the Asylums Board especially appeal to us. In the first place we agree that it is premature to embark on a piecemeal scheme when the question of a larger London with its local parliament is bound to come up for discussion. And from the medical point of view we may call attention to the fact that the Dawson report is still under consideration both by the medical profession and by the community. If any action is taken on that report the constitution of the administrative authority at once becomes of supreme importance. Secondly, we agree that the County Council, while greedy for power, can hardly be greedy for additional work. As a result the functions now exercised by the Asylums Board would be delegated to a County Council committee with additional members co-opted from outside. These co-opted members would do most of the work, and yet would be unrepresented at the meetings of the Council. It seems unwise at the present juncture to upset an efficient organization, and to put in its place an unsatisfactory committee of this nature.

In conclusion we may give the ratepayer one small item of information culled from the Metropolitan Asylums Board's report. It appears that for the 16,000 patients generally found in the 50 institutions administered by that body a staff of 9,000 persons is required.

PREVENTION OF TYPHUS FEVER.

IT is nowadays something of a platitude to remark that the history of typhus fever is the history of hard times—*la storia del tifo esantematico è la storia della* *[illegible] miseria* is how Professor Lustig[1] puts it—and its connexion with poverty, overcrowding, and dirt is known to everybody. But the question of preventing the extension of typhus in countries where it is endemic and widely prevalent is one that had but little practical interest to dwellers in the British Isles until the war came; though it was always of importance in Russia, for example, where, according to the published official statistics, it caused 120,000 deaths in the year 1911.

Typhus fever was one of the great plagues in the recent war in the less advanced countries over which the tides of battle swept, such as Serbia and the Balkan States generally. Dr. William Hunter has published in our columns accounts of the preventive work he and his colleagues carried out in Serbia during the early part of the year 1915; while Professor Lustig of Florence and his coadjutors have given a summary of the disease, its cause, methods of transmission, symptoms, treatment, and prophylaxis, based on work done in connexion with the Italian army, that is well worth reading.

It is only ten years ago that the importance of the louse in the transmission of the infecting agent of typhus fever was pointed out by Nicolle. Relapsing fever, too, is carried by the louse. As Dr. Hunter remarks in a volume recently published,[2] these simple facts have done much to render the prevention of the local spread of typhus and relapsing fever possible. When the British mission arrived in Serbia early in March, 1915, the epidemic of typhus then raging was still on the increase—in three or four months there were probably 400,000 cases and 120,000 deaths; the problem to be solved was how to stop the epidemic on the grand scale. He details the nature of the preventive measures enjoined, and lays special stress on one of them in particular, namely, stopping as far as possible all movements of people. He enforced the total suspension of all railway passenger traffic—only one train in the twenty-four hours being permitted—and suspended all leave from the army, which was the chief seat of the epidemic of typhus. Never before, he says, had this method of preventing the spread of a virulent epidemic disease been tried on such a scale and with such success. He quotes an interesting conclusion reached by one of the best observers of the Irish typhus epidemic in 1842: "The first object which demands attention in a proposal to remedy any evil is to remove its cause, in this case overcrowding in lodging houses. . . . Let the crowds of inhabitants be scattered."

From the medical point of view it is undoubtedly gratifying to see that history does not always repeat itself. Dr. William Hunter's papers contain a great deal of practical and statistical information of value, and will be read with interest by all who are concerned in the prevention of infectious disease in times of emergency and on the large scale.

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UNIVERSITY FINANCE.

It is satisfactory to observe that the unhappy financial position of the [illegible] universities of England has begun to attract the public attention it deserves, and that both Parliament and commercial companies are giving practical evidence of their [illegible]. Before the war the universities were increasing [illegible], mainly owing to the growing number of the departments to be staffed and housed. During the war the universities suffered from a dearth of students and teachers. Their present difficulties are in part due to the very large number of applicants for admission; the numbers are greater than can be coped with by the existing staff of teachers in the class-rooms and laboratories available. This is not wholly caused by an accumulation of undergraduates due to the war; more young men seem to be seeking to enter the professions, and the number of women students is immensely larger than ten years ago. Whether this increase in the number of would-be graduates is altogether healthy may perhaps be doubted, and the action of some of the Scottish universities in refusing applicants may be wholesome even for those who are disappointed. Some such policy seems to have become incumbent upon all universities, since they are not financially in a position materially to increase the staffs of teachers. Those at present engaged in university teaching are, almost without exception, in receipt of salaries which, with the present purchasing power of money, are quite inadequate. A recent inquiry by the Association of University Teachers showed that the average salary of a professor was £800, of a lecturer £366, and of an assistant lecturer £250. The older occupiers of chairs are in some cases not entitled to pensions. At the present moment, therefore, the university problem is largely one of finance. The parliamentary grant is again to be £1,500,000 next year, but it is far too small to meet the very difficult position now existing. In a letter published in *Nature* on August 12th, the Vice-Chancellor of the University of Leeds has stated that through the necessary increases of salaries that university has incurred an annual deficit of £25,000, and that to maintain the supply of teachers of the right type it needs an additional income of £60,000. His conclusion is that the parliamentary grant should be trebled. We believe this to be necessary, but even were the larger grant made there would still be plenty of room for private, commercial, and municipal benefactions.

AN OUTBREAK OF FOOD POISONING.

An outbreak of food poisoning at Brixton, in which all the members of a household were affected, with a fatal result in one case, was investigated at an inquest held on August 3rd and 10th, at the Westminster Coroner's Court. The reports of the medical evidence seem to have excited considerable interest in the lay press, although the methods of the medical investigation, the bacteriological findings, and the symptoms associated with the food poisoning in no way differed from those of previous outbreaks. Certainly some of the garbled reports in which it was stated that the lady of the household was a carrier of the *Bacillus coli* were somewhat startling. The facts of the case, as far as we can gather them, are as follows. Of ten members of the household, three individuals became ill about midnight of July 25th, six twenty-four hours later, and one on the subsequent night. They all suffered from the same symptoms typical of food poisoning—feverishness, rapid pulse, sickness, and violent colicky pains. Dr. Joseph Priestley, the medical officer of health of Lambeth, to whom the occurrence was reported, had the various articles of diet investigated, and by a process of exclusion came to the conclusion that the only food that appeared to be common to the whole of the household was a steak and liver stew which had been partaken of on the Saturday and the gravy of which was used with a roast joint on the Sunday. It is interesting to know that the individual who became ill on the last day had not shared in the household meal on the Sunday, but had eaten the food next day. The tracing of the infected food, therefore, did not present any particular difficulties. Two members of the household who first sickened had alone partaken of a [illegible] served with parsley butter, and it is possible that that served as the vehicle of infection. The medical officer of health is to be congratulated on the promptitude with which he sought the bacteriologist's aid and his good fortune in being able to obtain remains of the infected food, which is too often disposed of before investigations can be made. Dr. Braxton Hicks, of Westminster Hospital, found in the fatal case the typical signs of food poisoning; and Dr. Schutze of the Lister Institute, who has had considerable experience in the bacteriology of organisms of the food poisoning groups, was able to isolate from the *post-mortem* material (portions of large and small intestines, liver, and spleen) and from the gravy of the steak and liver the *B. aertrycke*. The blood of several of the victims showed agglutinins for this organism. According to the Medical Research Committee's Report (Special Series No. 51) on the Laboratory Diagnosis of Acute Intestinal Infections, the Aertrycke bacillus—which belongs to the same group of organisms as *B. paratyphosus* B and *B. enteritidis*, Gaertner—is the commonest organism concerned in food poisoning in England, and of its two strains, the Newport strain originally isolated by Dr. Schutze, and the Mutton strain isolated by Dr. Hutchens, the latter is the more commonly met with. In this particular outbreak it was the latter strain that was discovered. The Newport strain, on the other hand, was the one found by Perry and Tidy in the outbreak that occurred at a dépôt in France amongst our troops in 1918. These authors, whose observations are recorded in a report to the Medical Research Committee (Special Series No. 24), were able to isolate the *B. aertrycke* from 78 cases, and to run to earth a carrier of the organism who was employed in the cookhouse. In the recent Lambeth outbreak it was supposed, though the evidence is by no means conclusive, that the mother of the family, who had been ill a few days beforehand, may have acted as the carrier of the organism and infected the food which she prepared. On August 16th an inquest was held at Westminster on the body of another member of the household, a girl of 15, who died on Saturday last. It appeared from the evidence of a house-physician at the Westminster Hospital that a bacteriological examination had been made in this case without discovering the organism. The coroner recorded a verdict of death from misadventure from gastro-enteritis following food poisoning.

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[1] [illegible]

[2] [illegible]

HOME AMBULANCES.

THE way in which the work of the home ambulance service is expanding is proof that the scheme instituted less than a year ago by the Joint Council of the British Red Cross Society and Order of St. John meets a real need. Altogether, at the present time, motor ambulances are stationed at 264 places all over the country. The ambulances have been supplied in response to requests from localities as fast as they can be got ready. The average period of service of the ambulances at work is nine months, but the cases carried number 21,157, and the distance run is 262,761 miles. The large number of patients carried proves that the aim of the Home Ambulance Committee to link the hospital with the home of the patient is being fulfilled. The further fact that the number of patients carried is increasing very rapidly is proof that as the existence of the home ambulance service becomes more widely known its usefulness is correspondingly increased. Applications for ambulances have been received from forty-eight new districts, and they will be supplied as soon as they can be completed in the committee's workshops. The local administration of the service is in the hands of the county directors. The ambulances have been lent subject to the condition that the cost of their maintenance is provided locally. In many districts no charge is made for the use of the ambulances, their maintenance being provided for by voluntary subscriptions or by public authorities, but in others an attempt is made to render the scheme self-supporting. Such returns as are available as to the cost of the service are very encouraging; many counties during the last quarter have more than covered the cost of maintenance by fees received from patients. For ninety-three ambulances, for which figures have been provided, the cost for the quarter ending June 30th was £2,480, all of which, with the exception of £121, was recovered in fees.

PREGNANCY AND PULMONARY TUBERCULOSIS.

AT the present time it is probable that few physicians would hesitate to answer in the affirmative the question, "Are pregnancy and pulmonary tuberculosis reciprocally injurious?" Every student of Osler's *Medicine* is familiar with Dubois's aphorism: "If a woman threatened with phthisis marries, she may bear the first accouchement well; a second, with difficulty; a third, never." This aphorism with time has become almost a dogma. In the August number of *Tubercle* the most recent publications on the subject are reviewed, and prominence is given to a comprehensive critical study by Professor Forssner of Stockholm. Up to 1916 he often induced abortion on account of pulmonary tuberculosis, assuming that such a severe drain on the organism as pregnancy and the puerperium could not but be injurious to the patient. He always took this step in consultation with an internist, who, as he puts it, acted as the brain, while he acted as the hand that carried out the promptings of the brain. Then he had the experience with which many a conscientious teacher is familiar. While demonstrating two cases he was struck by the weakness of his *a priori* arguments; they convinced neither himself nor his pupils. His doubts were confirmed by his reading; the arguments of every writer he consulted were not proof against the most elementary criticisms. He was thus driven to confess that the induction of abortion on this indication was an unwarrantable step in the dark. Most of the authorities he consulted seemed oblivious to the fact that pulmonary tuberculosis is a disease frequently fatal by itself, often running a capricious course marked by alternate periods of activity and quiescence. No one apparently has compared in sufficient numbers the fate of pregnant tuberculous women with that of women whose tuberculosis was not thus complicated. Professor Forssner has analysed the large material available at Swedish tuberculosis dispensaries, and has traced 133 patients who were under observation for at least a year after their confinement. Among the first-stage cases the disease was unaffected by pregnancy in 77 per cent; among the second-stage cases it was unaffected in 62.5 per cent., and among the third-stage cases in 41 per cent. The "controls" were 881 women between the ages of 17 and 45. Their subsequent fate did not indicate that they were any better off than the patients who had become pregnant. A readjustment of the figures so as to distinguish between the cases of latent and active disease also failed to show that the prognosis was worse for the pregnant than for the non-pregnant patients. Professor Forssner found also that the fate of the progeny of tuberculous mothers was not as hopeless as is commonly assumed, and he came to the conclusion that the induction of abortion does not, as a rule, help to combat active tuberculosis. In his opinion, the accumulated evidence bearing on the problem of tuberculosis and child-bearing is so untrustworthy that it must be taken up from the beginning as a new and unexplored field.

INTERNATIONAL CONGRESS OF COMPARATIVE PATHOLOGY.

THE second international congress of comparative pathology, which was to have taken place in 1914, will be held in Rome during April, 1921. The organization will follow much the same lines as those of the first congress, which met at Paris in 1912. Professor E. Perroncito will preside over the congress, and the general secretary is Professor Mario Levi della Vida. A committee is being formed for Great Britain, with Professor Nuttall as honorary secretary. The general secretary requests that those desiring to contribute to the congress papers dealing with the comparative pathology of man, animals, and plants will send to him before December 15th the titles of their communications, together with abstracts about 25 lines in length. Pathologists or others who wish to attend should write either to the general secretary, at 58, Via Palermo, Rome, or to Professor G. H. F. Nuttall, F.R.S., at Longfield, Madingley Road, Cambridge. An admission fee of 40 lire will be charged. Among the subjects provisionally fixed for discussion are: Influenza of man and animals, cancer and sarcoma, rabies and the results of Pasteurian vaccination, plague among ruminants, chicken pest and bee pest, evolutionary cycles of *Dibothriocephalus latus* and *Ascarides*, scabies of man and animals, nerve regeneration, vegetable symbiosis and parasitism.

THE POSTURAL ACTIVITY OF MUSCLE.

In his Cavendish lecture, delivered this year to the West London Medico-Chirurgical Society, Professor C. S. Sherrington, F.R.S., discussed present-day conceptions of corporal posture and of the mechanism of its production. In lieu of describing his own important researches on the reflexes among mammals, Professor Sherrington modestly elected to devote the greater part of his address to a critical exposition of the current trend of physiological opinion regarding posture; this opinion, he said, had lately approached "an attitude of disillusion." The lecturer contrasted the reflex muscular response in the pithed frog with that seen in the cat or dog in which the cerebral hemispheres only have been ablated. In the muscular contraction which ensued in the latter animal there was no close correspondence between the duration of afferent stimulus and that of reflex response, which might last as long as an hour. This persisting contraction or postural reflex did not occur if the afferent nerve originating in the muscle had been divided. For the existence of the postural reflex it was necessary that (1) the cerebellum, labyrinthine nuclei and especially the red nucleus, and (2) the spinal reflex arc originating in the muscles, should both be intact. The postural tonic reflex was produced in the spinal centres, but for its existence influences from the above-named supraspinal centres were necessary. An important feature of the reflex as seen in the mammal was the plasticity and [illegible] of [illegible] exhibited by muscles; for example, if the knee, to which the great extensor muscle only had been left attached, were placed by passive movement in successive positions of different degrees of flexion, the muscle preserved a constant state of tension for prolonged periods of time, and until moved to a fresh position the knee continued to exhibit a constant degree of flexion. Allusion was made to similar phenomena seen in the hinge muscles of bivalve molluscs. In the postural reflex of standing there was a coordination of very many factors; each "anti gravity" muscle concerned exhibited its own particular reflex tonus or posture, a reflex of which the afferent impulses arose within the muscle itself. Experimental evidence suggested that coordination of these reflexes took place in the cerebellum. A similar mechanism for adjustment of muscle tension independently of length was seen in the circular muscles of the hollow viscera, such as the stomach or bladder. Postural reflexes were [illegible] the dog or cat exhibiting them would remain standing for several hours. Chemical investigation had shown that these reflexes were extremely economical and accompanied by an almost infinitesimal metabolism; they were [illegible] times less expensive than voluntary muscle contractions. Dutch experimenters had brought forward evidence from both the frog and the mammal to show that in the maintenance of the postural reflexes the efferent path lay along the sympathetic rather than the somatic nerves to the muscles. Some evident confirmation of this was to be found in the investigations of certain histologists, who believed that they had demonstrated that each muscle fibre had two motor nerve endings—the larger (and well known) motor end-plate, and a smaller one connected with efferent sympathetic fibres. Italian workers, as a result of the study of the heart of the turtle, had suggested that the sarcoplasm was responsible for muscle tonus, which was caused by change in the fluid, not the fibrils, of a muscle fibre. The view that postural tonus was due to a clotting (in response to nervous impulses) of the fluid sarcoplasm brought the latest experimental and histological investigations into line, and was regarded by Professor Sherrington as a convenient working hypothesis. In conclusion he advised the less frequent use of the word "tonus." This term had much significance in the controversy between the mechanical school and the "vitalists," who claimed tonus as peculiarly their own. It disappeared from the writings of the mechanical school of physiologists, but was reintroduced by Müller about a century ago. At the present day, in view of the new views held as to the activity of muscle in regard to posture, it was probably preferable to speak more of posture and less of tonus.

CEREBRO-SPINAL FLUID AND HYPOPHYSEAL EXTRACTS.

Jacobson has investigated the much-debated questions of the pressor and other effects of cerebro-spinal fluid and extracts of the pituitary body.[1] He employed the cerebro-spinal fluid withdrawn from thirty-nine patients by lumbar or ventricular puncture, as well as a large amount of bovine cerebro-spinal fluid; these he compared with artificial spinal fluids—namely, solutions of the inorganic salts found in the normal cerebro-spinal fluid. He found that moderate concentrations of human and bovine spinal fluid, when injected intravenously, usually caused a slight depressor effect, followed by a more or less prolonged pressor effect, and that when the concentration was increased such effects were more pronounced. With the artificial spinal fluid in concentrated form he obtained usually a depressor response quite similar to that given by like concentrations of human and bovine spinal fluids. Further, he prepared fresh extracts of several hundreds of ox pituitaries, using whole glands and making extracts from the anterior and posterior lobes, the pars intermedia, and the colloid material found in the interlobular cleft. The responses to injections of these extracts were found to be very variable indeed. Extracts of the anterior lobe exhibited mainly a depressor effect, those of the posterior lobe a moderate depressor followed by a specific pressor effect; those of the pars intermedia showed a small depressor followed by a pressor effect, whilst extracts of the whole gland showed a neutralization of the depressor and pressor effects. The posterior lobe secretion, if it is a specific secretion, is most probably produced in the pars intermedia and finds its way into the pars nervosa. The posterior lobe extract on intravenous injection appeared to have an antidiuretic rather than a diuretic effect, and glycosuria was produced in a number of cases, especially in rabbits. One of the author's conclusions seems well fortified, namely, that there is no definite evidence of the presence of a pressor substance in the cerebro-spinal fluid suggestive of any posterior lobe secretion, and it would seem rather unlikely that the pituitary gland gives its secretion into the ventricles or into the cerebro-spinal fluid. The physiological responses are common to various tissue extracts and are identical with those of histamine.

SUFFOCATION BY THE COLLAR OF A NIGHTSHIRT.

The following curious case is reported by a Norwegian medical man, Dr. H. Næbye.[2] In the autumn of 1919 he was summoned to a hut where a forester, aged 24, and a companion shared the same bedroom. The companion had been awakened at 5 a.m. by inarticulate sounds from the forester, who was found lying on his back gurgling and unconscious. His eyes were wide open, his face was cyanosed, and there was froth about his mouth. He flung his arms about, but did not answer when spoken to. His companion propped him up in bed, with his feet hanging over its edge. In this position he soon recovered, but for the rest of the day he felt dizzy and weak. About thirteen hours later the author examined him, and found numerous small cutaneous haemorrhages about the neck. Their upper limit was sharply defined by a line corresponding to the upper part of the larynx; their lower limit was ill defined, and they extended to the upper part of the trunk and the shoulders. The examination of the heart, lungs, abdomen, and urine was negative. The patient had taken no alcohol on the previous day, he had eaten the same food as his companion, and there was no record of any fits or of previous illness, apart from a slight attack of pleurisy earlier in the year. He did not vomit on this occasion, nor was there involuntary escape of urine or faeces. The collar-band of his shirt was firm, but it was loose enough to admit several fingers between it and the neck. The author suggests that the patient had lain on his back and had pushed himself up in bed while he slept, pulling on the back of his shirt and thus tightening the pressure of its collar on the front of his neck. There was no fire in the room, so CO poisoning could be eliminated. Dr. Norbye remarks that had not the companion awakened and acted as promptly and effectively as he did the case might have ended fatally and the companion would without doubt have been compromised.

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[1] *Johns Hopkins Hosp. Bull.*, June 1920.

[2] *Tidsskrift for Den Norske Lægeforening*, July 1st, 1920.

WE regret to record the death, on August 8th, at Farnham, of Dr. Philip John Hensley, consulting physician to St. Bartholomew's Hospital, in his 82nd year.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from August 9th to August 14th, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

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	669	7	6

Medical Notes in Parliament.

The Parliamentary Session.

ESTIMATES of the Parliamentary Session, now adjourned until October 19th, will depend, like most other appreciations, on the point of view. No survey of the work done can follow rigid lines of classification, inasmuch as any divisions attempted must be subject to overlapping; but, broadly, the three topics which each in turn has claimed attention have been Foreign Affairs, Finance, and Home Administration, with especial reference to the adjustment of industrial troubles and the reorganization of health services to help repair the ravages of the war.

As to Foreign Affairs, it will be said that the Prime Minister was, in the early days after the war, far too sanguine as to the prospective rate of recovery of Europe's body politic. Its members suffered from too many diseases; but it may be that his optimism, besides being in some degree temperamental, has been cultivated in the conviction that this quality—at least in demeanour—has value for the statesman in critical times, just as it has for the physician. Europe to-day, however, is still sick; and the danger of complications and relapses has been all too evident during the past week. Only by comparing conditions with what they were in the dark days of the war can we get the satisfaction of recognizing how much progress has been made towards a happier state of affairs.

As to the financial outlook of our own country, it is at any rate a relief to know that, as a nation, we are no longer exhausting our resources; with this year's Budget we have stopped the excess of expenditure over income, and we have also estimated for a substantial provision to reduce the appalling burden which the war has put on the people. It is, however, a grave fact that the Chancellor of the Exchequer reckons our taxation to be at its highest possible point; and there is all too evident cause for fear that unforeseen charges may reduce our prospective surplus. Financiers also remind us that we are now getting in Excess Profit Duty, and in other receipts, the benefits of two kinds of business—that which belonged essentially to the war, and that which was held up by the war. Add to these facts the ominous industrial outlook, with the insecurity it means for trade activity, and it will be realized that we are far from seeing the light. The outlook remains darkly clouded, and it is essential that the need for earnestness in production should be brought home to the community if the prosperity which can be secured is to be obtained.

For the medical profession, however, the matters which have most immediate interest are home administration and the legislative action being taken for health services. The session, viewed from this standpoint, has been fruitful, and there is reason to congratulate Dr. Addison on his persistency in well-doing through good report and ill—this amid the distractions of a housing campaign which is subject to so many embarrassments. The Health Insurance Amendment Act makes certain technical improvements in the administration of the panel system and provides for a somewhat more adequate return to the insurance practitioner. The extra grant obtained from the Treasury for the Medical Research Council is a distinct score in these days. In point of fact, the Ministry of Health is applying itself to the arrears of many years, and thus it is there is such a clash of urgent calls. One of the most difficult problems that remains to be taken up is that of the maintenance of hospitals. The crisis, so far as London is concerned, has been staved off for the moment through King Edward's Fund, on the appeal by Dr. Addison; but the situation must very soon be faced as a whole, and an attempt made to deal with it on large lines.

As regards tuberculosis, a step has been taken in the grant already sanctioned for village colonies. A new grant has been made by the Treasury to the port authorities for protective measures against the introduction of disease from the stricken countries of Europe. Another useful thing done in the session is the passage of the Dangerous Drugs Bill to regulate the importation, exportation, manufacture, sale, and use of opium, morphine, cocaine, etc., thus giving effect to the International Opium Convention signed at the Hague more than eight years ago. The Census Act, which became law last week, also shows in its provision for local censuses and other new features a larger outlook for securing a basis of useful knowledge.

Last, but certainly not least, amongst the health legislation proposals should be mentioned, of course, the Proprietary Medicines Bill, which, under the care of Lord Astor, has passed through Committee of the House of Lords. As has already been pointed out in these columns, an overwhelming case for that measure was made out previous to the war by the Select Committee of the House of Commons, which spent three years in taking evidence before reaching its conclusions. The bill, by its cardinal proposal for the registration of proprietary medicines and surgical appliances, offers no obstacle to legitimate trade, but is designed to protect the community against false claims and pretensions intended to deceive. It was emphasized in the course of the debate in the Lords that the bill is urgently required to meet three dangers arising from secret remedies: (1) Delay in obtaining appropriate treatment; (2) injury by noxious drugs; and (3) harm—often not less serious—from the ignorant use of drugs which in skilled hands are beneficial. Under this bill all reasonable care is promised for the preservation of trade secrets that have bona-fide claims; and the right of appeal to the High Court is given to every trader who may think himself wrongly dealt with by the Registrar.

To say much in these columns about the valuable work done by medical men in Parliament would be invidious, but it is fortunate that, at a time when health matters have become so prominent, there should be a much larger leaven of qualified medical opinion in the House of Commons than used to be the case, and that the medical Members of Parliament have responded with so much zeal and goodwill to the constant demands made upon them by reason of their special knowledge.

Army Council Constitution.

Lieut.-Colonel Fremantle asked, on August 10th, whether the Government had considered the advisability of [illegible] the [illegible] of medical arrangements and of securing greater physical efficiency in military operations by placing the Director-General of the Army Medical Service on the Army Council with responsibility for securing the due consideration of health matters and the efficiency of medical arrangements. Mr. Churchill replied that whenever questions affecting the medical organization or health conditions were under consideration the Director-General of the Army Medical Service was called upon to give the Army Council the benefit of his advice. He did not think that there was any advantage to be gained by making him a member of the Council. Lieut.-Colonel Fremantle asked whether it was realized that the Director-General had to deal with a very large number of medical problems which arose on strategical questions, upon which he alone could give a technical opinion. Mr. Churchill said that point had been very carefully considered. They had the benefit of the advice of the Director-General at any time and of very highly skilled officers, but that was no reason why these officers should be added to the Army Council. Lieut.-Colonel Fremantle asked how it was proposed to get over the difficulty of [illegible] arrangements in campaigns coming under the heads of three different departments with three different members of the Army Council. There must be a divided control and difficulties arising. Mr. Churchill answered that he did not think there was any great difficulty.

Ministry of Health (Miscellaneous Provisions) Bill.

Dr. Addison, on August 16th, introduced, under the title "Ministry of Health (Miscellaneous Provisions) Bill," a measure the first part of which deals with housing, and the second with various health matters. Of these latter, the most important subjects taken up are the treatment of incipient mental disorder and the extension of powers of county councils so that they may supply and maintain hospitals and ambulances.

Treatment of Mental Disease in Homes.

In regard to the treatment of incipient mental disorder it is laid down in Clause 10 of the new bill that a person shall no longer be liable to any penalty (if the required conditions are complied with)

> For receiving to board, lodging or taking charge of, for a period not exceeding six months, or such longer period not exceeding twelve months as may be approved by the Minister, and whether for payment or not, any person suffering from mental disorder which is incipient in character and of recent origin, but not being a person who has been certified under the Lunacy Acts 1890 to 1911, or in respect of whom an order has been made under the Mental Deficiency Act, 1913.

To this is attached the provision that—

> Nothing in this section shall authorize any person who has been received into any institution, home or house under this section to be detained therein if he delivers to the superintendent or other person, by whatever name called, having the charge of the institution, home or house, or sends by post to the Minister, notice in writing that he desires to be discharged therefrom.

The required conditions for the purposes of this section are set out in the bill.

Provision of Hospitals by County Councils.

In regard to the provision of hospitals, etc., Clause 11 of the new bill lays down that the council of a county shall have power—

> (*a*) to supply and maintain hospitals (including out-patient departments) for the treatment of illnesses and diseases generally, or for the treatment of any particular illness or disease, or any particular class of illnesses or diseases, and
>
> (*b*) to contribute on such terms and conditions as may be approved by the Minister, to any voluntary hospitals or similar institutions within their area; and
>
> (*c*) to undertake the maintenance of any Poor Law hospitals or infirmaries within their area; and
>
> (*d*) to establish and maintain, or to contribute towards the cost of or otherwise aid in establishing or maintaining, an ambulance service for dealing with cases of accident or illness within their area

The councils of two or more counties may, with the consent of the Minister and subject to his conditions, combine for the purposes of supplying and maintaining hospitals under this section and appoint a joint committee. Again:

> Section 132 of the Public Health Act, 1875 (which gives powers to recover the cost of the maintenance in hospital of a person who is not a pauper), shall apply to any patient who has received treatment in a hospital maintained by the council of a county under this section, and the council shall have the same power of recovering expenses as is given to a local authority under that section.

Further sub-sections set forth that expenses under this section shall be defrayable, in the case of a county council, as expenses for general county purposes, and in the case of a county borough council as expenses incurred in the administration of the Public Health Acts, 1875 to 1898. A council shall have power to borrow, with the approval of the Minister of Health, sums required for the purpose of the section, subject to Acts of Parliament which govern local borrowings. By this provision of the bill it appears to be implied that any large scheme will necessarily be subject to the approval of the Department.

A later clause of the bill prohibits the sale of clinical thermometers except as tested, approved, and marked in accordance with regulations to be made by the Minister of Health; another authorizes the inspection of aliens by medical officers of port sanitary authorities, and a third is to repeal the law which prohibits the holding of *post-mortem* examinations in mortuaries.

Colonial Medical Service Report.—Lieut.-Colonel Amery, in reply to a question by Lieut.-Colonel Fremantle on August 16th, said he hoped to be able to announce immediately after the recess the decision of the Colonial Secretary in regard to publication and action upon the report of the Committee which recently investigated the conditions of Colonial Medical Service.

University of London: Bloomsbury Site.—Mr. Gilbert asked the Chancellor of the Exchequer, on August 16th, whether, having regard to the fact the Government did not propose to proceed with the purchase of the Bloomsbury site for the University of London unless and until the University accepted the offer and having regard to the report of the valuer of the London County Council as to the reserve value of certain sites, and the present inability of the Government to offer any contribution towards the erection of the required building on the Bloomsbury site, he would hold over the purchase money for the site to be devoted to such purposes, subject to the approval of the Government, as the Senate of the University might recommend as most serviceable for the recognized object of the University and for the furtherance of University education in London as the metropolis of the British Empire. Mr. Chamberlain replied in the negative. He said for the reasons he had given on the previous Tuesday, the offer of the Government related only to the Bloomsbury site.

On the same day Major Barnes asked if the acquisition of the Bloomsbury site was suggested to the Government by anyone authorized to speak for the University of London; if the Government was committed to the purchase of this site; if so, what was the purchase price, the available building area, the dates upon which the purchase would be completed and possession of the site given, and to what use it would be put should it not be accepted by the University; whether the Government were willing to assist the concentration of the University, on a suitable site, or only upon this particular site; and, if the former, whether they would give consideration to a request for assistance by the University, if it should come to the conclusion that concentration was desirable, but that some other site would be more suitable. Mr. Fisher, in a written reply, stated that the Government decided that the Bloomsbury site was undoubtedly the best for the purpose, after careful consideration of alternative sites, and of the views expressed by the public bodies concerned, including, of course, the University itself. As stated by the Chancellor of the Exchequer on August 10th, the Government was not prepared to ask the general taxpayer for the extraordinary contribution involved, except in respect of the unique opportunities afforded by the Bloomsbury site. The Government was not committed to the purchase of the site, and he was not in a position to make any statement as to the purchase price proposed to be paid. In regard to the area and date of possession, Mr. Fisher referred Major Barnes to answers given on June 1st and June 7th.

An Imperial Medical Service.—Lieut.-Colonel Fremantle, on August 10th, asked whether the Army Council had as yet (as it was promised they should do after the war, and again promised on March 22nd last) considered the creation of an imperial medical service, or other steps with a view to efficiency and economy of effort. Mr. Churchill replied that the proposal put forward by Lieut.-Colonel Fremantle had been carefully considered; but the Council were not satisfied that it would be practicable in the best interests of the army, and they were not, therefore, prepared to carry the matter further. He wished to point out also that the army was only partially concerned with the question of the formation of an imperial medical service, and that there were other departments—for example, the Ministry of Health—which were vitally interested.

Prison Medical Service.—Mr. Hancock asked, on August 10th, whether the Home Secretary would consider the desirability of the transfer of the Prison Medical Service to the Ministry of Health, and of prison education to the Board of Education. Mr. Shortt replied that the arrangements for maintaining the health of prisoners and providing means of education were intimately bound up with the question of prison administration, and it was most undesirable that the responsibility for these should be divided between three separate departments of the Government.

State Control of Hospitals.—Mr. Purchase, on August 9th, asked the Minister of Health whether there had been submitted to him "a scheme for the State control of health and of hospital administration"; and whether he could give an estimate of the cost of such a scheme. Dr. Addison replied, "The answer to the first part of the question is in the negative, the second part, therefore, does not arise."

Third London General Hospital, Wandsworth.—In reply to Mr. Clynes, on August 11th, Dr. Addison said that he had made every effort to secure the retention of the Third London General Hospital, Wandsworth, for the use of the civilian population. He had ascertained that the site of the hospital was held by the London County Council on trust for the purpose of an open space; that it was acquired by them before the war for that purpose from the Royal Patriotic Fund Corporation at less than market value in consideration of the use to which it was put; and that the corporation objected to its use for a civilian hospital, and urged that the conditions upon which the land was sold must be adhered to. Moreover, he understood that part of the price paid for the land was subscribed locally, and that there was strong opposition to the land being diverted from use by the public as an open space. He was advised that legislation would be necessary to secure the retention of the hospital upon its present site, and in the circumstances he did not think that Parliament would be willing to give the necessary powers. He therefore regretfully concluded that he must abandon his efforts to obtain the use of the hospital on its present site for the civilian population.

League of Nations Health Organization.—Asked, on August 10th, by Sir J. D. Rees, how it was proposed that the cost of establishing a permanent health organization by the League of Nations should be met, Mr. Harmsworth said that the expense of organizations set up by the League of Nations would be met from the Consolidated Fund, to which His Majesty's Government, amongst others, contributed.

Tuberculosis in Leicestershire.—Major Sir K. Fraser asked, on August 11th, if the Minister of Health would take steps to improve the ventilation of the factories and schools in Leicestershire, with the view of checking the increase of tuberculosis in this area. Dr. Addison replied that the number of notifications of tuberculosis in Leicestershire had diminished from 524 in 1914 to 364 in 1919. The decrease was general throughout the country, the corresponding figures for England and Wales being 95,808 in 1914 and 74,647 in 1919.

Drugs and Dressings in India.—Mr. Spoor asked, on August 11th, whether the attention of the Secretary for India had been drawn to the circular letter issued on September 15th, 1919, by the Government of India (Indian Munitions Board) to the various local governments and administrations in India, concerning the drugs and surgical dressings required by the force in the field, supplied to the Government by a firm of chemists in Bombay, and stating that the drugs were so adulterated and the dressings so medicated, and otherwise below the represented quality, as to imperil the lives of soldiers; and that the name of the firm had therefore been removed from the Government of India list of contractors. Mr. Spoor further asked whether the Government was taking any action in the matter. Mr. Montagu replied that he had no information on the subject, but would inquire.

Approved Societies' Valuation.—In reply to Mr. Cautley, on August 11th, Dr. Addison stated that the separate valuation of each of the 12,000 approved societies and branches which administer National Health Insurance is being proceeded with under the supervision of the Government actuary. Very satisfactory progress was being made, but the announcement of the result could not be expected before the end of the year at the earliest.

Imported Potable Spirits.—Colonel Gretton put a question, on August 11th, as to the alleged bad quality and injurious results arising from the consumption of certain imported potable spirits. Dr. Addison said inquiries had been instituted into the allegations, and he should be glad to consider any specific information which Colonel Gretton might have. Under the Sale of Food and Drugs Act the vendor of any article of food or drink injurious to health, or not of the nature, substance, and quality demanded, was liable to prosecution. The Acts were administered by local authorities, and the Ministry of Health had no powers of condemnation.

Blind Persons Bill.—Dr. Addison stated, on August 3rd, in answer to Sir Cyril Cobb, that his estimate of the cost which would be thrown on the Treasury by the Blind Persons Bill was, in respect of England and Wales, £17,000 per annum for pensions; it was proposed that the annual charges in respect of capital expenditure and the maintenance expenses incurred by local authorities under the bill should be borne equally by the Exchequer and the local rates. The annual expenditure was estimated to reach £50,000.

Condemned Food at Newcastle-on-Tyne.—Mr. McCurdy informed Mr. Gratton Doyle, on August 3rd, that he had read the report of the corporation veterinary inspector for the four weeks ended July 10th. He found that during the period a certain quantity of home-grown beef was found to be tuberculous and accordingly condemned. A large quantity of imported meat was also condemned; it consisted partly of offals brought in on transhipment from the Continent on private account, and partly of carcasses, also sent on private account, which appeared to have been unsound for some time. Certain cases containing rabbits were also condemned; they formed part of surplus army stock which it had been impossible to sell. He was satisfied that the utmost vigilance was being exercised by the local sanitary authorities, and the Ministry of Food were doing everything in their power to assist them.

Pauper Lunatics in Workhouses.—Mr. John Davison, on August 4th, asked whether the attention of the Minister of Health had been drawn to the fact that, owing to the increase in the cost of pauper lunatics in mental hospitals, there was an increasing tendency on the part of boards of guardians to retain patients in workhouses, where they could be kept at a lower cost; and whether, in view of the fact that there was a lack of trained mental nurses and proper accommodation for the treatment of these patients in workhouses, he would have inquiries made into the matter. Dr. Addison replied he was not aware that there was an increasing tendency to retain patients in workhouses, but he was making inquiries.

Hospitality to Austrian Children.—The Home Secretary stated on August 3rd, in reply to Mr. McNeill, that the committee which is bringing children from Austria and Hungary is not supervised or controlled by the Home Office. So far 456 children had arrived from Vienna, and 400 more were expected from Budapest. Careful medical inspection is made under the direction of the Ministry of Health before the children start for this country, and on arrival they are placed in quarantine in a camp at Richborough. In due course they are distributed to various parts of the country, but the whole process is being supervised by the Ministry of Health. No adults are admitted with the children, and a Manchester committee has recently asked for and obtained permission to bring over a number of French children from the devastated areas of France, for recuperation in this country.

Answers in Brief.

Sir John Baird has introduced a bill on behalf of the Home Office to make provision for the better protection of women and young children against lead poisoning.

Steps are being taken by the Irish Office to submit proposals to the Treasury with a view to the scales of salary at the Criminal Lunatic Asylum, Dundrum, co. Dublin, being fixed on a similar basis to those now in force at Broadmoor.

The committee set up by the Ministry of Health to inquire into the determination of a standard for condensed milk hopes to present its report very shortly.

Major Tryon stated that when a demobilized officer is waiting to be fitted with an artificial limb and cannot provide for his own support, he may be granted from the Ministry disability retired pay at the maximum rate during the waiting period, but there is no authority to make any further allowance.

India.

INFLUENZA IN THE CENTRAL PROVINCES.

THE most conspicuous feature in the administration of the Central Provinces and Behar in 1918–19, as judged from the latest report, was the disturbing effect of the epidemic of influenza, which, to a greater or lesser degree, brought the work of almost every department to a temporary standstill. The disease attacked the "whole provinces with sudden and terrible violence, causing the greatest mortality within the memory of man." From this cause alone 5½ per cent. of the population died—a mortality twice as great as that caused by plague in twenty-two years. The effect will be felt for many years, as many widows and orphans were left helpless, and a considerable gap was caused amongst students at schools and colleges.

THE RED CROSS IN INDIA.

A Red Cross Society has been established for India by an Act of the Viceroy's Legislative Council. It is quite independent of the British Red Cross Society and Order of St. John of Jerusalem. The society is organized on a provincial basis for work both in war and peace, and has been admitted to the League of Red Cross Societies.

CHILD WELFARE IN INDIA.

The work done by Lady Chelmsford for maternity and infant welfare in India will produce lasting results. An institute has been opened in Delhi for training the health and maternity supervisors and health and maternity visitors. The former have a training of a year and the latter six months. Those who cannot pay receive 40 rupees a month from the association founded by Lady Chelmsford on condition that they undertake to serve it for three years when trained. They will be paid 150 rupees a month, or 75 rupees with furnished quarters.

China.

MEDICAL EDUCATION IN PEKING.

THE Peking Union Medical College, founded in 1906, was maintained by American and British missionary associations until 1915, when its control was transferred to the China Medical Board of the Rockefeller Foundation, and a charter was obtained from the University of the State of New York. During the past five years the accommodation for students and the organization of the teaching have been greatly improved. The pre-medical school was opened in 1917, the medical school in 1919; the new hospital and the training school for nurses will be ready this year. As a rule the students, who are of Chinese nationality, are to begin their course of training with three years' study in the pre-medical school, which has accommodation for [illegible]; they will be selected by examination. English is the language used, and instruction is given in biology, physics, chemistry, mathematics, Chinese, English, and one other modern European language. A certificate of graduation qualifies the successful student for admission without further examination to the medical school, where the normal course lasts five years, including one year spent either as a hospital interne, or as an advanced laboratory worker. The staff of the medical school consists of thirty-three members, of whom [illegible] are Chinese. It is noteworthy that the anatomical [illegible] is responsible for the teaching of histology, and [illegible] comparative anatomy, physical anthropology, and [illegible]. [illegible] medicine, pharmacology and toxicology are taught in the same department as physiology. The teaching of Chinese, English, and French or German, is continued. [illegible] is offered to a small number of students to earn a part of their expenses by service in the college libraries and laboratories. A hostel is provided, and there is a department of social and religious work. The courses are open to women students, who may live, together with certain women members of the staff, in a special hostel.

CHINESE MISSION HOSPITALS.

Twenty years ago there were only twenty-nine mission hospitals in China, and the populace regarded them with considerable distrust. The principal objective of the staff was the winning of the patients' confidence and friendship, and the medical missions had of necessity to be established and carried on in defective conditions as regards hygiene, nursing, and treatment. The number of new hospitals built since 1900 is 148, and the attitude of the Chinese Government and people towards medicine has been greatly modified; the benefits of treatment have been recognized and the Chinese themselves have come to demand that it should be efficient. A new medical school has been instituted and many Chinese students—both men and women—are studying medicine in their native land. An inquiry into the scientific efficiency of mission hospitals in China has been made by Mr. Harold Balme, F.R.C.S., Dean of the School of Medicine of the Shantung Christian University, whose conclusions are summarized in a report presented to the annual conference of the China Medical Missionary Association, held at Peking last February. The report shows under what difficulties the work of the hospitals has hitherto been conducted, and indicates that much improvement has still to be effected. Only 63 per cent. of the 193 hospitals are yet able to supply the majority of their patients with clean bedding, and seventy-two possess no bedding at all, or only sufficient for a few of the dirtiest or poorest of their patients. In 70 per cent. the water supply comes from surface wells, and in 33 per cent. it receives no preliminary filtration nor boiling; in only 51 per cent. are the patients regularly bathed, while sixteen hospitals report that they possess no bath at all. Sixty-five per cent. have no isolation block; 37 per cent. are not screened for protection from insects; 67 per cent. of the hospitals are dependent for sanitation on ordinary Chinese latrines, usually unscreened. The figures given with regard to the staffing show that there is only one mission hospital bed to every 26,640 people in China; and four hospitals out of five, with an average accommodation of seventy beds, had only one foreign or foreign-trained doctor; 60 per cent. have not more than one trained nurse, 69 per cent. no regular system of night nursing, and 34 per cent. have no nurse at all. It appears from the report that 200 more foreign doctors, 200 more Chinese doctors, 150 new foreign nurses, and 400 Chinese nurses are urgently required.

Correspondence.

THE TREATMENT OF FRACTURES.

SIR,—May I be allowed to write, from the point of view of a general practitioner in the country, a few words of warm appreciation of the letters and suggestions of Dr. William L. Griffiths and Sir J. Lynn-Thomas in the JOURNALS of July 24th and August 7th on the above subject, which Dr. Griffiths rightly says is one of the most important branches of surgery?

The wider questions opened up by Sir J. Lynn-Thomas will not, I hope, distract attention from the eminently practical and useful suggestion of Dr. W. L. Griffiths, "that means should be provided whereby Major Sinclair could tour the provinces for the purpose of giving instruction in the treatment of fractures." That is the only way, in my opinion, by which the lessons learned from the unprecedented wealth of material provided by the war can be brought home to the present generation of practitioners and made a personal possession for each of us. Why should not the governing body of the British Medical Association at once set about making the necessary arrangements with Major Sinclair for such a tour of instruction, and so render a real service to its members?

Dr. Griffiths further advocates the publication of a monograph giving a detailed account of the new methods. So far as fractures of the thigh-bone are concerned, this has already been most ably done by Lieut.-Colonel Pearson and Captain Drummond in their book on *Fractured Femurs*. This is a small book of eighty-nine pages, clear, convincing, well illustrated, and full of practical details. It redounds to the honour of its authors and of the South African Medical Corps, to which they both belong. Every doctor who is liable to be called upon to treat a fractured thigh-bone should certainly possess it; but one longs to see these methods applied. No book, however well written and well illustrated, can fully take the place of actual demonstration.

Sir J. Lynn-Thomas aptly reminds us of the work of the late Professor Lucas-Championnière. Possibly by a printer's error he is made to describe this as the "treatment of fractures by massage and immobilization." It should, of course, be "massage and mobilization." Lucas-Championnière inscribed on the title-page of his book, "Le mouvement c'est la vie." It has often been a matter of surprise to me that the two books on this subject by Professor Lucas-Championnière should never have been translated into English. The first and larger of these was published in 1895, and a smaller *précis* was published in 1910. Had either or both of these been translated and widely read in this country it is hardly conceivable that Sir J. Lynn-Thomas could have met with the case of which he tells us—of a chauffeur's fracture still in splints and in hospital at the end of seven weeks.

Fourteen years ago I brought before my fellow members of the Border Counties Branch the subject of the treatment of fractures by the methods of Professor Lucas-Championnière, and my address was published in the British Medical Journal of October 27th, 1906. Following a suggestion made by myself, Professor Lucas-Championnière was invited to attend the annual meeting of the Association at Sheffield, but unfortunately the address of this distinguished French surgeon and guest of the Association was relegated to the last day of the meeting, when a crowded agenda and a chairman in a hurry deprived the occasion of much of its value. "We have much to learn from Paris."

Sir J. Lynn-Thomas gives us the satisfactory information that "a beginning has been made at St. Thomas's Hospital to put the treatment of fractures on a sound basis." Sir Harold Stiles is organizing this department at the Royal Infirmary in Edinburgh. It is to be hoped that these examples will be followed in every medical school. But in the meantime let us have, if possible, Major Sinclair's tour of instruction through the provinces.

Finally, as a practical question I would ask whether our cottage hospitals throughout the country are adequately equipped for the treatment of fractures by modern methods. Do they possess the necessary apparatus and appliances? Every cottage hospital should at least own a proper fracture bed, with overhead suspension arrangements, extension posts, etc., as recommended by Pearson and Drummond, with a supply of large-ringed Thomas splints, knee-flexion attachments, and non-penetrating traction callipers. —I am, etc.,

Penrith, Cumberland, Aug. 14th. J. Edward Bowser.

MEAT DIET IN SPRUE.

Sir,—In an interesting paper on two cases of sprue, by Dr. P. Conran, in the Journal of August 7th, p. 206, there are a few points not quite clear, and one of these ought not to pass without comment.

In Case II, in investigating the stomach contents "microscopical examination showed an excess of yeast." As the stomach emptied in four hours this was not accumulation due to stasis, and unless the patient was indulging in stout, cider, ginger-beer, etc. (which is unlikely in a patient so ill), this yeast form was no casual visitor, but a settler in the stomach. It was therefore important to identify it. As this was not attempted, it may be pointed out that the yeast forms capable of settling in the unobstructed stomach are probably few, and confined to the thrush fungi. Just eight years ago I published a note in your columns on yeast forms found in the stomach, and again (British Medical Journal, July 24th, 1920) a note on monilial gastritis, which was proved to be due to the common thrush fungus.

In the examination of the faeces at the same time in Dr. Conran's patient it is stated, "Monilia or saccharomyces were not seen." But under no circumstances can one see a monilia or a saccharomyces in the faeces or in the stomach contents. One sees a hyphal element or a yeast form which in culture may be proved to be a monilia or torula, but rarely a saccharomyces. In the case in point, as there was "an excess of yeast" in the stomach, and no obstruction, the same yeast must have been present in the faeces. It is easy to miss yeast in microscopical examination of the faeces, just as it is often difficult to demonstrate yeast in a blastomycetic tumour, from which it may be readily grown. It is easy, however, to grow yeast from the faeces of the majority of people, healthy or ailing, and both English and American workers have proved that thrush-like organisms are almost invariably present in the faeces in sprue. The organism to which Ashford has given the name *Monilia psilosis*[1] is just as like the common London thrush fungus—morphologically, culturally, and pathogenically—as it is possible for any fungus admittedly subject to variation to be. Moreover, I have proved that the latter is able to settle in the bowel[2] just as well as in the mouth or stomach.

Consideration of these facts suggests that in Dr. Conran's second case the yeast present in the stomach, and therefore undoubtedly present in the bowel also, was more likely to be the common thrush fungus in yeast form than any other organism. Thrush is a trivial, but sprue is a terrible complaint, and nothing should be left undone to clear up its pathology.—I am, etc.,

Ealing, W., Aug. 9th. Robert Craik.

GALL STONES AND INFUSIONS.

Sir,—Anent the virtues of "infusion of parsley" in the treatment of gall stones, recorded in the British Medical Journal for August 14th, 1920, the following may be of further interest, instruction, and diversion:

Many years ago I was asked to see a man in a village near here who was suffering from a stone impacted for some weeks in the common duct, and causing severe colic and jaundice. I tried to persuade him to undergo the operation of choledochotomy for its removal, but he would not hear of it. He asked me if there were no alternative. I explained the position of affairs to him, and told him that there was the possibility at any time of its naturally passing out of the duct; if so, he would be relieved instantly.

Hearing nothing further of him, as I was driving through the village some three months afterwards I called to inquire after him. With a facetious twinkle in his eye, he stated that after I left him he sent for an old lady in the village, who made him from the fresh tops of broom (*Cytisus scoparius*) a tea, which he drank and was cured directly!—I am, etc.,

Rugby, Aug. 15th. Clement Dukes, M.D., F.R.C.P.Lond.

Sir,—Parsley may be a cure for gall stones—or it may not be. In olden times it was the custom to use parsley as a decoration for graves; nowadays it serves other decorative purposes; possibly it has a great future in front of it.

Mr. Cameron Kidd's thirst for truth must be easily quenched if he is content to swallow the evidence, or want of it, that six gills of a parsley infusion taken daily can cure or alleviate gall stones. In the case of gall stones which he records in to-day's issue of the British Medical Journal he states that "it would seem that the improvement must *certainly* be the result of the treatment"—that is, administration of infusion of parsley—"for practically nothing else was done."

On what grounds does he assert that nothing else was done? Surely Nature is continually doing her best to counteract an irritating focus in the body, nightly as well as daily; sometimes with success, sometimes without. In this case, until the occurrence of a natural process—such as the formation of a fistulous communication between the gall bladder and bowel—can be eliminated, I take it that such an event is the *natural* explanation rather than the extraordinary one that Mr. Kidd assigns for the disappearance of the symptoms.

As for the other case that he quotes in favour of his partiality for parsley—the case of his patient's friend—the evidence that he or she ever had gall stones seems no stronger than that upon which was founded the extraordinary rumour of the transport of Russian troops through England in August, 1914.—I am, etc.,

Norwich, Aug. 14th. A. J. Blaxland, M.S., F.R.C.S.

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[1] *American Journ. Med. Sci.*, 1917, ii, 157.
[2] British Medical Journal, 1915, ii, p. 1206.

CAUSATION IN DEFICIENCY DISEASES.

SIR,—Professor F. G. Hopkins, in his interesting paper opening the recent discussion at Cambridge on vitamines (BRITISH MEDICAL JOURNAL, July 31st, pp. 148-9), makes a critical allusion to the published remarks of Dr. F. M. R. Walshe on the causation of the so-called deficiency diseases, which calls for comment. Dr. Walshe has more than once pointed out, though it should be unnecessary, that a circumstance or thing which is not present cannot produce an effect, or, as he says, a negative cannot be a cause. What he means to convey in this regard is the obvious truth that if *a b c d* represent a conjunction of causes, and *a* is then removed, the subsequent effects are produced by *b c d*. This is perhaps the most self evident corollary to the principles of natural causation that could be framed, yet Professor Hopkins says that it "awakens his prejudices." He further suggests that it may be or become "bad metaphysics"; and ends with the singular statement "there is with some, apparently, an inherent difficulty in believing that a 'negative' factor in the environment can induce a set of symptoms." There certainly is a difficulty, seeing that a 'negative factor' is a contradiction in terms, and that a negative, even if graced with inverted commas, can induce precisely nothing.

Dr. Walshe has done wisely in drawing attention to a fallacy which, because it is evidently liable to occur in the theory of the subject under notice, is sure to react upon the various methods of investigating it.—I am, etc.,

Liverpool, Aug. 8th. EDMUND HUGHES.

MORTALITY OF VENEREAL DISEASES.

SIR,—Sir J. Crichton-Browne described the venereal as the third chief killing disease—a statement that he cannot prove—and in my view this was a very bad guess, and in support of my belief a few more figures—that is, facts—are added.

Even if we go so far as to assume that all cases of general paralysis, tabes, and aneurysm are syphilitic the list of syphilitic fatalities grows to the following (1917 list):

Syphilis	2,127
General paralysis	2,362
Tabes	757
Aneurysm	962
	6,208

But the pneumonia deaths (third killing disease) amounted to 39,892 (1917 list). Nothing daunted Sir J. Crichton-Browne now tells us that angina pectoris, organic heart disease, cerebral haemorrhage, and epilepsy are really syphilitic. This, I think, will be news to many of your readers, and I shall be glad of a chance to see Sir J. Crichton-Browne's microscopic preparations of the *Spirochaeta pallida* from a number of such fatal cases by which he might provide proof of his theories. Using his own phrase, syphilis is "the hidden hand of pathology"—and in view of Sir J. Crichton-Browne's new list of syphilitic diseases it is fortunate that the hand of syphilis in pathology was not hidden from all of us.

Now for other purported [illegible] on which Sir J. Crichton-Browne has been leaning for support, and I notice the purported support of Dr. Amand Routh and the late Sir W. Osler. Dr. Routh's impression as to the national loss by death in a period Sir J. Crichton-Browne calls it ante-natal death, and at this point I object, not so much to the premise but to the introduction of abortion (whether syphilitic or otherwise) into our annual death roll from disease. Abortion or miscarriage belongs to the region of potential human life and if this were allowed consideration, Sir J. Crichton-Browne might logically include an impression as to the non-real possibilities of conception prevention. No, we are trying to estimate the loss of human life actually from venereal diseases, not the extent of the damage to [illegible] nor their depreciation of our potential birth rate. Certainly any doctor's impression as to fatality of syphilis and gonorrhoea in the Registrar's list or any other malady is not evidence, no matter how sincere or eminent the estimator.

Coming now to Dr. Marshall's letter, I admit a small mistake in stating that no deaths were ascribed to gonorrhoea in the Registrar's list. This I attempted to correct before publication, but was too late. It was an extraordinary thing, because I have already referred to the occasional mortality from gonorrhoea in a pamphlet on *The Conquest of Venereal Diseases*. However, there were eighty deaths registered as from gonorrhoea in the 1917 list.

Dr. Marshall's dogmatic assertions as to the lethal importance of syphilis have no more value than similar assertions of other folk if unsupported by scientific proof. His statistics of percentage fatality of various syphilitic cases are utterly beside the point, which I repeat is, How many thousand deaths occur per annum from syphilis or diseases proved—not asserted—to be syphilitic? Dr. Marshall knows that to prove that a microbe is the cause of a disease that organism must be found in the lesions, and this is only one of several exacting factors in the proof. If he is going to prove that cerebral haemorrhage is syphilitic I think an average assembly of pathologists will accept his proofs if he can demonstrate the *Spirochaeta pallida* in 75 per cent. of such fatalities. In suggesting that syphilis predisposes to tuberculosis, I think Dr. Marshall can only be indulging in a flight of fancy. He mentions the complications of gonorrhoea as fatality factors. If gonorrhoea complications in women are veiled in the list by the term peritonitis, then the total in the list amounts to 261 cases, and the total in the list of diseases of mammary and generative diseases (other than cancer) is 1,037. If even all these figures are added to the syphilitic list above, Dr. Marshall will find the total venereal fatalities a very long way from the third killing disease—namely, pneumonia.

The letter from Dr. Sturge shows that he has accepted the late Sir W. Osler's estimate, and I am sorry I cannot do so. In view of the accomplishments of that great clinician it is certain that the proverb can apply—namely, "he who never made a mistake never made anything." Dr. Sturge's reference to education of public opinion in venereal matters is natural, and such education will probably produce a beneficial result.

Dr. Burke's letter is manifestly sincere, and its vital points have been dealt with above, except for his figures. Even if we accepted his total of clinical estimates (not proofs) of syphilitic fatalities at 19,498, and even after this we add the further hazard of 10,000 infants lost through syphilis, the total is still far behind the pneumonia total. Space forbids my touching on the other interesting letters which deal with other subjects—that is, alcoholism and table d'hôtage.

While entirely supporting the cause of advance in our conquest of these largely preventable diseases, I feel that harm is done by the error I have endeavoured to combat. I believe that in excess of zeal in a worthy cause, some of our colleagues in such public work have been led into exaggeration of the particular aspect of the subject about which we correspond. If by consideration of these facts any fault in the perspective is corrected it will be all to the good.—I am, etc.,

London, W., Aug. 16th. CHARLES RUSS, M.B.

TREATMENT OF DENERVATED MUSCLE.

SIR,—In 1910-11, during my tenure of a Beit Research Fellowship, I made an extensive series of experiments on the therapeutic effects of various forms of electricity on denervated muscle. Unfortunately the work was interrupted before full completion. I deferred publication of results in the hope of being able to complete the research at some future time. That hope has proved illusory. I may state, however, that the results of my experiments—of producing symmetrical lesions in a large number of cats, and treating one side by various forms of electricity for periods varying up to 100 days—confirm those of Professor Langley in failing to obtain conclusive evidence of any real benefit to the treated side, as tested by weight of muscle, its electrical reactions, and histological examination of the injured nerves.

The discussion reported in to-day's JOURNAL induces me to think that a *précis* of my results may be of some interest, and I hope to be in a position to offer it shortly for publication.—I am, etc.,

London, W. 1, Aug. 16th. OTTO MAY, M.D.

DILATATION OF THE HEART.

SIR,—With reference to Dr. Arbour Stephens's letter on dilatation of the heart in your issue of August 7th, I quite agree as to the necessity of modern methods of diagnosing the enlarged condition. The old idea of the triangle of superficial dullness is obsolete and useless. Part of the dilatation will generally be under a distended and possibly emphysematous lung. On taking a deep breath and holding it, part of the normal heart is overlaid by an air-distended viscus.

Ordinary percussion is of little use in such a case, and it is often misleading, because when the finger or pleximeter is struck sufficiently hard to drive down to the part of the organ overlaid by an air-containing viscus, the drum note of the chest cavity is produced instead of the note of the underlying organ, owing to the chest wall being set in vibration. The Kingscote pleximeter (made by Messrs. Down Brothers; see the *Lancet*, December 19th, 1896) overcomes these difficulties and renders the complete percussion of the organ easy. The impulse in a case of cardiac dilatation may be misleading. It is caused by the impact of merely that part of the dilated organ which happens to be nearest the chest wall, and the true apex may be much outside this and veiled by the overlaying lung. There should be no difficulty about determining the size and position of the dilated organ.

A skiagraph is not always convenient, neither is it always reliable. Failing this, a combination of (1) the Kingscote pleximeter, (2) Macguire's method of palpation, and (3) auscultatory percussion, will solve all ordinary difficulties.

With the pleximeter in question it is quite easy to percuss out the heart and the kidneys *from the back*. To determine whether a given enlargement is functional or not it is well to employ three or four Nauheim resisted exercises. If the lesion be a simple or functional dilatation, the cardiac diameter will be reduced thereby.—I am, etc.,

ERNEST KINGSCOTE.

Lower Seymour Street, W.1, Aug. 9th.

TREATMENT OF GONORRHOEA IN WOMEN.

SIR,—I read with interest in the BRITISH MEDICAL JOURNAL of August 4th the report on the discussion of venereal diseases in women, and was surprised to read what little new knowledge we have gained regarding gonorrhoea in women. All speakers emphasized the difficulty of curing this disease in the female, and Dr. Rawlins, who opened the discussion, suggested it was even more difficult to treat than in men.

From both of these conclusions I humbly beg to demur. Chronic gonorrhoea in the male is as difficult to cure, and good results can readily be obtained in both sexes if a proper diagnosis is made and facilities for carrying out treatment are obtainable.

The chronic form of the disease in the male has always been a nightmare, but with more recent diagnostic and therapeutic inventions that position is happily passing away, and good results are secured in almost hopeless cases if one pays individual attention to each patient. A similar result has not yet been obtained in the female, as the facilities for securing proper treatment are not always obtainable. These patients ought to be in a nursing home or hospital, and that is one reason why venereal centres will fail in stamping out gonorrhoea. To prescribe a douche or order a tampon is useless.

I would divide the disease in women into two classes: the acute or subacute and the chronic. The latter, in my opinion, are due to an undiagnosed source of infection, whether it be disease of Bartholin's glands, Skene's tubules, warts, etc., or to a true reinfection. Repeated reinfections are naturally incurable. If no focus of disease is found the discharge is probably kept up by douching, and if microscopically a diplococcus is found it will most likely be inert.

Acute gonorrhoea in women is readily curable if the medical attendant has the full control and co-operation of the patient. I have obtained good results from the use of acriflavine; the drug is as efficacious as in the male.

My routine is to order the patient to sit in a hot bath containing lysol for twenty minutes daily; then after placing her in the lithotomy position I swab the external genitalia with a solution of acriflavine (1 in 1,000). If the urethra is involved, it is also swabbed by means of a little cotton-wool on the end of a probe dipped in that solution. A Sims speculum is next inserted into the vagina and the cavity similarly treated. Diseased foci are searched for, and if present destroyed. The vagina is then lightly packed with gauze soaked in acriflavine, which is left in for twelve hours. The packing aids draining, separates the surfaces, and permits of a continued action of the antiseptic; it further prevents the formation of condylomata by absorbing discharges. This treatment is carried out twice daily. Within ten to twelve days all discharge usually ceases. "Sauerin" pessaries are then prescribed, one to be inserted night and morning. These, being composed of lactic acid bacilli, act as a fair substitute for the normal vaginal Döderlein bacillus.

Finally, to treat gonorrhoea successfully in women, the venereologist must have a sound knowledge of gynaecology.—I am, etc.,

Manchester, Aug. 10th. M. W. BROWDY, M.B.

THE TUBERCULOSIS CAMPAIGN.

SIR,—In your issues of February 27th, 1915, March 25th, 1915, March 27th, 1915, and April 3rd, 1915, letters were respectively written by the late Sir Hermann Weber, Sir Thomas Oliver, Dr. Crossley, and myself on the phthisical soldier at the front. In July, 1916, the Essex County Council allowed me to accept a commission in the R.A.M.C., and shortly after I was detailed to the 40th British General Hospital, mobilized for Mesopotamia. After my name on the nominal roll of this unit was put "T.B. expert." Sir John Goodwin writes me that this phrase was placed there by the War Office to indicate to my commanding officers that I had been engaged in tuberculosis work since August, 1908, and I take this opportunity of thanking the then D.G.A.M.S., Sir Alfred Keogh, for the compliment to the tuberculosis officers of the United Kingdom. I was twice in Mesopotamia and spent one year and eight months there and ten months in India. There was practically no tuberculosis among the British troops in Mesopotamia. On the other hand, the I.M.S. officers informed me that there was much more among the Indian troops. To anyone with any inherent weakness, Mesopotamia would be a mortuary and not a sanatorium.

During the time I spent in Mesopotamia and India I came to the conclusion that no case of tuberculosis, nor of suspected tuberculosis, ought to be allowed to be in khaki. In my work in Essex I have seen cases from almost every front, and consider that this conclusion applies to all the areas in which British troops have fought. The tuberculosis campaign is in a transitional stage at home now that the Insurance Committees have given place to the County Councils, etc. We started work in Essex in September, 1912, and we therefore claim that we have done some of the pioneer work under the sanatorium section of the Insurance Act. We have done a great deal, but have been seriously handicapped by two factors: (1) lack of financial support from the Government, (2) the great war.

In the campaign against tuberculosis it is no use employing a brigade to do the work of an army corps; the converse is equally true. The army sent out must be fully equipped in every essential detail. Has that been done heretofore? To those of us who had the honour to be on the staff of King Edward VII's Sanatorium, Midhurst, during King Edward's life, and who therefore had a unique opportunity of observing his active and kindly interest in tuberculosis, it is stimulating to read the speeches made by King George in Wales a short time ago. The local authorities might well adopt as their motto His Majesty's words, "Wake up!"—I am, etc.,

J. D. MACFIE,
Tuberculosis Officer, Essex County Council.

Colchester, Aug. 14th.

MEDICAL EDUCATION.

SIR,—The subject of medical education has been vigorously handled by many eminent professors, each dwelling upon the difficulties and importance of his own particular branch of study, but none has spoken from the student's standpoint, who of all is most concerned. Now, I claim attention on the ground of having been a medical student for forty years. I have experienced the difficulties of single-handed study in all the different branches, the difficulties encountered in the reduction of theory to practice, and difficulties in obtaining advice and help at cases in after-life. It has been my rule to renew my textbooks every five years, and on each renewal I am continually impressed by my own ignorance. My time and circumstances have not permitted my reviving an intimacy with my medical school, and I have therefore been forced upon literary work to learn something of modern progress—that is, remain a medical student.

The boy at school who is going in for the medical profession should be educated as well as possible in English and mathematics, and a knowledge of Latin and Greek is advisable as medical nomenclature draws largely upon Greek roots. At 16 he should be able to pass a fair examination in those subjects; then enter upon inorganic chemistry, physics, biology, and botany, and be ready to pass an examination in them at 18 in order to register as a medical student. Anatomy, physiology, organic chemistry and materia medica should occupy his attention until 20, when he should begin to study the *elements* of medicine and surgery, so as to pass his examination in them at 22. This "preliminary professional" examination is an important one that will break the routine of heavy study and give zest for the sequel. After passing this the student may with advantage become an assistant, or pupil, to a doctor in practice, but such an interlude must not detract from the remaining two years' preparation at the hospital for his diploma, during which he should pursue thoroughly the study and practice, especially the practice, of medicine and surgery in all their branches, and be initiated into the practical parts under the strict supervision and skilled observation of his tutors. Before presenting himself for his final examination he should personally conduct an autopsy, and should do an iridectomy, a mastoid, a tracheotomy on a child, a rib resection, laparotomy (for appendicitis), herniotomy, and should also perform ligation for haemorrhage from the most exposed arteries. He would thus take his diploma at 24, or later. Lastly, an appointment on the resident staff of the hospital is desirable, though generally unattainable except by the select few of distinguished students.—I am, etc.,

JOHN GOOD.

[illegible]

MEDICAL RESETTLEMENT.

SIR,—I am in the same position, and can endorse every word your correspondent, "Ex-Captain R.A.M.C.," writes in to-day's JOURNAL.

I wrote to a local paper, and sent a copy to the fifteen members of Parliament for the City, in terms almost identical. Let "Ex-Captain" do the same, and give his name. Publicity is essential.—I am, etc.,

R. McC. SERVICE, M.D.,
Late Captain R.A.M.C.

Glasgow, Aug. [illegible]

CANCER AND HEREDITY.

SIR,—Some years ago I made a collective investigation by asking readers of the *Journal of the American Medical Association* to let me know if any of them had met with cases of undoubted cancer in which the causation of heredity was absolutely excluded because there had been no cancer in the family history for three generations back. If, on the other hand, they had met with cases which were evidently due to contact with a cancer case or to residence in a "cancer house"—meaning a house in which one or several people had died of cancer—I asked that they would give me a brief account of the evidence which had convinced them that cancer was a contagious and not a hereditary disease. A great many answers were received from widely separated areas, as much as 3,000 miles apart; these I condensed, and made into a paper which was published in the above journal. If my British fellow workers who have met with such cases would send me a brief sketch of them I hope to embody their replies in a paper which I am preparing.—I am, etc.,

A. LAPTHORN SMITH, M.D.

[illegible]

THE Argentine health department has decided [illegible]

[illegible]

THE [illegible] has recently been increased from [illegible] marks.

Obituary.

SINCLAIR WHITE, C.B.E., M.D., M.CH., F.R.C.S.,

LIEUT.-COLONEL R.A.M.C. T.F.

Consulting Surgeon, Sheffield Royal Infirmary; late Professor of Surgery, University of Sheffield.

WE announced last week with great regret the death of Mr. Sinclair White of Sheffield, which took place at Bournemouth on August 8th at the age of 62. He was the youngest son of the late Mr. John White of Moneymore, and received his medical education at Queen's College, Galway, where he had a distinguished student career, winning many prizes and scholarships, including the senior scholarship in medicine. He graduated M.D. and M.Ch. of the Royal University of Ireland in 1884, became a Fellow of the Royal College of Surgeons of England in 1888, and obtained the Cambridge D.P.H. in the same year. At his degree examinations he was awarded the highest honours. His long connexion with Sheffield began in 1879, when, soon after taking his first medical degrees, he was appointed tutor in the school, now the medical faculty of the University of Sheffield. In 1882 he resigned that appointment to join the resident staff of the Royal Hospital, acting first as assistant and afterwards as senior house-surgeon.

In 1885 he left the Royal Hospital to become medical officer of health for Sheffield, and was immediately confronted with a difficult problem presented by the fact that a considerable number of cases of lead poisoning were occurring in various parts of the city. He traced a connexion with the water supply, and ascertained the presence of lead in the domestic supply in association with the cases of plumbism. The water in the reservoir was free from lead, but it was drawn from a moorland catchment area, and was apt to be "peaty." White found that the water was acid owing to the presence of organic acids derived from the moorland vegetation, and proved that it was capable of dissolving lead from the domestic water pipes. He advised that the situation might be met by treating the water in bulk before it entered the mains with an alkali; for this purpose he recommended Derbyshire limestone, which was used with success, but afterwards replaced by powdered chalk.

The novelty of the facts, the completeness with which they had been worked out, and the efficiency of the simple remedy suggested, attracted a great deal of general attention at the time, and had White continued to devote himself to public health work he would undoubtedly have achieved high distinction in that department. But clinical work made a greater appeal to him, and after holding the office of M.O.H. for about two years he went into general practice in Sheffield. His surgical ability was already well known, and two years later, in 1889, he was appointed surgeon to the Children's Hospital. In 1892 he became surgeon to the Royal Hospital, where he had so long served as house-surgeon. About this time he limited his practice more and more to surgery, and after his appointment to the Royal Infirmary in 1899 he was wholly engaged in consulting and operative surgery. He was an accomplished surgeon; by reading and visits he made himself acquainted with all advances in other centres, and took those he approved into use; but he was no respecter of authority, and all he saw or read was submitted to the tribunal of his very critical intelligence. His quality of independence of judgement, coupled with immense experience and a wide knowledge of other men's work, made him an excellent diagnostician whose opinion was valued in Sheffield and in the district within its sphere of influence. He was consulting surgeon to the hospitals at Mexborough, Worksop, and Retford, and was always ready to respond to a call for his assistance.

His character and attainments made him a great influence in Sheffield; his advice in administrative questions was highly valued both by his colleagues on the staff of the Infirmary and by the lay governors. He was greatly interested in the planning of the new surgical block with open-air galleries which has been in use for the last few years, and was instrumental in the establishment of the [illegible] in Sheffield.

He had intended to retire on attaining the age of 60, but when the time came the war was not over, and White was busily engaged in military and civil duties. He had before the war served a term as Commandant of the 3rd

Northern Territorial General Hospital, and at the outbreak of war he was surgeon *à la suite*; he actively assisted his successor, Colonel A. M. Connell, in getting the hospital into working order, and thereafter for three years undertook much of the operative work in it as well as in the Infirmary, many of the staff of that institution being on military duty. This double work overstrained a constitution never very robust. In 1917 he became commandant of the hospital, and hoped that by diminishing his work in other directions he might regain his strength. This hope was disappointed, and he resolved to leave Sheffield to reside in the south of England. Less than a year ago he settled in Bournemouth, but his health failed very rapidly. He leaves a widow, but no children; in his wife he had a fit helpmeet, a devoted companion who entered into all his joys and sorrows.

At the annual meeting of the British Medical Association held at Sheffield in 1908 Sinclair White undertook the duties of General Secretary and President of the Section of Surgery. On the death of Mr. Simeon Snell, the President of the Association, he succeeded him in that office for the remainder of the period and inducted his successor, Sir William Whitla, at the annual meeting in Belfast in 1909. He had been secretary of the Section of Surgery at the Toronto meeting in 1906. His great ability, upright character, and sound judgement, made him a power in Sheffield and a great influence in the profession in the districts around. When he retired in June, 1919, from the staff of the Royal Infirmary, on which he had served for twenty years, a colleague declared that he had always been an influence working for harmony, and his successor, Colonel Connell, said that he had transformed the Infirmary and had introduced into it all the modern methods of surgery, so that to-day it could compare with any other surgical institution in the kingdom. During the whole of his career in Sheffield Sinclair White was associated with the university and its parent institutions. Nine years ago he was appointed professor of surgery in succession to Mr. R. J. Pye-Smith; he resigned the chair when he left the city.

JAMES HERBERT RHODES, M.B.Lond., M.R.C.P.

By the death of Dr. Herbert Rhodes, at the early age of 45, our profession has lost one who had already achieved much and gave promise of yet greater distinction.

Dr. Rhodes was born in 1874, and, after a brilliant course at St. Bartholomew's Hospital, graduated M.B. at the University of London in 1899, taking his conjoint diplomas in the same year. He served as senior house-physician under the late Sir Lauder Brunton, who held him in the highest esteem, testifying to "his insight, patient and persevering work, and personal self-sacrifice," not only in the wards but also in original laboratory investigations in which his co-operation was enlisted.

Dr Rhodes laid broad the base of his medical knowledge He was clinical assistant in the dermatological department at St. Bartholomew's, resident medical officer at the Royal Orthopaedic Hospital (1900), anaesthetist to the Lock Hospital and then for four years (1900–4) as senior resident medical officer to the London Temperance Hospital; he had full scope for his surgical dexterity as well as for his work as a physician, to which his natural bent was inclined; later he became honorary physician to the Farringdon Dispensary. He was a Fellow of the Royal Society of Medicine, and, taking a deep interest in the temperance movement, he served on the council of the Society for the Study of Inebriety.

There was, however, one aspect of medicine and surgery which attracted much of Dr. Rhodes's attention and enthusiasm—that of radiology. He had early been interested in electro-therapeutics and in the rapid advance of radiology, alike in diagnosis and treatment. The great war provided him with many opportunities for utilizing the practical skill and technique which he had already acquired in x-ray surgery at the Royal Eye Hospital and the London Temperance Hospital, at both of which he had charge of the departments.

In October, 1914, his volunteered services were accepted with alacrity by the British Red Cross Society. He went to Boulogne with two complete x-ray equipments, which he speedily installed and started working. Moreover, he visited in less than a week some seven hospitals in and around Boulogne, and was able to put into working order at most of them the installations which had hitherto been unworkable. The writer heard from Sir Alfred Keogh's own lips unstinted praise of the thoroughness and zeal with which Dr. Rhodes, although not in good health at the time, had brought the invaluable agency of radiology to the service of our wounded in Northern France.

Notwithstanding a growing practice in South Kensington and in spite of impaired health, Dr. Rhodes continued to give valued war service as medical officer in charge of the Queen's Gate Red Cross Hospital, as officer in charge of the electrical department of the Lewisham Military Hospital, and as senior medical officer to the East London Volunteers.

Dr. Rhodes was well aware for years that he was suffering from tuberculosis, but there is no doubt that, but for the extra work he undertook during the war, his life would have been much prolonged. Fair and rather frail in appearance, he possessed great firmness of character, strength of will, and a placid determination to do his duty to those who confided in his judgement and skill. He was a patient and vigilant observer, was gentle and persuasive in advice, was endowed with an old-world courtesy and a warm genius for friendship, while, as a deeply religious man, he lived as ever in the Great Taskmaster's eye. He had troops of friends, and patients, rich and poor alike, trusted him with unquestioning devotion. It may be a commonplace to say that our profession is impoverished by his loss, but those who had the privilege to know Herbert Rhodes, as house-surgeon, friend, physician or expert specialist, recognized in him an uncommon excellence, a freedom from push and self-assertiveness, and the possession of a "heart at leisure from itself to soothe and sympathize"—a combination of qualities all too rare in an age of advertisement and commercialism and in a profession whose altruism needs to be on its guard against infection from these too prevalent vices.

W. J. COLLINS.

THE LATE PROFESSOR POLITZER.

ADAM POLITZER was what the French call a *grand maître* in modern otology. Possessed of a charming individuality, he was thoroughly equipped in his youth, and started early on a career in which he became so distinguished. He was well advised by his teachers, who appreciated his talents, and he directed his attention to otology from his earliest years, realizing the opening there was for this speciality at Vienna. Hence he passed several years travelling over Europe, studying acoustics with Helmholtz, histology with Kölliker, and physiology with Ludwig. In Paris he worked in the laboratory of Claude Bernard, and then he came to London to study with Toynbee. There can be little doubt that it was his English teacher who inspired him with his appreciation of the pathological anatomy of the mastoid. Politzer returned to Vienna in 1861, and it was sufficient for him to show his teachers the results of his scientific journeys for them to create a chair of otology, and he was elected as professor. He was not yet 30 years of age. He only had four pupils in his first course, but it is interesting to recall that one of them was Lucae, who afterwards was the well known professor in Berlin. His name soon became known throughout the otological world, as it was early in his career that he discovered the method of "Politzerizing" the ear. His reputation as a teacher became so well known that there are few aurists who have not based themselves upon his teaching, taking his career as an example and his ideals as an inspiration.

He was a model teacher. Neat and dapper in his appearance, with sparkling intellectual dark eyes and a musical caressing voice, he quickly gained the goodwill and admiration of every pupil. And, in return, he did not forget his pupils, to whom he was devoted. Although I only worked with him for one semester, he presented me with a beautiful dissection of the middle ear, made with his own hands, as a souvenir, which I still treasure. He was enthusiastic and patient, and, although he only had eight beds and had to give his lecture in the middle of a ward, his classes were always crowded. These classes were held every day of the week, except Saturday and Sunday, from 12 to 1, and, although he had a private practice to which patients flocked from all over the world, he was seldom five minutes late, and often remained until 1.30 and nearly 2. The course lasted six weeks and cost 20 florins, or, at least, it did so when I attended it in 1893. As Anglo-Americans formed a large part of these classes, most of his teaching was given in excellent English, but I have heard him speak fluently in German, French, Hungarian, Bohemian, and Italian during the one lesson. He had other talents: he wrote much; his textbook and his methods are known throughout the civilized world; he was always courteous; he had charm: he was a traveller; he was an artist of talent; he was a collector and connoisseur in art, and his skill with the pencil was a valuable asset in his teaching. His hospitable home in the Gonzagagasse illustrated the two sides of his life; there he delighted to show his superb collection of pictures and also to demonstrate his anatomical specimens.

He loved to do the honours of his museum, to show bric-à-brac he had picked up in his many visits to Italy, and to demonstrate his innumerable pieces of normal and pathological anatomy, dissected mastoids, preparations of the labyrinth, or microscopical sections. He was an immense worker; he had a lovable nature; and his life was full and happy, but doubtless his latter years were clouded with the horrors of war. No one, particularly with his wide international friendships, could have deplored the war more than Politzer. While it was in progress, I had news of the old professor from a Scandinavian colleague who had been in and out of Vienna several times during the war. He told me coal was so scarce in that city that Politzer, for the sake of warmth, had betaken himself to a boarding-house. Every day, during the war winters, he walked from his boarding house to his beautiful apartment. There, in spite of his four-score years, he still occupied himself with art and research in otology. . . . He was indeed a *grand maître*.

STCLAIR THOMSON.

WE regret to announce the death of Dr. E. W. GRAHAM, provincial medical officer, Nigeria, which occurred with tragic suddenness on the morning of March 20th, 1920, in his office at Calabar. He had not been in the best of health for some time past, but his condition was in no way regarded as serious, and he was at work when a sudden heart seizure carried him off within two minutes. Dr. Graham came of a Cumberland family of whom he was very proud. He was educated at Glasgow University, and graduated M.B., C.M. in 1896. After holding one or two assistantships at Ryton-on-Tyne and in the county of Durham he was appointed medical officer to the Niger Coast Protectorate in December, 1899. He was made a senior medical officer in 1910, and was transferred to the Gold Coast in 1912. He was appointed provincial medical officer in 1914. It was only in December last that he was transferred from the Gold Coast to Nigeria. Dr. Graham was not only a very able medical officer, but he also possessed a lovable disposition and great charm of manner. He was universally respected and liked by all, Europeans and natives alike, who came in contact with him. His death has caused a great gap, which it will be difficult to fill. His funeral, which was most impressive, took place the same evening at 5 p.m., and his remains were laid to rest in the European cemetery at Calabar amid scenes of universal sorrow. The cortège was followed by a large procession, including all the Europeans of Calabar, headed by the Resident. Very large numbers of natives attended. The coffin, which was borne by members of the Nigerian Marine, was covered with the Union Jack, and the [illegible] floral tributes gave evidence of the respect and esteem in which Dr. Graham was held. The band of the 3rd Nigeria Regiment West African Frontier Force rendered the Dead March in Saul at the graveside, and the last rites were performed by the Rev. Mr. Dean of the United Free Church Mission, an old friend of Dr. Graham. He leaves a widow and three children, two daughters and a son, with whom much sympathy is expressed.

DR. [illegible] MITCHELL, who died at [illegible] on July [illegible], received his medical education at the University of Glasgow, where he graduated M.B., C.M. in [illegible], and M.D. in [illegible]; he then took the D.P.H. Camb. in [illegible]. He went to Wales as an assistant to Dr. [illegible] Morgan Jones of [illegible], and was subsequently appointed medical officer of health to the Swansea Rural District Council, a post which he occupied for more than twenty years and held it at the time of his death. He was also medical superintendent of the [illegible] Fever Hospital and the [illegible] Smallpox Hospital, as well as medical officer to the post office, the Education Board, and to the infant welfare centres in Swansea, as well as certifying factory surgeon. He took great interest in the volunteer movement, and was in command of one of [illegible] companies of the 3rd Glamorgan Volunteer Rifles, and remained in command of the same company after its incorporation into the Territorial Force; he subsequently retired with the rank of major. Dr. Mitchell, who was a member of the Swansea Division of the British Medical Association, married the daughter of the late Mr. W. Lewis, and leaves two daughters, who both married medical men.

DR. ROBERT MUNRO, of Largs, Ayrshire, died on July 18th. He was educated at Edinburgh University, of which he became M.A. in 1860, M.D. in 1871, and LL.D. in 1901. After practising medicine for a time at Kilmarnock he retired in 1886 in order to apply himself with greater freedom to scientific pursuits. Dr. Munro was well known as an archaeologist and anthropologist; a Fellow of the Royal Society of Edinburgh, he was for eleven years secretary of the Society of Antiquaries of Scotland, and was president of the Anthropological Section of the British Association in 1893. He was also an honorary member of numerous anthropological societies abroad, and had been Rhind lecturer on archaeology, Dalrymple lecturer in archaeology in the University of Glasgow, and Munro lecturer on anthropology and prehistoric archaeology in the University of Edinburgh. In addition to numerous contributions to these sciences, he was the author of *The Lake Dwellings of Europe*, and of *Rambles and Studies in Bosnia;* his book *From Darwinism to Kaiserism* was published last year.

DR. IRENE C. DAVY EATON, who died suddenly from cardiac failure on August 2nd, was born in Victoria, Australia, in 1882, was educated privately, and subsequently studied at the London (Royal Free Hospital) School of Medicine for Women. She obtained the M.B. and B.S.Lond. degrees in 1909 and the D.P.H. in 1915. After graduating, she was medical officer at the East Anglian Sanatorium, Nayland, then house-surgeon and pathologist at the New Hospital for Women. In 1913 she was appointed assistant health officer to the Willesden Urban Municipal Council. During the war Dr. Eaton served first at the Norfolk War Hospital as assistant pathologist, then at Malta, being attached to the R.A.M.C., and in October, 1917, was appointed Area Controller (W.A.A.C.) in the Eastern Command, where she served until demobilization in June, 1919. She was one of the first medical officers appointed in the new Ministry of Health. Dr. Eaton did valuable work in her appointments, and was universally loved and respected by her colleagues and the numerous people with whom she came in contact. One of her colleagues writes: We all loved Dr. Eaton; she was so delightful to do with, so ready to help in any difficulty. You could always depend on her—her work was always in order—and her personal dealings with everybody, men and women alike, were always harmonious.

CAPTAIN PHILIP AUGUSTINE MCCARTHY, R.A.M.C., died at Lissenhall, Little Swords, County Dublin, on July 11th, from illness contracted on active service. He was educated at Queen's College, Cork, and at Guy's, and took the L.S.A. in 1883, also graduating in the Royal University of Ireland as M.D. and M.Ch. in 1884, and as M.A.O. in 1885. He took a temporary commission as lieutenant in the R.A.M.C. on April 3rd, 1915, and was promoted to captain after a year's service.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following courses in physiology for 1920-21 have been approved and will be recognized as advanced lectures, which a candidate at the B.Sc. Examination may name for part of his practical examination.

Advanced Lectures. 1st Term: Professor A. D. Waller, in conjunction with Mr. [illegible] Waller: Eight lectures on experimental studies in [illegible] physiology and vegetable electricity on Tuesdays at the University. Dr. C. Da Fano: Eight lectures on the histology of the nervous system on Wednesdays at [illegible] p.m., commencing October [illegible], at King's College. *2nd Term:* Mr. J. A. Gardner: Eight lectures on biochemistry; title and place to be arranged. Professor M. S. Pembrey: Eight lectures on the physiology of the embryo, fetus, and newly born, on Thursdays at 4.30 p.m., at Guy's Hospital. *3rd Term:* Eight lectures by various lecturers, to be arranged by

Professor Bainbridge at St. Bartholomew's Hospital. Professor H. E. Roaf: Light lectures on reception of sensory stimuli.

Advanced Practical Work: 1st Term.—Professor W. M. Bayliss: Physical chemistry in relation to physiology at University College. *2nd Term.*—Professor M. S. Pembrey: Practical work on respiration at Guy's Hospital. Professor W. D. Halliburton and Dr. O. Rosenheim: Advanced chemical physiology at King's College. *3rd Term.*—Dr. J. S. Edkins: Advanced practical histology at Bedford College. Professor F. A. Bainbridge: Electrical changes in skeletal and cardiac muscle.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

The following scholarships have been awarded: M. W. P. Hudson, Entrance Science Scholarship, £150; E. Thompson, Second Entrance Science Scholarship, £60; D. P. Mulvany, Entrance Arts Scholarship, £25; H. W. Bowen, Entrance Arts Scholarship, £25; D. V. Davies, The William Tite Scholarship, £25.

The Services.

Vice Admiral Sir William Norman, K.C.B., late Director-General of the Medical Department of the Admiralty, has been appointed honorary surgeon to the King in the vacancy caused by the death of Inspector-General Sir James Dick on July 13th.

A Territorial Force R.A.M.C. Major or Captain is required as D.A.D.M.S., 46th (North Midland) Division. He will receive pay and allowances of the substantive rank. Communications should be addressed to Colonel E. A. Wraith, C.B.E., D.S.O., A.D.M.S., 46th Division, Windsor House, Shrewsbury.

The Royal Naval Volunteer Reserve Officers' Decoration has been awarded to Surgeon Commander W. E. Harker, O.B.E.

The name of Major R. A. Chambers, I.M.S., has been brought to notice by the Commander-in-Chief in connexion with the Afghanistan campaign, 1919.

Medical News.

ON August 13th, in the large theatre of the Cambridge School of Anatomy, a presentation was made to Dr. W. L. H. Duckworth, Fellow of Jesus College and Senior Demonstrator in Anatomy, on the completion of twenty-one years of devoted service to the university as lecturer in physical anthropology. This tribute to the esteem and affection in which he is held was the spontaneous desire of every demonstrator, assistant, and student to contribute some token of their appreciation of his unfailing courtesy and ever ready help. Moreover, Dr. Duckworth has shown great capacity for organization, especially during the past year, when the chair of anatomy has been vacant and the entire control of the anatomy department has devolved upon him. The fine inscribed silver salver was presented to Dr. Duckworth, together with a book containing the signatures of two hundred and twenty subscribers, by Dr. D. Reid in the presence of the staff and students of the anatomy department.

THE Home Secretary has appointed Dr. A. E. Burroughs, Ophthalmic Surgeon to the Liverpool Royal Infirmary, to be specialist medical referee for ophthalmic cases under the Workmen's Compensation Act, 1906, for County Court Circuit No. 6.

THE St. Thomas's Hospital Old Students' dinner will take place at the Connaught Rooms, Great Queen Street, W.C., on Friday, October 1st, at 7 o'clock for 7.30. The chair will be taken by Dr. F. F. Caiger.

THE well-known ophthalmological journal, *Zentralblatt für Augenheilkunde*, founded forty-three years ago by Hirschberg, has suspended publication.

ON August 12th, during the XII International Congress of Esperanto at the Hague, in which more than twenty-two nations are taking part, a special meeting of medical men was held. Dr. J. Boyd Primmer, Cowdenbeath, Scotland, member of Council of the Fife Branch of British Medical Association, who presided, read in Esperanto (the international auxiliary language) a paper dealing with the treatment of tuberculosis in Great Britain, with special reference to treatment in farm colonies, and to the work in that direction of Sir Robert Philip, Edinburgh. A discussion followed, which showed that the medical men present, representing various European nations, fully understood the subject being discussed in the international language, their sole aim being to acquire by exchange of views an amelioration of the conditions that give rise to tuberculosis, and, if possible, to hasten the cure in suitable cases. Dr. Smulders (Holland) proposed and Mr. R. Barkema seconded the proposal to reconstitute the International Esperanto League of Physicians and Surgeons. Dr. Primmer was unanimously elected President. It was also resolved that those who desired the republication of the Esperanto journal, *La Kuracisto* (The Doctor), for the purpose of translating new methods of treatment through an international medium, and of publishing original contributions in the neutral tongue—the product of the mind of the oculist in Warsaw, the late Dr. Zamenhof—should send their names and addresses to the President.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. W. J. O'SULLIVAN (Limerick) inquires: What treatment or procedure has any effect in reducing the liability to recurrence of facial erysipelas? In the case I have in mind the attacks do not now appear to be associated with any constitutional disturbance.

INCOME TAX.

TAX has paid £4 14s. 9d. tax on the rental value of the residence. She asks if this can be deducted for purposes of income tax, Schedule D.

*** The tax cannot be deducted, though the appropriate fraction of the rental value (say one-half) on which it was paid can be regarded as a payment made for professional purposes. Our correspondent will perhaps appreciate the point better if the question is looked at as if a rent actually were paid; in that case any payment of income tax, Schedule A, would operate to reduce the payment of rent *quâ* rent. Substantially this is her position—that is, she is her own landlord for this purpose, and she cannot deduct both the rent and the tax. To the extent to which the £4 14s. 9d. includes other taxes—for example, inhabited house duty or land tax—it can be treated like the payment of rent or rates.

"E. H." inquires what tax he would have to pay on an income of £800 a year from British War Loans.

*** The tax payable would be as follows:

		£	s.	d.
Amount of income	...	800	0	0
Deduct—Allowance for self and wife ...	...	225	0	0
Net income chargeable	...	575	0	0
Tax payable on £225 at 3s.	...	33	15	0
And on £350 at 6s.	...	105	0	0
£575	Total ...	138	15	0

It will, of course, be understood by our correspondent that as and when he takes up professional work in this country the income so derived would necessitate payment of further taxes.

LETTERS, NOTES, ETC.

COMPOUND TINCTURES IN THE TREATMENT OF MALARIA.

DR. BEVERLEY ROBINSON (New York) writes to us on the value of compound tincture of bark, or of Warburg's tincture, in malaria. In the ordinary tertian type, when relapses occur, bark is perhaps most effective, if given in sufficient and frequent doses, such as one teaspoonful every two hours, for a day or two, and, later, less often. For forms of malaria contracted in tropical countries, Warburg's tincture or extract in [illegible] is sovereign. It is essential, he adds, to have either preparation made by a thoroughly reliable chemist.

*** The investigations described during the discussion, in the Section of Physiology and Pharmacology, on quinine and its related alkaloids, seem to afford an explanation of the fact that undoubtedly in suitable cases preparations of the whole succeeds where quinine fails. A report of the discussion was published in the JOURNAL on July 24th (p. 113), together with a leading article (p. 131), in which an endeavour was made to throw some further light on the situation.

TENNIS ELBOW.

DR. W. J. MIDELTON (Bournemouth) writes: I am glad the question of "tennis elbow" has been raised in the BRITISH MEDICAL JOURNAL. The importance of ascertaining precisely what one is dealing with is great. Personally I should say that in the majority of cases the trouble lies in muscular tissue and is a myositis. Although as a rule local treatment is efficacious, yet sepsis must be thought of. For local treatment I rely on the galvano-cautery. Quite recently a lady consulted me complaining of muscular rheumatism in the right shoulder. She said she was playing in a tennis tournament and must go through with it. I found localized tenderness in the supraspinatus. I made a number of "dots" with the cautery over and around it. She continued to play, and said the one application had cured her. Not only was the pain relieved and a feeling of weight taken off her shoulder, but she felt "bucked up."

DISLOCATION OF HUMERUS BY MUSCULAR ACTION.

DR. HENRY H. HAWARD (Northwich) writes: Some eight years ago I reduced a dislocated humerus sustained by a young man through a fall off some steps while painting. About twelve months after I was called to him again in the early morning. When he had just got out of bed he sneezed violently, while holding on to the bedrail with both hands, and it had dislocated again. I have attended him for it since owing to a slight fall, and he went to another doctor with it on another occasion. He has had no subsequent return of the trouble in spite of three years' war service.

POSTURE IN DEFAECATION.

DR. D. H. VICKERY (Senior R.M.O. Ministry of Pensions Hospital, Neath, Glam.) writes: Though it may seem unnecessary to draw attention to the well recognized causes of hernia and constipation, I feel no apology is needed for once again calling to mind what is, in my opinion, the principal factor—the position adopted in emptying the lower bowel. The modern closet with its high seat allows considerable pressure on the inguinal region, and the buffer-like action of the thigh is lost. Nature, I feel sure, intended the "squatting position" to be adopted. In a hospital like this a large number of hernia cases are operated on by Major Haycraft, M.C., visiting surgeon, and in discharging them I always advise the "squatting posture." In private practice I always advised parents to encourage their children to adopt this position, and were it used more frequently we should see less of the conditions mentioned.

POISONING BY TWO AND A HALF GRAINS OF ASPIRIN.

DR. E. [illegible]-SMITH (Barry) writes: Although several cases of aspirin poisoning have been noted I think the following may be of interest owing to the small dose required to produce well marked symptoms in an intolerant individual. Recently I saw a man, aged 7[illegible], who had taken half a tablet of aspirin ([illegible] grains). Within ten minutes he had severe headache, [illegible] and partial collapse. The face, arms, [illegible] and portions of the lower limbs were covered with an [illegible] rash, which showed large raised patches [illegible] the eruption. The [illegible] were almost closed [illegible]. When [illegible] hours later the [illegible] [illegible] [illegible]

[illegible]

[illegible]

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 33, 34, and 35.

THE appointment of certifying factory surgeon at Gatehouse of Fleet (Kirkcudbright) is vacant.

A MEDICAL CRICKET CLUB.

WE learn that the practitioners resident in Southend-on-Sea have formed the Southend Doctors' Cricket Club, the origin of which arose from a "scratch" team raised in 1919 by one of them to play against the school attended by his son. This season the club have played five matches, of which three have been won, one drawn, and one lost. In addition, two matches could not be played owing to bad weather. The games have been played on Wednesdays, and much keenness and interest have been shown. Our informant adds that it is hoped next year to arrange a more ambitious programme of matches. We congratulate the honorary secretary, Dr. A. W. Holthusen, and his colleagues on their enterprise. There have been many famous medical cricketers in the past, headed by W. G. Grace, and several are playing in county matches this year, but we do not know that there has hitherto been a doctors' cricket club like that at Southend.

DEPILATORIES.

IN our issue of August 7th, p. 228, "Ignotus" inquired as to remedies for superfluous hairs on the upper lip and chin of women, and a short note on the treatment of this condition by electrolysis was appended to his question. Another correspondent "M.D." now writes: "What is the objection to shaving? I have recommended this (by a safety razor) to two lady patients recently, with complete satisfaction to them as to the result. Of course it has to be done daily, or nearly so, but with the kind of razor in question this is as easy as paring the nails or dressing the hair."

TOBACCO TREMOR.

"C. D." writes to encourage "A. B." (August 7th, p. 228) in following the "counsel of perfection"—namely, to abstain from tobacco. The same tremor affected "C. D." whilst on duty in France, till he could not move the men on a chess-board with any comfort. He gave up the practice of smoking tobacco, and has not, after two years, regretted it. The gain in improved digestion and in steadier nerve is great, not to mention the very considerable saving in money, the only item on the *per contra* side being the allegation of unsociability. No half measures, he says, are of any use. The drug should be stopped right away, and the necessary power of will applied.

RÔLE.

THE word rôle is admitted to the *New English Dictionary*, but obelized to show that it is "not naturalized." A quotation is, however, given from Gardiner, 1606, who spelt it rowle. That the word is nevertheless declared not naturalized is some proof that it is not in fact a good word in English, in which there are several others of the same sound but different meaning. L'Estrange in 1692 in fact spelt it roll, which in English is right, since it means merely the roll of paper in which the actor conned his part, and part—not rôle or roll—is the word the English actor uses. The word with the accent is borrowed from French; it seems to have made a special appeal to medical writers. We read of the rôle (or role) of the patient, of the surgery of the intestines, of gastro-enterostomy, of the microbe and of the stain for it. Of the strange company in which the word may be found an amusing example is to be found in a testimonial given by Mr. Henri de Bray, "the original exponent of the tickle toe," who is of opinion that the gramophone is "destined to play a primordial 'role' in the future activities of Society Dancing."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

[illegible]

[illegible] Manager, [illegible] morning [illegible]

[illegible] post- [illegible] in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

Sir Humphry D. Rolleston, K.C.B., M.D., F.R.C.P.,
President.

DISCUSSION ON THE CLINICAL SIGNIFICANCE AND COURSE OF SUBACUTE BACTERIAL ENDOCARDITIS.

The Chairman (Dr. Thomas Lewis, F.R.S.) remarked that before calling upon Sir Thomas Horder to open the discussion on the clinical significance and course of subacute bacterial endocarditis, he might perhaps indicate why this subject had been chosen. It was very desirable that subjects coming for discussion at sectional meetings should be subjects of practical utility to those in general practice, or that they should be subjects which have been brought to a head during the course of their investigation. The present subject belonged to the former category. It was in respect of prognosis that subacute bacterial endocarditis had such a high though, unhappily, grave significance, being a very fatal disease. Another reason for giving this disease prominence by its discussion was that it is by no means uncommon, far less uncommon than had been thought; but it often escaped recognition. It was not infrequent; it was often overlooked; yet, in its final stages at least, it was easy to recognize by simple bedside observation. Why, then, was it overlooked? Largely because we had in the past misinterpreted certain important physical signs. There was the temperature chart; we were too apt to look for high fever; in subacute bacterial endocarditis the temperature was not conspicuously high; often there was no fever for considerable periods. But more important, perhaps, was the misinterpretation of two signs, namely, pallor in aortic disease, and clubbed fingers. It was widely believed that aortic reflux, if free, in itself produces pallor; that aortic reflux was a sufficient explanation; that was incorrect, pallor in aortic disease being usually associated with infection. Again, clubbing of the fingers was commonly believed to be a simple associate of valvular disease or congestion. That was sometimes true, as in congenital heart disease. But in adults who present heart disease he was convinced that clubbing of the fingers was much more frequently an association of infection. He did not say that either pallor in aortic disease or clubbing of the fingers was diagnostic of subacute bacterial endocarditis, but he did wish most strongly to emphasize these signs as signs which should at once arouse our suspicions of this infection. The Section was most fortunate in having obtained Sir Thomas Horder as the opener of this discussion. His work, extending over many years, constituted a very weighty contribution to our knowledge of this subject. Personally, the Chairman was of opinion that this work had not yet received the attention which its merit deserved. The Section was also no less fortunate in having a distinguished visitor, Dr. Libman, of New York, whose work in this sphere had been wide and thorough.

In the discussion Dr. Lewis hoped that questions of pathology, and especially of bacteriology, would be avoided. While it was recognized that the pathology and bacteriology of the condition could scarcely escape consideration, yet the intention was that the clinical aspects of the disease should form the basis of the discussion.

OPENING PAPER

BY

Sir Thomas Horder, M.D., F.R.C.P.,

I. The Subject Defined.

It is desirable at the outset to define our subject. Let me do so in the first instance by excluding certain forms of endocarditis with which we are not to-day concerned. We are not concerned with that form of endocarditis which accompanies acute and subacute rheumatism. Whatever the essential nature of rheumatic fever—and as to this we are still much in the dark—it is generally agreed that the vegetations of the associated endocarditis are, as judged by our present methods of investigation, bacteria-free, as also is the patient's blood stream. We are not concerned with that form of endocarditis, not inappropriately termed ulcerating, which is but one part of an acute pyaemia, and in which the heart lesion is secondary to, rather than responsible for, the systemic infection or septicaemia. Such cases, though common, run an entirely different course from that seen in patients suffering from subacute bacterial endocarditis, and their pathogenesis is also very different. In most of these cases of ulcerative endocarditis there is a primary focus of acute infection from which there arises a systemic blood invasion, and the ulcerating endocardial lesion is a secondary focus from which, again, tertiary (embolic) foci arise in the tissues. The primary focus may be in the uterus, the lung, the bones, the prostate, the skin. The infecting agent is a virulent bacterium, *Staphylococcus aureus*, *Streptococcus pyogenes*, pneumococcus, gonococcus. The duration of the disease is from a few days (for there is a fulminant type) to a few weeks. Thirdly, we are not concerned with that form of endocarditis, even though it be—as it not seldom is—bacterial, which occurs as a terminal event in chronic diseases, and, though it may be suspected or even diagnosed by a prompt blood culture, is more often latent and only discovered in the *post-mortem* room.

So much for what subacute bacterial endocarditis is *not*. If we exclude all cases of infection of the endocardium falling into the three groups I have described, there remains a set of cases that have been termed by some chronic and by others subacute. In my own early accounts of this group I described both subacute and chronic cases, according to the intensity of the disease-process and its duration. It simplifies a none too simple subject, however, to follow the suggestion made by Libman, to whose thorough and valuable work we owe so much, who includes the subacute and the chronic cases under the one title "subacute." Subacute bacterial endocarditis, then, is the accepted name of a disease having more or less of the following features. The onset is most often insidious; the general symptoms include loss of strength and tone, a sallow complexion with anaemia, moderate loss of weight, and fever; the heart gives evidence of endocarditis at some time or other in almost all cases, and in the majority there has been previous valve injury; widespread arterial embolism takes place; in most cases blood cultures are positive, the isolated bacterium being either a short streptococcus, much less often Pfeiffer's bacillus, and rarely a micro-organism difficult of identification, but in all cases the microbe is of low pathogenicity. The course of the disease is slow but progressive, and though remissions occur, it is, once established, almost invariably fatal. The total duration of the illness is from three months to two years, with an average duration of six months; death occurs from toxaemia, from heart failure, from uraemia, or from cerebral or coronary embolus. The *post-mortem* findings include a vegetative endocarditis on the valves or wall of the heart, with little or no ulceration, and widespread embolic infarction without suppuration. As a result of the embolic process there is found a form of glomerular nephritis more or less characteristic of the disease.

II. Frequency and Importance of the Disease.

There is no doubt that the disease is fairly common. How common it is not possible to say, for the incidence of diseases depends much upon the degree to which the picture of them has been popularized, so that he who runs may read, and reading may record. From some investigations of my own I am led to say that 1 in 200 patients admitted to the medical wards of a large general hospital suffers from subacute bacterial endocarditis. The frequency with which it is met in private practice will depend much upon the facilities afforded to the individual observer. To some of us, for obvious reasons, the disease presents itself with a relative frequency which is at times quite startling, and, as long as our therapeutic measures are still so inadequate, very humiliating. Has the incidence of the disease increased of late? A question as difficult of answer as the question of its absolute frequency. Perhaps there has been a recent undulation in the curve of incidence; but I am not sure that similar undulations have not occurred at other times during the last two decades. Without indulging in the dream of an "epidemic circulatory constitution," it may well be that such undulations are real things and not the vagaries of personal experience. The disease is of great importance, partly on account of the difficulties often attending its recognition, but still more on account of the difficulties attending its successful treatment. In few, if any, diseases is the contrast so striking between our knowledge of its clinical and morbid anatomical features on the one hand and our ignorance of any really effective treatment on the other.

III. Onset, Early Symptoms, and Predisposing Factors.

The onset of the disease is usually very insidious, so insidious, indeed, that it is often quite impossible to say when the process of actual endocardial infection begins. This is equally so whether the patient be of the hospital class and comes under observation relatively late in the course of his disease, or of the private class and keeps in close touch with his doctor. As regards age incidence, most of the cases occur between the ages of 15 and 50, and half of them between 20 and 40. The sex incidence is equal. The patient's previous medical record is important. In about half the cases met with there is a history of acute or subacute rheumatism or of chorea, but between the occurrence of the rheumatism and the onset of the endocardial infection there has usually been an interval of several years, very often years of good general health. In a few cases the interval is much shorter, and in fewer yet there is no interval of good health at all between the two diseases. Diseases other than rheumatism in the past history of the cases, but of frequency which is insignificant by comparison, are scarlet fever, gonorrhoea, typhoid fever, malaria, syphilis, influenza, Graves's disease, dysentery, and pneumonia. So-called "athlete's heart" has been, more than once in my experience, a feature known to the patient.

Post-mortem evidence not infrequently reveals the existence of a congenital heart defect which gave no indication during life. There is abundant evidence for saying that in the great majority of the cases the endocardium has suffered previous damage. This pre-existing heart lesion may be very slight and, even if known, as it usually is in patients of the private class, very little importance may be attached to it. Modern views as to the relative unimportance of cardiac bruits in the presence of sound cardiac muscle, though they have been valuable in helping to adjust certain disproportionate ideas concerning the functional integrity of the heart as an organ, must not be allowed to disguise the known importance of scarred valve cusps in determining bacterial invasion and infection. "No one ever dies of mitral regurgitation" it has been said—which is doubtless true; but too often the cicatrized mitral valve proves to be the point of lowered resistance, [illegible] organisms, it may be, from the circulation which might otherwise excite but a slight disturbance in health, or at most set up a systemic infection far less lethal in its results than the one we are now considering. Any old rheumatic valve lesion is good enough to serve as the starting point for bacterial infection; the existence of such a lesion, therefore, should never be readily dismissed as being of no moment in any patient whose general health is unsatisfactory, quite apart from the question of cardiac adequacy. We are prone to consider a heart valve damaged by previous rheumatic inflammation as merely cicatrized, an effect of [illegible]; in connexion with our present subject of greater importance is its extra vascularity. The associated condition of fibrosis and vascularization produced by old rheumatic endocarditis has been emphasized by Carey Coombs as the result of careful histological study.

Ill-defined malaise, slight anaemia, some loss of weight, irregular fever, sweats, erratic pains in the limbs or back or joints or fleeting rashes, areas of redness or tenderness developing in the hands or feet—one or more of these in any patient in whom a critical examination of the heart fails to pass it as organically sound, should raise our suspicions, and should lead to a special examination for definite signs of endocardial infection.

There is no doubt that many of these subacute cases go quite unsuspected for a considerable part of their course. They pass in and out of our consulting rooms, or we see them in their homes, or treat them in the out-patient department, and, whether from an inadequate conception of the protean nature of the disease, or from stress of work, or from some other reason, our suspicions are not aroused. In some instances a sanguineness of temper, ofttimes a striking feature in the patients—a *spes endocarditidis* it might be called—deludes their medical adviser into accepting their own view of the trivial nature of symptoms which he might otherwise regard more seriously. The occurrence of some other disease process, which keeps them in bed and leads to the taking of temperatures; an exacerbation of the disease itself, which they now term a bout of "influenza"; an investigation of their temperature, undertaken because the question of tuberculosis has arisen in the mind of the practitioner—one of these things draws attention to the fact that a progressive infection is at work, and therefore helps to raise the question of a bacterial endocarditis. The discovery of fever that cannot be adequately explained, whether the discovery be the result of accident or the outcome of the patient's sensations, is probably the most common early sign of the disease.

Next to unexplained fever, the most common initial symptom arousing suspicion is probably an atypical rheumatic state: pains with or without swelling, in odd situations it may be, or in places sufficiently common to suggest lumbago, fibrositis, or myalgia. The idea of possible endocarditis not being in the observer's mind, too often the spot complained of receives but cursory examination, and it may be several weeks later, when more incriminating features present themselves, that the observer remembers this early phase of the disease picture.

In a third set of cases it is a frankly embolic event which first draws attention to the serious nature of the trouble; sudden pain in the left flank followed by the discovery of an enlarged and tender spleen, pain in the arm with temporary obliteration of the radial pulse on that side, blood in the urine, complaint of defective vision due to retinal embolism—to name some of the more common instances.

In yet a fourth set, since nowadays the practice of blood culture in cases of obscure disease has become more generalized, it is the cultivation of a microbe from the blood stream of a patient suffering from an unknown malady that first of all suggests to the doctor the nature of the illness under investigation.

IV. Cardinal Signs of the Disease.

There are four cardinal signs of the disease when it is fully evolved. Arranged in the order of their importance from the point of view of diagnosis they are these: multiple arterial embolism, endocarditis, the isolation of a bacterium from the blood stream, and fever. The occurrence of multiple arterial embolism in a progressive illness of obscure nature itself raises a strong suspicion of the disease. If endocarditis be manifest in addition, the nature of the illness is established. The presence of a positive blood culture, though not essential to the diagnosis, confirms this, especially if the bacterium isolated be a streptococcus of the type to be referred to briefly later. Fever is perhaps the least helpful of the four cardinal features, although it is probably always present at some stage or another of the disease, and in the majority of the cases is present throughout the whole of it. Let us consider these cardinal signs in more detail.

1. *Multiple Arterial Embolism.*

In order to obtain anything approaching an adequate conception of the disease we are considering it is necessary to enlarge considerably our earlier notions of the embolic process, and in two directions—in the direction of the diffuseness of the embolic site, and in the direction of the minuteness of the embolic fragment. Close study of the clinical and of the morbid anatomical material available reveals the facts that many more organs and tissues are found to be affected by infarction than was formerly known to be the case, and that many of the emboli are of microscopic size, little else than microbic metastases, in fact. These two considerations are of very great importance in the clinical and clinico-pathological investigations of a suspected case. A few examples must suffice.

a. The Skin should be explored for petechiae in a methodical manner, and though one petechia does not make a case of infective endocarditis, any more than one swallow makes a summer, it is, in any doubtful instance of the disease, a very frequent harbinger of more certain signs. I pointed out long ago that these isolated and pioneer petechiae are common about the regions of the clavicles and at the base of the neck; these situations should be carefully examined. Sometimes it is of value to note a mere yellowish punctate stain, seeing that this may be one such petechia in a stage of decolorization. Twice in the past few months I have found a minute petechia, in the form of a vivid linear splash of red at the side of the bed of a finger-nail, in cases in which there were, as yet, no skin petechiae to be found, and in which the diagnosis of infective endocarditis was doubtful, but later established. I do not remember to have read or heard of this appearance. As to the extent of these petechiae, there is every transition from cases exhibiting isolated lesions to a state of things in which the whole body is covered by small haemorrhages, though it should be added that this latter condition is more often seen in the acuter forms of endocardial infection.

Even more decisive from their diagnostic significance are the painful and discoloured patches or nodes that appear on the terminal phalanges of the hands and feet, to which attention has been drawn by several observers. These areas are found most often on the pads of the fingers and toes; but they may occur at other aspects of the extremities, such as the palm of the hand and the sole of the foot. They are doubtless embolic in origin, the affected vessel lying in the deep layer of the skin or in the soft parts beneath the skin. It is not enough merely to look for them; it is also necessary to ask about them. At the moment of the examination none may be present, and the patient may not refer to the occurrence of the sharp, sudden pain which ushered in the event or to the local area of tenderness which followed it, because both passed off quickly, and the resulting small dusky area of induration may have passed also or may never have attracted his attention. At times there is nothing to see even by the skilled and alert observer. The patient's reference, on inquiry, to a sensation in the pad of a finger as though he had been pricked by a thorn or pin is of no less significance. I have seen a patient examining such a finger and such a toe with minute care, puzzled to understand what has led to the exquisite but minutely localized tenderness. As proof of the insidious nature of the disease I have elicited incontrovertible evidence of the existence of these tender spots during what I may call its ambulatory stage, fully three months before the patient came under systematic observation.

(b) *The Joints, Peri-articular Structures, etc.*—It is convenient to consider the symptoms referable to these structures in this place, although it is open to question how many of them are due to the operation of toxins, and how many to the arrival of microbic metastases. That many of them are embolic in origin seems clear from their clinical features and course. They lack the symmetry of true rheumatic joint affections, there is much less tendency to synovial effusions, and focal oedema and discoloration are common in the overlying skin. The situation of the pain and swelling is not seldom one rarely seen in true rheumatism—the dorsum of the foot, the region of the tendo Achillis, the groin, the sterno-clavicular joint.

c) *The Kidney.*—Gross embolic infarction is, of course, well known, and its significance is not likely to pass unnoticed. This event may lead to very severe pain, simulating a renal colic; it is generally followed by haematuria recognizable by the naked eye, and albuminuria of somewhat longer duration. The renal embolism may be the first clear confirmation of a doubtful case, or the first symptom to raise the question of infective endocarditis—as, indeed, may any embolic event, whether splenic, renal, retinal, or cerebral. This is common knowledge. Less widely known, but of great importance, is the occurrence of very minute microbic embolism in the kidney glomeruli, a process which recent investigations go far to prove is both an early and a very common occurrence in the disease.

Clinically, this process is to be inferred by the discovery of red blood cells and traces of albumin in the urine of suspected or known cases. Before it can be said with even an approximation to certainty that this glomerular infarction and infection is not occurring the urine must be examined systematically over a series of at least ten days.

Pathologically, the condition has been studied very completely by Gaskell and by Baehr, who demonstrated independently in the kidneys of the more chronic cases of infective endocarditis a form of glomerular nephritis that is almost, if not quite, specific for the disease. They showed that part or the whole of many glomeruli underwent swelling and hyaline degeneration, and Baehr was able to demonstrate groups of the causative coccus lying in the midst of necrotic intraglomerular areas. Undoubtedly this is the morbid histological lesion that we must associate with the conspicuous renal symptoms so commonly present in the disease, and which leads to uraemia and other evidence of renal inadequacy as a terminal event in a large percentage of the cases, and especially in those which run a prolonged course. Libman goes so far as to say that he regards the occurrence of such kidney changes as leading to a lethal result in a certain proportion of cases in which there is evidence that the microbe dies out ("healed and healing cases").

(d) *The Retina.*—Just as in the skin and in the urine it behoves us to search diligently for signs of the embolic process at the earliest possible stage of a suspected case, so here careful exploration of the fundus oculi not seldom discovers small haemorrhages that are indicative of the state of arterial metastasis long before a grosser event leads to plugging of a relatively large vessel and consequent scotoma of which the patient may complain.

With the many examples of embolism in such regions and of such magnitude as to draw the observer's attention to the event, and to the lesion produced, I will not stay to deal, except to refer in passing to the fact that such event occasionally leads to a surgical procedure undertaken in ignorance of the real nature of the process. Thus the kidney has been explored, and even removed, for renal infarction of this kind, and the abdomen has been opened for the severe pain and the lump caused by plugging and aneurysm formation in a mesenteric artery.

2. *The Endocarditis.*

The endocarditis may be manifest or it may be masked. There is no doubt that in a few cases no signs are present by which endocarditis can be diagnosed with certainty for a long time, and in a still smaller number of cases the absence of the signs of endocarditis persist throughout the whole course of the disease. This was so in one of my own cases, and the reason for it was apparent *post mortem*; the patch of endocarditis was entirely mural, the valve cups being wholly unaffected. It does not follow even when signs of endocarditis are manifest that it is the present infection which is causing them, rather than old cicatricial changes in the valves; but the probability is so high in any given case that the present infection does involve the damaged valve, that this may be taken for granted. All the same, it is well to remember that in those cases in which well marked valve lesions preceded the onset of the disease, the major part of the heart signs may be, indeed probably are, due to the old lesion rather than to the new; for this reflection gives some hope that if the infective process could once be successfully combated the heart would not be left much worse off than it was prior to the arrival of the infection. Considerations such as these account in part for the fact that in subacute bacterial endocarditis, unlike acute ulcerating or fungating endocarditis, it is uncommon for bruits to "come and go," or to "change their character from day to day," as is so commonly taught. Even when a systolic bruit does appear in a case in which it was not heard primarily, the observer needs to bear in mind the possibility of the murmur being due to lack of myocardial tone, to stretching of the mitral ring, or to concurrent anaemia, rather than to endocardial vegetations.

As to the state of the heart generally, it is agreed by most observers who have studied these cases that it is a striking thing that this organ shows so little recognizable response to the infecting process, at least for a very considerable time. There is some difference in the expressed views of different observers as to the relative incidence of the classical signs and symptoms of heart failure towards the end of the course of the disease, but there is general agreement as to the fact that for the major part of its course subacute bacterial endocarditis is very largely destitute of cardiac features. Indeed, our conception of the disease will be in stricter accord with the facts both of clinical and of morbid anatomical observations if we do not regard it as a disease of the heart at all. In this respect it contrasts markedly with acute rheumatism, in which disease cardiac involvement looms conspicuously, more or less carditis being almost invariable. Recognition of this fact will help us to avoid the error of thinking a patient is necessarily free from the suspicion of infective endocarditis because his heart and pulse on critical examination show little or no evidence of disordered function. Arrhythmia, symptoms of inadequate response to effort, signs of dilatation, and the results of so-called decompensation—not only may all of these be conspicuous by their absence, it is unusual to see them.

3. *Isolation of Microbes from the Blood Stream.*

Since we have become more familiar with the disease, the confirmatory evidence of a positive blood culture is less essential to a correct diagnosis. Moreover, we are not now so prone as formerly to consider negative cultures as being due to faulty technique, since we understand better the vagaries of the infective process. After all, there are limits to the amount of blood we can extract, and to the number of times we can extract it; so that a negative blood culture does but mean that *within these limits* no microbes are cultivated from the blood stream; it by no means signifies that the blood stream is sterile. Indeed, and with profound respect for Libman's views, I think all our knowledge so far goes to indicate that a systemic blood infection of varying degree exists throughout the whole course of the disease. I regard a series of negative blood cultures—I assume special knowledge of this class of case, and of the type of bacterium involved, on the part of the bacteriologist concerned—as indicating some as yet unknown factor determining the content of the microbe in the circulating blood, rather than as indicating that the vegetations are "bacteria-free." However, these considerations scarcely concern us in to-day's discussion. We must beware not to assume a better prognosis in those cases in which the cultures are negative than in those in which they are positive. Nor is the outlook necessarily better in any individual case which gives a negative culture following a positive one, unless the fever and the general state give equal assurance of a dying down of the infection. One very important reason why every effort should be made to obtain a positive culture is that without this we are at a loss for a specimen of the infecting agent, and therefore unable to proceed along any line of immune therapy.

4. *Fever.*

As already remarked, this is probably an invariable concomitant of the disease. Its discovery is, as I have said, the commonest early hint that all is not well with the patient, and it is the symptom which brings the majority of patients under observation. Though chilliness is complained of frequently, and sweats are common, rigors are uncommon, apart from some accidental event such as infarction. Of the type of temperature curve there is little to say; most often it is irregular, remittent quotidian. Remissions may occur, whether following some effort at treatment or not, although in most cases the chart shows a daily pyrexia with persistent monotony. Afebrile periods lasting from one to several days are not very unusual. In two of my cases these remissions lasted [illegible] and ten days respectively, and quite recently Dr. Herbert French showed me a patient in whom the temperature did not rise above normal for fourteen days. These afebrile periods are sometimes accompanied by increased tone in the patients, and I have notes of a case in which weight was gained, the blood count improved definitely, and the infecting microbe disappeared from the blood stream. It follows that some at least of these remissions in the fever are accompanied by remissions in the [illegible] of the infective process. We may speculate as to whether for the time being a clearance has been [illegible] thrombotic material impinging upon the [illegible] in the chamber of the heart, the [illegible] by the tissues, and the blood stream has had a temporary respite which lasts until the [illegible] in the depth of the valve tissue again renews the vegetations which again pay out microbes into the circulation. The afebrile periods that are seen to follow heroic but well meant efforts to cleanse the blood stream by [illegible] with a large bulk of some antiseptic solution are not, I believe, indications that the effort has been [illegible] so much as that the normal [illegible] of the nerve centres to the [illegible]. The afebrile periods [illegible] are not very unlike these, and the [illegible] may perhaps be taken as a useful warning. But the absence of fever as a terminal event in [illegible] is not confined to [illegible]

[illegible]

5. [illegible]

[illegible] capable of [illegible] the infective agents? In despite some difference of opinion as to the exact bacteriological status of the causative microbe and considerable difference in nomenclature, there is little doubt that the *Streptococcus viridans* of Schottmüller, the attenuated pneumococcus of Rosenau, the endocarditis coccus of Libman, and the streptococci described by Andrewes, Horder, and Gordon as *S. salivarius* and *S. faecalis* are little, if at all, removed either in biochemical features or in pathogenicity from the streptococci occurring in the normal flora of the human body in health. Are there primary foci where these potentially pathogenic microbes colonize, undergo mutation of some kind in the process of interaction with the tissues, enhance their virulence, and, eventually escaping the barrier of the mucosa, invade the blood stream? Are the tonsils, the peri-odontal membrane, and the appendix amongst these primary foci? Are we using important means of prevention, building better than we know, when we search for and evacuate these and other possible foci? Is the first stage in the disease more common than we realize, and does the mere existence of a damaged heart valve determine in which of us a temporary bacteriaemia shall become a lethal malady? Are there any clinical means of recognizing this early stage, and thus of stepping in before the fatal link in the chain is forged? What is the relative importance we should attach to the different factors in the whole pathological process—the primary focus, the lowered tissue resistance, the damaged endocardium, and the infecting agent? In our treatment shall we do best to concentrate our attention chiefly to the streptococcus, elaborating and testing our methods of immune therapy even more persistently than we have already done, or try still more diligently than hitherto to find a successful system of chemiotherapy, or spend our efforts largely in non-specific measures, with a view to raising the general resistance, as is our present method with pulmonary tuberculosis? Is the disease, after all, chiefly a "disease of low resistance," in which the micro organism—at least during the later stages—plays but an inconspicuous part? What are the causes underlying the spontaneous remissions seen in the disease, and can we do anything to imitate or to intensify them? What is the meaning of a repeated series of negative blood cultures in cases where the patients are quite as ill as in other cases in which the cultures yield large numbers of bacteria?

Such are some of the questions it seems to me we can usefully consider in connexion with this interesting but perplexing disease—a disease well meriting, as I think, its choice as one of the subjects for discussion by the Medical Section of this Association.

E. LIBMAN, M.D.,

New York.

As I am in agreement with Sir Thomas Horder in his view-points concerning the disease under discussion, I shall take up some of the aspects of the subject. It is of the greatest importance to distinguish between valvular defects and endocarditis. Otherwise one can have no clear conception and no clear terminology. A valvular defect is a finished process, like an ankylosis of a joint following an arthritis. An endocarditis is an active process.

The causes of valvular defects are:

1. The rheumatic virus (not established).
2. The syphilitic virus.
3. [illegible], a degenerative process.
4. Congenital defects. In connexion with subacute bacterial endocarditis [illegible] the open ductus [illegible].
5. [illegible] an acute bacterial [illegible] leaving a valvular defect. [illegible] for example, an [illegible] of the pulmonary [illegible].
6. [illegible].

Terminal endocarditis is clinically unimportant and will not be discussed.

When we come to discuss endocarditis we find that the main types are:

1. Rheumatic.
2. Syphilitic.
3. Bacterial, acute and subacute.

The cause of rheumatism has, in the opinion of most authors, not been established. Rheumatic endocarditis differs from subacute bacterial endocarditis in important particulars which I shall discuss in a moment. It is acute, subacute, and recurrent in type, probably never chronic.

In rheumatic fever there is frequently present pericarditis, which occurs in subacute bacterial endocarditis only rarely, then being due to some other intercurrent disease, or due to extensive infarction of the heart muscle. The skin over the joints is often red in rheumatism, and erythema nodosum may occur. In subacute bacterial endocarditis I have never seen the skin red over a joint, nor have I seen erythema nodosum. From a pathological standpoint there are sharp differences. The lesions in rheumatic endocarditis are small, firm, and covered by endothelium. In the heart muscle Aschoff bodies are found, and pericarditis is frequent. In subacute bacterial endocarditis another type of lesion is found in the heart muscle—the so-called Bracht-Wachter body, which has been produced experimentally by several observers (specially Thalhimer and Rothschild). In the kidney, in the subacute bacterial group there are the lesions described by Loehlein, and later by Baehr and Gaskell. These lesions, which almost always involve only part of a glomerulus, are almost specific for the disease, rarely occurring otherwise. They never have been found in cases of acute bacterial or rheumatic endocarditis. This lesion must not be confounded with the glomerulo-nephritis which has been observed in some of the cases.

In rheumatic fever streptococci of the anhaemolytic type (non-haemolytic, so-called *Streptococcus viridans*) have been found in the blood of eight out of fifty-eight cases of rheumatic fever. But in these organisms a positive complement fixation test was never found—in contradistinction to the obtaining of uniformly positive results in cases of subacute bacterial endocarditis, when the blood is tested against the homologous organism. In rheumatic fever the cocci found probably represent a secondary invasion.

The bacterial group of cases of endocarditis is divided into two types: acute and subacute. This distinction is made according to the duration; but there is also a bacteriological difference. Under acute cases are grouped the cases having a duration up to six weeks. Recovery is rare. They are caused by the *Streptococcus haemolyticus*, staphylococci, pneumococci, gonococcus, influenza bacillus, meningococcus, and other organisms. The heart lesions are vegetative and ulcerative, and the metastatic lesions are of a suppurative type.

The subacute cases are due to the *Streptococcus anhaemolyticus* in about 95 per cent. of the cases. The other 5 per cent. are due mainly to the influenza bacillus. An occasional case is due to the gonococcus or *Micrococcus flavus*. For practical purposes the latter can be disregarded. The cases last usually four months to eighteen months. Some last still longer; the very long cases can be called "chronic." Recently I have considered it advantageous to call the disease, which is much more frequent than acute bacterial endocarditis, "subacute streptococcus and influenzal endocarditis." The word anhaemolytic, or non-haemolytic, need not be added because the haemolytic streptococcus never gives rise to a case with subacute course.

The lesions in the heart muscle and kidney have been mentioned. There is not sufficient time at my disposal to go into the clinical differences between this disease and rheumatic endocarditis and acute bacterial endocarditis. In the subacute type the presence of the tender cutaneous nodule (Osler node) is of great value, being a pathognomonic symptom. In acute bacterial endocarditis there are small dark red papular lesions in the skin of the dorsum of the foot and the palmar side of the hand, but these are smaller and not tender. The nodes found in rheumatism are subcutaneous, not tender, and differ entirely from the Osler node. The cases of subacute streptococcus and influenzal endocarditis are characterized by embolic features, petechiae, embolism, embolic aneurysms, and the tender nodes. In rheumatic endocarditis embolic features are not produced by the endocardial lesions because they are firm and small.

It is a remarkable fact that, while the rheumatic and syphilitic viruses find no difficulty in attacking normal valves, the bacterial infections attack almost entirely previously diseased valves. The term "bacterial" is used provisionally. If rheumatic fever should be found to be due to bacteria and not to another type of organism the name "subacute bacterial endocarditis" would have to be dropped, because rheumatic endocarditis can run a subacute course. The use of the designation "subacute streptococcus and influenzal endocarditis" avoids all possible difficulties. It is interesting to note that the subacute bacterial infections occur mainly on the basis of valvular defects due to the rheumatic virus, and much less in other types, notwithstanding the great frequency of syphilitic valvular defects.

The focus of infection, as Sir Thomas Horder has mentioned, is usually an evident active one in cases of the acute bacterial type, and a small quiet focus in cases of the subacute type.

What is the outcome of the subacute cases? I have seen four complete recoveries without any residua whatsoever. These four had occurred during the course of about 150 well observed cases. Up to the present time I have seen over 300 cases of the disease. The figure is not a definite one, as I no longer make notes in all the cases that I have the opportunity of observing. I have seen several cases become bacteria-free, and die within a few months of after-results. What is very remarkable is that one sees cases which were formerly considered to be cases of "chronic rheumatic endocarditis," which are really cases of valvular defect followed by a bacterial infection with spontaneous disappearance of the infection. These patients must have had an infection of unknown duration and were not sick enough at the time to ask for medical treatment, or were supposed to have a mild malady. They have in the main the same symptoms as the few cases that I have watched, becoming bacteria-free and then dying of after-results.

By a bacteria-free case I do not mean a case of evident active infection in which the blood cultures are negative. Some active cases will show no bacteria in the blood, although the temperature is very high all through the course of the disease, and the vegetations at the *post-mortem* examination consist of a mass of bacteria. I apply the term bacteria-free to such cases as have no bacteria in the blood, and none in the vegetations as determined by crushing them and using a variety of staining methods. Such cases may run as long as two years or more after they come under observation, and usually are not febrile except when a complication arises. At the *post-mortem* examination one finds fibrosed and calcified vegetations, fibrosed chordae, some of which are torn. In the kidneys, in nearly all the cases one finds the typical glomerular lesion in healed state. Some of these cases present from time to time the pathognomonic Osler node.

Clinically these patients, besides presenting some of the symptoms seen in the active (bacterial) stage—such as petechiae (the white-centred ones being the most valuable for diagnosis), a tender sternum, moderate splenic enlargement, *café-au-lait* colour of the face, etc.—have certain clinical features that are distinctive. Some develop renal insufficiency and die of uraemia, some die of progressive anaemia and others of embolism. In some a very marked enlargement of the spleen is found, and these patients are usually suspected of being victims of Banti's disease. A few present a dark-brown colour of the face that is distinctive. It is to be noted that some or nearly all these features may be found grouped in a single case.

The renal insufficiency is due to glomerulo-nephritis and not to the small lesions in the glomeruli described by Loehlein. Of 77 pairs of kidneys in this disease studied by Dr. Baehr, a practically universal glomerulo-nephritis was found 9 times; 2 of these were of acute type and occurred in the active (bacterial) stage of the disease; the other 7 instances were of a diffuse type (secondary interstitial nephritis). These all occurred in the bacteria-free cases.

There has been a misconception as regards embolism in cases of cardiac disease. In rheumatic endocarditis the lesions in the valves are small and firm. They rarely if ever break off, and if they do they could not close large vessels. In cases of valvular defect, except for rare thrombotic deposits in an eroded part of a stenotic mitral valve, there is nothing to break off. Of course, emboli can come from thrombus material in the auricles or ventricles in any case of cardiac disease, or an embolus may come from a thrombus in an ulcerated patch of the aorta or other vessel, or from the pulmonary vein, or from a peripheral vein if there is present a congenital defect. But apart from these what may be called thrombotic eventualities.

embolism in valvular disease means that the patient is suffering from a bacterial endocarditis, acute or subacute, in the active or bacteria-free stages.

It is important, therefore, in cases of afebrile valvular defect, with progressive anaemia, splenomegaly, renal insufficiency, curious brown pigmentation of the face, or embolism, to investigate whether the patient has had an infection by an anhaemolytic streptococcus, has lost the infection, and is in the bacteria-free stage. In febrile cases everybody would nowadays be on the look-out for a valvular infection.

These bacteria-free cases are not rare. Up to 1917 I had full notes of 76 cases in the bacterial stage, 64 of which were absolutely proven to be cases of subacute streptococcus or influenzal endocarditis, and 33 cases in the bacteria-free stage, 20 of which were definitely proven by that time. If we take the first figures, 33 and 76, we find over one-quarter are cases in the bacteria-free stage. If we take the second figures, 20 and 64, we find somewhat less than one-quarter are bacteria-free cases. In general, then, one can say that, as far as these figures are concerned, about 25 per cent. of persons having an infection of the valves of the heart by an anhaemolytic streptococcus spontaneously lose the infection and die of after-results. We have no idea of how often the infection may occur without being clinically observed and complete recovery follow. Serologic studies may help in settling this question.

It is to be noted that there are cases that come to *post-mortem* examination in which cocci are still present in small numbers in vegetations not completely fibrosed or calcified. These are included in the group of bacteria-free cases, because in active cases the vegetations are really a mass of bacteria.

The patients who have completely recovered, both those observed by myself and those recorded in literature, were treated by methods wholly ineffectual in a very large number of other cases. The treatment carried out does not seem to have played a rôle in the result. Considering this fact and the great mortality of the disease, the question of prevention must be actively taken up. If we could prevent rheumatic fever we could prevent nearly all of these cases.

But, at present, we do not have to accomplish this object. What we can do is to systematically rid all patients with vulvular disease of their ascertainable foci of infection (teeth, tonsils, sinuses), keep them built up and try persistent immunization. The frequency of immunization and the best method of carrying it out are questions needing study. Before the war we began this work at Mount Sinai Hospital. We found that after immunization with anhaemolytic streptococci positive complement fixation tests could be obtained. Of course that does not necessarily imply immunity. If in the outdoor cardiac clinics now being organized systematic watching of cases of valvular disease for foci of infection be carried on, and immunization be attempted, we may see a drop in the morbidity of this dread condition.

A plea for the application of preventive measures was already made in the paper published by Sir Thomas Horder in 1909, a contribution to which, it pleases me to say, I owe much inspiration.

In 1917 I made a compilation of the data in the records of the *post-mortem* examinations made in the three preceding years at the Mount Sinai Hospital. These records showed that three-tenths of the deaths in cases of valvular disease were due to a superimposed infection by *Streptococcus* [illegible]—in other words, to subacute streptococcus and influenzal endocarditis. When one takes into consideration the fact that this disease is one that occurs to the largest extent in young adults, and that it attacks mainly the patient with cardiac disease who is not yet suffering from cardiac insufficiency, the question of prevention appears the more pressing.

F. J. POYNTON, M.D., F.R.C.P.,

London.

DR. POYNTON said that the part he wished to take in this interesting discussion was to illustrate by a short demonstration the view that subacute bacterial endocarditis was not a special disease, but a phase of cardiac infection [illegible] several varieties, one of the most important being the rheumatic. It was, in his opinion, impossible to exclude rheumatic endocarditis from this discussion as Sir Thomas Horder had done, unless there was overwhelming evidence in favour of its exclusion. None, however, had been forthcoming, but a statement by him to this effect, that it was now generally agreed that the endocarditis *associated* with rheumatism was bacteria-free. In the absence of evidence he (the speaker) was at liberty to put forward this counter-statement, that the endocarditis in rheumatism was *caused by*, and not *associated with*, the disease, and in its early stage was not bacteria-free.

The reason that the condition of rheumatic endocarditis could not be excluded was at once apparent from the following considerations: A patient, having recovered from one or more attacks of rheumatic endocarditis, succumbs, at a period more or less remote, from subacute bacterial endocarditis. Rheumatic endocarditis not being bacteria-free, what relation did the bacteria which caused the fatal illness bear to those which caused the earlier rheumatic endocarditis? His explanation would be that the heart of this patient had never really recovered from the early attacks, but that unhealthy bacteria containing foci had been left in the valves, which, when the health became degraded by overwork, evil surroundings, or other cause, became locally virulent, flared up, and caused the final catastrophe of subacute bacterial endocarditis. He would compare this patient's condition to that of one who had apparently recovered from one or more attacks of acute pulmonary tuberculosis, and then later succumbed to a progressive tuberculosis from the lighting up of an unhealed focus in the lung.

He then illustrated on the screen the bacterial origin of rheumatic endocarditis and the formation of necrotic foci in the valves in rheumatic, simple, and progressive endocarditis. He pointed out the important bearing of these investigations upon treatment; the great need for more particular supervision of those who had suffered from endocarditis, not only from the standpoint of further attacks of rheumatism, but from general aspects—their occupation, their surroundings and general hygiene. He was probably the first to try antiserums in this country in rheumatic endocarditis and in the progressive form, and had a long experience of serums and vaccines, used alone or in combination, and aided by expert advice. Success had been denied him. He had no belief in chemical antiseptics injected into the blood stream, for his study of the pathology convinced him of their inadequacy.

CAREY COOMBS, M.D., F.R.C.P.,

Bristol.

DR. CAREY COOMBS said that it was quite impossible to reply to Sir Thomas Horder's main question (as to the relative importance of "the primary focus, the lowered tissue resistance, the damaged endocardium, and the infecting agent") without some allusion to the pathology. There were three main histological facts on which his own views were founded. First, subacute bacterial endocarditis was an infection of the heart in which the endocardial lesions greatly predominated over those of the myocardium and pericardium; in contrast with rheumatic carditis, in which the lesions of the myocardium and pericardium were at least as intense and widespread as those of the valves. Second, the difference between subacute bacterial endocarditis and the other forms of ulcerative endocarditis to which Sir Thomas Horder had alluded was one of degree and not of kind. In the former the valvular reaction was more productive and less necrotic than in the latter, the difference being one of the balance between host and invader. In both kinds of endocarditis such myocardial lesions as were present were obviously embolic, and the difference between those of the subacute bacterial group and those of the remainder was relative chronicity on the one hand and acuteness on the other. Third, histological examination proved that most of the hearts attacked by this disease had already been handicapped by previous infection, particularly by rheumatic infection.

On this basis he felt that it was possible to assign to each of the four factors mentioned by Sir Thomas Horder its relative importance. The infecting agent, it seemed to him, was comparatively unimportant. It was not a constant; in a certain percentage of cases, as Dr. Libman had said, organisms other than streptococci were found—a fact that depreciates to some extent the importance of the infecting agent. Again, such evidence as there was showed that the streptococcus was the same as that of rheumatic infection, although in the latter it was acting with enhanced virulence. If this were so, the streptococcus must be relying for the production of subacute bacterial endocarditis not on its own increased powers but on the diminished resistance of its victim.

As to the primary focus, it would be a relief to think that attention to tonsils and to teeth would prevent the disease, but in view of the wide mucous surfaces exposed to streptococcal infections he feared lest oral sepsis would prove to be no more than the fringe of the subject.

Lowered general resistance, he believed, was of more practical importance. Time would not allow of examples, but he had seen cases in which fatigue and privation had seemed to him to predispose quite definitely to the development of subacute bacterial endocarditis.

In his opinion it was the damage done to the valve by previous infection that was of the greatest practical importance. He wished to associate himself with Dr. Poynton in emphasizing the significance of rheumatic carditis in this connexion, and said that it was high time to attack the problem of prevention of that disease.

A. E. Gow, M.D., F.R.C.P.,
London.

THE early symptoms of subacute bacterial endocarditis are apt to be so protean and ephemeral in their clinical manifestations that we should bear it in mind as a possible underlying cause in any case of chronic disease in which a fair prognosis is falsified by the patient's unexpected progress downhill, or in which a looked-for clinical improvement does not materialize. Any organ or tissue of the body may be the first to attract the attention either of the patient or his doctor, but only very exceptionally is it the heart which appears primarily at fault.

The symptoms throughout are generally either of embolic or "toxic" origin. Sir Thomas Horder in his opening remarks has insisted on the diagnostic value of certain embolic processes, and has referred in this connexion to the occurrence of petechiae in the skin, which may be the first sign that all is not well. Another early cutaneous manifestation may be a recurrent transient erythema or scarlatiniform eruption, irregular in distribution, often symmetrical, involving the inner side of the legs and forearms or the front of the trunk. This is doubtless "toxic" in origin and not infrequently associated with fleeting joint pains, which may themselves be due to a like erythema of the synovial membrane. Other common "toxic" manifestations are progressive anaemia, loss of flesh, fever, and sweats.

Though the detection of an organism in the blood stream is undoubtedly a point of great diagnostic value in this condition, the converse does not hold, and at the present time I count the failure to isolate a bacterium on blood culture of small importance. In my experience during the past eighteen months it has been the exception rather than the rule to obtain a positive blood culture during life, whereas before the war failure to isolate the organism at some stage of the disease was regarded as a blot in one's escutcheon. It may be that these streptococci are not so appreciative of the English chemicals in our present-day culture media as they were of the foreign ones of pre-war days; it is difficult to believe that the organisms themselves have changed.

The isolation of the causal organism, though of minor importance in clinical diagnosis, is essential if we are to attempt the destruction of the bacterium and its toxin by the use of specific agents; and this is one of the lines along which we may look for ultimate success in the treatment of this disease. For this reason, if blood culture fail to reveal the organism, other likely sources must be tapped in the hope of securing it. During the war it was proved to a large number of medical officers that puncture of an enlarged spleen is a simple operation and, if due precautions be observed, one devoid of risk to the patient. Cultivation of fluid withdrawn by spleen puncture may be the means of isolating the organism. Cultivation of the urine, collected aseptically, is not infrequently successful, though an organism isolated from the urine is not necessarily the one responsible for the septicaemia.

But these means may also fail. At the present time there is a patient under the care of Sir Archibald Garrod, on whom I and others have made repeated unsuccessful direct attempts to identify the causal organism; his blood has been sown in agar, in broth with and without the addition of sterile fresh rabbit kidney and spleen, under aërobic and anaërobic conditions; the urine is apparently sterile, even when the slight transient haematuria characteristic of embolic focal nephritis is present, and cultivation of the fluid obtained by puncture of his enlarged spleen has failed to reveal the infecting organism—and this in a febrile patient with a progressive anaemia, an obvious endocarditis, petechial haemorrhages, and symptoms indicative of pulmonary, renal and splenic infarction, so that the accuracy of the diagnosis can admit of no doubt.

Another point in the clinical pathology of subacute bacterial endocarditis is the fairly frequent occurrence of leucopenia. The septicaemic state is in general associated with a leucocytosis, and in this disease a count varying between 10,000 and 20,000 per c.mm. is the rule; there are two cases in the same ward at St. Bartholomew's Hospital at present in which the leucocytes have never been found above 5,000 per c.mm.

Though these cases with leucopenia cannot be distinguished clinically from those associated with leucocytosis, the immunity—using the term in its widest sense—developed in the two groups appears to differ. There is no "never" or "always" in medicine, but it seems that a case with leucocytosis can be sensitised to horse serum without much difficulty, but so far we have failed to sensitize one with leucopenia in like fashion; and while the former type shows an immediate reaction to the intravenous injection of peptone—that is, fall of systolic blood pressure, rise in pulse frequency, and leucopenia followed by leucocytosis—no such effect is seen in the latter, and further, if a rigor ensue, there is still no leucocytosis.

With regard to the frequency of the disease, it appears to be the general impression of those with whom I have discussed the question, that it was relatively in abeyance during the war; comparatively few cases were met with in the stationary and base hospitals. But now in civilian life we find it apparently more prevalent than ever before. Statistics from the *post-mortem* room of a general hospital are of little value in determining disease incidence, but perhaps in this condition there are fewer sources of error than in most others. During the past seventeen months there have been, at St. Bartholomew's, 30 cases of subacute bacterial endocarditis (in a total of 345 medical autopsies), whereas in the corresponding period before the war there were 17 cases (amongst 460 *post-mortem* examinations).

I have specimens here from two instructive cases:

The first is that of a man, aged 41, whose left forearm had been amputated in consequence of a wound sustained whilst serving in the infantry in France. He had been slightly gassed with mustard gas on three occasions, but he remembered no other illness. In November, 1919, while working as a pupil on a chicken farm, he got wet, and next day showed signs of acute nephritis. He was admitted to hospital four weeks later, oedematous and dyspnoeic, passing on an average 1,000 c.cm. of urine containing about 1 per cent. of albumin, casts, and practically always a little blood. But there was no evidence of valvular disease, and the optic fundi were normal. Various tests of renal efficiency proved his kidneys to be gravely damaged; the oedema increased, and his response to treatment was highly unsatisfactory. In the middle of February streptococci were found in the urine, and on the 29th of that month he complained of great pain in the right leg—the first definite evidence of arterial embolism, though it was not appreciated as such at the time. Both legs were highly oedematous; Southey's tubes were introduced, the oedema fluid drained well, and the pain was considerably relieved. The left leg drained 4,150 c.cm. in four days and appeared nearly empty of fluid, in marked contrast to the right, which in spite of draining more scarcely diminished in size. A week later marked pulsation was noted in the right calf. In the upper part of the popliteal space the artery could be felt pulsating and apparently not enlarged; the lower end of the space was occupied by a pulsating swelling with a systolic thrill and a short systolic and a long diastolic murmur. A loud diastolic murmur was found in the aortic area, and a streptococcus was isolated from the blood.

Death took place suddenly on March 17th. The heart shows a long ribbon-like vegetation on an aortic cusp. Above the cusp, within range of the free end of the vegetation, is a small area of ulcerative aortitis and a tiny aneurysm, perforation of which into the pericardial sac was the immediate cause of death. The mycotic aneurysm on the posterior tibial artery is also shown. It too had ruptured and is surrounded by a false sac, the wall of which is formed by the compressed tissue of the calf muscles.

A second case, of different type, was known to be the subject of congenital morbus cordis—subaortic stenosis. She had been in St. Bartholomew's, under Dr. Morley Fletcher, on two occasions, with functional paraplegia, but her heart appeared to have caused her no inconvenience until September, 1919, when she was 21 years of age. She then complained of weakness, amenorrhoea, dyspnoea on exertion, palpitation, and fleeting pains in her knees and wrists. Two months later she was again admitted under Dr. Morley Fletcher. The physical signs in the chest were much the same as on previous examinations—heart not enlarged, a systolic thrill all over the front of the chest, most marked in the aortic area, a loud blowing rough systolic murmur, loudest at the aortic base but heard all over the precordia and in the vessels in the neck. A diastolic murmur had its point of maximum intensity over the third left interspace close to the sternum. By this time she was febrile, her spleen was palpable, and there was a trace of albumin in the urine. Blood culture was positive; the leucocyte count 5,400 per c.mm. Death took place four weeks later, the illness lasting just three months. The heart shows a rigid ring of fibrous tissue lying between the aortic cusp of the mitral valve and the interventricular septum. There are no vegetations on this ring. From above, one cusp of the aortic valve can be seen, the others being involved in recent vegetative outgrowths, as is a portion of the aorta immediately above the valve.

My thanks are due to Sir Archibald Garrod and Dr. Morley Fletcher for allowing me to refer to cases under their charge.

H. J. STARLING, M.D.,

Norwich.

I DESIRE to speak on my experience with 38 cases which have been under my care, 31 of which were soldiers and 7 were discharged soldiers or pensioners. Autopsies were held on 17 of these cases; 3 only of these men are still living. The most remarkable feature among the soldiers was their ability, in the majority of cases, to carry on full front line duty until a week or so before admission to hospital, when they were found to have an advanced degree of endocarditis, their deaths taking place within a short period of one to two months after admission. It was established without doubt in some of these cases that the disease had existed for at least six months without interfering with their duties. Several of the pensioners had been discharged as A1 men, the symptoms of slight dyspnoea and debility commencing a month or two later, admission to hospital some six to twelve months after this, and death within a week to two months after admission.

I cannot speak of the earliest features of this disease, as those cases still under observation cannot yet be diagnosed as such, but from my experience with this series I regard the following symptoms as characteristic of this disease, once it is established, and the percentage of such are calculated to the nearest unit from this series:

[illegible] and in the majority of cases, as I have mentioned, the ability of the patient to lead a strenuous or almost normal life after the earliest symptoms have occurred.

[illegible], [illegible] per cent., sometimes *café au lait*, at others a pale [illegible] upon which a healthy colour is superimposed; [illegible] the pallor is not noticeable till the end of the illness.

[illegible]. All these cases had advanced valvular lesions [illegible] but with little of the disability which usually [illegible]. [illegible] of the heart is not marked till the [illegible] the patients lying flat when in bed [illegible] the last few days of the illness.

[illegible], [illegible] per cent. This has been present in every case of the last [illegible] cases. This feature is not present in non-infective endocarditis unless it is of a long standing.

[illegible] spleen, 81 per cent.

[illegible], [illegible] per cent. If the cases were examined every day the incidence of this symptom would be nearer 100 per cent. I [illegible] these cases, but they [illegible] at present under my care.

[illegible] such as the cerebral, [illegible] popliteal, and other arteries, have been present in [illegible] per cent.

[illegible] one to three or four weeks [illegible] with short periods of fever [illegible] embolic [illegible]

[illegible]

[illegible] 17 cases had ever [illegible]

[illegible] rheumatic fever within [illegible] rheumatic fever [illegible] per cent. [illegible] There were other [illegible] such as influenza, dysentery, trench fever, gassing, the incidence of which was so small as not to warrant discussion. Six cases had received severe wounds which appeared to be a direct precursor in 3 of these cases. Eleven of this series had never had any illness or wounds either before or during the war—another illustration of the fine type of man that is affected by this disease.

It is of the utmost importance that all those who are responsible for the medical examination of soldiers, and still more that of pensioners, should be fully acquainted with the symptoms of this disease. Recent correspondence in the BRITISH MEDICAL JOURNAL shows how unexpected is the fatal result in many cases diagnosed merely as valvular disease of the heart. The Ministry of Pensions is not yet sufficiently aware of the prevalence of this disease, nor of its responsibility in regard to those pensioners who suffer from it.

Pathology.

All the 17 cases which came to autopsy had been diagnosed before death by means of the symptoms already described.

The Heart.—The vegetations are mainly calcareous, often sessile, and in this form spreading over the auricular and ventricular walls and extensively affecting the chordae tendineae, which become friable and rupture. There are also seen large pedunculated masses varying from the size of a split pea to a cherry. In many cases the infective process can be seen to have spread from the mitral to the aortic valves or vice versa, the oldest infection being the most extensive. The most remarkable changes occur in the aortic valves. In 9 of the cases two of the cusps were completely fused together, the free edges of the cusps being thickly sclerosed and rigid and the septum between them completely absorbed. At first this was thought to be a congenital abnormality, but its frequency and the discovery in one case of the incomplete process proved that it was a result of the infection. As a matter of fact only two congenital abnormalities were found in this series.

The spleen was enlarged in all the autopsies save one, and in this case two small infarcts were present. Infarcts were present in twelve of the autopsies, some being huge and occupying half the organ, in others they were small and multiple. In most of the cases with infarcts there was evidence of previous infarction at a distant date, the fibrous change producing great puckering of the organ and being another proof of the long duration of this disease. The appearance of these old infarcts would warrant the assumption that a year or more must have elapsed since their occurrence.

Evidence of previous endocarditis in healed lesions of the valves was present in 11 cases. It would be rash to ascribe the origin of these former attacks in every instance to rheumatic fever. Subacute infective endocarditis is a disease in which the process of healing runs concurrently with extension of the infective process, and it is more than possible that previous attacks may have resulted in the healing and cessation of the infective process.

Dr. Glynn, in the Lumleian lectures on infective endocarditis in 1903, mentions a case in which, nineteen years after recovery from an illness thought to be this disease, death took place, and calcareous vegetations were found on the anterior surface of the mitral cusp. Theodore Fisher, in the *Medical Chronicle* of the same year, records the death of a woman after a miscarriage whose heart showed many features pointing to a previous extensive infective process. There were calcareous and fibrous masses on the posterior surface of the auricle and the mitral valve had a very thickened posterior edge. This woman had been a patient in the Bristol Royal Infirmary four years previously and was diagnosed as suffering from malignant endocarditis.

This disease, therefore, stands midway between acute infective endocarditis and non-infective or rheumatic endocarditis. It has all the characteristic symptoms of the accidents of the former, such as the embolic phenomena, but without any suppurative process and without the fever. In its outward appearance it is like rheumatic endocarditis unless the characteristic symptoms are sought for diligently. As far as we know, it appears to be always fatal.

A. G. GIBSON, M.D., F.R.C.P.

(Oxford.)

I would like to say something as to the value of petechial haemorrhages in the diagnosis of subacute bacterial endocarditis. The difficulty of making a diagnosis of what is or is not a petechia apart from similar lesions in the same patient is not small because of a liability to mistake for them minute naevi that cannot be rendered bloodless. Anatomically it is any small leakage of blood with or without a pale centre which does not fade on pressure. Isolated small petechiae are always difficult to interpret, but multiple petechiae, as Sir Thomas Horder has pointed out, are certain evidence of damage to vessel walls.

The point especially that is to be relied on, however, is successive crops appearing from day to day, the earlier ones fading as compared with the later. Valuable evidence of this tendency to haemorrhages may be found, as Sir Thomas Horder has mentioned, by careful daily examination of the centrifugalized deposit of the urine. The presence of blood corpuscles in the urine depends on petechial haemorrhages in the kidney; the organ having the appearance that is well described as the flea-bitten kidney.

But what is the value of petechiae even in successive crops in a patient showing no tendency to any purpuric disease? Even in the absence of septicaemia, leukaemia, or a purpuric disease, it is not to be taken as certain evidence of endocarditis, for other pathological conditions—for example, an infected atheromatous ulcer or leukaemia—can be conceived as a possible source of minute emboli. Before we can locate the disease in the heart there ought to be some signs or symptoms referable to it. Several authors have recently pointed out the frequency of various types of arrhythmia in rheumatic fever, with or without valvular signs, as an indication of myocarditis, and the same must also be true of subacute bacterial endocarditis. In fact, so important is this as evidence of a cardiac infection that it is sometimes possible to make the diagnosis from the history. In one of my cases I was able to establish a diagnosis from an attack of tachycardia some months before it was otherwise possible. I have under my care at present a man who has had several crops of petechiae whom I suspect of having subacute bacterial endocarditis, but the only sign of cardiac affection is an occasional extra-systole in the upright position, though none were present on lying down.

He has now developed extra-systoles in both positions, and a systolic murmur at the base. His bodily condition is good, the temperature only rises slightly in the evening, and blood culture has been negative. The diagnosis is in doubt, but it is certain that he has some infection that is being disseminated through the arterial system, and I suspect the endocardium.

I am not sure that the term "subacute bacterial endocarditis" may not contain two or more entirely distinct clinical types, the result of infection by nearly allied streptococcal or other organisms. Pathologically, that due to the *Streptococcus viridans* of Schottmüller is very distinct with the warty type of vegetation spreading on the endocardium of the chambers in a direction opposite to that of the blood stream. Some of the cases in which on the earliest signs we may rightly suspect subacute bacterial endocarditis get well, but I have a sufficiently serious view of the condition we are now discussing to agree that within two years most cases die. I quote a case suggesting a little virulent type of infection, probably of the heart, in which recovery followed treatment.

W. P., aged 37, joined the army in January, 1915, as category A1, and was discharged in April, 1919, as B3. He had never felt well since having trench fever in March, 1918. There was nothing of importance in the family or previous history. He was fairly healthy-looking, with some venules on the face, and a tendency to moisture of the face, hands, and feet. During sleep he frequently sweated profusely.

The apex beat on admission was in the fifth space in the left nipple line. The first sound was poor, and there was a very doubtful systolic murmur at the apex, and a slight systolic at the base conducted into the arteries of the neck. There was also slight tenderness of the left biceps and left latissimus dorsi muscles. The temperature showed marked daily oscillations with an evening rise between 98.6° and 99.4°. The pulse, which was regular and soft, varied between 60 and 92 in the prone position. During his thirteen weeks' stay in hospital we observed on several occasions petechial haemorrhages sometimes in crops, that faded in the course of a week. The urine on one occasion out of four examinations showed the presence of blood in the centrifugalized deposit.

The blood culture and Wassermann reaction were negative. The provisional diagnosis of subacute endocarditis was made, and he was treated by intravenous injections of perchloride of mercury, of which he was given nine of $\frac{1}{18}$ gr. each. He improved considerably, and his tendency to sweating entirely disappeared. The temperature settled down. No more petechiae appeared, and the murmurs which were most marked at the end of a month entirely disappeared. He was discharged convalescent, and advised to take things quietly.

This leads me to the question of treatment. Personally, I feel that if a positive blood culture be obtained in these cases the outlook is hopeless. To obtain a positive blood culture there must be abundant organisms in the blood, and if we are to get them to grow the defensive mechanism of the patient's serum must have been diminished. To obtain the best cultural evidence we must take the specimen at the highest point of the temperature, if possible during a rigor, but here again rigors should, I think, be considered a late symptom. The presence of a streptococcus in the urine is a sign of very great value in conjunction with other signs, but by itself of no significance as a diagnosis of cardiac disease.

As one who studies disease from a bacteriological point of view I have little hope that by vaccines or serums we shall do much. Sir Thomas Horder some years ago made a very important study of the disease which incidentally dealt with this method of treatment. This was his conclusion, and nothing I have seen has led me to differ from this view. But in chemiotherapy we have greater possibilities, and in view of the known remedial effect of intravenous injection of perchloride of mercury in puerperal conditions I have been led to try it in suspect cases of subacute bacterial endocarditis. In one undoubted case of subacute bacterial endocarditis under my care the injections tend to produce a fall of temperature, but the general trend of the disease is downwards. He was an advanced case, however, at the beginning of treatment. The case previously cited improved considerably as a result of the injections, and is to me an indication of the lines of future treatment in these cases.

DISCUSSION.

The CHAIRMAN remarked that Dr. A. G. Gibson had rightly emphasized the importance of petechial haemorrhages in the diagnosis of the condition under discussion. In one respect, however, he did not quite agree with him, namely, in the differentiation from naevi. Naevi, in his own experience, would always fade with pressure, unless they actually project above the skin level; they had a brighter and bluer colour also. The petechiae of subacute bacterial endocarditis, though they might occur in large crops and might affect any portion of the skin, especially in the terminal stages of the malady, had to be sought for very carefully as a rule. They were particularly prevalent in the loose skin over the clavicles, around the armpits, and in the conjunctivae. As Dr. Libman had pointed out, they were often characterized by a yellowish or white spot in the centre; that is to say, the haemorrhage was actually in the form of a ring. Clubbing of the fingers was another very important sign, as was pallor. It was a most important thing for prognostic purposes that patients who presented valvular lesions and had subacute bacterial endocarditis over and above this should be recognized; the more so, for as both Sir Thomas Horder and Dr. Libman had rightly pointed out, it was the valvular case presenting little sign of congestion, showing comparatively little enlargement of the heart, that was attacked by this complication. In any aortic cases pallor was a most important sign of the presence of this infection. Clubbing of the fingers was equally important, especially if slight but distinct. Neither sign was diagnostic, but the presence of either or both should at once arouse the suspicion that subacute bacterial endocarditis might be present. If in these circumstances petechial haemorrhages and an enlarged spleen were found, the diagnosis might be confidently made, whether the temperature were raised at the time or not, and without the aid of a bacterial examination of the blood. He agreed with Sir Thomas Horder that arrhythmias were relatively uncommon in this condition.

Dr. WARDROP GRIFFITH (Leeds) remarked upon the practical difficulties of diagnosing acute bacterial endocarditis; he laid especial stress on the frequent impossibility of distinguishing it from such kindred conditions as simple endocarditis with fever and ulcerative endocarditis. The cases in which such confusion would naturally arise were numerous.

Dr. JOHN HAY (Liverpool) observed that there were certain points which might be emphasized from a clinical point of view. This disease was not uncommon; during the war these cases were focussed, and it became evident that in the past they were not recognized. His impression was that they were even more common than Sir Thomas Horder's remarks would suggest. Early recognition was essential if a correct outlook was to be indicated. In addition to the signs of early disease, as described by Sir Thomas Horder, he would emphasize a rapid action of the heart, in the absence of any degree of temperature which could be looked upon as explanatory. Clubbing of the fingers was a remarkable and almost constant sign, and should in itself be an adequate ground for suspicion. He believed these cases should be diagnosed in the absence of blood culture, or rather, the blood culture should be auxiliary and the diagnosis should not depend on the result of blood examination. The tendency of clinicians was to rely too much on the bacteriologist and the biochemist. The outlook from the moment a positive diagnosis was made was depressing, although there was a certain fascination in watching the evolution of the disease. The only hope lay in prophylaxis. Patients suffering from rheumatic valvular disease must be kept under constant supervision. Their medical attendant must carefully watch over them, looking for any deviation from the normal, and any possible focus of infection in the mouth, in the sinuses, or in the abdomen.

Dr. G. D. **LAING** (Limpsfield) wished to make a few remarks and ask a few questions from a general practitioner's point of view. It seemed to him to be difficult to distinguish subacute bacterial endocarditis from an ordinary case of rheumatic endocarditis of a subacute character which might run a course of a few weeks and then got perfectly well. It was very important to be able to diagnose a case like this, for the prognosis was entirely different, and it would be a very serious thing for a practitioner if he told his patient and friends that the patient was going to die and in a few weeks he got quite well. The clinical symptoms were indefinite, and the varying murmur, anaemia, clubbed fingers, etc., might all occur in other illness; even blood examinations did not necessarily settle the diagnosis. It appeared to him that the only definite point was that the patients did not get better, and apparently death alone clinched the diagnosis, which was not very satisfactory. He thought this disease must be rarer than might be inferred from the remarks of the other speakers. The general practitioner should therefore be careful not to mistake the much commoner cases of rheumatic endocarditis, or even of incipient tuberculosis with a heart murmur, for subacute bacterial endocarditis.

Dr. R. J. M. **BUCHANAN** (Liverpool) inquired if there were any lesions of the lungs in conjunction with the clubbing of the fingers. He drew attention to the marked anaemia associated with rheumatic fever, but which was amenable to treatment, and of a transient character, while the anaemia of bacterial endocarditis was less amenable to treatment, and persistent. He had known this disease prove fatal when there had been a normal temperature for many months. He called attention to the advisability of taking particular note of the early morning temperature as an index of the constitutional disturbance. In his opinion a morning temperature on the "normal" line should be considered as recording slight pyrexia. This was his experience in tuberculosis. Hence the "apyrexial" periods in bacterial endocarditis might really be periods of mild pyrexia. He drew attention to the disturbance of the [illegible] curve in cases of prolonged infection, as illustrated in tuberculosis, and to the minute embolic spots under the nails, sometimes forming a corona near the distal edge. As a distinguishing clinical feature between bacterial and rheumatic endocarditis, he pointed out the marked variations from time to time in the physical signs in the heart in the former, with instances of sudden and rapid progression. He emphasized the [illegible] future for [illegible] produced in a [illegible] for therapeutic purposes, which he thought was a promising and hopeful measure.

Dr. E. P. **POULTON** (London) drew attention to the statement that blood culture was often negative in bacterial endocarditis. Was this due to the fact that not enough cultures were made in individual cases? It would be possible to test this by plotting a curve in a series of, say, 50 cases to show the number of cases (ordinates) that gave a positive blood culture at the first, second, third, fourth, etc., attempt at cultivation (abscissae). If the number of cases gradually fell off as the number of cultivations increased, it would mean that the bacteria were always present, but sometimes in too small amounts to be readily detected. If, on the other hand, the curve fell to begin with, but later rose again, it would mean that disease could exist without bacteria escaping into the blood stream—that is, that the septicaemia was not an essential part of the disease. The cases investigated would have to be either stationary or becoming gradually worse.

A contribution to the discussion was received from Dr. **JOHN M. COWAN** and Dr. **J. A. G. BURTON** (Glasgow), in which they pointed out how frequently subacute bacterial endocarditis caused the death of patients with chronic valvular disease. Cardiac failure was, of course, the usual termination in acute bacterial endocarditis, of streptococcic or pneumococcic origin. In these cases the valvular lesions were extensive and progressive, the vegetations massive, the ulceration deep. It was those cases in which the endocarditis was slight—a few small granulations dotted over thick fibrous valves—that they wished to discuss.

Thus a boy, aged 17, came under observation at the end of 1914. He had had an attack of acute rheumatism in 1911, accompanied by a mitral endocarditis and in all probability pericarditis. A recurrence of rheumatism brought him into hospital. There was at this time a mild degree of cardiac insufficiency, but it soon passed off and he left hospital. He at once found a suitable job, and continued to work until the end of the war. In January, 1919, his war work came to an end, and he had to take work which was more arduous than that which he had been performing. Cardiac symptoms soon ensued, and he entered hospital in May, 1919, notably short of breath and cyanosed. He had some bronchitis, and, on its subsidence, improved. His auricles, however, were now fibrillating (the rhythm in 1914 was normal), and he required regular doses of digitalis to ensure his comfort. In December, however, he was able to walk four miles daily for recreation. In January, 1920, he caught cold and all his symptoms returned. When he re-entered hospital he was very breathless but cyanosis was minimal, and there was no oedema. There was some fluid in the right chest, and friction over the left, and widespread bronchitis. As the pulmonary condition improved the orthopnoea disappeared and he was able to walk about the ward. But the improvement was evanescent, and in April it was evident that his heart was failing. He died in the middle of May.

There was no obvious cause for the fatal termination. The occurrence of symptoms in 1914 had been associated with rheumatism, in the spring of 1919 with excessive physical exertion, in the beginning of 1920 with bronchitis. But none of these were active during March, April, May, 1920, though the failure was progressive. The pericardium was adherent as the result of his first illness, the mitral valve was incompetent, the auricles were fibrillating. But none of these factors had altered during the last year of his life, and in December, 1919, he was walking four miles a day for pleasure. The heart, however, was steadily enlarging. The apex impulse in 1915 was 10.2 cm. from mid-sternum; in May, 1919, 13.5 cm.; in February, 1920, 15.5 cm., and before death 16.5 cm. Blood cultures were sterile, and the leucocyte count normal. There was little fever. During his residence in 1919 the temperature never exceeded 100° F., and in 1920 only once reached 100.4. His age and the condition of his vessels negatived gross dystrophic fibrosis, and the only probable cause of the progressive myocardial failure seemed to be myocarditis, the sequel of a subacute endocarditis.

Post mortem examination showed an adherent pericardium with considerable mediastinitis, and a chronic mitral lesion of notable degree. Both of these lesions were, however, of old standing, and the only acute process visible took the form of a few minute granulations on aortic, mitral, and tricuspid valves, too small to have occasioned any notable valvular defect. Microscopic examination, however, showed gross changes in the muscle. The bulk were subacute, a periarterial fibrosis with collections of fibroblasts and lymphocytes at the margin of the patches. But some were acute, the muscle being infiltrated diffusely by polymorph leucocytes and lymphocytes. In places, notably in the upper third of the interventricular septum, the arterioles were blocked by small thrombi, a condition which was also present in the right auricle and ventricle. The smaller vessels showed hyaline changes. The muscle cells showed granular degeneration. To sum up, a subacute and an acute myocardial inflammation existed, which explained the progressive character of the cardiac failure.

In this case the diagnosis was made by exclusion, but in other cases a positive diagnosis could be made. The appearance and persistence of an altered rhythm of the heart, extra-systoles, nodal rhythm, heart block were almost invariably due to the involvement of the primitive tissues in a pathological lesion. Such a lesion was most usually the result of disease of the coronary arteries and dystrophic fibrosis. The next most frequent cause was myocarditis secondary to an acute endocarditis. Syphilis and general diseases were less common causes.

The rhythm of the heart was not invariably altered in myocarditis. A change of rhythm was, in fact, accidental, for inflammatory lesions might be gross and widespread without the primitive tissues being involved. This was so in a recent case, a girl, aged 16, who died from a streptococcic infection.

She had been ill for some months with general symptoms, and was moribund when admitted. Double aortic murmurs were present, the temperature was febrile, and blood cultures were positive. *Post-mortem* examination showed an acute aortic endocarditis engrafted upon one of old standing. The left posterior cusp was perforated, and the inflammation had spread upwards on to the aorta and downwards on to the anterior mitral cusp. A small abscess was present in the ventricular wall, and a widespread myocarditis was evident upon microscopic examination, streptococci being visible in every section. The tracings taken during life had, however, been normal.

But if the primitive tissues were hit the rhythm altered.

A man, aged 24, died in hospital from an acute ulcerative mitral endocarditis. On his admission the pulse was coupled from regularly recurring ventricular extra-systoles. Next day it was regular and continued so until the day of his death, twelve days later, when it was again coupled for a short period. Tracings taken during the regular periods showed a very short *a–c* interval, 0.05 sec., a nodal rhythm. Microscopic examination of the heart showed a widespread myocarditis, which was maximal in the region of the *a–v* node.

In those cases where the bundle happened to bear the brunt of the inflammation, heart-block of greater or less degree obtained. This was the case in a patient, aged 26, who died from an acute, or rather a subacute, endocarditis of some six months' duration. The pulse was regular, but tracings showed an *a–c* interval of about 0.25 sec. The node was congested but otherwise normal. The bundle was involved in three places by inflammatory foci.

They had seen full heart-block in several cases of this kind, but had not been able to examine the parts *post mortem*. In more than one case, too, they had seen a partial heart-block succeed a period of extra-systoles. The lesions at first irritated, and then abolished the function. They did not, of course, maintain that every patient who showed extra-systoles, nodal rhythm, or block, and febrile disturbance was necessarily suffering from myocarditis, for these might be due to other causes—nervous, etc. They had, too, found myocarditis in cases (diphtheria, etc.) without endocarditis. But they considered that the occurrence of disturbances of rhythm in patients who showed signs suggestive of an acute endocarditis was an additional and strong point in favour of such a diagnosis.

Reply to Discussion.

Sir THOMAS HORDER, in reply, said: Time only admits of a few disjointed comments upon the points raised by previous speakers. The wording of the subject for discussion carefully avoided matters of bacteriology and of morbid anatomy, and into these I do not therefore propose to go. However definite and well recognized a clinical picture the disease may be, it is clear that it is not specific in so far as the associated infecting agent is concerned, because, as I was able to show some years ago, the bacterial finding might be a streptococcus or it might be Pfeiffer's bacillus, and one could not predict from any known clinical differentia which would be found on blood culture. But that the clinical picture does repeat itself again and again, with such constancy as to merit separate consideration and a separate name, seems certain. Dr. Wardrop Griffith asks for criteria as between acute cases of infective endocarditis and these subacute cases. The first case he himself quotes was clearly an acute case of pneumococcus endocarditis, and he admits that he considered it to be such; the second case was even more acute. Dr. Starling's cases illustrate the extraordinary degree of retention of heart efficiency in the presence of definite infection. I have known a doctor to continue his practice, including a good deal of strenuous confinement work, some months after the isolation of bacteria from his blood and the appearance of multiple emboli. A battalion commander who came home in 1916 had twice gone down to the base hospital to recover from supposed pleurisy, which was in reality perisplenitis complicating infarction, and each time returned to the front line and did excellent work with his troops.

Dr. Starling confirms the President's valuable observation upon the significance of clubbed figures, in cases of old-standing valvular disease, as indicating infection. I am sure of this from my own experience, but I would venture to say that I am led to attach greater importance to the sign in this connexion if the valvular affection has not been acquired early in life. The President's confirmation of the opinion that signs of heart inadequacy are strikingly slight, and not infrequently absent, in the disease we are discussing, is of great importance, bearing as it does the weight of his authority. I do not agree with Dr. Poynton that these cases cannot be marked off from cases of rheumatic endocarditis, although I admit that this question involves bacteriological matters for its full consideration. I will only say that I cannot allow that the thrombotic lesions set up in rabbits' hearts by the intravenous injection of cocci in large quantities are identical or even similar to the lesions found either in rheumatic or in subacute bacterial endocarditis. I have produced such lesions by using salivary and faecal streptococci from the healthy mouth and intestine.

Dr. John Hay must, I think, mistake my meaning when he says that the fourth group of cases mentioned by me (that is, those in which the disease is first recognized by the discovery of a positive blood culture) should not exist. With my conceptions of the disease I think the existence of them to be very natural. They do but signify how insidious the disease process is. I will mention two instances only, one of a patient whose temperature seemed a long time settling to normal after "influenza," and the other of a patient about to be subjected to a major surgical procedure, and who, again, was found to be febrile. In neither of these cases was the notion of endocardial infection in the practitioner's mind at the time the blood culture was undertaken.

If it is shown that the interlunar curve in the temperature, which Dr. Buchanan tells us is lost in phthisis, is retained in infective endocarditis, this will be a valuable differential point, seeing that some of the cases of the latter disease go to lung sanatoriums as cases of "phthisis without physical signs." Dr. Buchanan, and others also, spoke of the nodes present in acute and subacute rheumatism as confusing with the nodes occurring in subacute bacterial endocarditis. But are not the differences, both clinical and pathogenetic, rather definite as between these two lesions? The former are inflammatory, the latter embolic; and in appearance and other features there is very little resemblance. I entirely endorse all that has been said as to the importance of preventive measures, and that the chief of these is the prevention of rheumatism. But to prevent rheumatism would not do more than prevent the occurrence of some 60 or 70 per cent. of these cases, and we are probably a long way from preventing rheumatism, since as yet we lack accurate knowledge as to its causative factors. In the meantime we can adopt measures of another kind, such as Dr. Libman generously referred to as having been outlined by me ten years ago, and of which I spoke in my introductory remarks.

THE King Edward VII Welsh National Memorial Association has now under its charge fourteen hospitals and sanatoriums in different parts of Wales, with a total of 1,250 available beds. The latest addition is the North Wales Sanatorium, situated at Llangwyfan, in the Vale of Clwyd, near Denbigh; the buildings were opened by the King on his recent Welsh tour, and a short account of them was given in the JOURNAL of July 24th. The *Architect's Journal* has now published—in its issue of August 11th—a description of the site and buildings, illustrated by several excellent photographs. The architect is Mr. Taliesin Rees, whose design was chosen from among thirty-one sets sent in for competition six years ago. The sanatorium lies on a slope of the Moel Fammau Range, facing south and overlooking the Vale of Clwyd from a height of 500 ft. above sea level. It is sheltered from the easterly and northerly winds, but open to the west and north-westerly breezes.

THE eleventh meeting of the Italian Society for the Advancement of Science will take place at Trieste on October 3rd to 9th.

CHRONIC ABDOMINAL PAIN.

BY

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Disease and pain are synonymous. Morbid states and disturbances of functions of a grave kind may exist without pain, but to the patient nothing is so imperative and convincing as pain, and nothing so readily induces him to seek medical advice. To determine the cause of pain is, therefore, one of the first and commonest tasks of every doctor. It is also one of the most difficult. Even where pain is most definitely localized and referred to a particular part of the surface of the body or limbs it is not always easy to determine where and why the painful stimulus arises. In the case of the viscera it is still more difficult. In spite of all that we have learnt from the physiologists as to the innervation of the internal organs and the manner in which painful impressions arising within them are referred to definite skin areas supplied by corresponding somatic nerves, it must be admitted we are far from being able to assign to a definite organ many of the various internal pains for which patients seek explanation and relief. We have for the present to fall back on clinical experience and circumstantial evidence. This is particularly the case with the pains which are referred more or less vaguely to the abdomen. We know that in a state of health we are quite unconscious of our abdominal organs, and we must assume that every time we become uncomfortably or painfully aware of an internal disturbance there must be some trivial or serious, momentary or prolonged, derangement of normal function in some particular part of the visceral system. When this disturbance takes the form of pain it is generally more or less definitely localized to some region of the abdomen—sometimes small and precise enough to be indicated by the finger, at others only to be vaguely indicated as in the upper or lower abdomen, in the centre or on the right or left side.

When the pain is of sudden onset and of considerable intensity it is generally called "acute," and is then sometimes contrasted with "chronic" pains. This classification is ambiguous and misleading, because it confuses intensity with duration. Very intense pain is usually of limited duration, but the word chronic should be used without reference to intensity, and applied to all cases in which the pain complained of occurs frequently or constantly, over a period measured by weeks or months. It is in this sense that the term chronic abdominal pain will be used here.

TYPES OF PAIN DUE TO THE SEVERAL ORGANS.

Clinical observation and experience have given us reasons for assigning various abdominal pains to particular organs; reasons derived partly from the patient's description of the character and location of the pain, partly from concurrent disturbances of function. When the various symptoms elicited from the patient point to a particular organ, and when they are corroborated by the results of physical examination, there is no difficulty as a rule in reaching a definite diagnosis. Definite facts, indeed, ascertainable by physical examination are of much more value than subjective symptoms. [illegible] by the present that many physicians and surgeons are apt to underrate the importance of the evidence to be derived from intelligent interrogation and to evade the difficulties of diagnosis by sending the patient over to the radiographer, the pathologist, or some other expert practitioner of a particular method of examination. In this attitude they have the hearty support of most patients, who are even more eager for [illegible] to be applied than their doctors.

Every new method of physical examination which [illegible] cannot be too warmly welcomed, and no patient should be denied its advantages when procurable. But this does not remove any of the necessity for the information which can be obtained from a personal, accurate clinical history and careful physical examination by ordinary means. It is particularly important to obtain an accurate account of the time and circumstances in which the pain complained of was first noticed, the duration and severity of the pain; whether constant or intermittent; how affected by exertion, posture, or other circumstances; its relation to food; if accompanied by disturbances of function; whether becoming increasingly severe or less severe with lapse of time; in fact, every circumstance which can be elicited likely to throw light on the origin and progress of the complaint. Great skill and experience are required in obtaining accurate data of this kind, especially with uneducated and unintelligent patients. Care must be taken to avoid leading questions and to make the patient understand clearly whether he is describing his present symptoms or those with which a particular attack began. Only those who have patiently practised the art of clinical interrogation, and have also been familiar with the efforts of inexperienced clinical clerks and house-surgeons, realize how misleading a patient's history may be made, and what patience and skill are required to elicit an exact account. Most of us, too, have met with cases in which absurd blunders have been committed by pathologists, radiographers, and other skilled investigators, when they neglected clinical data or accepted them at second-hand from an unreliable source.

Excluding for present purposes pains due to direct irritation of somatic nerves or nerve roots, and referred to some part of the abdomen, such as those caused, for instance, by spinal abscesses and growths or by abdominal aneurysms; excluding also pains associated with some obvious cause, such as a hernia or tumour of the abdominal wall, and confining consideration to those arising in some morbid state of the abdominal viscera, it may be said that the seat of the pain as described by the patient corresponds more or less closely to the anatomical position of the organs affected. Thus, pains referred to the epigastrium and left hypochondrium are suggestive of gastric origin, those in the right hypogastrium of the gall bladder, in the loins the kidney, in the lower abdomen the bladder or large intestine; or, in the female, of the pelvic organs, and so on. When the localization of the pain is definite, and when a simple examination of the abdomen or of the rectum or vagina discloses some obvious fact, such as a localized mass or tumour corresponding to the seat of the pain, further investigation is usually comparatively simple and conclusive.

But these cases are the minority. More commonly the patient's localization of the pain is vague and the abdomen presents no abnormality which can be detected by ordinary clinical examination. It is in these cases that a searching interrogation of the patient is of such great importance, for by this means alone are we likely to find a clue to guide us in our further investigation. We want to know what the pain is like, and we must get the patient if possible to describe it in his own words. Is the pain constantly present or only at certain times, and if so when? Is the pain made worse or better by exertion or movement? Is it affected by food or the absence of food? Are some kinds of food more prone to excite the pain than others? The severity of the pain is very important. Is it dull and aching or throbbing, or is it unbearable or even agonizing? As ability to bear pain varies so enormously in individuals we must seek for some objective test such as the extent to which the pain complained of interferes with the patient's ordinary life and habits. Does it prevent sleep? does its onset waken him if already asleep? Is it variable in severity, and, if subject to exacerbations, what is the duration of these periods, and is there any regular periodicity? With unintelligent patients it is often difficult to get satisfactory answers to such questions; they have no idea of logical sequence, or fail to grasp the exact question unless put in the simplest language. One must remember also that the cross-examination of a patient by the doctor must not be conducted as if he were a prisoner at the Old Bailey or a hostile witness from whom counsel is endeavouring to obtain damaging admissions. The doctor's object is to obtain a true account of the symptoms uncoloured either by preconceived notions of the examiner or by the tendency of some patients to minimize, of others to exaggerate, the significance of their statements. For this purpose correct information may sometimes be obtained by indirect means. Many patients who refuse to admit that what they eat makes any difference to their pain when asked if they habitually eat meat will admit that they have not done so for months. In estimating the value of statements made as to the severity

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* [illegible] Medical Association, [illegible]

of the pain suffered, note must be taken of the patient's type of character, and of the visible traces which really severe pain of long duration or very frequent occurrence infallibly stamps on the features and whole aspect of the patient.

METHODS OF DIAGNOSIS.

It is a misfortune that almost all systematic textbooks of medicine are deductive in their methods and arrangement. Diseases of systems or organs are described in an orderly manner, beginning with etiology and causation and ending with their morbid anatomy. All the necessary facts are given, but not in the form in which the clinical observer requires them, for all his methods are inductive—the finding out and piecing together of facts, the value and significance of which have to be estimated in the light of clinical experience. Moreover, the whole symptomatology of abdominal visceral diseases requires to be rewritten and brought up to date in the light of modern surgical and radiological experience, which has completely revolutionized our knowledge. Sir Berkeley Moynihan,[1] in a valuable contribution which should be attentively read by every physician and surgeon, makes this abundantly clear as regards the diagnosis of chronic gastric ulcer. He shows conclusively how little reliance can be placed on the generally accepted rules which we find in the textbooks for the recognition of this disease. His statement that "gastric ulcer is a disease of comparative rarity; its diagnosis from the clinical evidence alone is difficult; its mimicry by other diseases extremely frequent," will be borne out by the experience of every progressive surgeon and physician. In my own considerable experience it is not too much to say that more than half the cases operated on for symptoms pointing to gastric disease prove to have the seat of disease in some other abdominal organ, and that in some the exact cause of the symptoms cannot be determined with certainty even by a complete exploration of the abdomen.

Time does not permit me to discuss at length the clinical significance of all abdominal pains and the assignment of them to the organs in which they originate, nor to illustrate the subject by actual cases, but a few generalizations, gathered from the study of the clinical histories and operative findings of cases dealt with in my own practice during the last fifteen years, may be useful to others. Firstly, I have found that in cases in which gastric or duodenal ulcer is verified by operation, the clinical history and symptoms have almost always enabled a correct diagnosis to be made beforehand. On the other hand, many cases with symptoms apparently pointing clearly to ulcer, such as a definite time relation between pain and food, and even haematemesis actually observed, were found at the operation to have no demonstrable ulcer either in the stomach or duodenum. In other words where the ulcer existed it was nearly always diagnosed, but many were diagnosed without being found. Another observation which has impressed me strongly is that in every case in which I have operated in which there was a definitely observed chronic melaena, I have found a duodenal or pyloric ulcer. I do not include in this observation cases of profuse haematemesis where blood has also passed downwards, for I have known such cases to show no demonstrable lesion of stomach or duodenum in spite of the copious bleeding.

Another impression gathered is that the clinical history of cases diagnosed or suspected of ulcer but disproved by operation, though sometimes resembling very closely the history of a true ulcer, when scrutinized fails in one or more important features. The symptoms are apt to be more vague; the time relation between pain and food is less precise than usual. Haematemesis is almost always absent—a point of some significance even if we admit, as we must, that it is absent also in at least half the cases of true ulcer.

Some useful inferences may be made from the patient's localization of chronic abdominal pain. In the upper abdomen pain is seldom purely central. In most cases it is felt also under the right or left ribs. Of all organic causes of chronic pain referred to the left upper abdomen or the left hypochondrium and verified by operation, gastric ulcer has been in my experience by far the commonest. Only twice have I found the cause of such a pain in an inflamed and adherent spleen. I have known of a case of chronic left hypochondriac pain actually treated by an exploration of the left kidney from behind, and subsequently found to be due to chronic gastric ulcer.

On the right side of the abdomen, on the other hand, the possible causes are more numerous. The pylorus and duodenum, the gall bladder, the caecum and appendix, as well as the kidney and ureter, may all refer their troubles to the right hypochondriac and right iliac regions. For this reason right-sided chronic abdominal pains are vastly more common than left, and the task of localizing the cause correctly is much more difficult.

Something may be learnt from a close study of the character of visceral pains. In all muscular hollow viscera there is a clear distinction between the pain caused by the irritation of exposed nerves in an ulcer or by inflammation of the peritoneum, and the more or less violent cramp-like pains due to over-action of the muscular wall in the presence of some obstruction of the gut. In their more severe form these pains are generally described as colics, and a consideration of their distribution and character is often a valuable guide to the seat of mischief. An acute attack of biliary or renal colic can almost always be recognized, but minor degrees of visceral cramp are less easily distinguished from each other. In the intestine and in the stomach colicky pains cannot be recognized with certainty unless accompanied by recognizable peristalsis.

If a searching clinical investigation and a complete physical examination fail to reveal the cause of a chronic pain, then any other method of investigation likely to throw light should be adopted. This means that every case of pain possibly referable to the kidney, ureter, or bladder should be examined cystoscopically and by the *x* rays. Every doubtful case of gastric ulcer should have the benefit of microscopic chemical and radiographic examination; and the same rule applies to obscure intestinal cases. Of all these methods radiography in gastric and intestinal cases is by far the most valuable. Special experience and skill, as well as command of the best apparatus, are, however, indispensable for abdominal work. Methods and skill sufficient for foreign bodies and fractured bones are quite inadequate for this purpose.

By radiography the position and shape of most parts of the alimentary tract can be revealed with great precision. The movements of the stomach, the rate and manner in which it empties its contents, the existence in it of ulcers and growths, if not too small, can be clearly demonstrated. Ulcers and strictures of the large intestine are equally demonstrable. Organic abnormalities of the small intestines are much less often and less clearly definable. Gall stones are with difficulty demonstrated, and only in a minority of cases. Their absence cannot be asserted. The rays offer us little help in diseases of the pancreas and spleen. Stones in the kidney can be confidently asserted to be present or absent, but other surgical abnormalities of the kidney are not demonstrable by radiography without the addition of opaque injections into the renal chamber and ducts, a procedure not without a risk equalling or exceeding direct surgical exploration. Radiography cannot even demonstrate with certainty ulcers of the stomach or duodenum in their earlier and smaller stages. In fact, the evidence of radiography is most convincing in those cases in which clinical history and ordinary examination make diagnosis most certain, and least helpful just in those more obscure cases of visceral pain in which we should most welcome its aid.

It is the experience of every general surgeon frequently to be consulted for the relief of chronic abdominal pain by patients in whom neither ordinary physical examination nor radiography can find any definite cause. The symptoms complained of may suggest gastric ulcer, or gall stones, stricture or other partial obstruction of some part of the bowel, or an affection of one kidney or ureter. Leaving on one side all localized affections of the urinary tract, and also most organic diseases of the female pelvic organs—for these can usually be detected by direct methods of examination, including cystoscopic and allied methods—the diagnosis usually resolves itself into a weighing of the evidence of history and symptoms between gastric ulcer, gall stones, and an affection of some part of the intestines. Failing any signs of the two former, the guilt is often attributed to the appendix; innumerable cases in which chronic pain is more or less definitely located in the right side of the abdomen have been summarily treated by removal of an appendix. In a large proportion of such cases—perhaps the majority—the appendix shows no visible abnormality. It is not surprising if the patient afterwards shows no visible improvement.

APPENDICITIS.

It is not, in fact, safe to diagnose chronic disease in the appendix unless the history includes at some time or other the clinical syndrome of an acute attack of inflammation of the appendix, followed by similar attacks more or less severe. This syndrome has very marked and constant features. The onset of the first attack is always sudden, and pain is always the first symptom of the illness. The pain is sometimes severe but never agonizing or unbearable like renal or biliary colic, or perforation of a gastric ulcer. Also in contrast to these it is usually some hours before it reaches its maximum intensity. Vomiting usually occurs in the first few hours of the attack and then ceases, unlike the vomiting of biliary or renal colic, which is often repeated at frequent intervals for twenty-four hours or more. In the later stages, after the third day, vomiting may become incessant from generalized peritonitis, but it is very seldom a marked feature during the first two days when the acute inflammation is confined to the appendix and its immediate neighbourhood. Again, a definite attack of acute appendicitis, however mild, practically always causes a sufficient amount of pain, malaise, and rise of temperature to keep the patient in bed for at least twenty-four hours. A clinical history in which careful interrogation brings out no history of an attack such as this should be regarded as excluding inflammatory disease of the appendix. Nor should an appendix which after removal shows no signs of having ever been acutely inflamed be regarded as a satisfactory explanation of chronic abdominal pain; for if it be admitted that an appendix may have recovered so completely from an acute infection as to show no traces of its effects, which is possible, then it cannot be reasonably regarded as a continuing source of pain.

As a matter of experience, in few cases in which there is a well-marked clinical history of acute appendicitis will the appendix fail to show traces of former inflammation, such as peritoneal adhesions, opacity, thickening of some part of the wall, stricture, or other well-marked effects of a truly inflammatory process, even when removed months or years after the first illness. There is, on the other hand, no evidence whatever that inflammation of the appendix may be chronic and insidious in its origin, unattended by acute clinical symptoms. Nor is there any better ground for attributing single or recurrent attacks of severe abdominal pain to the presence of faecal concretions or foreign bodies in the appendix, and giving them the name of appendicular colic. Faecal concretions may often be found in appendices examined deliberately or casually in the course of any abdominal operation, and are hardly to be regarded as even abnormal. Actual perforation of the appendix by a foreign body swallowed in the food or by living worms is, of course, a different matter, but there is no evidence that appendicular colic or any symptoms whatever are caused unless perforation or infection occurs.

The surgeon who removes an appendix for the relief of chronic pain or other abdominal symptoms, when there has been no definite indication of appendicitis in the past, commits a blunder, not in operating, but in operating wrongly. Chronic pain is itself a disease, perhaps sufficient to disable or to render life miserable. It must be assumed to have a definite and discoverable cause, and if that cause cannot be ascertained by the fullest investigation by every other possible means, it is not only justifiable but obligatory to make a surgical exploration. It was once objected to a surgeon that he habitually resorted to exploration on evidence on which he would not hang a dog. The objector forgot that the surgeon's object was not to hang anybody but to discover and remove a trouble causing disability, and that the direct seeing and handling of the internal organs may be the only final and conclusive means of discovery and cure in the present state of knowledge. In acute abdominal diseases the surgeon operates on reasonably grounded suspicion and not wait for post-mortem verification of his fears. In chronic cases he should equally not hesitate to cut Gordian knots by direct action. But an exploration should be as complete and thorough as possible. Through a small incision over the appendix it is not possible to make more than a very limited examination. For this reason in every case of chronic abdominal pain, wherever located, if there are no definite objective signs, the incision should be made in a position which commands the whole abdomen. The best for the purpose is an incision in or near the middle line extending as much above and below the umbilicus as may be required. Through such an incision it is possible to inspect and palpate every organ of the abdomen, and to carry out almost any operation subsequently required. In cases of special difficulty an additional incision more directly over the seat of disease may be required, but there is no difficulty in performing operations on the gall bladder, stomach, intestines, and pelvic organs through a sufficient median incision. The advantage of the completest possible exploration of all the abdominal organs in obscure cases is self-evident, since it not only minimizes the risk of overlooking the real cause of trouble, but gives us negative evidence which may be of the greatest value.

The exclusion of gastric ulcer, for example, enables us at once to abandon the restricted diet which we are compelled to adopt so long as there is reason to suspect its presence. Every surgeon must be familiar with patients who have been treated for months or years for a gastric ulcer which operation has eventually shown to have had no existence. On the other hand, it is common to find that organic disease, which eventually comes into the hands of the surgeon in an advanced or inoperable condition, has been previously labelled with such names as gastritis, gastralgia, mucous colitis, enteritis, colic, and so on, and treated "expectantly"—that is to say, by waiting for something to turn up. An earlier and more frequent resort to surgical exploration would obviate many errors of this kind.

VISCEROPTOSIS: INTESTINAL STASIS.

Every surgeon who accepts the general principle of making a complete exploration in every case of obscure abdominal pain seriously affecting health and physical capacity, and who records the operative findings of a series of such cases, will find in a certain proportion of them some definite organic trouble which accounts for the pain and is relieved by appropriate treatment. In a large proportion of similar cases he may at first record his findings after a complete search as entirely negative, and he may be content to call the pain functional, neurotic, hysterical, or some other question-begging epithet. If, however, he reads the surgical literature of this and other countries he will note the increasingly frequent publication during the last ten years of observations on abnormal looseness of the chief abdominal organs, and of certain abnormalities of the peritoneum connected with this condition which are now quite familiar under the name of general visceroptosis.

The relation of this condition to obscure abdominal pain is of the greatest interest and importance, but much further observation is required before the obscurity surrounding it can be cleared up. The actually observed facts are quite simple, and easily verified by every surgeon whose ordinary practice includes a large number of abdominal sections, if he will only make a practice of looking for them. The position of the lower border of the stomach and the transverse colon, even when the patient is lying on the operating table, is unusually low; that of the former at or below the navel, that of the latter lower still, its centre sometimes almost in the pelvis. The whole colon may be much less closely attached to the back and sides of the abdomen than usual, so that the caecum may hang down into the pelvis, and the whole of the right side of the large intestine may be brought completely outside through a central abdominal incision, including the caecum, ascending colon, hepatic flexure, and transverse colon as far as the splenic flexure. The sigmoid flexure is also unusually long and loose, but the splenic flexure and descending colon remain deeply fixed, and cannot be mobilized without dividing their outer peritoneal reflections. No abnormal changes are noted in the muscular wall of the stomach or large bowel, but some or all of the following abnormalities are found in the peritoneum. About the outlet of the stomach certain more or less thick and opaque bands passing from the pylorus or duodenum to the gall bladder, liver, and the hepatic angle of the colon; a similar band passing from the upper end of the ascending colon to the centre aspect of the caecum, causing a sharp bend of the colon outwards. Occasionally this band is replaced by a thin membranous veil concealing the anterior aspect of the caecum. A few inches from the termination of the ileum a radiating fan-shaped thickening of the mesentery passes downwards towards the pelvic brim and fixes the small intestine in this position, sometimes causing a sharp angulation. This condition is now tolerably familiar to all under the name of Lane's kink. To Lane, indeed, is due the credit, if not of noting these peritoneal abnormalities for the first time, at any rate of calling surgical attention to their frequency and possible significance.

It is curious that the whole subject of visceroptosis and its significance has been approached piecemeal from different sides by observers whose attention was directed at the time to particular organs. For a time much attention was directed to excessive mobility of the kidneys, a condition both common and easily demonstrable by clinical examination. Closer investigation has proved, first, that deviations from the normal, or what had hitherto been regarded as the normal, mobility of the kidneys were exceedingly common in persons presenting no obvious inconvenience or ill health; and, secondly, that abnormal mobility of the kidneys is frequently, if not always, associated with abnormal mobility of other abdominal viscera, particularly of the stomach and colon. The reality of this condition, conveniently described as "visceroptosis," is easily demonstrable during an abdominal section when the patient is horizontal. It is even more marked when patients are examined radioscopically in the erect posture, even after making full allowance for considerable variations from the normal standard within the limits of health.

These observations provide a clue to the curious fact that while some surgeons were treating a group of obscure abdominal symptoms by fixing the kidneys, other surgeons were treating cases not unlike them with equal success by excision or short-circuiting of the colon. No doubt the similarity of cases so differently treated may be denied, but it cannot be denied that the one indisputable and demonstrable anatomical condition common to both is visceroptosis and the accompanying peritoneal changes. Sir Arbuthnot Lane attributes chief importance to an obstruction or slowing of the intestinal stream caused by the various kinks and bands already described. He ascribes visceroptosis to the prolonged effect of gravity in the erect posture, and regards the various thickened bands of peritoneum as a physiological response at points of greatest strain. Lane's ileal kinks, Jackson's membrane, and other peritoneal thickenings are, however, found in a large proportion of babies and young children who show no evidence of having suffered from intestinal stasis. Their origin is probably always due to congenital abnormalities of development, but they may, of course, be capable of progressive intensification. Against the theory that visceroptosis is due to gravity and the erect posture is the observation, which will be confirmed by many surgeons who perform many abdominal sections, that typical cases of general visceroptosis are quite common, both in hard-working men with highly developed abdominal muscles and in young muscular women who have never had children. These are, in fact, the cases in which chronic abdominal pains simulating gastric ulcer most typically occur.

My own experience is opposed to the view of Sir Arbuthnot Lane that the evil effects of visceroptosis are attributable mainly or entirely to chronic constipation or intestinal stasis. The evil effects of constipation are greatly exaggerated both by the public and by many doctors. Many people are so obsessed by the idea that the daily evacuation of the bowels is essential to health that they purge themselves daily, by some form of aperient drug. The result is that a considerable portion of their nutritive intake is lost, and they suffer from constant malnutrition. In the case of men who eat and drink heartily and lead sedentary lives, this may be of no account, but many women eat habitually less than is sufficient for full health and vigour, and to these the daily subtraction of a purge is positively injurious. When visceroptosis is associated, as it very commonly is, with chronic abdominal pain, the intake of food is always insufficient and purgation increases the insufficiency. Many of these cases closely simulate chronic gastric disease and are carefully dieted, which generally means insufficiently fed.

That too much importance has been attributed to the effects of angulation and peritoneal bands in delaying the intestinal stream is suggested by the small amount of disturbance which may exist when the intestines are matted together, and often very sharply kinked in cases of chronic tuberculous peritonitis or after recovery from severe peritoneal suppuration. Symptoms of intestinal stasis in a most aggravated form would be expected to occur in cases of this kind, but so far as I know are never seen. Actual obstruction, chronic or acute, from such conditions is, of course, common, but then there is no similarity whatever between the symptoms of actual mechanical obstruction and "intestinal stasis," a name with hypothetical implications from which the older term of constipation is free.

EXPLORATORY OPERATION.

Although for these reasons it is difficult to regard the various bands and kinks of the colon, ileum, and jejunum as seriously delaying the onward passage of the contents of the bowels, they may well be the sites of origin of the chronic pains for which no other cause can be found on abdominal exploration. Almost all such pains are referred to the epigastrium or the right iliac fossa, but, so far as I am aware, there are no definite data for assigning a pain in one place or another to a definitely situated peritoneal band. Such a pain might arise from a dragging or tension at one or other of the spots where the thickened peritoneal bands are constantly found, or from a momentary or temporary constriction of the colon or ileum in a particular posture or phase of movement. Acting on this hypothesis, I have in every case of visceroptosis explored by operation made a point of freely dividing every abnormal peritoneal fold or membrane in such a way as to give the utmost mobility of the part of the bowel concerned, for hardly any two cases are precisely alike. In some cases every sort of thickened band will be found from the duodenum and gall bladder to the beginning of the ileum. In others there may be a well-marked ileal kink and no other. Others have bands confined to some part of the colon. In addition to dividing the bands I have always removed the appendix, which in the great majority of cases presents no sign of ever having been inflamed, though it may be sharply kinked or fixed to the pelvic brim or caecum by transparent membranous adhesions differing entirely in appearance and character from those of inflammatory origin, and resembling the peritoneal bands of visceroptosis.

In order to examine the caecum and colon thoroughly it is necessary to divide the whole of the peritoneal reflection to the outer abdominal wall on the right side until the caecum and ileum can be brought out of the wound, together with the hepatic flexure and transverse colon. Any fixed kinks and adventitious membranes can then be thoroughly removed. The left side of the colon is examined without bringing it outside, and as a rule no bands have been found in this part requiring removal.

The result of this operation has been in many cases to relieve completely and permanently the pain and disability previously suffered. In almost all there was improvement in health, but in a considerable number, after temporary improvement, complaint was again made of pain. The ultimate result, then, depends partly on the temperament of the patient and partly on the influence of the surgeon. Every effort should be made to induce him or her to eat heartily and lead an active and vigorous life. The patient should on no account be encouraged or allowed to wear abdominal belts. A surgeon who makes a routine practice of ordering a belt to every case in which he has performed abdominal section for fear of ventral hernia does not know how to close his incision properly. Vigorous use of the abdominal muscles is undoubtedly essential to good health and is incompatible with the wearing of a surgical belt.

As soon as the patient can be induced to eat a normal diet he gains weight, constipation ceases, and the abdominal pains and discomforts become less insistent. If he begins again for any reason to take insufficient food, pain and constipation return, followed by loss of weight. If he can then be persuaded to eat normally and to disregard the pain and discomfort he can be confidently assured of recovery. The ability to give this advice with confidence, with the certain knowledge that we can exclude gastric or duodenal ulcer, is one of the strongest arguments for exploring every doubtful case of chronic abdominal pain.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, December, 1919.

X RAYS AND THE APPENDIX.*

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IN examining the alimentary canal by the help of opaque meals the observer is apt sometimes to overlook the fact that he is not dealing with organs under normal conditions, but with organs placed in circumstances entirely novel and unwonted and, indeed, reacting under the stimulus of a foreign body.

Before we allow ourselves to draw conclusions from the pictures seen on the screen or in the plate, we are bound to consider what unusual effect the presence of a large mass of barium sulphate may have upon the behaviour of the stomach or the duodenum, or, for that matter, upon any portion of the alimentary canal. So, when the peristalsis of the stomach is noted on the screen, it becomes a nice point to ascribe the proper proportion of movement to the ordinary gastric activity and to make the necessary allowance for an organ faced with an unusual problem and doing its possibly exaggerated best to pass on an unwonted foreign body.

Again, there may come a time in the progress of every bismuth meal when all, or nearly all, the salt may be collected in a narrow segment of the transverse colon. Weight for weight the metal is heavier than a collection of faecal matter of equal bulk, and it may be that the extra weight is sufficient to cause a notable dropping of the bowel and so induce the observer to believe that there is a real ptosis of the colon, whereas, under natural conditions, the intestine is kept by its supports in the proper position.

As for the appendix, claims are made that 75 or more appendices out of 100 may be demonstrated by opaque meals of one kind or another; but putting aside for a moment the actual value of a picture of the appendix, the means sometimes adopted to separate the organ from its surrounding coils of intestine introduce an element of violence to which the parts are never exposed during the process of ordinary digestion. I refer to the massage of the caecal region by the hand, or by some instrument, for convenience made transparent to the rays—a wooden spoon, for example.

Considerable importance is attached by some observers to the medium in which the opaque salt is given; one recommends gruel, another buttermilk, and a third will [illegible] with some proprietary mixture such as that made by Burroughs and Wellcome. Trials made with [illegible] of barium sulphate in 10 oz. of various fluids showed that all or nearly all the salt separated from the [illegible] in a comparatively short time—from water in ten minutes, from [illegible] in thirty minutes, from thin gruel in two and a half hours; it may, therefore, be assumed that whatever the medium used in an opaque meal the nature of the suspension will have greatly altered long before any of it has reached, let us say, the ileo-caecal region. It seems more reasonable to give the opaque salt under natural conditions spread over the various foods that make up the patient's usual breakfast; the result is not so [illegible] as it sounds, and though the salt is more diffused and the shadow thrown by it less dense, the proceeding has no practical disadvantages, and at least avoids the unnatural act of swallowing a large quantity of foreign material in a mass. Lastly, there should be no preparation of the patient by purging, at least within twenty-four hours of the examination; the only object of the investigation should be to watch the alimentary canal as nearly as possible under normal conditions, not when it has recently been a prey to more or less violent [illegible].

Screen Examinations and Skiagrams.

No doubt a series of good skiagrams of a bismuth meal is of some use as a record, but its value is insignificant in comparison with the report on a series of screen observations; moreover, the interpretation of skiagrams will vary with the reader, and no one is really competent to give an opinion on the constantly changing picture presented by a bismuth meal except the radiographer who watches it. The last word on this subject is found in a sentence of Sir Arbuthnot Lane:

> The utility of a complete report on the passage of a bismuth meal by a competent radiographer who is experienced in this work cannot be exaggerated . . . it is futile to expect the surgeon to obtain much useful information from a series of radiograms, however good, taken at intervals. By far the most valuable portion of the information afforded by the skilled radiographer is obtained by means of screen work. . . .

And, indeed, some of the published radiograms of diseased conditions in the ileo-caecal region are unconvincing. One sees a mass of ileum and caecum, and, indistinguishable save by the eye of faith, a narrow band is marked by a confident arrow and labelled "kinked and adherent appendix." Such a picture can be of no use in diagnosis, and tends to discredit the whole science; it would be invidious to point to examples, but there is scarcely a work on radiography which is not disfigured by imaginative efforts of this kind.

In the series of 50 consecutive opaque meals given for one purpose or another, but always having in view the behaviour of the parts in the ileo-caecal region, the appendix was definitely recognized in a much smaller percentage of cases than might have been expected; no massage of the abdominal wall or other interference was permitted, and whether the patient was screened from the front, or the back, or the side, in only 45 per cent. could one be sure that what one was looking at was really the appendix. Of the appendices seen (22) 20 were found diseased at the subsequent operation, 2 were apparently normal. Of the remaining 28 in the series—the 28 in which the appendix was not identified on the screen—15 were diseased, 13 were normal; of the 15 the lumen was obliterated in 3, and in 12 the organ was so bound down to the side or back of the caecum that even with a patent lumen full of barium, it would have been impossible to differentiate its shadow from that of the surrounding coils of intestine.

Visible appendices, 22—	
Diseased	20
Normal	2
Invisible appendices, 28—	
Diseased	15
Normal	13

The numbers are no doubt small to draw any very definite conclusions from them, but if they prove nothing they at least suggest that the barium does not tend to enter the normal appendix at all. Not that this assumption helps us very much; even if we could say definitely that the barium enters a diseased appendix and does not enter a normal one, we cannot say that an invisible appendix is a normal one because, for the reasons given above, a proportion of diseased organs will be invisible too.

Pursuing this question, preparations were made of the bowel in the ileo-caecal region from 15 consecutive *post-mortem* examinations, the last 12 inches of the ileum, the caecum and appendix, and the first part of the ascending colon, were removed, the distal end of the preparation was clamped, and through the cut ileum a barium suspension was poured into the segment of gut. Among the 15 specimens there were 4 in which there was obvious disease of the appendix; in these the barium entered the caecum, filled it and the ascending colon, and, at the same time, overflowed into the appendix. In 7 of the remaining 11 normal appendices this overflow did not occur; it required a certain amount of manipulation and squeezing of the caecum to overcome the resistance offered to the progress of the fluid; in the other four normal preparations the barium entered as freely as it did the diseased specimens.

Skiagrams of two of these preparations are reproduced. Fig. 1 shows a long-standing inflammation with plentiful adhesions; Fig. 2 a normal appendix. The examples were chosen for the sake of contrast, and emphasize the difficulty of drawing useful conclusions from the inspection of a bismuth filled appendix.

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* Read before the South-Western Branch of the British Medical Association, March, 1920.

Here again the numbers are small, and the conclusions drawn from them, especially as we are dealing with *post-mortem* preparations, are not convincing, but the results fairly point to the assumption that Gerlach's valve has to be reckoned with as a structure which justifies its function, which is that of preventing the regurgitation of fluid from the caecum into the appendix while allowing free passage in the reverse direction. It is easy to imagine a permanent crippling of this mechanism by any inflammatory change in the appendix itself, and not difficult to see how the rough handling of the part entailed by the massage and squeezing necessary to separate the appendix from the surrounding coils of gut might overcome the resistance offered by the valve, a resistance perfectly competent under ordinary conditions.

All this favours the view that the etiology of appendicitis is not to be sought in the passage of food or foreign body into a normal organ and its stagnation there; no doubt such retention is the immediate cause of the greater number of attacks, but the organ has been damaged already, and the original cause is that which first attacked it, altered its structure, interfered with its function, and crippled the mechanism which kept it shut off from the general alimentary canal. There is no evidence that food ever enters the normal appendix; if it did, there does not seem to be any reason why it should be held up there, nor, being held up, that it should occasion the train of symptoms which constitute appendicitis. We have no right to ascribe an undue sensitiveness to the mucous membrane of the organ. What is there so deadly in themselves in an orange pip or a faecal concretion? Consider the length of time that stercoral masses remain in the colon and the infrequency of stercoral ulcers.

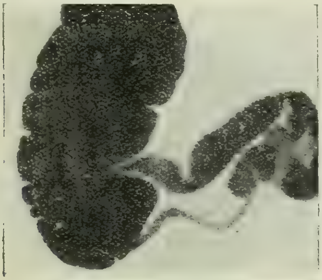
FIG. 1.—Chronic inflammation of the appendix with many adhesions.

The work of Dr. Poynton and Dr. Payne[1] in 1913, established appendicitis as a blood-borne disease; briefly, they ascribed it to streptococcal infection, and emphasized once more the likeness between the appendix and the pharyngeal tonsil. Nothing has been done to upset the conclusions of these observers; unfortunately their work attracted little attention at the time it was published, and seems to be forgotten now, but it appears to me to have settled the question once for all as to the origin of appendicitis, and it should have succeeded in displacing some of the hoary traditions which still cling round the ileo-caecal region.

In any case, the question of seeing the appendix in the course of a bismuth meal is not of great moment. If we see it, in the greater number of cases we do not know whether it is normal or diseased; and if we do not see it, it may either be normal, or diseased and invisible for mechanical reasons. I do not remember one instance among the many opaque meals observed in the Torbay Hospital where the visibility or invisibility of the appendix had the slightest influence in deciding for or against operation.

Where the diagnosis of chronic appendicitis was made or helped by the findings of the bismuth meal the points determined were those associated with the grosser local changes in the ileo-caecal region, or with the distant lesions of gastric and duodenal ulceration. Chief among these points are the mechanical effects which may result from an inflamed organ, for the familiar symptoms of the controlling appendix are largely due to interference with the structures guarding the junction of ileum and caecum. No doubt the ileo-caecal valve has some effect in preventing the regurgitation of fluid from the caecum, but its influence is small compared with that exercised by the ileo colic muscle, the long sphincter which encircles the termination of the ileum. This muscle has an intimate connexion with the appendix, for of the three longitudinal bands of the colon, the posterior passes directly over the junction of ileum and caecum, its fibres interlacing with those of the ileo-colic muscle and so runs to the appendix. When the ileo-colic muscle acts the longitudinal muscle acts also, and the effect of the two is certainly to exaggerate the folds of mucous membrane which form the ileo-caecal valve if it does not actually call them into existence.

The sympathetic nerve supply of this region must be briefly considered: the ileo-colic, right colic, and middle colic divisions of the superior mesenteric artery are accompanied by the appropriate branches of the superior mesenteric plexus, itself the continuation of the inferior coeliac plexus; the parasympathetic supply comes from that branch of the right vagus which joins the inferior coeliac plexus and is distributed in the same way as the sympathetic. Now the functions of these two nerve supplies being antagonistic one to the other, the detrusor muscles are made to contract by the parasympathetic and to relax by the sympathetic; the sphincters are made to contract by the sympathetic and to relax by the parasympathetic. The adjustment of the two, whereby harmonious action of the parts is secured, must be extraordinarily delicate, and extraordinarily liable to be upset by any pathological change in the organs which the nerves supply, or through which they pass. The influence a diseased appendix may exert, for example, on the ileo-colic sphincter must, then, be very great. It is not difficult to conceive a state where over-action of the parasympathetic would entirely inhibit the controlling function of the ileo-colic sphincter, with the result that regurgitation from the caecum would be free and constant; on the other hand, sympathetic irritation would lead to over-action of the sphincter, and a consequent hold up of the intestinal contents on its proximal side.

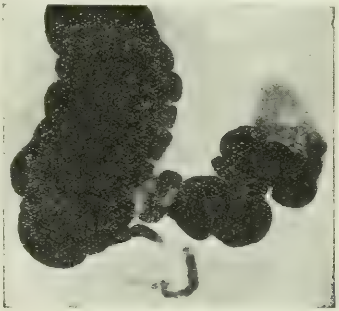
FIG. 2.—Normal appendix.

One other point of interest is that after appendicectomy, associated or not with caecoplication, pain in the right iliac region may remain unrelieved; it is suggested that this pain may be due to a tonic contraction of the ileo-colic muscle, and Groedel[2] states that it has been abolished by exposing the ileo-colic muscle in the wall of the gut and incising it. Again, the influence of the appendix must extend to the whole region in which antiperistalsis occurs, that is, from the caecum to the sixth sphincter of Professor Keith—the point in the transverse colon which lies below the pylorus; to allow an efficient peristalsis, this sixth sphincter and the one above it—the ileo-colic—must be simultaneously in action, any interference with either rendering one or both inefficient and throwing the whole mechanism out. It may be that the appendix has an even closer connexion with the intestinal movements than a simple mechanical control suggests; it is credited by Heile[3] with a hormone, which powerfully excites peristaltic action, and it is probable that a pathological change in the appendix would in some way check or alter the formation of this internal secretion.

In any case the appendix is not of vital importance—in health at least; it is true that a proportion of patients who have had appendicectomy performed suffer afterwards from constipation, but, as will be shown in the series considered in another paper, the disability in uncomplicated cases is seldom great and generally tends to right itself with time.

REFERENCES.

[1] *Researches on Rheumatism.* [2] *Fortschritte für Röntgenologie,* vol. xx, H. 2. Physiologie des Blinddarmanhanges, *Beiträge zur klinischen Chirurgie,* vol. xciii, 1914.

ANAESTHESIA IN TONSIL AND ADENOID OPERATIONS.

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THE purpose of this note is to advocate the use of nitrous oxide or local anaesthesia, in preference to ether and chloroform, in the removal of tonsils and adenoids. In children below the age of 14 or so the operation can always be efficiently performed under gas. In adults the same is true where adenoids only require removal; if in them tonsils are to be enucleated, some can be dealt with under gas, but the majority must be dissected out, and for such a procedure gas is not suitable. A more prolonged anaesthesia is necessary, and it is in these cases that I strongly recommend local anaesthesia rather than ether or chloroform.

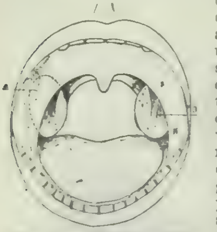

FIG. 1.—A, [illegible] artery [illegible]. B, Plica triangularis. [illegible] for novocain [illegible].

In stating the grounds on which the discontinuance, as far as possible, of the use of ether and chloroform for tonsil and adenoid work is urged, it will be convenient to consider separately the cases of children and adults.

I. *Operations in Children.*

Anyone who has had considerable experience of removing tonsils and adenoids in children knows that, with a guillotine of suitable size and form, enucleation of the tonsils can be easily and rapidly performed, while with a sharp curette the adenoids can be removed with one clean sweep.

Nitrous oxide anaesthesia affords ample time for the completion of the operation, if the following method is adopted:

The child lies on the bed, with the head extended over the end of the table. The operator stands [illegible] behind the head [illegible]

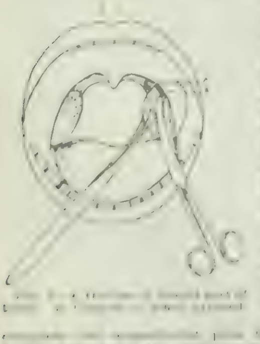

FIG. 2.—[illegible]

[illegible]

It [illegible] that a [illegible] ring has been chosen which is large enough to allow the upper tonsil pole to pass through with a moderate degree of ease. It is the upper pole of the tonsil which is most likely to be left behind if the pressure and manipulation are inadequate. The method of finger pressure advocated by Whillis and Pybus takes longer, and in my experience is no more efficient. The method described is competent to deal with any case, unless the adhesions to the faucial pillars and peritonsillar tissues are such as to prevent evagination of the tonsil. After the enucleation of the tonsils the adenoids are removed. The whole operation does not occupy more than twenty seconds. The position of the head allows the blood to gravitate away from the larynx, and on turning the head to one side at the conclusion of the operation the blood flows out of the mouth. The child is made to sit up almost immediately, and will cough or spit out the blood instead of swallowing or inspiring it. The return to consciousness, together with the upright posture, arrests the haemorrhage directly and the child can be safely returned to its home within an hour.

The whole proceeding is simple and safe, and free from any anxiety. Haemorrhage is reduced to a minimum, and the child is fit and well again in a very short time. The one untoward circumstance that may arise is a sudden cessation of breathing from overgagging, but if the cause be recognized the trouble can be rectified in a moment by easing the gag. In my opinion overgagging as a cause of asphyxia in young children is not sufficiently recognized and taught.

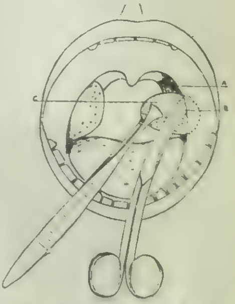

FIG. 3.—A, Tonsil bed. B, Scissors used both for cutting and blunt dissection. C, Upper tonsil pole drawn out from between the pillars.

The foregoing remarks concerning the use of gas in tonsil and adenoid operations require qualifying in this very important respect, that the best results can only be obtained with "team" work. The anaesthetist must be skilled in the administration of gas, and must understand exactly how to hold the head and assist the operator. An experienced nurse is also invaluable.

To instance the safety of tonsil and adenoid operations under gas I should like to refer to the statistics of school children operated on by me during the past three years for the Education Committees of Liverpool, Bootle, and Southport. These statistics have not been worked out by myself, but have been furnished me by those responsible for the care of the children after the operation.

Altogether 3,[illegible] children have been operated on, with no fatalities immediate or subsequent, and [illegible]. In [illegible] cases, considerably under 1 per cent., has severe bleeding occurred, that is, bleeding sufficient to cause faintness [illegible].

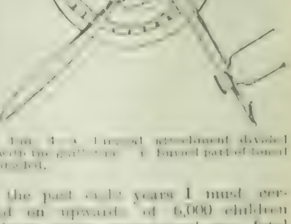

FIG. 4.—A, [illegible] attachment divided with the [illegible]. B, [illegible] part of tonsil attached.

When I review all my work during the past eight years I must certainly have operated on upwards of 6,000 children under gas, and I have never experienced any fatal case, either at the time or subsequently. Of course, I am well aware that very striking statistics have been published of series of cases in which the major anaesthetics had been used, but, broadly speaking, I am convinced that with ether and chloroform anaesthesia, especially the latter, there is much greater risk, firstly of collapse under the anaesthetic, secondly, of serious haemorrhage, and thirdly, of pulmonary, middle-ear, and other complications. Deaths during tonsil and adenoid operations have occurred far too frequently in the past. An analysis of 700 inquests on anaesthesia deaths appeared in the *Proceedings* of the Royal Society of Medicine some years ago, and out of that number no fewer than 56 were in cases of tonsils and adenoids.

With regard to haemorrhage, in my experience there is usually a much greater loss of blood under ether anaesthesia than with nitrous oxide, and that, I think, is just what one would expect. Under ether a child continues unconscious for a considerable time. The head is low, the vessels are all relaxed, and the bleeding is further aggravated by retching and vomiting. Even with the most careful swabbing of the tonsil beds it is inevitable that blood must be swallowed and inspired. Firm pressure with a swab, after the removal of one tonsil, will certainly momentarily arrest the bleeding, but it is not feasible to continue this pressure since the other tonsil, as well as the adenoids, are waiting to be done and the child is rapidly coming out of the anaesthetic. The secret of the small loss of blood with gas is the speed with which the patient recovers consciousness and can be placed in the sitting position. Cold sponging of the face is a useful adjunct in arresting haemorrhage. I have never once had to have recourse to stitching the faucial pillars together or tying a bleeding point, and the use of a temporary clamp has been extremely rare. Should haemorrhage be severe it can nearly always be adequately dealt with by pressure with an adrenalin swab applied at the end of a forceps, or, better still, pressed to the bleeding spot by the point of the finger, counter-pressure being kept up for some minutes by the finger-tips of the other hand placed just behind the angle of the jaw. Morphine is a most valuable aid in any case of persisting haemorrhage.

Concerning other risks in tonsil and adenoid operations, no one, I think, will deny that they are greater with a major anaesthetic. The swallowing or inspiring of blood, the malaise and sickness, and the general lowered vitality which follows ether or chloroform administration, render pulmonary, middle-ear, and general infective conditions much more frequent than with nitrous oxide.

II. *Operations in Adults.*

The scope of local anaesthesia for tonsil operations is naturally restricted to adults, and its use is indicated wherever the embedded position or adherent character of the tonsil renders the operation of dissection necessary. The advantages of local anaesthesia in these cases are enormous. Under ether the dissecting out of adherent tonsils in an adult is a difficult and often anxious operation. Very deep anaesthesia is necessary to abolish the throat reflexes, the tongue requires to be retracted well forward, and good artificial light must be used. The work of the operator is greatly hampered by haemorrhage and salivation and the need for frequent swabbing, and also by the rapidity with which the throat reflexes return, necessitating a further dose of anaesthetic. Considerable haemorrhage is common, and the patient not infrequently suffers from severe malaise and prostration for several days after operation.

With local anaesthesia, however, the state of things is quite different. The patient sits in front of the operator. The tongue lies quietly in the floor of the mouth and need hardly be touched. The operation can be conducted quietly and deliberately, and may be frequently interrupted to allow the blood to be expelled. With suitable technique haemorrhage is usually slight and pain hardly present. Should the bleeding be free it can be most easily controlled, and, if thought advisable, the second tonsil left to another occasion.

Very briefly, the various steps in the removal of tonsils by dissection, under local anaesthesia, are as follows:

1. A preliminary injection of $\frac{1}{6}$ grain of morphine and $\frac{1}{100}$ grain of atropine is useful in nervous patients.
2. The fauces, soft palate, and pharyngeal wall are swabbed several times with a 10 per cent. solution of cocaine.
3. A 2 per cent. novocain solution (containing 5 minims of adrenalin to 1 drachm of novocain) is injected into both pillars of the fauces and deeply into the junction of the lower pole of the tonsil with the tongue. The injection into the anterior faucial pillar is the most important one. It must be made just beneath the mucous membrane, and the fluid must be seen to diffuse widely, causing a raised anaemic area the size of a shilling. The posterior faucial pillar is so thin and mobile that injection into it is often difficult.
4. The upper pole of the tonsil is seized with tenaculum forceps and pulled inwards.
5. By means of a pair of scissors, curved on the flat, the upper pole of the tonsil is exposed by snipping through the mucous membrane covering it. This is the most important step in the operation. It is vitally necessary that the mucous membrane only be divided, since, if the wound be carried too deeply into the tonsillar substance, the capsule is missed and the operation is apt to degenerate into a mere tearing through the glandular tissue.
6. The capsule of the tonsil having been laid bare it is comparatively easy to free the whole of the upper pole and deliver it from between the faucial pillars.
7. The upper pole is now seized with the tenaculum forceps, the tonsil dragged inwards, and the dissection carried downwards to the lower pole—still using no other instrument than the curved scissors, which serve both for cutting and blunt dissecting.
8. The operation is completed by cutting through the lingual attachment of the tonsil with the guillotine.
9. Bleeding is easily checked by means of gentle pressure with an adrenalin swab. Any bleeding vessel can be temporarily clamped.
10. The tonsil bed is swabbed out with Whitehead's varnish, which acts both as a styptic and antiseptic.

I have endeavoured to illustrate, by the accompanying drawings, the salient points in the above description, and, in conclusion, confidently assert that in adults the operation for the removal of tonsils by dissection is easily feasible under local anaesthesia, while the avoidance of ether and chloroform for the purpose confers very great advantages on both patient and surgeon.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EARACHE DUE TO LARVAE IN THE EXTERNAL AUDITORY MEATUS.

A GARDENER, convalescent from double peritonsillar abscess, came to me complaining of violent pain in the right ear; it had commenced suddenly the previous day, and during the night had become almost maddening. On examination there was seen to be a discharge of blood from the canal. With strong illumination and a speculum it was therefore difficult to see anything clearly; but, whilst trying to view the membrane, I was astonished to see what looked like small worms passing across the field of vision. With the aid of bent sinus forceps I succeeded in extracting three maggots, alive and wriggling. A remaining maggot refused to be caught until stupefied by chloroform vapour. The patient was instantly relieved, and the next morning the canal and membrane looked perfectly healthy. It was fortunate that the creatures revealed themselves, for in view of the history, acute otitis media was a very probable diagnosis. I learnt afterwards that during the previous week a fly had entered the ear, and was only removed after a considerable number of minutes.

Haywards Heath. REGINALD ALDERSON, M.D., B.S.

RABBIT-SHOT IN THE APPENDIX.

A WOMAN aged 30 was sent to me as a case of chronic appendicitis of some two years' standing; there had been no acute attacks. The symptoms were those of reflex dyspepsia, with slight rigidity and tenderness over the appendix. This organ proved to be $5\frac{1}{3}$ in. long, and on opening it after removal I found thirty-seven rabbit-shot and a few minute fragments of splintered shot. They were all collected at the apex; there was no faecal concretion, but the mucous membrane was chronically inflamed and thickened. The patient made a normal recovery. She is a servant at a farm, and rabbits have formed a larger proportion of her diet than is usual for people in other walks of life. She is somewhat hysterical, but I can obtain no evidence of her having eaten rabbit-shot as such. It seems inconceivable that so many shot should have strayed into the appendix without a pre-existing abnormal patency of the lumen; I suggest that this patency was due to long-standing inflammatory changes and not caused by the foreign bodies. The further interest in the case lies in the fact that though so many potential nuclei had been present in the appendix for a considerable time, yet there was not the slightest trace of any concretion.

D. Leigh Spence, M.A., M.B.Camb.,
Melksham. M.R.C.S., L.R.C.P.

Reports of Societies.

ORTHOPAEDIC SURGERY.

A special meeting of the British Orthopaedic Association was held in Edinburgh on June 4th and 5th, under the Presidency of Sir **Robert Jones**, K.B.E., C.B. Mr. R. C. **Elmslie**, in opening a discussion on "The principles of the correction of congenital talipes equino-varus, and particularly of inveterate and relapsed cases," emphasized the importance of considering the ultimate function of the foot as opposed to the mere correction of deformity. In the treatment of infantile club-foot, tenotomy—particularly of the tendo Achillis—had in the past been used far too freely; in many children under one year correction could be obtained by manipulation alone. He advocated the use of plaster of Paris for fixation, and in his own experience found no difficulty in its application to the feet of tiny infants. The deformity should always be corrected in two stages—first, the varus element, and next the equinus. In his opinion tenotomy of the tendo Achillis performed in early infancy produced later on inadequate function in the calf muscles. Relapses were due to imperfect correction or to lack of correct after-treatment; in such cases the deformity could usually be partially overcome by repeated wrenching, but complete correction needed an open operation. The speaker maintained that the classical operations—especially astragalectomy and cuneiform tarsectomy—were unsatisfactory; as a routine he carried out an operation in which the essential steps were (1) the removal of the thick calcaneo-astragalo-scaphoid capsule, and (2) transverse division of the os calcis just behind its anterior process. In certain cases the tendency to relapse could be prevented by carrying out a transplantation of the tibialis anticus tendon to the outer side of the foot.

In the subsequent discussion the consensus of opinion was in favour of the use of manipulative methods in dealing with infantile club-foot, and the avoidance of operations requiring the removal of big masses of bone in the relapsed cases.

Mr. John Fraser read a paper on "The treatment by tendon transplantation of paralysis involving the ankle-joint," based on observation of 124 cases, comprising both spastic and flaccid paralyses. He maintained that the weight-bearing portion of the foot skeleton was mainly on the inner side, the outer side had a balancing function. In choosing muscles for transplantation three muscles—the tibialis anticus, tibialis posticus, and peroneus longus—owing to their unique action, should never be sacrificed. In his work he had used the long flexors and extensors of the toes. He favoured long freeing of the muscle belly of the transplanted tendon, division of the thickened overlying fascia, and attachment of tendon to tendon rather than into bone or periosteum.

Mr. [illegible] disagreed with the conception of the outer side of the foot as a weight-bearing mechanism. Messrs. Dunn, McMurray, [illegible], Trethowan, Murk Jansen and the President also contributed to the discussion.

Mr. S. T. Irwin reported a case of acute arthritis of the hip-joint occurring in an infant four weeks old. Complete destruction of the head and neck of the femur followed, so that at the present time the child aged 11 years had an unstable hip with a shortening of 2½ inches when weight was borne on the limb. The case now presented certain difficulties in treatment; the speaker favoured conservative treatment at the present stage as [illegible].

Dr. Murk Jansen of Leyden in a paper on "Feebleness of growth," pointed out that feebleness of growth due [illegible] should be studied [illegible] belonging to the same family. He showed photographs and illustrations proving the [illegible] of under development, rickets, and [illegible] in children of the same mother. In a further communication on "Dysostosis cleido-cranialis," Dr. Jansen discussed the influence of amniotic pressure on the fetus *in utero*.

In the eighth week of fetal life an infolding of the fetus occurs both in its transverse and longitudinal axis, and produces certain mechanical results manifested as the malformations constituting dysostosis cleido-cranialis. The cranial and clavicular deformities can be explained by mechanical compression of the chest and the compression of the forehead against the chest; the dwarfing of the toes which is also characteristic of this condition is due to partial arrest of blood supply, affecting the only skeletal parts which are still scleroblastomatous.

In a discussion on "Hallux valgus, rigidus and malleus," opened by Dr. **Jansen**, the majority of the speakers were in favour of the operation of excision of the head of the first metatarsal.

Bone Grafting.

Mr. **Hey Groves** read a paper on "The vital and mechanical principles of bone grafting." He held that the ideal graft required five conditions—namely, complete restoration of the lost bone in its length and thickness; firm fixation, so that the graft could immediately function as a part of the skeleton; perfect fitting, with a large area of contact of the graft with its bed; fixation by fitting methods independent of screws or sutures; good vascularity in the bed and rapid re-establishment of circulation in the graft. In actual practice all these ideals could seldom be attained, and it was important to recognize certain limitations of grafting, of which the following were the most important:

The graft never grows in length; the graft increases in thickness very slowly; callus junction between the graft and its bed is slow and scanty; there always occurs a period of osteoporosis of the graft, when fracture readily takes place.

Mr. Hey Groves said that the most important vital factors in bone grafting were: (1) Asepsis; this was of utmost importance, but partial survival of the graft could occur in spite of some sepsis. (2) The periosteum attached to the graft was of great value in bringing about rapid vascularization. (3) The functional stimulus: the restoration of continuity was essential for growth and vascularization of the graft and its bed. (4) The spontaneous vitality of a living autogenous graft was proved by callus formation after fracture, and by sequestration under certain conditions of portions of dead graft. With regard to the mechanical factors of bone grafting, the speaker said that: (1) The restoration of the skeletal strut was essential for providing the stimulus of growth, for putting the muscles and joints into action, and for cure of deformity. (2) The length and thickness of the graft must suffice as a skeletal strut. (3) The fitting and fixation of the graft must be such as to give wide coaptation with its bed without dependence on suture material. The details by which these mechanical requirements were best carried out were considered in connexion with the various long bones, and the choice of a graft was considered with special reference to those cases in which a homogenous or boiled graft was preferable to an autogenous graft.

Mr. A. P. Mitchell reported a series of bone grafting operations performed in the Bangour War Hospital in which the inlay method had given the best results.

Mr. W. H. Trethowan, in a demonstration by lantern slides of the results of a series of bone graft operations done at the Shepherd's Bush Hospital, maintained that the intramedullary method was superior to the pure inlay method.

Miss M. Forrester Brown read a paper on the possibilities of end-to-end suture after extensive injuries of peripheral nerves. She said that the possible methods of relaxing the nerve were: (1) Extensive freeing. (2) Fixation of joints in suitable position for six weeks, followed by gradual stretching. (3) Freeing of branches, especially those above the lesion, which could be made to run an inverted course. The amount gained by this manœuvre depended on the situation, peripheral gaps being easier to overcome than proximal ones. (4) Transposition to the front of the limb in the case of the ulnar and musculo-spiral. (5) Sacrifice of branches, especially distal ones which were already paralysed. (6) Anchoring the [illegible] ends at a first operation and resecting the neuroma at a second, when about 2 in. of slack would be available. (7) Shortening of bones only advisable when an ununited fracture was present. (8) Nerve grafting not usually advisable although two cases of apparent recovery were shown. (9) Turning down a flap from the neuroma (a recovering case was shown). When these methods were adopted the possible gains were stated to be:

Median, in arm or forearm, 4½ in.
Ulnar, in arm 5 in.; in forearm 5½ in.
Median and ulnar (all forearm branches being sacrificed), 6½ in.
Musculo-spiral, 3½ to 4 in.
Sciatic, 4 in.
Posterior tibial, below main branches, 6 in.

The meeting on the first day closed with a demonstration by Mr. JOHN FRASER of cinematographic records of various gaits in children.

On June 5th Sir HAROLD STILES and his associates gave a demonstration of operations and cases at the Edinburgh Royal Infirmary.

PSYCHOLOGICAL MEDICINE.

THE seventy-ninth annual meeting of the Medico-Psychological Association of Great Britain and Ireland was held at the North Staffordshire Mental Hospital, Cheddleton, by invitation of the new President, Dr. W. F. Menzies (Medical Superintendent), and at the Town Hall, Buxton. The President, Dr. BEDFORD PIERCE, occupied the chair at the commencement of the proceedings and inducted his successor.

Dr. W. G. THOMSON read a paper on the minimal requirements for a small clinical laboratory, in which he described the best way of providing the apparatus needed to conduct routine investigations on excreta, and perform clinical tests in institutions having no whole-time expert pathologist. His estimate of the cost of such minimal equipment was £115. Dr. TOM WILLIAMS spoke of the method adopted in America for centralizing the laboratory and teaching work of the various asylums in the same State. Members of the asylum staffs periodically attended certain centres, and when they returned they were better equipped for their duties.

Dr. MIDDLEMASS spoke of the great benefit of being able to conduct at each hospital routine examinations, which should include simple examinations of the cortex of the brain; these, in his experience, had cleared up many an otherwise obscure case.

Involutionary Melancholia.

Dr. MENZIES took as the subject of his presidential address "The Mechanism of Involutionary Melancholia." At the present time, he said, when the claims of psychogenic treatment were attracting even the attention of laymen, it befitted those who believed that beneath every mental process there was a mechanical basis to ask themselves whether they were quite blameless if easily understood psychological explanations were substituted for the much more intricate and complex physiological ones; had alienists always applied to the problems of nervous physics the available knowledge? Twenty years ago Crookshank endeavoured to correlate physical signs with mental conditions, and fifteen years later Dunlop Robertson drew attention to the importance of adrenalin in the production of depression. Those engaged in this special branch should be willing to apply to it the simpler tests of the physiologist and the chemist. The type of illness he had chosen for this address comprised two distinct processes, and his aim was, by tracing the conditions present in both, to offer some explanations as to the proximate causes underlying each—involution and depression. Closely bound with the psychology of melancholia was the depressive emotion; the anatomy of the depressive emotion was a sympatheticotonus, and the chemistry of the latter was an endogenous anoxaemia. At the involutionary period a most important factor was excessive intestinal putrefaction. Though constipation and dementia were common in old age, only a few old people were depressed. Intestinal stasis was certainly very common among the insane, and bands and fine adhesions were evident when looked for: the views of Arbuthnot Lane were alluded to. Yet in young neurotic persons it was sometimes possible to make out an undue breadth of the colon, dilatation of stomach, exaggerated flexion at the angular notch, and tonic contraction of one or other rectus muscle; there was, however, a daily emptying of the bowel. Keith believed that enterostasis was due to nodal segments, and the speaker thought that both he and Lane might be right. To understand the connexion between bacterial absorption and melancholia it was essential to have an anatomical basis to work upon, and that basis existed in the involuntary nervous system.

In regard to the physiology of the emotions it had long been recognized that fear could cause certain superficial presentations, but only comparatively recently had systematic efforts been made to trace the technique. The next step was to show that the inhibition caused by the emotional impulses was closely connected with the activity of the involuntary nervous system. Bayliss and Starling had proved that the phenomena of digestion in the mouth, stomach, and duodenum could be stimulated if an acid fluid were applied to the duodenal mucous membrane after the nerves had been divided; in this case another important factor was at work—the action of hormones. The sympathetic system could generally overcome the autonomic, but its action did not persist so long. Cannon considered that the autonomic system quietly built up the body reserves against a time of stress, its operations having but little effect on tone. Many phenomena produced by emotion and by the nervous outflow from the involuntary system were closely simulated by the effects of adrenalin, as Oliver and Schafer showed in 1894. Dr. Menzies recounted the physiological manifestations which followed the giving of adrenal extract, from which it was clear that an emotional outflow was at one with the sympatheticotonus, and was accompanied by an increase of adrenalin acting as a hormone. It had long been known that severe emotion produced diabetes, and a large number of observers noted that glycosuria was common in melancholia, the amount of sugar in the urine varying with the degree of depression. Glycosuria was easily produced in excited states, but in melancholia alone was glycaemia unduly high before meals.

Dr. Menzies next considered the conduction of nerve impulses before they reached the cerebral cortex, and the possible paths by which those subserving feeling-tone might travel. Head's brilliant conceptions of the nature of sensation had added a new chapter to the science of neurology. Ramsey Hunt had enunciated the theory that there were two distinct systems of motor fibres to skeletal muscles: (1) the paleokinetic to the sarcoplasmic substance, associated with slow tonic contraction; (2) the neokinetic to the sarcostyles, associated with the quick, spasmodic, "voluntary" contraction. Hunt held that the distinction was carried right through from the periphery to the centre, and was represented in the cerebellum; clinical evidence was adduced from the observed differences between the two forms of muscular hypertonus. The matter could not yet be regarded as settled, however.

After discussing the present-day knowledge of the afferent paths, Dr. Menzies considered the question of thalamic sensations. Head codified the nature of thalamic sensations, and showed that partial interruption of the thalamo-cortical path had a profound influence in releasing sensations registered in the thalamus from the inhibitory effects of cortical activity. Normally, all sensations reaching the thalamus were subjected to minute analysis in the cortex; they might be "allowed" or "censored." But in certain diseased conditions either the connecting path was impaired, or the cerebral cortex was unfit to function, and then the sensation rose to the dignity of an emotion, which could be regarded as a temporary flood in a stream of feeling tones. All feeling-tones did not eventuate in emotion; nor were all defensive emotions tornadoes—they might develop slowly, and last for weeks, even months; such a condition constituted depression. In melancholia there appeared to be a chronic hyperadrenalism.

Dr. Menzies discussed the functions of the various layers and regions of the cerebral cortex in health and in disease, remarking that our chief knowledge of the course followed by the cerebro-spinal fluid had been gained by observing the process of brain atrophy and the distribution of the areas of wasting in dementia. Involutionary processes were independent of the mental state which might accompany them, though both in some cases might depend on the same causes. Involution was a march of gradually increasing cytolysis, and depended to an appreciable extent on the power of reaction of the hepatic antitoxins to the intestinal toxins, the penalty of failure being defective oxidation. What was known as melancholia depended on modifications of the same processes, especially on excessive bacterial fermentation and enterostasis. Medicine was now, apparently, on the way to a better understanding of the problems underlying the origin of the psychoses. Science waited upon the chemist, who, in turn, waited upon the clinician; cases must be observed with a more scientific eye. The war had infused the art of medicine with a new spirit, and the brilliant results attained in preventive fields by organized research had proved that money so spent was a good investment to the nation. The Board of Control had commenced a campaign, so that it was hoped that before many years each mental hospital would have its triad of trained observers—pathologist, biochemist, clinician.

Dr. TOM WILLIAMS of Washington, D.C., read a paper on some determinants of morbid emotionalism. He said emotility was, until the present century, dealt with in a purely introspective and observational manner. It was difficult to understand how there could be reactivity without that state of feeling known as emotility; even a unicellular organism, which had no differentiated nervous system, must have a state of feeling at the moment of being repelled by a stimulus. On passing up the animal scale the difference could be observed between the manifestation of a state of feeling or emotion and the more purely purposive manifestations which were regarded as associated with the cerebro-spinal nervous system. An emotion was a function of the whole organism; the individual who was not emotive was abnormal. The speaker explained the states which he regarded as indicating morbid emotility, from the ordinary temporary "blues" to more serious states, especially as seen in the "phobiacs," who had met with a series of circumstances which they had been unable to transcend. In these cases the emotion did not cease as soon as its determinant. Dr. Williams described his process of re-education which aimed at the cure of the condition.

Psychological Analysis.

Dr. W. H. B. STODDART, in a summary of Freud's psychology, said that an unpleasant memory was not thrown away into space, but could be revived by such processes as hypnotism and psycho-analysis. The driving of unpleasant thoughts deeper into the mind ("repression") was an automatic protective mechanism. A constellation of repressed ideas was known as a "complex," and inhabited the unconscious mind; a desire which had been banished from the conscious was constantly striving for recognition and gratification. As the conscious would not allow this, such gratification must be achieved in a distorted guise: it was sublimated in various activities. If the patient did not remain normal, he gratified his complexes by the creation of symptoms. Neuroses, psychoses, and dreams were fundamentally the same, the only difference being that the neurotic or psychotic lived his dream. Freud held that forgotten infantile desires and interests remained permanent throughout life, and that many adult activities owed their energy to primitive infantile impulses; any neurotic or psychotic manifestation among members of the family, especially the father or mother, had a profound effect on the mental development of the child. With regard to the sexual problems, Freud did not really extend the application of the word "sexual" to the young child: he merely recognized certain infantile activities to be of a sexual nature because, if they occurred in an adult, they would be regarded as sexual by everybody. Probably Freud was right when he said that nobody was quite normal sexually; hence repression achieved the force of an inborn instinct. It should be remembered that in psycho-analysis the analyser said nothing; he only encouraged the patient to unfold his own [illegible].

Dr. WILLIAM BROWN made some criticisms of present-day psychological analysis. He agreed that there was in the profession a widespread lack of understanding of psycho-therapy. This was well exemplified in the recent Cambridge meeting of the British Medical Association. Remarks were there made concerning it which those who understood the subject knew to be both untrue and unfair. [illegible] He related some experiences in the cure by analysis of loss of memory and other mental symptoms during the war. Complete cure was brought about by abreaction and psycho-catharsis. An important matter was giving the patient an opportunity of working off the emotion of fear, which he had not the opportunity of doing while he was in the line, where he was more or less in a state of stupor. Freud stated that emotions could not be remembered, but Dr. Brown could not agree with that; he quoted cases in which obviously childish emotions were lived over again in military patients. The chief difference between Freud and Bryer was on the "libido content": Freud's view was getting nearer and nearer to the physical, while Bryer's was emotional. The speaker thought that psycho-analysis should be carried out as far as possible and as fully as possible. He believed that even in psycho-analysis, in which the examiner refrained from leading on by remarks, the influence of suggestion, unconscious, was present and potent. Sex tendencies, sadism, masochism were present in some cases, but he (the speaker) denied them anything like the universality claimed by Freud's disciples.

Papers were read also by Dr. C. STANFORD READ and Dr. REES-THOMAS; and Dr. H. G. Baines of Zurich sent a contribution which was read for him by Dr. BEDFORD PIERCE.

In the discussion that followed Sir ROBERT ARMSTRONG-JONES declared his belief that in England Freudism was dead. When that system first came to light he regarded it as probably applicable to life on the Austrian and German frontiers, but not to virile, sport-loving, open-air people like the British. Psycho-analysis was thought to be a splendid thing because it brought baser desires to the surface and enabled them to be discussed; but all the courtesies and conventions of decent society were founded on intelligent repression. These restraints were rather ridiculed by the new psychiatrists. He believed suggestion played a large part in psycho-analysis. The method was claimed to have value for the educationalist, for spiritual development, for social welfare and social regeneration; he was astounded at the variety of the claims, which had not yet been substantiated.

Professor GEORGE ROBERTSON (Edinburgh), speaking as an asylum physician, insisted on the great distinction between a true manifest psychosis and a psycho-neurosis, although the two might coalesce in the same person. Important questions arose as to the applicability of psycho-analysis. For the psycho-neuroses, psycho-therapeutic treatment—such as psycho-analysis—was very suitable, while it was not at all beneficial to the true psychoses, the subject of which could not be convinced that he had an abnormal mind, and regarded such an idea as nonsense. The speaker emphasized the fact that early cases of psycho-neurosis were not early cases of insanity, and did not tend to pass into insanity. He went on to discuss toxaemias and dream states, and said that anyone who studied Freud on dreams and tried to analyse his own dream-states could not fail to be convinced of the truth of Freud's contentions. A number of cases were referred to in support of these views.

Dr. BEDFORD PIERCE was not willing to grant the accuracy of the view that, because a thought or tendency was repressed, it was bound to appear in some other way in the person. It was said that just as in the case of water, if one pushed a thought or tendency out of one place it would come up in another, but he did not think mental processes should be so regarded; why should they not rather be considered as mental gunpowder? Gunpowder might remain unexploded for all time.

Dr. EDWARDS suggested that some synthetic process must follow the analytical, and asked why dreams were always symbolic. He did not believe early emotions could be revived, but only the memory of them, sometimes with a resumption of childish speech.

Dr. [illegible] said that hypnotism was helpful in many cases of neurosis, but in others it was necessary to proceed much further by psycho-analysis. He preferred to treat each case on its merits. He had been dealing with war cases in a pensions hospital, and some cases could be dealt with by clearing up the amnesia for the war period, or by suggestion in either the hypnotic or the waking state. But there persisted afterwards a state which did not justify turning the man loose upon the world to earn his living.

Dr. [illegible] did not think that cases of dementia praecox were cured, and referred to Sir Frederick Mott's contribution at the Cambridge meeting of the British Medical Association, in which he set out his pathological findings in thirty cases of dementia praecox, showing that the brain and body generally were badly developed. Cases which the psycho-analysts said they had cured could not have been dementia praecox.

Dr. HELEN BOYLE (Brighton) said that the great difficulty was that those most interested in the psychoses did not see the cases until they were far advanced. The type of patients which she had were those not sufficiently bad to be certified, but nevertheless requiring treatment. They were mostly cases of psycho-neuroses, with a fair sprinkling of cases of psychoses. It must not be forgotten that nearly every disease represented Nature's effort to cure something which did not harmonize with surroundings. If one rushed in to cure mental diseases it was quite possible they were thereby rendered worse; this had repeatedly been the case with physical disease.

A letter was read from Professor Friedländer (Freiburg), in which he said that Freud was the father of pansexualism. Professor Friedländer gave the names of many authorities in America and on the Continent who rejected the doctrine. He contended that Freud's teaching stood and fell with his interpretations of dreams, and that his proofs were not scientific and convincing. He felt it was wrong to attribute to every neurosis a sexual cause.

The PRESIDENT said it was the glory of the Claybury school that they showed the mechanical basis of all these higher associations. He had tried to show that the infragranular layers were mainly the places in which the instincts and ancestorial memories were stored. In old persons, in whom, as Mott showed, the lipoids of the testicle were greatly diminished, there was a corresponding want of association, a fading away of the newer associations, and a retrograde return to the dominance of the infragranular layers.

Reviews.

VITAL CAPACITY.

ONE of the good effects of the war has been to arouse public interest in the importance of physical fitness, not only to the individual but also to the nation. Without attempting to define with any precision just what the term "physically fit" may mean, it has to be admitted that no short and simple method of testing the individual's degree of physical fitness has hitherto obtained general acceptance. The older methods, based on statistical tables dealing with age, height and weight, give unsatisfactory results because they take no account of the individual variations in size that are so conspicuous when any large number of ordinary persons is reviewed. Recently Professor DREYER of Oxford has published a book[1] in which he develops a new method of estimating physical fitness that has the advantages of easy application, accuracy, and, so far as the evidence hitherto collected goes, correctness in the results it yields. The method is fully explained in this little volume, the bulk of which is occupied by tables in which are correlated, two and two together, the four measurements upon which the method is based—namely, the weight, the length of the trunk, the circumference of the chest, and the vital capacity of the lungs.

It will be remembered that the "vital capacity" of the lungs is the term used to indicate the maximum amount of air an individual is able to expel from the lungs by voluntary effort, after taking the deepest possible inspiration. Separate tables are given for the two sexes, and the figures apply to children as well as adults; there are separate tables for the metric system of measurement (which is the preferable system) and for the imperial system with its pounds and inches. At the end of the volume a number of examples are worked out, showing to which class of physical fitness—Class A, Class B, or Class C—the individual measured should be referred. It is to the vital capacity that the greatest importance is attached; and perusal of Professor Dreyer's introductory pages makes it plain that his method is well worthy of general employment on the one hand, and of further extension into the provinces of chronic disease and disability on the other. Thus, from work undertaken in conjunction with Dr. Burrell, the author deduces that changes in the vital capacity of patients with tuberculosis of the lungs afford an unusually trustworthy index of any improvement or deterioration taking place in the pulmonary lesions. The establishment of this connexion, on the large scale, would seem most desirable, as affording those in charge of sanatoriums and other such institutions with a new and rapid method of checking that most difficult of all things to pronounce in phthisical patients, to wit, the prognosis. The methods advocated in this volume are simple, and we venture to recommend its perusal very strongly to all those who are interested in the assessment of physical fitness. Professor Dreyer is to be congratulated upon the skill and thoroughness with which he has presented the new method to his readers, who will have cause to thank him for the vast quantity of spadework involved in the preparation of the ready-reference tables with which the book is furnished.

THE MIND OF CHILDHOOD.

GREAT strides have been made within the past twenty years in our knowledge of children. Detailed and comprehensive investigations have been made into the normal physical standards of children at various ages, and into the incidence of physical defects. With these general physical conditions most medical practitioners and many school teachers are now familiar. At the same time there has been growing up a body of knowledge of a much more subtle and informative kind; it is likely to have an even more weighty influence than a knowledge of physical conditions alone can have. This knowledge concerns itself with the manifestations of the working of the human brain, with the growth of the intelligence of the child and the conditions that favour and retard that growth. The great pioneer in this sort of work was Francis Galton, who in 1883 published an elaborate account of individual and racial differences. His aim was to obtain a general knowledge of the capacities of a man by sinking shafts, as it were, at a few critical points. This work, and that of many other investigators, was brought to a focus and given practical application by Binet and Simon in 1905–8. These investigations are far removed from the narrow introspections of current psycho-analysis, and deal with a broad range of human faculties which are of the highest and most fascinating interest. This statement may be verified by anyone who will read Professor HERBERT WOODROW's book, *Brightness and Dullness in Children*.[2] It is an admirable presentation of observations on child mentality; there is not a page of dullness between its covers, notwithstanding that it has to consider dullness in some of its subjects. Not only is its matter good, but the English of the writer is crisp and idiomatic.

The book commences with a statement of the methods used for the measurement of intelligence, and the exposition of the Binet-Simon scale is clearer than any we have read. Next the mental qualities of the various grades of children are considered, from brightness to dullness, and their relation to mental age as distinct from physical age explained. Brain is the subject of the fourth chapter, and the relation of mind to body. Useful lessons are drawn from the anatomical data there collated.

> "No child ever becomes feeble-minded after the age of 4 or 5 years, the age at which the brain reaches almost its full weight." "It cannot be too strongly emphasized that the really critical years of a child's life are the years before he enters school. . . . There is strong evidence indicating that the level of brightness of a child is determined during these years, whether he be dull or normal."

A chapter is given to the consideration of the relation of physical defects to intelligence:

> "They affect intelligence somewhat [illegible] does the efficient exercise of physical [illegible]. A child with heavy and misfitting [illegible] in a foot race."

The consideration of the anatomical age establishes the truth of the old retort to the curious—"I am as old as my tongue and a little older than my teeth," for Professor Woodrow tells us that the child has three ages—chronological, anatomical, and mental; the three may vary considerably in the same subject, and are largely independent of each other. In many schools birthday age is the one test of grading, but the data given of the physical development of children show this test to be fallacious. Mental age corresponds more closely to physical development or anatomical age than to birthday age, and recognition of this fact provides an answer to controversies as to the relative cleverness of boys and girls at school. Age for age by the birth certificate girls do better than boys, but age for age in anatomical development, in which girls are precocious, the boys prove the better. "When proper allowance is made for the girls' superiority in anatomical age, they will be found slightly less intelligent than the boys." This discrepancy between birthday and anatomical age is one of the serious obstacles to the dream of the co-educationalist.

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[1] *The Assessment of Physical Fitness by Correlation of Vital Capacity and Certain Measurements of the Body.* With tables. By Georges Dreyer, C.B.E., M.A., M.D., in collaboration with George Fulford Hanson. London: Cassell and Co. Ltd. 1920. (Demy 8vo, pp. 126; 3 figures, 24 tables. 10s. net.)

[2] *Brightness and Dullness in Children.* By Herbert Woodrow, Ph.D., Associate Professor of Psychology in the University of Minnesota. Philadelphia: J. B. Lippincott Company. 1920. (Post 8vo, pp. 322; 15 figures. 6s. net.)

Later chapters of the book deal with more strictly educational matters: Mental processes, mental organization, influences of heredity, the organization of education and educational methods. Of the mental processes it is written:

> Good attention, like association, is fundamental. It shares in every mental operation. It is the great steadying and directing factor of the mind. Association is the process whereby the stream of mental events continues to run its course; attention is the process which directs the stream to a certain course, and thus holding it in bounds, preserves its force and vigour, instead of allowing it to be dissipated by aimless meanderings in any direction. . . . Attention is as closely related to intelligence as any other known mental function.

This is a book which every student of children should read: the doctor, the teacher, the parent, or the solitary but envious onlooker who loves his kind.

NEUROLOGY OF WAR.

DURING the war the French made excellent use of their opportunities for the study of traumatic and other lesions of the nervous system, and in particular enriched the semeiology of the nervous disorders of which cases were produced in such enormous numbers.

Professors GUILLAIN and BARRÉ have recently republished[3] in a book over fifty neurological papers written during the last five years and published in various scientific or official periodicals. The papers themselves, all first-hand records of the authors' own observations, show great competence in the scientific, the medical, and the surgical details of neurology. They are grouped under six headings. First come those dealing with semeiology, and next those on wounds of the brain. Then follow seven publications on wounds of the spinal cord, in which the symptomatology is discussed at considerable length. The fourth section deals with cerebral commotion by explosions; detailed evidence is afforded of the fact that organic lesions of the nervous system may often occur when the surface of the body shows no wound; the diagnosis was, in fact, made in over a quarter of nearly 800 cases of cerebral commotion due to shell explosions. Out of 575 patients received from the Somme with this diagnosis between July and November, 1916, 5[illegible] were cured and rejoined the army in a few days or weeks, 41 were invalided to the base and 5 died. The papers in the fifth and sixth sections of the book deal with lesions of the peripheral nerves and various other matters.

The authors are to be congratulated upon the success with which they [illegible] should be in the hands of all neurologists.

VERTEBRATE EMBRYOLOGY.

We heartily congratulate Professor [illegible] and Mr. [illegible] on their excellent *[illegible]*[4] [illegible]

The whole course would occupy about one term if two periods a week were given to it. During the first two weeks the student would acquire a general knowledge of the appearance and gross anatomy of pig and chick embryos of various ages. After that he would study in greater detail not a whole embryo of this or that age, but the development of the heart, or the central nervous system, or the gut, from the earliest rudiment upwards. We entirely agree with the authors that it is by studying the development of one system that the student will best learn his embryology, and be most likely to acquire real interest in it.

NOTES ON BOOKS.

A STUDY of arterio venous fistula, written at the suggestion of Professor Halstead by Dr. C. L. CALLANDAR,[5] is of historical value. The bibliography runs to 312 numbers, and goes back to Hunter. A table of the 447 cases, on an analysis of which the essay is founded, is given, as well as a supplementary table of those instances in which proximal dilatation of the artery is mentioned. It was this point, proximal dilatation in the presence of congenital stricture or artificial obstruction, that interested Halstead, but the author has contributed no personal views to its elucidation. For the rest, since the observations relate almost exclusively to pre-war studies, and do not, it seems, do complete justice to the views of Japanese surgeons after their Russian war experiences, or to the existing French textbook accounts, there is but little return for an expenditure of almost 15s. It is a useful work of reference for future writers upon the subject, but the practical surgeon will turn to Makins.

Dr. WALSH is well known as a writer on the history of medicine, and his little volume on *Medieval Medicine*[6] deals with the development of medical science and practice in the dark ages between the fifth and the fifteenth centuries of the present era. Not that Dr. Walsh would agree to call these the dark ages of medicine, and indeed he argues in every chapter that the science and art of medicine and surgery grew vigorously as the later of these centuries passed, at Salerno, at Montpellier, in Italy, and elsewhere. The time has not yet come when the full history of scientific or medical progress in these times can be written, and Dr. Walsh's treatment of the subject is, as he says, fragmentary.

Kala-azar and its Treatment, by Dr. BRAHMACHARI, has now reached its second edition;[7] the text has been thoroughly revised and enlarged, and Surgeon-General Robinson contributes a foreword. In the preface to the second edition the author says that the first edition was exhausted in less than twelve months, which speaks for itself. The present edition covers several fields not already dealt with and will also prove useful to those who have to deal with local or general leishmaniasis. There are twenty-nine chapters and perhaps the text is a little drawn out in places and unnecessarily discursive, but, apart from that, the information contained in the book is generally accurate and should be useful to physicians who are called upon to treat such cases. Temperature charts and photographs illustrate the different points.

Messrs. J. and A. CHURCHILL will shortly publish new editions of *The Anatomy of the Human Skeleton*, by Mr. J. E. Frazer; *Massage: its Principles and Practice*, by Dr. J. B. Mennell; and *A Textbook of Materia Medica*, by Professor H. G. Greenish. The same firm announces *[illegible] of Hygiene*, by Dr. W. W. Jameson and Mr. [illegible].

We have received the first two numbers of *Clujul Medical*, a monthly journal published in the Rumanian language by the Faculty of Medicine and Medical Society of Cluj (Transylvania). The first number, which appeared last February, contains an interesting account of the medical faculty of Cluj.

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[3] [illegible]

[4] [illegible]

[5] *The Johns Hopkins Hospital Reports*, vol. xix, fasc. iii. Study of Arterio-venous Fistula, with an Analysis of 447 Cases. By Curtis L. Callander. Baltimore: Johns Hopkins Press. 1920. (Sup. roy. 8vo, pp. [illegible]; [illegible])

[6] *Medieval Medicine*. By James J. Walsh, M.D., Ph.D., Sc.D., [illegible] Medical Director, Sociological Department, Fordham University. London: A. and C. Black, Ltd. 1920. (Cr. 8vo, pp. 221. [illegible])

[7] *Kala-azar and its Treatment*. By Upendranath Brahmachari, M.A., M.D., Ph.D. Foreword by Surgeon-General W. H. B. Robinson, C.B., [illegible] Second edition thoroughly revised and extensively enlarged. [illegible] Butterworth and Co. 1920. (Demy 8vo, pp. 252, [illegible])

NEW CONCEPTIONS REGARDING IMMUNITY TO THE ENTERIC FEVERS.

PART I.

THE recent experimental investigations by Besredka, of the Pasteur Institute, on the mechanism of infection in typhoid, paratyphoid, and dysenteric infections, and the methods of producing active immunity against them, are of such enormous practical importance and so subversive of the ideas hitherto held by bacteriologists that they merit close study by the whole medical profession. The results of Besredka's work were published for the most part in the *Annales de l'Institut Pasteur* of last year. The first paper deals with dysentery. Despite the frequency of dysentery in all the contending armies, and although laboratory experiments were quite as favourable to the efficacy of dysentery vaccination as to that for typhoid and paratyphoid fevers, few attempts were made to vaccinate soldiers against dysentery, chiefly on account of the severe toxic effects following subcutaneous injection of killed cultures. It was generally agreed that it was impossible to reproduce these infectious diseases experimentally by oral administration of the organisms, and that killed cultures of the bacilli of dysentery, typhoid, paratyphoid, and cholera were quite inoffensive when given by that route. Besredka,[1] however, found that this immunity from poisoning by killed bacilli could easily be overcome; he succeeded in killing several rabbits by giving them by the mouth killed cultures of Shiga's bacillus, and in these fatal cases he found haemorrhagic lesions of the intestine. With smaller doses he provoked temporary intestinal lesions.

Results of Intravenous and Subcutaneous Injections of Living Cultures.

When fatal doses of the living cultures of Shiga's bacillus were injected into the veins of rabbits *post-mortem* examination revealed lesions confined to the intestines; the vessels in the bowel wall were greatly dilated and the contents of the small intestine throughout almost its whole extent were liquid and mixed with bubbles of gas. Bacteriological examination, especially in the animals that died within twenty-four hours, revealed dysentery bacilli in abundance and in pure culture in the contents of the small intestine and in the gall bladder; the other organs were invariably sterile and no bacteria could be found in the blood, in the kidney, or in the urine. Thus it is seen that the inoculation of the dysentery virus directly into the circulation does not produce a septicaemia; though rapidly fatal, the infection remains strictly limited to the intestinal apparatus. The results of subcutaneous injections were even more instructive. So far from becoming generalized and producing death by septicaemia when large doses were given, the virus remained for a considerable time localized in the cellular tissue, giving off toxic products which had a peculiar affinity for the intestinal wall in that they produced there their maximum effect. But the process did not stop there. After liberation of the endotoxin the bacilli in their turn were mobilized and, leaving their original site, made their way towards the intestinal mucosa. In fatal cases the blood, spleen, liver, and urine were quite sterile, but dysentery bacilli were recovered from the gall bladder and especially from the contents of the small intestine, where they were often present in pure culture. The mechanism of dysenteric toxi-infection was invariably the same, whatever the portal of entry of the virus. However infected, by the blood stream or by the subcutaneous route, with living cultures or with killed cultures or endotoxin, the animal reacted only by its intestinal apparatus. In other words, whatever be the mode of administration of the virus, the animal reacts as if it had received it directly by the oral route.

The consequences of administration by the intravenous route, which is the most direct, and allows most, if not all, of the virus to get rapidly to the intestine, are the most severe. The oral route is the most inoffensive, for the virus, being diluted in the alimentary mass and acted on in its passage by the various ferments, is carried more slowly to its point of action. The subcutaneous route is certainly much less severe than the intravenous, but it has not the advantage of the oral route; the virus remains to a great extent localized at the site of injection, liberating endotoxin under the skin, where it produces great oedema. Only a feeble part of the injected virus succeeds in escaping the subcutaneous absorbent filter and reaching the intestine.

According to this conception, the effectively acting dose of the virus scarcely varies; if one is obliged to vary the doses administered in order to obtain the same effect, it is because by the different routes the virus is liable to very unequal amounts of loss.

Agglutination Reactions.

In those rabbits which ingested killed cultures of Shiga's bacillus and survived, the agglutination reaction of their serum was particularly instructive. When only a single ingestion of dead bacilli had been allowed, the agglutinin after eighteen days reached a maximum of 1 in 200, and after a month fell to the normal 1 in 50 or so. When two ingestions at eight days' interval had been allowed, the examination of the serum after eight, twelve, and twenty-four days (counting from the second ingestion) failed to show any trace of agglutinins. The conclusion from these experiments is that the ingestion of massive doses of killed dysentery bacilli is followed by the production of specific agglutinin lasting for a very limited time only; the renewal of the ingestion, so far from increasing the small quantity of agglutinins, is followed a month afterwards by their complete disappearance. It would seem that after the first absorption of the organisms the intestine refuses to absorb any further quantity. Further, the serum of such rabbits did not contain any preventive antibody, for when injected into mice which were afterwards inoculated peritoneally with fatal doses of dysentery bacilli, it had no more preventive power than normal serum.

It remained to see how these rabbits, which carried in their blood neither agglutinin, preventive antibody, nor apparently any other antibody, behaved when they were subsequently inoculated intravenously with a certainly fatal dose of the dysenteric virus. The detailed experiments showed that both the rabbits which had had a single ingestion of killed bacilli (and contained feeble amounts of antibody in their blood) and those which had had two ingestions (and contained no antibodies in their blood) behaved similarly when tested by intravenous injections of living bacilli which killed the control animals in twenty-four hours. *The rabbits previously treated with killed cultures of the Shiga bacillus, administered by mouth, were solidly protected against fatal dysenteric infection.* The same phenomena were established with mice.

The experiments bring out the fact that the ingestion of killed dysentery bacilli, alone or preferably mixed with bile, practised once, or preferably twice, confers a solid active immunity of such a degree that the animal can bear with impunity an inoculation of living virus so severe that it kills the untreated controls, rabbits or mice, within twenty-four hours.

Mechanism of Immunity.

As the rabbits under experiment contained in their blood no antibodies that could be detected *in vitro* or *in vivo*, the immunity which they acquired must be essentially local. Besredka believes that the immunity is established in the intestine at the site of the lesions following the first ingestion of the bacillary bodies. It is because of the erosion of the intestinal mucosa that a part of the antigen succeeds in penetrating the intestinal wall, reaching the blood, and there giving rise to certain antibodies—namely, the agglutinins. But when this breach of the wall is repaired a solid immunity is established: the intestinal barrier becomes unbreakable. If the ingestion is repeated, no more antigen can gain access to the circulating blood: no further formation of antibody occurs.

Besredka discusses how this local intestinal immunity following the ingestion of the organisms can be placed in relationship with the general immunity or the brief immunity acquired after vaccination by the subcutaneous route. Is the intestinal immunity a local manifestation of the general immunity, and, as such, is it subordinated to it, or are the two kinds of immunity established independently of each other? Above all, in view of the active local immunity which he has demonstrated, is there anything to be gained by endeavouring to obtain a general immunity—that is, the production of antibodies in the blood—as has hitherto been the great aim? In his opinion (not only in dysentery but also in typhoid and paratyphoid infections, as he subsequently showed) the animals have only a single means of acquiring active immunity, and, no matter what be the mode of vaccination adopted—subcutaneous, intravenous, or oral—the resulting active immunity is invariably local, that is, intestinal. In all these infections vaccination is only efficacious when the vaccine finally reaches the intestine or certain zones of it. If the vaccination is more efficacious when performed by the intravenous than by the subcutaneous route, it is because in the former case the vaccine arrives more rapidly and almost integrally at the intestine. For the same reason living vaccine, sensitized or not, would be more efficacious than dead vaccine. More massive and repeated doses are required of vaccine given subcutaneously; here the vaccination takes an indirect route. Much of the vaccinating substance is lost on the way; fixed to the connective tissue elements it may never reach its destination. Intraperitoneal or intravenous routes are the direct certain lines of transit, and make for economy of vaccine, but they are not practical because of the secondary reactions which they bring about. The mode of vaccination to be preferred is that by the oral route; it gets to its required position directly and with the maximum of security. Just as the lesions are the same whatever the portal of entry of the virus, so also the mode of action of the virus is the same. The antibodies which appear in the blood in vaccination by other than oral routes are only useful, in Besredka's opinion, in passive immunity; in active immunity they play no part. Further, in aiming at active immunity, antibody production should not be looked for: the production of antibodies should be avoided, for they are acquired at the expense of bodily reactions which are sometimes very serious. Preliminary essays in man have shown that the administration by mouth of killed cultures of the Shiga bacillus is accompanied by neither local nor general reaction.

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[1] *Annales de l'Inst. Past.*, vol. xxxiii, 1919, May, p. 301; August, p. 557; December, p. 882.

Experimental Reproduction of Typhoid and Paratyphoid Fever.

Progress in vaccination treatment can only be realized by the study of a properly produced infection, and one endeavours to find an animal in which the characteristic picture, or at least an essential part of it, is given. The peritonitis produced in guinea-pigs by the inoculation of typhoid bacilli is a very imperfect disease. Metchnikoff, it is true, obtained in chimpanzees a characteristic replica of human typhoid, but for obvious reasons the experiments cannot be carried on on a large scale. Such laboratory animals as rabbits, guinea-pigs, and mice are sensitive to the inoculation of paratyphoid bacilli, and subcutaneous inoculation is less severe than intravenous or intraperitoneal, but even with small doses a fatal result is too often [illegible] obtained. Curiously enough, these animals are practically insusceptible to the virus given orally; enormous doses can be ingested without producing any apparent disease. The immunity to the ingested virus has been attributed to the arrest of the bacilli in the stomach or the intestine or both. It is found that *B. paratyphosus* B, introduced by the mouth, passes through the pylorus, and that it is in the mucosa of the intestine that it meets with an obstacle to its dissemination in the body. Can this intestinal barrier be weakened, the mucous membrane being modified by some substance or agent that creates a breach and allows the bacilli to pass through the wall? In numerous experiments Besredka found that ox bile given by mouth to rabbits rendered them sensitive to the virus of paratyphoid B. This substance not only has the effect of enriching the intestinal contents in virus, but also increases the biliary secretion of the rabbit, and this reinforced secretion produces an intense desquamation of the intestinal mucous membrane, and thus favours the absorption and generalization of the virus. This sensitizing power of the bile may be demonstrated by introducing paratyphoid bacilli either by the mouth or intravenously. Rabbits are practically refractory to oral ingestion of the infecting bacilli, but if previously given bile by the mouth an infection fatal in a few days was produced. After an incubation period of one to four days, during which no symptoms were evident, diarrhoea set in; the animal remained motionless, taking practically no food, and having profuse diarrhoea. After two or three days, as a rule, the rabbit died with profound hypothermy; sometimes the disease lasted for twelve or fifteen days. At the autopsy the appearance of the small intestine was striking; it was deeply congested, almost transparent, and filled with a greenish viscous fluid containing desquamated epithelium. In the walls, thinned by desquamation, the turgescent Peyer's patches showed prominently. Another striking feature was distension of the gall bladder by greenish-blue transparent or colourless turbid bile. Cultivations of the bile and also of the blood in the very acute cases gave pure cultures of paratyphoid bacilli. The stomach contents were sterile; the contents of the small intestine gave abundant, often pure, cultures of the organism; in the large intestine also the bacilli were found but were fewer as the termination was approached.

By injecting paratyphoid bacilli intravenously there was produced a generalized infection the gravity of which depended on the quantity injected. If the infection was fatal a positive blood culture was always obtained, but the conclusion is not justified that the virus killed the animal because it invaded the vascular system. When the animal survived for several days, though the bacilli might still be isolated from the heart blood, the death later was not due to septicaemia. A closer examination of the animal showed the presence of organisms where one would least expect them. Cultures showed that in comparison with the few colonies obtained from the blood, numerous colonies were obtained from the gall bladder, duodenum, jejunum, and very often in practically the whole of the small intestine. The later the occurrence of death the more numerous were the bacilli in the intestinal contents. The significant pathological processes took place not in the blood but in the gall bladder and intestines. The lesions following the intravenous injection of paratyphoid bacilli were thus similar to those found after oral ingestion; the mechanism of infection, bacteriologically and anatomically, was the same in both cases.

Typhoid Infection.

This applied in a large measure to experiments with *B. typhosus*. In this case the impression formed was that although the septicaemia was sometimes more pronounced the difference was insignificant. Not only the rabbit, but all other laboratory animals are totally refractory to the oral administration of the typhoid virus; only the chimpanzee can be infected by mouth. On intravenous inoculation of typhoid bacilli a characteristic localization of the lesions in the small intestine was produced. When death was delayed for several days, the bacilli were found from the gall bladder to the caecum, sometimes associated with *B. coli*, sometimes in pure culture. The typhoid bacilli thus introduced into the general circulation do not long remain in the blood; they pass into the kidneys, and especially into the intestine, where they displace other bacteria normally present. In a considerable part, especially the upper part, of the small intestine they were found in pure culture. The only lesions visible to the naked eye were those of the small intestine; its walls were deeply congested and its contents were of a characteristic liquid consistence. The appearance was exactly the same as that produced in the chimpanzee by the oral ingestion of typhoid bacilli. Thus the mechanism of infection by the veins does not differ sensibly from that by the oral route.

The sensitization by means of ox bile occurred when the virus was introduced either by the veins or by the mouth. The fatal dose in intravenous inoculation was found to be much less when the animal was sensitized by bile than when not thus treated. Whatever the portal of entry of the virus the previous ingestion of bile had the effect of breaking down the natural immunity; it caused a breach in the intestinal wall. It was the integrity of the latter which gave the non-sensitized normal rabbit its immunity. The mechanism of immunity, therefore, rests in a large measure on that of the intestinal wall: it is local.

(*To be concluded.*)

British Medical Journal.

SATURDAY, AUGUST 28TH, 1920.

HOSPITAL LEGISLATION.

In our Parliamentary Notes last week we gave a short account of some of the matters dealt with in the Ministry of Health (Miscellaneous Provisions) Bill introduced by Dr. Addison into the House of Commons on August 16th. It is entitled "A Bill to amend the law relating to the housing of the people, public health, and local government, and for purposes in connexion therewith." The first part of the measure is concerned wholly with housing; the second part is appropriately headed "Miscellaneous." One clause in this second part has attracted more attention than all the rest of the bill, for its terms give ground for the apprehension that it marks the beginning of the end of the voluntary hospital system of which the country has been justly proud.

The financial position of voluntary hospitals is admittedly difficult. It had, before the war, been growing less and less easy to find funds for current expenses, and for capital expenditure rendered necessary by increase in the number of patients, by the need for larger nursing staffs and their better accommodation, and generally by the growing complexity of medical and surgical methods. The subsidies received from the War Office and the postponement of repairs and extensions served to conceal for a time the inevitable effect which the change in economic conditions was having on hospital finance; on the one hand the rise in the price of all commodities increased expenditure, and on the other, the immense growth in the burden of taxation diminished subscriptions. As the inquiries Sir Napier Burnett made for the Joint Council of the British Red Cross and Order of St. John showed, some hospitals were more affected by these circumstances than others, but a great deal of attention has been drawn to the straits in which the London Hospital and certain other hospitals in the metropolis find themselves.

The Minister of Health, when questioned in the House of Commons at various times during the last few months, has replied that while the necessity for coming to the help of the hospitals was recognized, he was anxious not to lose the advantages of the voluntary system. Clause 11 of the bill may be taken to be the solution he presents. It gives power to county and county borough councils (*a*) to supply and maintain hospitals, including out-patient departments, for the treatment of illnesses and diseases generally, or any particular illness or class of illnesses; (*b*) to contribute, on such terms and conditions as the Minister may approve, to any voluntary hospitals or similar institutions within their area; and (*c*) to undertake the maintenance of any Poor Law hospitals and infirmaries within their area. It may be assumed that the reason why the proposals were not reserved until Parliament reassembles in October, but were brought in so shortly before the adjournment, was the desire of the Minister to gauge public opinion, and to learn during the recess the kind of criticism he would have to meet when the time for parliamentary discussion comes.

So far as it has yet found expression, the opinion of those engaged in working the voluntary system is that the result of giving power to the councils of counties and large cities to subscribe to voluntary hospitals will be that in no long time all hospitals will be on the rates; the voluntary subscriber must, it is argued, quickly disappear, since he will feel that his subscription will go merely in relief of the rates. Further, since it is proposed to give the councils power to establish hospitals, and for this and similar purposes to raise money on loan, it is considered unlikely that the public will respond to appeals for the building of new hospitals or the repair and extension of those already existing; it is feared also that testators will be little disposed to include hospitals among the institutions to which they will make bequests. The force of these contentions cannot be questioned, and it is impossible to avoid the conclusion that Dr. Addison, in seeking to assist the voluntary hospitals, has, in fact, imperilled their continued existence as such. At the same time it is to be remembered that, as our Parliamentary correspondent points out, the Public Health Act of 1875 gave local authorities wide powers to provide hospitals or contract with existing hospitals to receive sick persons. This has generally been interpreted to apply to infectious diseases, but the terms are wide, and have been held to justify such action as has been taken at Bradford and some other places. Dr. Addison's immediate object may be to regularize the position; at the same time to increase the control of the Ministry by specifically giving it power to determine the conditions under which local authorities shall make contributions to hospitals is open to criticism, inasmuch as there will be a risk that local knowledge and experience may be hampered by a code of regulations which, however carefully prepared and however conscientiously interpreted by an official in Whitehall, must impede progress. The conditions in general terms, and the more general the better, should be in the bill.

The reports of the Medical Consultative Councils for England and Wales advised the supply and maintenance of centres of the nature of hospitals or out-patient departments, and the utilization of Poor Law hospitals and infirmaries. The Government is pledged to reform the Poor Law, in fact to "reform it altogether," and we should have preferred to have seen a measure dealing with the system as a whole, rather than incidental legislation of this kind. The conditions under which the Poor Law hospitals and infirmaries are to be taken over by the councils are not defined, and there is no indication that the problem of the revision of areas has been considered. Nor is there any indication that the question of the area to be served by each hospital has been tackled. The larger hospitals, and in particular the teaching hospitals, receive patients from areas far outside the county or county borough in which they are situated. Again, there is no hint as to the classes for whom extended accommodation is to be made available, nor as to the basis on which treatment is to be supplied. Apparently a rate-supported hospital system must be open to everybody.

The main defect in the proposal is that it does not face the need for providing means by which the medical profession, as such, shall be able to express—and in some measure to enforce—its opinion; the vital importance of the medical profession having a responsible share in the health authority has been insisted upon by the British Medical Association, and was fully recognized by the Medical Consultative Council, which recommended the establishment of a Medical Advisory

Council for each area, probably a county or county borough, this Council to nominate a certain number of medical men to be co-opted on the health authority. We had hoped that this principle was accepted by the Ministry of Health. The legislation now proposed contains no evidence that the principle has been remembered, nor is there any evidence that the proposal is a temporary expedient to tide over the present financial emergency. It must be taken to express the policy of the Ministry, and we can only regret the way in which it has been brought forward. The hospital problem cannot be treated by itself; it has too many aspects, is a matter of too great and too serious importance, to be settled by a clause in a miscellaneous bill. The medical profession no less than the public at large has a right to ask that this problem shall be dealt with in a detailed special bill containing definitions of principles and terms.

INTRAVENOUS PEPTONE.

Some years ago Professor P. Nolf of Liége satisfied himself that the subcutaneous or intramuscular injection of pure peptone was of considerable therapeutic value in the treatment of haemophilia, of purpura, and even of paroxysmal haemoglobinuria. Encouraged by the effects of peptone in controlling haemorrhage of this kind, he proceeded to use this substance in typhoid fever and other infections. The results of these later experiences were published early in 1917. Nolf used peptone originally to check intestinal haemorrhage, but found that not only was bleeding from the bowel reduced, but that the administration of peptone had a definite effect in ameliorating the general condition of the patient. In two cases the temperature fell rapidly to normal. Nolf at first reserved the use of peptone for the severer cases, but soon came to employ it as a routine. Subsequently he had opportunities of trying this mode of therapeusis in Depage's Ambulance de l'Océan at La Panne. Peptone was tried there in cases of severe septicaemia following gunshot wounds. Five out of his first six cases of streptococcal septicaemia recovered. In all six *Streptococcus pyogenes* was grown from the blood. Repeated injections of peptone were made in all of these cases, and it appeared that when the injections were stopped the organisms tended once again to appear in the blood stream. The clinical histories of these cases, which are given in much detail, are of great interest. Several patients whose condition seemed quite hopeless recovered. With staphylococcal septicaemia Nolf was not so successful, two out of three cases dying, probably because peptone treatment was instituted too late. Peptone was used after this in all severe infections, whether blood cultures were positive or not.

The peptone was given intravenously with a 10 c.cm. syringe and fine needle. The strength of the solution used was 10 per cent., and 5 to 15 c.cm. were injected, usually 10 c.cm. It is important to use a good quality of peptone, that made for bacteriological purposes being the best. Whatever kind is used, it is essential that it should be free from disagreeable odour. The injection must be made very slowly, and on no account should more than 5 c.cm. be injected per minute. An initial portion of peptone must be injected a drop at a time; untoward signs are acceleration of the pulse, cyanosis, and headache. Sometimes such symptoms occur with good peptone, but if so they will disappear in a minute or two and the injection may then be continued. Nolf recommends any surgeon who feels nervous about the method to dissolve the peptone in 150 to 200 c.cm. of saline and give it intravenously in this diluted form. He does not use that method himself, preferring the concentrated dose. Nolf reminds his readers that peptone shock can be readily overcome, like anaphylactic shock, by the subcutaneous administration of adrenalin or by the inhalation of ether. It appears to be due always to the too rapid injection of the protein. Peptone can, and must, be sterilized in the autoclave. The injection of peptone is followed sometimes by a slight rigor and sweating, but the patient sleeps better, and the next day the temperature is lower. It is best to make the injection in the morning and repeat it every other day.

Nolf has more recently tried the effects of peptone injections in acute rheumatism, and finds sodium salicylate to be much more efficacious if combined with peptone than when given alone. He illustrates the therapeutics of the method by several cases. Cecil found that good results followed intravenous administration of typhoid vaccine in forty cases of rheumatic fever and acute arthritis. Others who have successfully employed foreign protein therapy in the treatment of arthritis are Peterson, and Miller and Lusk. Dr. A. G. Auld, in several communications to this Journal, has recorded encouraging results from the treatment of asthma by peptone. In our issue of February 28th, 1920, Dr. A. E. Gow gave an account of the therapeutic employment of peptone (as well as other foreign proteins) given intravenously. He summarized the trials made by others, and reported numerous instances in which he had treated by one or other of these methods cases of pyelonephritis, pyogenic infections (general and local), streptococcal septicaemia, and arthritis. He concluded that intravenous protein therapy had great value in certain carefully selected cases; but it should be regarded solely as an accessory weapon in our armament, and used in conjunction with, not in place of, other remedies.

Professor Nolf claims no empirical or specific powers for peptone. He has had considerable experience with colloidal gold and silver, and finds the effects of all three very similar. He holds that the reaction which follows the injection is due to change in the colloidal equilibrium of the blood, and believes that the good effects which have followed the injection of non-specific serums in the treatment of septicaemia and typhoid and typhus fevers are to be attributed to their common content of a colloid. The too rapid injection of peptone leads to disagreeable symptoms, the slow administration to most salutary effects. It is admitted that the most important constituents of the blood, in the battle with infections, are the white cells and the albumins of the plasma. On both of these peptone appears to have a well marked effect, but precise information drawn from animal experiment is lacking. Special advantages of peptone are its handiness and its usefulness as an adjuvant in those infections the germ of which still eludes discovery.

A PURE RACE

Professor Karl Pearson's address as president of the Anthropological Section of the British Association at Cardiff was a powerful appeal to his fellow workers to throw aside "these rusty old weapons, these measurements of stature and records of eye colour," and devote themselves to the investigation and measurement of those human qualities which really matter—bodily health and mental aptitude—to what we may term vigorimetry and to psychometry." In the course of this appeal Professor Pearson made certain interesting observations regarding purity of race. He alluded to the belief, still widely held, that at the dawn of history there were numbers of pure races of mankind, each marked by definite physical and mental characteristics. Professor Pearson does not share this belief. "Let us, however, grant that there were fewer races at the beginning of history than we find to-day. Let us suppose a Nordic race with a certain stature, a given pigmentation, a given shape of head, and a given mentality. And again we will suppose an Alpine race, differing markedly in type from the Nordic race. What happens if we cross members of the two races and proceed to a race of hybrids? A Mendelian would tell us that these characters are sorted out like cards from a pack in all sorts of novel combinations. Nordic mentality will be found with short stature and dark eyes; a tall but brachycephalic individual will combine Alpine mentality with blue eyes. Without accepting fully the Mendelian theory, we can at least accept the result of mass observations, which show that the association between superficial physical measurements and mentality is of the slenderest kind. *If you keep within one class*, my own measurements show me that there is only the slightest relation between intelligence and the size and shape of the head. . . . We talk as if it was our population which was mixed and not our germ-plasm." There is nothing more certain than that in late neolithic times our land was the scene of just such an experiment as is here postulated by Professor Pearson—a mixture of long-headed and round-headed types. The Alpine or round-headed invaders of that date are usually known as the "Beaker" people, because of the kind of earthenware vessel which they buried with their dead. They had flat occiputs and rugged facial features, with beetling eyebrow ridges such as Darwin had. Darwin, too, had the flattened occiput, as had also his cousin, Francis Galton. Darwin is one of the best known physical reproductions of the "Beaker" type. It is a type which is rarely seen among Englishmen who earn a living by manual labour, but is common among the classes less dependent on the labour of their hands. "We are accustomed," Professor Pearson remarked, "to speak of a typical Englishman. For example, Charles Darwin, we think of his mind as a typical English mind, working in a typical English manner; yet when we come to study his pedigree we seek in vain for purity of race." Thereupon he sets out to trace the pedigree of this typical Englishman. Darwin's germ-plasm was drawn from all parts of Europe—from four different lines of Irish kinglets, from as many lines of Scottish and Pictish kings, from natives of the Isle of Man, from Alfred the Great and early Anglo-Saxons, from the great Charles of France and Carlovingians, from Saxon Emperors of Germany, from nobles of Norway as well as of Normandy, from Dukes of Bavaria, Saxony, and Flanders, from Princes of Savoy and Kings of Italy, not to speak of Hun rulers of Hungary and Greek Emperors of Constantinople. Thus our typical English Darwin is but a product of the germ-plasm of all Europe! Professor Pearson does not expect that any other Englishman would be in a better case supposing that the data existed for proving the source of the germ-plasm which gave him birth. Every one of us may combine in our bodies characters which were scattered in a million of individuals at the time of the Norman conquest. Still the fact remains that in these "beaker" barrows of Salisbury Plain, 3,000 years old and more, we find the features of face and head which Darwin reproduced in our own time. In spite of mixture the type prevails. If the extent of race mixture is so great in our islands, what of Central Europe, of Italy, Spain, France, Germany and Austria, and Russia? After all, the British people are probably the most homogeneous mixture of races in all Europe—the nearest to the anthropologist's conception of a pure race.

ANOXAEMIA.

The presidential address of Mr. J. Barcroft to the Physiological Section of the British Association this week was a review of the present position of knowledge as to the nature and consequences of deficient supply of oxygen to the tissue. This condition, to which the not very fortunate term anoxaemia has been applied, was the subject of a very closely reasoned lecture by Dr. J. S. Haldane, published in our columns on July 19th, 1919, at p. 65. The systematic study of the condition, which may complicate many disorders, was greatly stimulated during the war by its occurrence in shock and gas poisoning. Mr. Barcroft paid a warm tribute to Dr. Haldane's teaching, to which "medicine owes and will owe much," but he did not hesitate to differ on two points. Dr. Haldane has affirmed that anoxaemia not only stops the machine, but wrecks the machinery. Rapid deprivation of oxygen undoubtedly stops the machine, probably because the cerebral functions cannot be performed for more than a period to be reckoned in seconds without oxygen. But Mr. Barcroft advanced evidence that the machine is not so quickly wrecked; he related one very striking case in which blocking of the superior sagittal sinus—produced by gunshot wound—caused the motor areas on both sides to be asphyxiated until the block was relieved by operation after thirty-six hours; during this period the patient could move no limb, but he eventually recovered almost completely, the defect left being some weakness of the muscles of the toes on one side. In this case the machine was stopped for a relatively long time, but it was not wrecked. Reviewing all the facts, Mr. Barcroft arrives at the conclusion that no degree of acute anoxaemia, short of complete unconsciousness, leaves anything more than the most transient effects; even acute anoxaemia so severe as nearly to kill is followed by permanent effects only in elderly or unsound persons. Of anoxaemia which is not acute but continued in small degree for a considerable time Mr. Barcroft distinguishes three types: in the anoxic type the haemoglobin is not saturated to the normal extent, the pressure of oxygen in the blood being too low, owing to (1) a rare atmosphere, as at great elevations; (2) imperfect ventilation of areas of lung; and (3) fluid or fibrin on the surface of alveolar cells. In the anaemic type, the quantity of functional haemoglobin is too low; and in the "stagnant" type the tissues do not get sufficient oxygen because the circulation has failed. The type of most practical importance is the anoxic; Mr. Barcroft related an experiment on himself in which he lived in a chamber for six days at reduced pressure: on the last day he was lying troubled with occasional vomiting, racked with headache, and able to see clearly only by an effort of concentration; if this degree of the anoxic type be produced by disease the patient suffers from these symptoms in addition to those of his primary disorder. The important practical point is that this form of anoxaemia can be effectually relieved by giving oxygen. In this Mr. Barcroft agrees with Dr. Haldane, but he does not accept the view that the pulmonary cells, when the partial pressure of oxygen is low, actively extract oxygen from the alveolar air and force it into the blood.

STARVATION OEDEMA.

Famine, or rather Scarcity, the figure on the black horse in a well known passage of the Apocalypse, has long been recognized as a possible cause of oedema. There has been ample opportunity for the study of this oedema in the prisoners' camps and among the civil population in Germany, and Drs. Maase and Zondek[1] have recently published an investigation of its symptoms and etiology in Berlin, distinguishing it from the widespread oedema that occurred in epidemic recurrent fever or epidemic dysentery during the recent war. Starvation dropsy was first observed in the wasted civilian population of Berlin during the winter 1916-17, mostly in males and in the second half of life. Cases under thirty years of age were rarely seen in Berlin, whereas in Galicia and Poland half the patients with this oedema were children under ten years old, and in Munich all ages were equally affected. The onset of the oedema is often fairly acute, perhaps with aching of the legs and frequent micturition at night; sometimes mechanical factors seem to determine its occurrence, and cold certainly often leads to its appearance. Bradycardia and a subnormal temperature due to inanition are frequent accompaniments, often with lowering of the blood pressure. The oedema is generally seen first about the feet and legs, less often in the face. Oedema of the scrotum was common in the experience of these authors, who remark that some other writers have never met with it. Chemical analysis showed about one part of albumin in nine hundred of the oedema fluid, which also showed an unusually high NH value. The degree of oedema often varies from day to day. The bradycardia is said not to depend on increased vagal tonus, and the electrocardiogram is normal, as are the pulse and blood pressure; the authors conclude that the oedema in starvation is not cardiac in origin, and attribute a large share in its production to abnormal permeability of the capillary walls—a very ambiguous factor. Nothing abnormal can be found in the urine or in the renal functions of patients with starvation oedema. The blood shows evidence of dilution, containing as much as 81 per cent. of water; the residual nitrogen is greater than normal, fatty substances are diminished, and the alkalinity is lowered. The blood cells and haemoglobin are all decreased. In the early days starvation oedema seemed to be associated with diarrhoea, but later this was not so. The patients commonly suffer from fatigue and general debility, and in rare instances they present signs of polyneuritis, as if the case were one of avitaminosis. The authors devote a long chapter to the metabolism of protracted starvation and its oedema. They argue that the diet was lacking not only in protein and fat, but also in carbohydrate, and that starvation oedema is evidence of an inadequate intake of energy in the form of food, rather than of a diet deficient in any particular kind of food; here, perhaps, they hardly pay sufficient heed to the amount of vitamines in the Berlin diet. The pathological anatomy of starvation oedema showed little of interest; the organs in general were wasted and atrophic, the liver contained little glycogen. Another long chapter is devoted to the whole question of the food supply in Germany, both before and after 1914, with details of its deficiencies during and after the year 1916; the conclusion is reached that the oedema was not attributable to an excessive consumption of common salt taken to render the scanty diet more palatable. An interesting account is given of the common association of starvation with periodic attacks of frequent micturition and polyuria. These attacks the authors regard as an abortive form of starvation oedema; both conditions became rarer when the German diet was improved in 1918. The clinical course of the oedema shows that the capillary walls retain their power of absorbing fluid unimpaired, which is not the case with the oedema seen in nephritis. It seems unlikely that the tissues have an abnormal thirst for fluid in starvation oedema, and the hypothesis that it is due to deficient activity of the thyroid gland has nothing to support it. Patients exhibiting the oedema have a lowered resistance to intercurrent infections, particularly those of the intestinal tract producing diarrhoea. The authors might have given more generous attention to the possible connexion between lack of vitamines and the occurrence of starvation oedema in their patients. It will be remembered that Colonel McCarrison, discussing dietetic deficiency and oedema in the Section of Tropical Medicine at Cambridge (reported at p. 236 in our issue of August 14th), stated that "fresh butter contains some substance which tends to protect against oedemas."

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[1] *Das Hungerodem.* By Dr. C. Maase and Priv. Doz. Dr. H. Zondek. Leipzig: G. Thieme. 1920.

A CLASSIFIED DIRECTORY.

WE understand that medical practitioners in London have received by post a circular from a firm styled the Business Telephone Directories, Limited, inviting them to have their names entered in the next issue of "The Buff Book" at a fee ranging from one to four guineas according to the size and style of the type used in the entry. The circular states that the firm has entered into an agreement with His Majesty's Postmaster-General to publish, and supply with the Post Office Telephone Directory, a classified Directory of Trades and Professions (for subscribers to the London Telephone Exchange System), a copy of which, under the terms of the firm's licence, will be supplied free of cost to every London telephone subscriber. It is added in emphatic type that "Professional Entries in this Publication are *not* Advertisements." This, we infer, must be read in relation to the announcement overleaf, "Rates for full-page or part-page advertisements for traders on application"; but this distinction between what is and what is not an advertisement, convenient as it may be to the Business Telephone Directories, Limited, is not a ruling which should carry any weight with members of the medical profession. In considering the propriety of the insertion of names of medical practitioners in directories and reference books of a like nature, the Central Ethical Committee of the British Medical Association considers that an essential element is the completeness or otherwise of the list of medical names. From this point of view the publication would be open to objection, on the ground that it is a limited list with the consequent risk of the public accepting it as a list of doctors who have a special claim to the insertion of their names in a classified directory. From the information supplied in the circular before us it seems clear that no medical practitioner's name (with address and telephone number) will appear in "The Buff Book," unless he pays the minimum fee of one guinea; this contravenes the principle laid down by the Central Ethical Committee. A further objection, moreover, arises in connexion with the specimens of type, at varying prices, shown in the circular. The publishers offer to insert a medical man's name "in its correct classified position," but they refrain, perhaps wisely, from indicating which of the four styles of type should be chosen. The unpleasant impression, however, is thereby conveyed that a medical man is free to select the boldest type provided he pays the money.

THE RISKS OF DOMICILIARY TUBERCULOSIS

IN a report as to the tuberculosis problem from the point of view of the Medical Officer of Health for the City of Nottingham, the futility of the powers at present given to local authorities for the suppression of the disease is very clearly indicated. Notification, without any means for enforcement, fails to fulfil the intentions with which it was introduced. Concealment, as proved by the frequent occurrence of death immediately after notification, is only too common. In the vast majority of cases of pulmonary tuberculosis the risk of infection by contagion becomes greater as the disease advances. Assuming that the advanced case, with constant output of bacilli, must be a source of danger to other inmates, and especially young inmates of the frequently overcrowded domicile, no means other than persuasion are at present available to remove the source of possible infection from their midst. Persuasion alone, unless it be supported by something more convincing than simple assertion, will not usually be of much avail. Something more definite is needed, and it should not be difficult to collect such evidence of domiciliary infection as would appeal not only to individual sufferers, but also to the public conscience and to the minds of possible legislators. Medical officers of health have again and again called attention to the matter, but their opinions have not hitherto been sufficiently supported by statistical proofs. If domiciliary infection is an actual as well as a theoretical danger, the after-history of thousands of "contacts" should now be available to prove the case. Until such evidence is forthcoming the exact risks which a "contact" has to run must remain an unknown quantity.

A MEDICAL SERVICE SCHEME.

WE have received from Messrs. Thomas de la Rue and Company certain memoranda regarding extensions which it is proposed to make in the medical service provided by this firm for persons in its employment. It appears that for some time the company has had a medical service which has gained the appreciation of the staff and workpeople; originally the medical staff consisted of (1) a consulting physician and a dental surgeon, each giving one session of three and a half hours a week and more time when required, and (2) a full-time trained nurse. These are the only details we have of the service as originally constituted; the memorandum and the accompanying letters are concerned chiefly with a proposed extension. A list is given of three consulting physicians, three consulting surgeons, three oculists, two radiographers, two orthopaedic surgeons, two anaesthetists, and two bacteriologists, as well as specialists in diseases of the nervous system, chest, throat and ear, and skin respectively, and two each in diseases of children and of women. These gentlemen have consented, under certain specified conditions, to give advice and treatment to employees of the company at reduced rates, which are set out in a sliding scale. We are glad to observe that the list of medical names is marked "Confidential." Those employees only who receive from the company's medical adviser a certificate that specialist advice or treatment is necessary will be entitled to the services of the scheduled list of consultants. Before the authorized visit each patient will receive a voucher stating what proportion of the medical fee is payable by him. Thus patients with an "adjusted income" (estimated by deduction from the total income of one-fifth on account of a wife, and one-tenth on account of each child or other dependant) of £350, £450, £600, £800, or £1,000, would pay 10 per cent., 15 per cent., 25 per cent., 40 per cent., or 50 per cent. respectively of operation fees, or 25 per cent., 30 per cent., 40 per cent., 50 per cent., or 66⅔ per cent. respectively of fees for consultation or non-operative treatment. The latter scale of percentage payment is applicable also to nursing home fees, of which the balance is paid by the company. A minimum fee of one guinea for a single visit is payable in all cases. Except in the case of nursing home fees, the reduced scale of charges applies both to employees and their dependants. It will be seen from all this that the object of the scheme is to provide for those of moderate means specialist medical services on something approaching a co-operative basis. The memoranda and schedules are accompanied by a copy of a letter sent to "large employers and others interested in the provision of first-rate medical facilities for persons of limited means." In this letter the tentative suggestion is made that firms should club together and put up money to erect a large nursing home for the reception of employees as patients at reduced fees; a private institution of this kind could of course be run more efficiently and at less cost than smaller private homes. The issue of 7½ per cent. debentures is suggested, and the intention is disclaimed of making more profit than would suffice to pay this interest and provide a sinking fund at the rate of 5 per cent. per annum. The materialization of such a scheme would be watched with interest by the medical profession.

GRANT TO VOLUNTARY HOSPITALS FROM THE NATIONAL RELIEF FUND.

THE National Relief Fund, now about to be wound up, has made a grant of £700,000 for distribution among the voluntary hospitals of the United Kingdom. This important appropriation has been decided upon by the Executive Committee of the Fund after consultation with the Minister of Health. It is made in consequence of representations to the committee that many of the voluntary hospitals are in a critical position owing to deficits caused by the war, and that financial difficulties now limit their work to such an extent as to threaten widespread distress among the poorer classes in need of hospital treatment. The sum of £700,000 is granted "towards meeting the outstanding liabilities of the voluntary hospitals of the United Kingdom incurred during the five years ended December 31st, 1919, as a result of the war." The method of distributing the grant is under consideration, and we expect to be able to publish a statement on this matter in three or four weeks' time. Individual hospitals will be notified when the committee of the Fund is in a position to begin the distribution.

THE EDUCATIONAL NUMBER.

THE next issue of the BRITISH MEDICAL JOURNAL, that dated September 4th, 1920, will be the annual Educational Number. This will describe the requirements of the General Medical Council and of the various examining bodies, and give detailed information as to the courses provided for medical students and practitioners by the teaching institutions of the United Kingdom, together with notes on the Public Medical Services, post-graduation study, and the special branches of professional work.

Medical Notes in Parliament.

The Provision of Hospitals by County Councils.

OUR Parliamentary correspondent writes: Whatever may be the effect of Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill if passed into law, it is not intended to mark a departure in policy by the department, nor is it brought forward to solve the problem of the maintenance of the voluntary hospitals. So much may be gathered from authoritative quarters, although no official statement definitely announcing what it is expected may happen under the operation of the clause is likely to be made until Dr. Addison moves the second reading of the bill in the Commons. How far it may operate, and whether or not it is liable to have a delaying influence on the settlement of the whole question of hospital provision—inasmuch as it may be used to afford relief in some extreme cases—remains to be seen.

Broadly, the information is that the object of the clause is to remove doubts in regard to the working of Section 121 of the Public Health Act, 1875, under which Bradford recently, with the sanction of Dr. Addison, provided a municipal hospital.

This section runs as follows:

> Any local authority may provide for the use of inhabitants of their district hospitals or temporary places for the reception of the sick, and for that purpose may themselves fill such hospitals or places of reception; or contract for the use of any such hospital or part of a hospital or place of reception; or enter into any agreement with any person having the management of any hospitals for sick inhabitants of their district on payment of annual or other sum as may be agreed on. Two or more local authorities may combine in providing a common hospital.

Reference to Lumley's *Public Health*, with its numerous notes on this section of the Act of 1875, indicates that there has been considerable divergence of opinion in regard to the interpretation of the section, and Dr. Addison appears to hold that if he is called upon to sanction any further enterprises such as Bradford has undertaken he had better place himself on firm ground. Indeed, it is said that the new legislative proposal is meant not only to clarify the position as to the future, but also to regularize what has been done at Bradford.

It may be recalled that on April 14th last, when interrogated by Mr. Lyle as to the Bradford scheme, the Minister of Health said he had sanctioned it because it appeared to him to be the only practicable method of providing institutional accommodation necessary to meet the needs of the city. He added that he fully appreciated the value of the work done by the voluntary hospitals, and was aware of the difficulties under which they were labouring, but he was not then in a position to make any definite statement. Mr. Lyle inquired whether what had been done in regard to Bradford meant that every other borough and town would be enabled to set up hospitals if it applied in the same way. Dr. Addison said that pending further legislation which was being prepared, he had to consider cases on their merits as they arose, this being the only way of meeting the necessities of the situation.

Upon this the question arises whether the insertion of this clause in the Miscellaneous Provisions Bill has been made on account of requests from the county councils. The answer given unofficially is that certain county authorities are considering the question of establishing public hospitals, and, Bradford already having moved in the matter, the proposed legislation was thought to be required. On the next question, whether it was contemplated under the clause to proceed with hospital reorganization on the lines of the Dawson report, the answer was that the clause does not bear evidence of having been influenced by the Dawson report. This, it will be noted, leaves as a moot point whether such legislation might consistently lead up to the adoption of the policy outlined in that report. It is said also that the desire of certain councils to maintain general hospitals should not be construed as having anything to do with the financial position of existing voluntary hospitals. The demand for hospital accommodation is greatly increasing, and neither in Bradford nor elsewhere is it proposed that the municipal hospitals shall replace voluntary hospitals. More hospital accommodation is urgently needed, and the step taken at Bradford is one way of meeting it.

League of Nations Health Organization. Dr. Murray asked, on August 16th, what decision had been reached by the Council of the League of Nations at San Sebastian with regard to a permanent health organization. The Prime Minister replied that the record of the proceedings of the Council of the League of Nations at San Sebastian had not yet been communicated to the Government. He was therefore not in a position to reply to the question.

Sick Prisoners. Mr. Briant asked the Home Secretary, on August 16th, whether he would consider the desirability of further facilities for the transfer of sick prisoners to ordinary hospitals. Mr. Shortt replied that the powers which already existed, and which were very freely used, for the transfer of sick prisoners to ordinary hospitals were found to be sufficient for the purpose.

The House of Commons adjourned on August 16th to Tuesday, October 19th, subject to discretion being vested in the Speaker to summon an earlier assembly on short notice if, after consultation with the Government, he considered that the state of affairs required it.

TREATMENT OF INCIPIENT MENTAL DISORDER.

Among the medley of clauses in Part 2 of the Ministry of Health (Miscellaneous Provisions) Bill, Clause 10, dealing with incipient mental disorder, alone has the appearance of a step in constructive legislation. This lays down that, provided the required conditions are complied with, it shall not be an offence to receive for six months (or such longer period not exceeding in all twelve months, as may be approved by the Minister of Health) and whether for payment or not, any person suffering from mental disorder which is incipient in character and of recent origin, but not being a person who has been certified as a lunatic, or in respect of whom an order has been made under the Mental Deficiency Act, 1913. Attached to this is the proviso that nothing in the clause shall authorize anyone who has thus been received into an institution, home or house, to be detained there if he delivers to the person in charge or sends by post to the Minister notice in writing that he desires to be discharged. Stated shortly, the clause enables a person suffering from incipient mental disorder, but not certified under the Lunacy Acts, to be received, with his own consent, in an institution approved by the Minister, for a period of six months without exposing those who receive him to penalties under the Lunacy Acts.

The required conditions are: (a) The institution, home, or house must be approved for the purpose by the Minister; (b) no person shall be received therein except with his previous consent in writing and except on a written certificate by two medical practitioners to the effect that he is reasonably likely to benefit by treatment therein; (c) the superintendent or other person in charge shall, on the demand of anyone having authority to inspect the place, produce all such written consents and certificates; (d) the reception under this clause of any person shall be reported to the Minister by the person in charge. Lastly, it is provided that any institution, home, or house approved by the Minister shall be periodically inspected by officers appointed by him for that purpose, and that the Minister may make regulations for carrying the clause into effect.

These provisions follow roughly the lines advocated severally by the Board of Control in 1917, by a special committee of the Medico-Psychological Association, whose interim report appeared in November, 1918, and by the Guildhall conference on asylum committees in February, 1919. Clause 10 approximates most closely to the proposals of the Board of Control, of which a full account was given in our issue of April 10th, 1920, at page 515. It is to be observed that this clause takes the form of an amendment to, and not a comprehensive revision of the Lunacy Acts. It is purely permissive in character, leaving the whole question of the provision of accommodation and treatment for these cases to the interplay of demand and supply; whereas the Medico-Psychological Association urged the need of imposing upon local authorities the duty of providing the requisite treatment either directly or through voluntary organization, and insisted that there should be special staffing and special management for these institutions. If, however, Clause 10 is read with Clause 11 (which we discuss elsewhere) it will be seen that some provision is made for development in this direction. We may note also that Clause 10 provides for cases of mental disorder "incipient in character *and* of recent origin." This seems a less elastic definition than that offered by the Board of Control, which implied a distinction between cases incipient in character and those of recent origin.

The bill states that inspection will be by "officers appointed for that purpose by the Minister," but until the regulations are made known it is not clear whether the new arrangements contemplated for incipient and recent cases of mental disorder are to be administered and supervised, on behalf of the Minister, by the Board of Control or not. Many of those who have pressed for this reform have insisted on the importance for its success of separating these arrangements entirely from the ordinary lunacy administration, whether central or local, for fear that any association with it would fatally prejudice the new method in the eyes of the public. A memorandum on the bill, published this week by the Ministry of Health,[1] implies that this separation will be brought about under the operation of Clause 10. "The importance of early treatment of these cases," it says, "wholly dissociated from the machinery of the Lunacy Acts, is now generally recognized, and the powers given by the clause will be especially useful in cases of shell-shock and similar nervous disorders." Unless the public can be induced voluntarily to make use of the facilities proposed at the very onset of the disorder, and before things have come to such a pass that something drastic has to be done, they will fail to attain one of the most important objects in view, which is to arrest the disorder and restore the normal balance.

The proposed method of detention under this bill is in its essentials an extension of the "voluntary boarder" system, and the formality of a written application for admission is still required as a necessary step previous to reception. Such a requirement often deters the patient from making use of the present provisions and we regret its retention. It would be better, we believe, to assume that a person desiring treatment under this clause consents by implication to such restriction of his liberty as is necessary for his treatment, subject to the provision that he can at any time resume his liberty by giving notice in writing to that effect. This is practically the way in which cases of mental disorder occurring in patients in general hospitals have been dealt with informally in the past without difficulty and without abuse.

It is satisfactory to note that provision is made for the extension of the period of treatment from six months, as originally foreshadowed as the standard period, to one of twelve months, with the approval of the Minister. Six months is sure to be inadequate for complete recovery in many cases suitable for treatment under these provisions. It is, however, not quite clear why a person who has once been certified under the Lunacy Acts and has recovered should be debarred from taking advantage of these provisions in the early stages of some later onset of disorder.

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[1] Cmd. 898. H.M. Stationery Office. Price 1d.

Australia.

[FROM A SPECIAL CORRESPONDENT.]

LODGE PRACTICE.

Now that the war is over conferences are being held with the lodge authorities. It is sought to obtain a 35 per cent. increase in medical remuneration and to lay down an income limit for those who participate in the medical benefit.

THE NATIONALIZATION OF HOSPITALS.

With the advent of a Labour Government to power the question of nationalization of hospitals is again being discussed in various quarters. At the recent annual meeting of the supporters of the Royal Alexandra Hospital for Children, Sydney, the State Governor, Sir Walter Davidson, in moving the adoption of the report of the Board of Directors, said that it was exceedingly creditable to the charitable public that upwards of £20,000 had been contributed to the hospital funds. The war had created a new standard of duty in the public mind, and he expressed the hope that the hospitals of the country would long remain on a voluntary basis, which was best for the public and for the State. Dr. Clubbe, the President of the hospital, said he hoped the Government would never take action to nationalize the hospitals, and he declared that even if the Government were to withdraw its subsidy, they would have no hesitation in going on without it. Mr. Innes Noad, M.L.C., said he would deplore the day the public were relieved of the necessity of subscribing to hospitals owing to that duty being undertaken by the Government. That would be a sorry day both for the national virtue of charity and for the welfare of institutions.

SOLDIER STUDENTS.

Professor E. R. Holme, of the Sydney University, who was a member of the Australian Universities Administration Committee in England, has given some account of the work which was done by many of the students who were serving with the A.I.F. The finding of medical post-graduate work, hospital appointments, clinical study and so forth for medical officers devolved on the A.A.M.C. itself, particularly on Professor J. H. Anderson, of Melbourne, who was then Lieutenant-Colonel and Assistant Director of Medical Services. Between 60 and 70 resident house appointments for six months were taken in British hospitals by Australian graduates. One was appointed demonstrator of anatomy at University College, London, by Professor Elliot Smith. Another did research work at Oxford under Dr. J. S. Haldane, and is still engaged in the study of inhalation of dust as a cause of miners' phthisis. Another was demonstrator of physiology at the London Hospital, and another acted for the Professor of Anatomy at Trinity College, Dublin, and yet another worked at the Pasteur Institute in Paris. In addition quite a number of students entered for the higher qualifications, the F.R.C.S. and M.R.C.P. of London and Edinburgh. In all about 300 medical graduates had the benefit of further professional training in Great Britain. In addition about 30 dental officers took post-graduate and other special courses, but the majority of these went to the United States for that purpose.

Correspondence.

ARMY COUNCIL CONSTITUTION.

SIR,—Lieut.-Colonel Fremantle's questions in the House of Commons on the constitution of the Army Council, as reported in your issue of August 21st, are most pertinent: the replies of the War Lord very unsatisfactory. Mr. Churchill answered that "he did not think that there was any advantage to be gained by making the Director-General Army Medical Service a member of the Army Council, because when matters affecting the medical organization or administration were under consideration the Director-General of the Army Medical Service was called upon to give the Army Council the benefit of his services." This may be the reply of a great brain; but surely it would be better common sense to realize that if the Director-General of the Army Medical Service was a member of the Army Council he would meet the other members of that Council as an equal, would hear any criticisms they might make on his ideas, have a full voice in all deliberations, and a vote in the final decision.

A few weeks since you published a letter of mine asking why—after the splendid eulogy of Mr. Churchill on the Army Medical Service during the war—neither of the Director-Generals of Medical Services had been the recipient of a title and pecuniary grant as bestowed upon certain combatant officers. Yet not a single member of the British Medical Association moved a pen either for or against the suggested rewards.

If the members of the medical profession are not themselves true to their cloth; if they do not grasp, and make the nation realize their intrinsic value, particularly what they have done in the navy and army during the war, they must not grumble at being relegated to a back seat socially, and that their present status in both services is one of toleration because they are needed.

Now, in the piping times of peace, we should (as we did after the Boer war) unite—have a British Medical Association committee of medical officers who have served in peace and war, and formulate a scheme. The scheme of 1907 was chiefly for a Territorial Medical Service to co-ordinate with the Regular A.M.S. for invasion. The late war upset many ideas, and we should now consider the future and establish services useful in peace, invasion, and for oversea work.—I am, etc.,

P. BROOME GILES,
Colonel, A.M.S.(T.F.).

Bletchley, Bucks, Aug. 22nd.

PLEURAL REFLEX SYNCOPE.

SIR,—In replying to the letter of my former chief, Sir Clifford Allbutt, I have to acknowledge his kind and courteous method of controversy, which would almost render it a greater pleasure to acknowledge a correction, than to maintain an adverse contention.

To anyone who has read Sir Clifford's closely reasoned arguments in support of his theory of a reflex vagal death in angina pectoris it will, I am sure, be readily comprehensible how his conclusions have commanded such wide acceptance, and I would gladly subscribe myself one of his adherents were I but convinced that a fatal reflex vagal syncope has ever been recorded and its vagal nature proved by physiological methods.

In his letter Sir Clifford Allbutt attaches considerable importance to the experiments of Dr. H. K. Anderson, of which he gives an account in his book, but I do not think that Dr. Anderson does more than suggest vagal action as a possible explanation of the syncope observed; at least, there is no evidence of proof in the brief description provided. I have myself twice observed fatal syncope during recovery from Anderson's operation (removal of the stellate ganglia in the cat), but the anaesthetic employed was chloroform, and the syncope was proved to be due to ventricular fibrillation; and, further, no such fatality was observed when the operation was performed under ether; the deaths were, in fact, cases of chloroform syncope. It is, of course, difficult to discuss Dr. Anderson's results in the absence of more definite experimental details, but I am inclined to think they may be open to an interpretation similar to that of my own.

In his physiological survey of the subject, Sir Clifford Allbutt mentions the investigations of Capp and Lewis into pleural reflexes, but I cannot concede that these workers adduce evidence of a fatal vagal reflex, and indeed they themselves consider that the vagus plays only a minor part in their results, which they attribute in greater part to a vasomotor reflex; as a matter of fact the tracings reproduced betray evidence of an asphyxial element which may very well determine the fatal vascular failures.

I may add that my own acquaintance with experimental vagus reflexes is not inconsiderable. I was at one time impressed with its possibilities, but after the better part of two years' work on this subject I abandoned the research, having never found any indication that a fatal result could be obtained by a cardio-inhibitory reflex.

Sir Clifford Allbutt's letter has prompted me to look up old records, and I find in my possession a tracing of an experiment performed by Mr. Morriston Davies. The operation contemplated was the removal of a lobe of the lung, and this had been proceeded with no further than the ligation of its base when the blood pressure fell precipitately to zero, and the ventricles were simultaneously observed to pass into fibrillation. This is just such a case of syncope as might be attributed, in the absence of direct observation, to vagal reflex action, but it was in fact a chloroform death, and I record it in further support of my contention that much that is attributed to vagal action may in actuality be conditioned by the peculiar irritable state of the heart set up by the lighter degrees of chloroform anaesthesia.—I am, etc.,

London, W., Aug. 17th. A. G. LEVY.

MORTALITY OF VENEREAL DISEASE.

SIR,—Mr. Charles Russ reminds us that "he who never made a mistake never made anything," but that is scarcely applicable to an egregious mistake persisted in after its clear refutation, for that cannot be said to be indicative of an open and productive mind. It is into a mistake of that sort that Mr. Charles Russ has floundered, and from it no contortions will extricate him. He asserted that it was "a serious misstatement" to assign to venereal disease the third place amongst the great killing diseases, and he said explicitly that according to the Registrar-General's report syphilis was responsible for 2,127 deaths in 1917, and therefore comes a very long way down in the list. But the Registrar-General's returns do not in any degree represent the mortality due to syphilis. Mr. Charles Russ either knew this or he did not, so he must take his choice between *ignoratio elenchi* or *suppressio veri*.

Mr. Charles Russ must have a touching faith in the Registrar-General's report if he really believes that its crude and unanalysed figures are any guide to the prevalence of syphilis, or to the mortality due to it. Wherever moral consideration and character are concerned the registration certificates are apt to be euphemistically worded, and so it is more than probable that a number of deaths immediately due to syphilis appear under other headings in the Registrar-General's report, while in none of the deaths for which it has been indirectly responsible is its operation there detectable.

The Registrar-General informs us that in 1919 eighty-one deaths were in England and Wales attributable to alcoholism, acute and chronic. If Mr. Charles Russ supposes that that sums up the amount of killing done by excessive drinking I can only hand him over to the teetotalers to be dealt with at their discretion.

Mr. Charles Russ has now discovered, and somewhat grudgingly admits, that syphilis, besides the deaths charged to its account in the Registrar-General's report, is solely responsible for general paralysis, tabes, and aneurysms. These three double the mortality which he ascribed to it, and send it up several pegs in the killing list; and in regard to two of them—general paralysis and tabes—let me recall to him that their dependence on syphilis was clinically diagnosed long before the discovery of the spirochaete in the brain and spinal cord of their victims. And so in many parasyphilitic affections to-day we can feel sure that the spirochaete has been at work although its presence has not been microscopically demonstrated. The secondary or remote lethal effect of syphilis Mr. Charles Russ still ignores or minimizes. He quotes me as saying that angina pectoris, organic heart disease, cerebral haemorrhage, and epilepsy are *really syphilitic*. I said nothing of the kind. What I did say was that syphilis is really accountable for *a large proportion* of the mortality that is generally believed to be due to these diseases, and to that opinion I adhere. I do not believe there is any experienced medical practitioner who has not been able to trace to syphilitic infection cases of each of these diseases, which are collectively responsible for upwards of 76,000 deaths in England and Wales annually, and such estimates as have been formed justify the assumption that in a large proportion of them it is syphilis that has engineered the fatal issue.

Mr. Charles Russ discredits the calculation of that wise and erudite physician the late Sir William Osler, but he has nothing to say about the mortality statistics of the United States. The death rate per 100,000 of population in the registration area of the United States in 1916 was 1,[illegible]; for syphilis alone it was 16. When corrected so as to include the proportion of deaths under other classifications that should be ascribed to syphilis, the rate was 222, syphilis being the cause of practically two out of every thirteen deaths in the United States.

I was very moderate in my claim that in the four diseases named a large proportion of the mortality was of syphilitic origin. I chose them out as conspicuous instances of the hidden intrigues of syphilis, but it cannot be questioned that in many other diseases syphilis plays underhand a malign and death-ending part. Take, for instance, encephalitis, Bright's disease, and atheroma and diseases of the arteries. Has Mr. Charles Russ never encountered hopeless cases of amyloid degeneration and arterio-sclerosis arising out of syphilis? Why, for suicide and murder syphilis is sometimes to blame.

Mr. Charles Russ objects to my supporting my plea for venereal disease as the third in fatality of the great killing diseases by a reference to ante-natal deaths, on the ground that we must not introduce abortion (whether syphilitic or otherwise) into our annual death roll from disease. But in my speech at the Ministry of Health, to which he has taken exception, I was not discussing our annual death roll, but enlarging on the destruction of human life in all its phases caused by venereal disease, and I was quite entitled, therefore, to adduce Dr. Amand Routh's striking figures showing on how large a scale human life is extinguished by venereal disease, even in its intrauterine glimmerings. But putting aside ante-natal mortality we had in 1919 20,140 deaths of infants under one year of age attributable to premature birth, infantile debility, and sclerema, and of these deaths it will not be denied that no inconsiderable proportion were traceable to venereal disease.

Mr. Charles Russ seems to think that venereal disease is being held up as a bogey to frighten an ignorant and credulous public. It is a terrible and deadly reality, and its disastrous consequences, physical and moral, immediate and remote, cannot be too strongly insisted on. If it is to be effectually grappled with it must be dragged into the light, its misdeeds proclaimed, and its prevention assured.—I am, etc.,

JAMES CRICHTON BROWNE.

Crindau, Dumfries, N.B., August 22nd.

SIR,—Dr. Russ underrates the intelligence of the readers of the BRITISH MEDICAL JOURNAL if he imagines that the syphilitic factor in organic heart disease, cerebral haemorrhage, and epilepsy is news to them. Any one who has studied the literature of the subject is perfectly well aware that syphilis was known to be the chief cause of aortic disease, one of the chief causes of cerebral haemorrhage, and a frequent cause of epilepsy long before the *Spirochaeta pallida* was ever dreamed of, and that further confirmation of this factor in etiology has been afforded by the demonstration of this micro-organism in the lesions, and by the high percentage of positive Wassermann reactions in these conditions.

With regard to syphilis being a predisposing cause of tuberculosis, I would refer Dr. Russ to the works of Fournier and Sergent, where he will find much evidence to show that this "suggestion" is more than a "flight of fancy."

Next, as regards the figures of deaths from pneumonia in 1917, Dr. Russ lays great stress on the demonstration of the pathogenic microbe before he will accept a death as being caused by a particular disease. I would ask him how he defines "pneumonia," and whether he holds that this condition is always due to the same microbe. The modern view, I believe, regards pneumonia as the local pulmonary manifestation of a general infection due to one of several microbes. I think I am right in stating that a large proportion of the deaths certified as pneumonia in the year 1917 were cases of so-called influenza pneumonia, which was due to infection with several microbes. In fact, statistics of pneumonia are concerned with a symptom rather than with a morbid entity such as syphilis.

Finally, I do not agree with Dr. Russ that "any doctor's impression as to fatality of syphilis (not traceable in the Registrar's lists) or any other malady is not evidence." Personally, I should regard the opinion of a man who had made a lifelong study of a disease as affording more valuable evidence than statistics such as those of the Registrar-General's report, which are obviously and unavoidably open to so many sources of error.—I am, etc.,

London, W., Aug. 22nd. C. F. MARSHALL.

KALA-AZAR IN MESOPOTAMIA.

SIR,—Last summer there was an interesting correspondence in the JOURNAL on the question as to whether or not kala-azar was indigenous in Mesopotamia. Drs. Low,[1] Hamill,[2] Ledingham,[3] and Billing[4] took part in the discussion, and the question was left unsettled, Dr. Ledingham remarking that, "before satisfying oneself that kala-azar may be contracted in Mesopotamia, one must have definite evidence of its occurrence among natives."

This evidence would now appear to be forthcoming, for belated numbers of the *Archiv für Schiffs- und Tropen-Hygiene* have reached this country, and in vol. 20, No. 22, for November, 1916, Külz[5] has a paper on his pathological and therapeutic observations in Lower Mesopotamia. Therein he mentions the case of an anaemic and fever-stricken *Arab* with enlargement of the spleen and liver, whom he saw at the Härle clinic in Baghdad. Leishman-Donovan bodies were found by splenic puncture and the case was diagnosed as kala-azar. Subsequently his Turkish colleague, Abdul Kadir, performed splenic puncture on twelve other cases (nationality not stated) and found the parasites in eight of them.

It is true that one swallow does not make a summer, but these observations by Külz are very suggestive and make it extremely probable that kala-azar does exist amongst the Arab population of Mesopotamia.—I am, etc.,

ANDREW BALFOUR.

Wellcome Bureau of Scientific Research,
25-27, Endsleigh Gardens, N.W.1, Aug. 18th.

DIRECTIONS FOR USING DRIED MILK.

SIR,—Now that so many infant welfare centres are being started all over the country I should like to draw attention to the bad habit that seems to be prevalent of advising the mothers attending them to feed their babies according to the directions on the packets of dried milk.

These directions advocate so many teaspoonfuls to the same number of ounces of water, according to age, and one is left to discover what is meant—whether heaped or flat teaspoonfuls. Apart from the fact that babies vary greatly in weight and appetite, making it impossible to feed them by rule of thumb, the percentages of solid ingredients when the milk is mixed as above do not correspond to those in whole cow's milk. Several years ago, when the infant welfare centre in Sheffield was started, the correct formula was worked out by Dr. A. E. Naish, who found that the proportion of three moderately-heaped teaspoonfuls to 5 oz. of water made the percentages of solids equivalent to those in cow's milk.

Although this measurement by teaspoons is not scientifically accurate, owing to the varying sizes of teaspoons and also to the varying interpretations put on the words "a moderately heaped teaspoonful" by different individuals, it has been found to work well in practice. It would perhaps be better if a standard cylindrical measure, such as has been introduced by one of the manufacturers of dried milk, could be used. As the various dried milks are not of the same density, it would be necessary to have a different measure for each one.

But each child should be seen by the medical officer himself. If this is not done it will be found that improper quantities are being given.

I think it is a mistake for additions to be made to the dried milk by the manufacturers in the shape of cane sugar (vide advertisements). Mothers are far too prone to add cane sugar without instructions, and if medical men wish it to be added in certain cases, it would surely be better for them to prescribe the desired amount themselves.—I am, etc.,

Sheffield, Aug. 15th. H. LEADER.

TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

SIR,—I have read with much interest in your issue of July 31st the report of a paper on the treatment of calculi impacted in the pelvic portion of the ureter, read by Mr. Frank Kidd before the annual meeting of the British Medical Association at Cambridge. I think that the medical profession owes a debt of gratitude to Mr. Kidd for describing some of the methods of removing stones from the lower ends of the ureters by means of the operating cystoscope without recourse to methods of open operation. There appears to be a lamentable lack of appreciation of these procedures by general surgeons in this country, who regard them as of doubtful value and as methods of difficulty if not always of danger to the patient. Whereas they are methods which I have adopted for many years, and are of daily routine in my practice both at All Saints Hospital and in private, and also in the hands of all competent urologists.

I can endorse all that Mr. Kidd has to say concerning the "coaxing" of stones down the ureter. He describes the following plans in his paper, namely:

1. The injection of paroleine or of papaverine.
2. Division of the ureteric meatus with scissors or diathermy.
3. Dilatation of the ureter with an air-distended bag.

I myself have used all these procedures with the exception of the dilatation bag, which never appealed to me.

The injection method, more especially with papaverine, I have utilized on many occasions. At first I had great difficulty in obtaining the drug, but Martindale of New Cavendish Street kindly dispensed it for me a few years ago, first in pure solution and subsequently with the addition of cocaine. He has also at my suggestion put it up in ampoules for subcutaneous injection.

It is now some fifteen years since I first used the scissors through a Brenner's direct vision cystoscope to liberate a calculus impacted at the ureteric orifice; but I have long since discarded Brenner's type of cystoscope and scissors for more recent models. The method of dividing the orifice with scissors and liberating a stone has often been used by me, and I have nothing but praise for this most excellent procedure. The last time I employed it was a few months ago, when I had a young man under my care who had had anuria for forty-eight hours. On cystoscoping him a calculus was seen blocking the left ureteric orifice. A cut with the scissors at once gave vent to pus and urine, and within forty-eight hours the stone was passed per urethram and the patient was discharged. For calculi impacted at the ureteric orifice, after dividing the ureteric meatus, I have utilized forceps to extract the stone from the ureter on many occasions, but experience has taught me that simple division of the meatus is all that is necessary in most cases as the stone is voided naturally later.

I have also employed the diathermic electrode to enlarge the ureteric meatus or the mouth of a sacculus containing an encysted stone, but for a patient suffering from anuria the scissors method is far superior, as it releases the patient at once from his dangerous condition.

In addition to the foregoing methods, described by Mr. Kidd, I would like to bring before the notice of the profession in this country the following procedures which I have adopted with the object of "coaxing" calculi, lodged in the pelvic portion of the ureter, into the bladder:

1. A ureteric catheter of large calibre is passed up the ureter until it comes into contact with the stone, and is then left *in situ* for several hours. It appears to dilate the ureter in much the same way as a small catheter passed through a urethral stricture, and tied in for twenty-four hours, dilates that canal.

2. Bueger's metal dilating olives. First, a small metal olive is attached to the insulated end of a ureteric diathermic electrode which, with a moderate degree of current insufficient to cause more than gentle heat, relaxes the muscle fibres of the ureter and allows a larger olive to be attached, passed, and the process repeated again and again until a considerable degree of dilatation has been attained. The olives vary in size from 12 to 20 French, and are introduced through the operating cystoscope.

3. A mechanical dilator with parallel blades attached to a flexible forceps is passed through the cystoscope and up the ureter until it reaches the stone, and the dilatation is carried out by working the handle of the forceps external to the body. It has the advantage that it dilates the ureter immediately below the stone, and the necessary amount of force applied can be regulated with the fingers.

4. Lastly, Messrs. Allen and Hanburys have made for me laminaria tents, 1 in. in length and No. 10 French in size, through which a channel is bored to allow urine to pass from the kidney into the bladder, a thread being attached for

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[1] Low, G. C.: (a) Intravenous Injections of Antimonium Tartaratum in Kala-azar, BRITISH MEDICAL JOURNAL, June 7th, 1919, p. 702. (b) Kala-azar in Mesopotamia, BRITISH MEDICAL JOURNAL, July 26th, 1919, p. 115.

[2] Hamill, P.: Intravenous Injection of Antimonium Tartaratum in Kala-azar, BRITISH MEDICAL JOURNAL, July 5th, 1919, p. 28.

[3] Ledingham, J. C. G.: Kala-azar in Mesopotamia, BRITISH MEDICAL JOURNAL, July 19th, 1919, p. 88.

[4] Billing, E.: Kala-azar in Mesopotamia, BRITISH MEDICAL JOURNAL, July 26th, 1919, p. 116.

[5] Külz, L.: Pathologische und therapeutische Beobachtungen aus Niedermesopotamien. *Archiv für Schiffs- und Tropen-Hygiene*, vol. 20, 1916, p. 487.

[illegible] extraction. I have used them for dilating the lowest inch of the ureter and leave them in position for twenty-four hours.

By any of these means or a suitable combination of them one is able to induce a stone, if small, to descend the ureter, enter the bladder, and be passed naturally or be extracted with forceps.

Mr. Kidd, in his paper, makes brief reference to the value of diathermy in treating villous growths of the bladder. An extensive experience of the method since 1912 enables me, not only to agree with his remarks on the subject, but, in addition, I would go so far as to say I consider it criminal to remove a simple villous growth from the bladder by open incision unless there is some very strong indication for doing so. To me it seems a great pity that so many surgeons appear not to appreciate these methods and still prefer the ancient and barbarous procedure of open operation in every case.—I am, etc.,

London, W., Aug. 16th. E. CANNY RYALL.

VACCINAL CONDITION OF SMALL POX CARRIERS.

Infantile Vaccination.

SIR,—My friend Dr. Millard, whose letter appeared in your issue of July 17th, is to be admired for his courage in advocating unorthodox departures, and to be heartily congratulated on his success in keeping Leicester comparatively free from small-pox, whether this freedom is partially due to the neglect of infantile vaccination or not. Although the mild ambulant case of modified small-pox is undoubtedly one chief cause of outbreaks nowadays, Dr. Millard has not convinced me that the Leicester method abolishes this difficulty, and it is to be expected that in a population which is unaccustomed to vaccination the task of persuading contacts to be vaccinated will be specially difficult.

I continue, therefore, to advocate infantile vaccination, but suggest that there would be distinct advantage in postponing the age at which it becomes compulsory to 5 years and before admission to school. The popular prejudice to vaccination diminishes with the age of the child. Antivaccinationists are in the habit of attributing a proportion of the many deaths which occur in infancy to vaccination; postpone the age to 5 years and you almost entirely disarm them of this item of their armament. The position of the State in refusing to admit unvaccinated children to State supported schools will be a much stronger one than it now is, and it may be found practicable to repeal the conscience clause. But even if the Labour party—decidedly the most important party nowadays—will not agree to this, there will assuredly be fewer conscientious objectors to vaccination at 4 years than at 4 months.

Dr. Archibald Kidd has very properly pointed out the great liability of unvaccinated children to small-pox in a large town, but in my experience the cases in London under 5 years are very few, and a child under 5 practically never acts as a carrier. Mothers in the crowded and poorer parts of the town like to send their children to school at the age of 3 or 4, and these, I [illegible], will gladly seek the vaccination in order to enjoy this privilege.—I am, etc.,

[illegible], Aug. [illegible] [illegible] DAVIES.

SIR,—May I trespass very kindly on your space once more to reply to Dr. Killick Millard? In [illegible] he says I "frankly confess that infantile vaccination will protect the whole community." [illegible] that infantile vaccination [illegible] and my statement of [illegible] nothing new.

I [illegible] I do not quite follow Dr. Millard's argument that the fact that he has not found it necessary to resort to [illegible] supports his contention that it is the vaccinated rather than the unvaccinated who spread small-pox.—I am, etc.,

[illegible], Aug. [illegible] ARCHIBALD KIDD.

*** This correspondence now ends.

Obituary.

DR. FREDERICK CHARLES MEARS died at North Shields on August 10th. He was educated at the City of London School and the London Hospital. He graduated M.B. Durham in 1884, having obtained the diplomas of M.R.C.S. and L.S.A. in 1882, and held the posts of house-physician and house-surgeon to the London Hospital. On leaving hospital Mears went to North Shields, and practised in that town ever since. He was appointed honorary surgeon to the Tynemouth Infirmary about thirty years ago, and at the time of his death was senior surgeon and chairman of the medical staff. He always took a great interest in public affairs, and was a member of the old School Board, and later of the Insurance Committee; he was chairman of the Financial Committee and chairman of the Panel Committee. He took an active part in the reconstitution of the British Medical Association, and was always one of its most energetic supporters in the North. Mears was a man of exceptional strength of character, who could make up his mind on a point and stick to it. He had a soul above all meanness and was quite incapable of any unworthy action. He frequently did not see eye to eye with other people and thoroughly enjoyed debate, in which he often scored, as the correspondence columns of this JOURNAL can testify. Of a very reserved disposition, few people knew of the many acts of kindness which endeared him to his patients, all of whom, poor and rich, were alike to him. A true English gentleman, a doctor of the best type, he has left a name in the North country which will be revered for many years to come.

The Services.

HONOURS.

FOREIGN DECORATIONS.

THE following foreign decorations and medals have been awarded for distinguished services rendered during the course of the campaign:

By the President of the United States of America.

Distinguished Service Medal.—Major-General Sir William B. Leishman, K.C.M.G., C.B., F.R.S., K.H.P.

By the President of the French Republic.

Médaille de l'Assistance Publique. En Argent: Lieut.-Colonel Henry MacCormac, C.B.E., late R.A.M.C., Temporary Captain Harold Oscar Gough, R.A.M.C. *En Bronze*: Temporary Major Thomas Norton Frood, R.A.M.C., Temporary Captains Henry Murray Agnew, Mervyn Lager, and Frederick Alexander Ross, R.A.M.C.

By the King of the Belgians.

Croix Civique 1st Class: Lieut.-Colonel Standish de Courcy O'Grady, C.M.G., D.S.O., R.A.M.C.

By the King of Rumania.

Order of the Crown of Rumania. Chevalier: Temporary Captain Mervyn Lager, R.A.M.C.

Universities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved at the examinations indicated:

SURGERY.—*†L. Burrell Holmes, M. C. Hartley, *H. Morris, *†J. W. E. Ord, *†A. C. D. Telfer, †C. M. Finkler.
MEDICINE.—[illegible] L. A. Cohen, *M. C. Hartley, *†R. L. Jenkins, †W. A. O'Connor, *†J. W. E. Ord, *A. C. D. Telfer, †C. M. Finkler.
FORENSIC MEDICINE.—L. C. [illegible], A. Y. Cantin, J. L. [illegible], M. C. Hartley, W. A. O'Connor, J. W. E. Ord, A. C. D. Telfer, C. M. Finkler, [illegible].
MIDWIFERY.—A. Y. Cantin, W. H. [illegible], R. [illegible], C. J. [illegible], M. C. Hartley, W. A. O'Connor, J. W. E. Ord, J. [illegible], A. C. D. Telfer, E. W. Terry.
* Section I. † Section II.

The diploma of the Society has been granted to Messrs. J. Burrell Holmes, A. Y. Cantin, M. C. Hartley, R. L. Jenkins, J. W. E. Ord, W. A. O'Connor and A. C. D. Telfer.

THE Dutch Society for Combating Lupus state in their [illegible] annual report that [illegible] patients were treated in 1919; [illegible] cases, of whom 180 lived outside Rotterdam, received gratuitous treatment. Only 134 patients had lupus vulgaris, the others had various tuberculous skin diseases, lupus erythematosus, etc. Another 182 patients suffering from skin diseases, including favus, were treated by x rays. Of the [illegible] lupus patients who have been treated since the establishment of the society, 33.4 per cent. have been cured, and 32.4 per cent. considerably improved, or a total of 65.8. Of the 1,219 patients with forms of tuberculosis 44.1 per cent. were regarded as cured.

Medical News.

SIR SHIRLEY MURPHY, K.B.E., has been elected Master of the Society of Apothecaries.

THE Wellcome Historical Medical Museum will be closed for cleaning and decoration from September 1st to September 30th inclusive.

A POST-GRADUATE medical course will be held at the Radcliffe Infirmary, Oxford, from October 1st to 9th inclusive. Morning and afternoon sessions will be held each week day. A dinner has been arranged in Queen's College Hall on Tuesday, October 5th, at 7.30 p.m. (morning dress), at an inclusive cost of 15s. The secretary to the committee is Dr. Hugh Whitelocke, 6, Banbury Road, Oxford.

THE Committee of the Hospital for Diseases of the Throat has given instructions for the sale of its freehold property in Golden Square, Regent Street, W., covering a site area of more than 7,000 ft.

IN view of inquiries from local authorities and others, the Ministry of Health has compiled a list of residential institutions in England and Wales in connexion with maternity and child welfare. The list, which will shortly be published by the Stationery Office, contains the names and addresses of 318 institutions (with 4,599 beds) dealing only with cases of mothers and children. These institutions are divided into five classes: (1) Homes for mothers and babies; (2) homes for children under 5; (3) maternity homes and hospitals; (4) hospitals for children under 5; and (5) convalescent homes. All institutions of the kind known to the Ministry are included in the list, with the exception of some which have been inspected and found unsatisfactory.

THE Department of Hygiene at King's College, London, recently reorganized under the supervision of Professor Simpson, gives complete courses of instruction for the various degrees and diplomas in public health. Lectures are given by Professor Sommerville on hygiene, sanitary law and administration, sanitation, and vital statistics, and by Mr. Rhys Charles on the Food and Drugs Acts. Bacteriology and parasitology are taught by Professor Hewlett and Dr. Taylor and chemical laboratory work by Mr. Partridge. The laboratories are open daily for instruction and research and arrangements are made to suit those engaged in practice. There are weekly demonstrations on sanitary appliances and visits to places of sanitary interest. Courses on industrial hygiene will be given by Dr. Legge (October to February) and on school hygiene by Dr. Malcolm (October to June).

THE fifth Congress of Physical Therapy, instituted by the Belgian societies of physical therapy and radiology and the Antwerp Association for Physical Therapy, will be held at Antwerp on September 11th and 12th. On the morning of September 11th an address will be given by Dr. Paul Tissié of Pau on the use of movement in therapeutics and hygiene. In the afternoon the first general meeting will be devoted to the diagnosis and treatment of abnormalities of osteogenesis. On September 12th the second general meeting will discuss the question of instruction in physical therapy. Subscriptions for membership (20 francs) should be sent at once to the treasurer, Dr. Gobeaux, Place de l'Industrie 16, Brussels.

THE Medical Section of the Association of the Italian Scientific Press has unanimously decided that the price of all medical journals should be raised, and that the Government should be requested to grant special privileges to medical journals as regards paper and postage rates.

TWO courses of instruction in dermatology and venereal diseases are to be given annually at the Hôpital St. Louis, Paris. On the first Monday in February of each year a free course will begin, lasting for two months, the lecturers and subjects being as follows:—Thibierge: Forensic aspects of syphilis; Darier: Morbid anatomy of syphilis; Jeanselme: Tropical diseases; Hudelo: Secondary syphilis and pyodermite; Julien: Tertiary syphilis and parasyphilis; Sabouraud: X ray treatment of ringworm; Gougerot: Mycoses. The second course will be given, under the direction of Professor Jeanselme, twice a year (October to December and May to July), the fee for each session being 150 francs.

THE nineteenth Flemish Congress of Medicine and Natural Science will be held at Ghent on September 18th and 19th.

THE German Government has allotted 200,000 marks for the enlargement of the Medical Clinique at Heidelberg.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"TEMPORARY M.O.H." Evidence of a connexion between the prevalence of cancer and insanitary conditions of housing and refuse disposal is wanting. Expressions of opinion on such a matter can be of no value.

INCOME TAX.

"C. P." took over the practice of a colleague to include the lease of the house. Finding that at that time he could not obtain a partner to take the house over it was given up after eight months. Can the £45 rent paid for that period be deducted as an expense?

⁎ The point to be decided is whether the expense was incurred (*a*) in taking over the practice, or (*b*) in running the practice after it had been taken over. If the plate was kept up on the house (as it presumably was) and some definite even if small use made of the house after the amalgamation of the practices, we consider that (*b*) would apply, in which case the expense would be deductible.

"W. E. A. W." inquires as to the authority for a statement in a recent answer as to the method of calculating the cost of renewal of a motor car.

⁎ The following example was put before the Royal Commission on the Income Tax by an official witness: "A machine which originally cost £1,000 is worn out and replaced by one of greater power or size or capacity, costing £2,500. The amount to be allowed as an expense is not the full £2,500, but only the cost of replacing the old machine by one of similar power or capacity—say £1,500." The slight divergencies in this example from the facts in our correspondent's case seem to us to be immaterial.

LETTERS, NOTES, ETC.

MEDICAL RESETTLEMENT.

IN the JOURNAL of August 14th, at p. 259, we printed a letter with this heading from a general practitioner of long standing who signed himself "Ex-Captain R.A.M.C." After serving four and a half years with the army he found his practice shrunk almost to nothing, and complained that he could get no temporary work on medical boards or as pension referee to tide him over this difficult period, while civilian practitioners who never left their practices were still serving on boards. We have since received letters from other readers who find themselves in like straits on returning to practice from war service abroad, and their experience in obtaining temporary work corresponds very closely with that of "Ex-Captain R.A.M.C." We have only space to print short extracts from some of these letters, which, for the most part, dot the i's and cross the t's of what has already been published.

"EX-CAPTAIN GENERAL LIST," who gave up his practice for war service abroad and was invalided home, writes: "When the House of Commons cut down the staff of the Pensions Ministry, thinking in their wisdom they would save expense, I received some sixty sessions on medical boards. I was then virtually twice told I had had enough employ. There were at that time kept on men with pensions, men with private practices, and men who had never served in any but a civilian capacity. I have no pension, but a disability made worse by service, and have no practice to return to."

"ANOTHER EX-CAPTAIN R.A.M.C." writes: The grievance outlined is common to many, and it would appear a great travesty of justice that such response to patriotism, resulting in personal hardship and financial loss, should be met by indifference from Government authorities in a position to "make good." Numerous offices are held by men who not only never donned khaki, but who have all through received emoluments from this source and at the same time have been able to nurse their private practices during the absence of their less fortunate *confrères*.

"LOCUM" relates how he left his fourteen year-old practice and, at the age of 47, went to France on October 1st, 1914. Returning four and a half years later he found another doctor had taken his private house and put up a plate at his old surgery a mile away. Our correspondent decided then to do locum tenens work, and advises "Ex-Captain R.A.M.C." to follow his example. He adds bitterly: "When he has done this as long as I have he won't waste his time asking, Is this fair? He will recognize, as I do, that there is nothing fair and nothing just, save for two classes in this country—Might as represented by the rich and Might as represented by the noisy poor. . . . The sense of justice and fair play that existed before the war is dead."

Other correspondents write to much the same effect, supporting their complaint by instances drawn from their own knowledge.

ADVERTISEMENTS OF PRACTICES.

"XR" writes to corroborate the remarks of Dr. E. S. Hall on this subject in our issue of August 14th. Since my demobilization (he says) with the sequel of a return to a dead practice, I have spent hundreds of pounds in railway fares and hotel expenses in a search, so far without success, for a decent practice in which to settle down again. The amount of commercialism in the medical profession when it comes to selling a practice has been an eye-opener, and some of my experiences have been illuminating. The following is a selection:

(1) "Practice in good going order; locum in charge." Actually the practice had been going so long that it had gone altogether. It was a death vacancy; for months no locum had been in the place; but at the time I saw it there was a locum in charge, paying four visits or so a week. (2) "Opposition slight." Twenty-eight other doctors in a town of some 30,000 inhabitants. (3) "Population 30,000." Probably true enough when a trip was on in summer, but the resident winter population was 2,900. (4) "Population 2,500." Actual population 240. The 2,500 really existed in a rural district council area of the same name, a district ten miles in greatest measurement and including an island off the coast. (5) "Fees at house 3s. 6d. to 1 guinea." The vendor very frankly admitted that he had only once received a guinea fee in twenty years, and that then it had been paid under protest. He remarked that it looked well, however, and so he had put it in! In order to get this information I had travelled several hundred miles. (6) The agent's prospectus described the house, garden and stabling, and so on. Actually the house had been sold over the doctor's head, and the purchaser refused to resell even at a profit. He intended transforming the house into business premises, and there was no alternative accommodation. (7) A case where the practice was carried on in two rooms on a weekly tenancy.. No security of tenure; no agreement with the landlady, who might have required the rooms at any time for her other boarders. (8) An effort to sell a dead practice, where even the very house had been shut up for years. (9) Refusal by vendor to show his books or state his expenses; the only thing one gets is the remark, "The expenses are what you care to make them." (10) Efforts to include war pensions appointments—in which there is, or [illegible] part of the assets of the practice [illegible] from one to one and [illegible] (11) The vendor [illegible] that it is an essential condition that the [illegible]

[illegible]

[illegible] writes: Dr. Hall has a measure of my sympathy. [illegible]

little more. The camera and picture postcard might be called in to their aid, and a photograph of the house, back and front, supplied, together with some view of the district if available. After all, if we are buyers we are looking, as a rule, for a place of residence as well as a practice and *modus vivendi*. I think agents might take a tip from *Country Life*, and give us a little more information about the locality and house—large rooms or small, details of local taxation, price of gas (which varies enormously), and so on. Then the agents' hands are tied sometimes. In January I wrote about a certain practice; I was referred to a firm of lawyers; they said that a gentleman was treating for the practice and likely to buy. The advertisement appeared again; I wrote again; I got no reply, but it was in about two weeks ago. Another present feature is the selling of a house with a bit of a practice tagged on to it. I see a practice of £600 advertised with a £4,500 house. Did I possess £5,000 I should not buy a £600 practice. Some years ago a monthly journal proposed to start a practice bureau, but nothing came of it, and I rather question the wisdom of the British Medical Association doing anything of the kind. A good agent who knows his business can be of very material help and earn his commission. I would be sorry to see them abolished.

GALL STONES AND PARSLEY.

DR. J. CARROLL (Wigan) writes: It is extremely interesting to find this use of parsley cropping up at the present day. It has been used in urinary and liver troubles for generations, mainly, of course, by herbalists. I find a reference to its use in both classes of complaint in a book I came across recently, *The Family Herbal*, by Sir John Hill, M.D., F.R.A. of Science at Bordeaux, printed at Bungay, and published in 1812. He says, "The roots are the part used in medicine. A strong decoction of them is good against the jaundice. It operates powerfully by urine, and opens obstructions." I can find no reference to the plant or its uses in Dr. Hill's previously published (1771) book on *The Virtues of British Herbs*. Probably he did not regard it as British, and therefore omitted it from the book. If any one is interested in the subject I have no doubt Mrs. Grieve, F.R.H.S., Chalfont St. Peter, Bucks, could assist him with references.

PROLAPSE OF CORD.

DR. A. HUMPHREY DAVY (Bournemouth) writes: In your Epitome of Current Medical Literature (August 14th, p. 20), under the heading "Prolapse of the Cord," the statement is made that the fetal mortality is 37.5 per cent. In a case of vertical presentation, which I attended with Dr. Fiske several years ago, the cord was found to be protruding but pulsating. In the three previous confinements forceps had been needed. After fully anaesthetizing the patient with chloroform, we lifted her into the knee-shoulder position; the head went back and also the cord. By carefully replacing her on the left side (the os being guarded), it was sought to prevent the cord from descending; actually it showed no tendency to further prolapse. On full dilatation of the os I delivered the patient by forceps; both mother and child did well.

When the patient is seen sufficiently early—that is, as long as pulsation in the cord continues—there is every hope of saving the child's life. The many mechanical contrivances recommended nearly always fail. Simply placing the mother in the knee-shoulder position may cause the cord to return, but this is not invariable. The anaesthetic has the advantage of relaxing the abdominal and uterine walls, thus helping the cord to drop nearer the fundus, and making less likely its return when the uterus contracts.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 31, 34, 35, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32, 33, and 34.

THE appointment of certifying factory surgeon at Strabane (Tyrone) is vacant.

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THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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THE PROFESSION OF MEDICINE.

For many years past it has been our custom to preface the annual Educational Number of the BRITISH MEDICAL JOURNAL with some remarks by way of general guidance to those who contemplate entering the profession of medicine. What we have to say on this occasion to prospective recruits will follow the lines laid down in previous years; but it must be borne in mind by readers of each subsequent section that, while the large aims of medical education are the same to-day as they were yesterday, the means to attain those ends are at present under close scrutiny. All who aspire to be counted as medical statesmen now recognize that the future of medicine—as a science, as an art, and as a social force—is bound up with the training of the student. The general scheme of education will remain much the same, but the detailed pattern is likely to be modified. In particular, efforts are being made to bring the teaching of the preliminary sciences into closer relation with the life-work of the practitioner. It is significant of the present attitude that, during the Annual Meeting of the British Medical Association held in Cambridge this summer, there was a section to discuss the problems of medical education, under the presidency of Sir George Newman, whose recent writings have illuminated this topic, and that other aspects of the same problems were touched on during the debate on the future of medical practice in the Section of Medical Sociology.

Our present issue is mainly addressed to two classes—those who need information as to the course which must be followed in order to become a legally qualified practitioner of medicine; and those who, having obtained a qualification to practise, are doubtful as to what particular part in medicine they should choose as a career. With passing years the form and contents of the Educational Number have undergone more or less change, but these primary objects remain unaltered. For the guidance of the first class of readers we set out in the following pages the course of education required of the student, the places at which this training can be obtained, and the universities and other bodies which test the knowledge thus acquired and stamp successful students with their several hall-marks.

The conditions with which those who desire to enter the medical profession must comply are regulated by a statutory body, the General Medical Council, and a statement of its requirements will be found on page 341. The examination of candidates as to their fitness to practise medicine is left to the universities and to certain corporations in England, Scotland, and Ireland. But the Council takes steps to ensure that the tests imposed do not fall below a certain standard, and that the persons examined have undergone certain definite courses of instruction at a recognized medical school. Successful candidates at such examinations eventually receive from the body holding them either degrees, in the case of the universities, or diplomas or licences, in the case of the corporations, entitling them to claim insertion of their names in the *Medical Register* kept by the General Medical Council. In former days the holders of diplomas and licences made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied, and so many practitioners now hold degrees that, in almost all cases, the wisest plan for a student at the outset of his career is to aim at a university degree in medicine, though it may be desirable to take also a diploma or licence. Should he start out with the intention of obtaining diplomas, and find later that a degree is all-important to him, his position will be unfortunate.

Beyond the qualifications on the strength of which the General Medical Council admits to the *Medical Register* most of the examining bodies bestow on candidates who have passed further tests such higher titles as Doctor of Medicine and Fellow. It may be said that as a rule they are well worth obtaining, though the difficulty of doing so, and the added professional status they confer, vary much. There are also diplomas in a growing number of special branches of work, such as public health, tropical medicine, and psychological medicine, which are superfluous for most practitioners, but either useful or indispensable for those who wish to specialize in these subjects.

With regard to the question of cost, the outlay involved in completing a medical curriculum varies so much that no single precise statement can well be made. The limits are wide apart. Besides differences in the charges made by medical schools for instruction there are differences in the fees for examination, as well as in those payable for the certificates of qualification given to successful students. Again, not all students, however industrious, get through examinations with equal facility. Since in any case professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living in different parts of the kingdom varies much, while personal expenditure varies still more, it can only be said in a general way that no one should think of entering the profession who is unprepared to spend on his medical education, taking the present value of money, at least £1.500. The old saying that it costs a thousand pounds, first and last, to become a doctor, is now quite out of date. On the other hand the number of scholarships now offered is larger than in the past; in the Scottish universities bursaries are numerous, and the Carnegie Trust gives assistance to deserving Scottish students.

To the medical graduate, diplomate, or licentiate, once his name is on the *Register*, many paths are open. He can aim at becoming a general practitioner; or at entering one of the Government services at home or abroad; or at specializing in public health or asylum work, in pure science, or in one or other of the many modern subdivisions of medicine and surgery. Most of these different paths in medicine are considered in detail in the sections that follow, but a few remarks may here be made as to the first and last of them.

There are three main gateways into general practice. The newcomer may take a house and wait for patients to seek his services; he may acquire through purchase the goodwill of a practice rendered vacant by retirement or death; or—perhaps best of all—he may enter into partnership with some already established practitioner. Success in private practice demands, however, a great deal of knowledge other than that obtained at the medical schools, and consequently a man is more likely to be accepted as a partner, or to succeed on his own account, if he has first gained some experience in private practice as an assistant or deputy. As for those whose aim is to become consultants or specialists, their path, though full of interest, is seldom smooth. For them success will depend in the long run not only upon their mental gifts and capacity for hard work, but on their possession of those qualities which help to win for a man the confidence both of his colleagues and of the general public. Moreover, since it is certain that, however well equipped they may be, they will not at first make as specialists enough to pay their outgoings, this branch is only open to those with the means to maintain themselves for an uncertain period, or who by teaching or in other ways can make enough to defray their expenses. We need scarcely insist here that the man who enters our profession with the sole idea of making money has mistaken his calling. The competent practitioner can always earn a competence while his health lasts, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of practice chosen, it must be remembered that the large majority of doctors make but a moderate income, while the financial returns of even the most successful compare but ill with those won by men of equal ability in other walks of life.

More than four years of war threw a heavy strain upon the medical profession and upon medical education, and although things have become more normal in the past twelve months, some effects will be felt for years to come. Many doctors who served long with the forces have found the period following demobilization a time of uncertainty and financial stress. For them "resettlement" has proved an uphill business. The effect of the war upon the numbers of medical students has been described from time to time in these pages. Between 1910 and 1914 the annual entry of first-year medical students averaged roughly 1,440. During the war these entries increased by 500 or 600 a year. For, although many were called away for naval or military service, the whole number actually studying in the medical schools of the United Kingdom showed a steady upward movement. In May, 1916, the total was 6,104; in May, 1918, it was [illegible]; by January, 1920, it had leapt up to [illegible]. Last year no fewer than [illegible],420 medical students were registered. This was more than 1,000 greater than the record entry of 1891—the year before the enforcement of a compulsory five years' curriculum. But while the number of first and second year students was so very large, the final year students barely sufficed to maintain the normal supply of newly qualified doctors during the year; in fact, only 872 practitioners were registered on the Home List in 1919. The enormous increase in the student body since the armistice has, of course, been mainly due to the return to the medical schools of junior students who were on service—the accumulated freshmen of five years, whose first year's course was broken by the call to arms. As a result, many of the medical schools are overwhelmed, and some have had to close their doors for a while against the flood of students.

There is thus every prospect that within the next four years or so such shortage of doctors as may now exist will be far more than made good. This has led to some apprehension lest there should not be enough work to go round when the present generation of students become qualified. The President of the General Medical Council, however, does not share this view; he looks rather to the great wastage of the war, and to the probable multiplication of openings for skilled medical men and women, brought about by the increased activities of new authorities concerned with the health and physical welfare of the people. Thus he foresees many new demands, and has no doubt that they will ultimately match the new supplies. But in the meanwhile the strain upon the medical schools of the country is excessive. Most of the schools would, indeed, welcome an ebb in the tide of applicants for admission until it is certain that the profession can absorb all those aspiring to enter it and until more adequate provision is made for their training.

Another feature of the last five or six years has been the great increase in the number of women going in for the study of medicine. For this the war must be held mainly responsible. Owing to the remarkable expansion in the number of women students the proportion of medical women is increasing and is bound to grow rapidly during the next year or two. A word of warning was, however, sounded by the President of the General Medical Council in his last address. There is good reason for believing that the services of medical women are less in demand than during the war, and that newly qualified women now find difficulty in obtaining suitable opportunities for professional work. Hence, in view of the big entry of women students in recent years, all those who are now well advanced in their curriculum may not at once find openings for work after qualification. The return to civil life of large numbers of ex-service men, both as students and as practitioners, inevitably and properly tends to displace a proportion of the women who carried on the work of the profession during their absence abroad. That work was done well and faithfully; but the law of supply and demand is inexorable, and the men who return from serving their country have claims which all must recognize.

What are the general prospects of the profession now that peace conditions are more or less restored? The medical services acquitted themselves extremely well in the war, and medical science came out of it with an enhanced reputation. Military medicine and surgery made great strides, and not a few of the results of practice and research in the war zones remain as permanent additions to knowledge. The treatment of wounds steadily improved, orthopaedic relief for the crippled and maimed is more successful; preventive medicine has scored great triumphs. In civil life the spirit of the times is all in favour of extension and co-ordination of the public health services. This has taken practical shape in the setting up of a Ministry of Health, which came into existence fourteen months ago, with a medical man as the first Minister. On July 1st, 1919, all the powers and duties of the Local Government Board and of the Insurance Commissioners for England and Wales passed to the Ministry of Health, and the new Ministry is pledged to a reform of the Poor Law. At the same time a Scottish Board of Health and an Irish Public Health Council were constituted. These new central departments of health are not as yet, however, fully grown up. Much must depend on the spirit in which the administrative machinery is worked. The Medical Consultative Council has presented an interim report to the Minister of Health, on the future provision of medical services. This important document has only been before the profession for three months, and the principles underlying its proposals are not as yet fully explored. Thus the possibilities of the future, though large, are lacking in definition. More medical care has been provided for expectant mothers, for infants, for children, and for the victims of tuberculosis and venereal diseases. All this has meant an increase in the official medical services, but the position of these new medical services is not well defined. The salaries offered may be sufficient at first to satisfy young graduates, but prospects of promotion are uncertain. At present these special services look like blind alleys; it is, however, possible, if not probable, that the evils of this extreme particularism will compel reform at no very distant time.

The future of private practice it is difficult to foresee. The fundamental importance of the work done by the general practitioner is better understood, and the Medical Consultative Council agrees with the British Medical Association that an efficient medical service for the community must be based on that. A Medical Services Bill of some kind is expected from the Government before long, but there is little reason to suppose that this will take any such drastic step as the setting up of a whole-time salaried State medical service. Nevertheless, the position of the private doctor has changed and is changing. It was profoundly affected by the Insurance scheme, which converted the majority of general practitioners into part-time civil servants, and subjected them to the discipline of Insurance Commissioners. Pecuniarily, National Insurance has benefited many doctors, but the full effect of the scheme on the profession cannot even yet be estimated, for, in spite of modification by successive amendments and regulations, it is still far from having reached any stable form. The immediate future, therefore, is full of uncertainty, perhaps especially for the general practitioner.

It follows from what has been said that now, more than ever before, the doctor should possess a strong sense of *esprit de corps*. The effect of many modern measures is so far-reaching that no medical man, whatever his position or particular occupation, can safely stand aside from his fellows. When it comes to business dealings of any sort, medicine is a calling which the general public, as also public authorities, regard as being of a semi-philanthropic character. Furthermore, its aims and requirements are very ill understood by lay persons. Hence the interests of the medical profession, both on its financial and scientific sides, are for ever being attacked, sometimes openly, sometimes insidiously. It is essential, therefore, that medical men and women should band themselves together for the common protection of themselves and their profession, and to this end join the British Medical Association. The aims of the Association are to promote the progress of medical science and to maintain the honour and interests of the medical profession; and its history shows that it has well fulfilled them.

THE GENERAL MEDICAL COUNCIL.

THE General Medical Council was set up by the first Medical Act of 1858, and consists of thirty-eight members, six of whom are elected by the medical profession, five nominated by the Privy Council, and the remainder are representatives of the universities and such medical corporations of the United Kingdom as have a statutory right to issue diplomas. Its head quarters are at 44, Hallam Street, Portland Place, W.1, and it has branch offices at 20, Queen Street, Edinburgh, and 35, Dawson Street, Dublin. Its duties are to control the medical and dental professions in the interests of the general public, and to that end to maintain a register of legally qualified practitioners. It is admission to this *Register*, and not the possession of a degree or diploma, that constitutes a person a legally qualified practitioner. The Council is bound to admit to the *Register* those who hold the qualifications granted by the bodies represented among its members, but it exercises supervision through the Privy Council over the terms on which those bodies grant such diplomas or degrees, and it can erase from the *Register* the name of any medical man or dentist who has been convicted before a court of law of an ordinary crime or of a serious offence against public order, or who is proved before the Council itself to have been guilty of certain actions which the Council regards as professionally "infamous." Its disciplinary powers are limited to legally qualified practitioners, and it has no control whatever over irregular practitioners of any kind.

An account of the recommendations that the Council has drawn up in respect of the education of medical students here follows.

PRELIMINARY EDUCATION.

The regulations with regard to the subjects of the preliminary examinations recognized by the Council have recently been modified. In November, 1916, the Council decided that, in the matriculation examinations for the faculties of arts and science, and equivalent examinations, Latin should no longer be regarded as a compulsory subject. For practical purposes this means that all examinations accepted for matriculation in the faculties of arts and science in any university of the United Kingdom, without regard to the subjects included, are approved by the Council as qualifying a successful candidate for admission to the *Students' Register*. This carries with it the recognition of degrees in arts and science of any university of the United Kingdom or of the British Dominions. This decision, however, applies only to the senior or higher grade student; so far as the junior or lower grade of candidates are concerned, it was decided, as a matter of expediency, that Latin should remain compulsory for these candidates, since they do not, as a rule, produce as evidence of general knowledge certificates of examination accepted by a university or national education authority.

The lists of educational bodies whose examinations are now accepted under the regulations made by the Council for the maintenance of the register of medical students, together with other particulars, are published with the Students' Regulations, which may be obtained from the various offices of the Council, price 1s., post free 1s. 2d.

REGISTRATION OF MEDICAL STUDENTS.

In addition to showing that he has passed one of these examinations, any person applying for registration as a medical student must (1) produce satisfactory evidence that he has attained the age of 16 years; (2) show that he has commenced medical study at a university or school of medicine or at a teaching institution recognized by one of the licensing bodies and approved by the Council. The commencement of professional study will not be reckoned as dating earlier than fifteen days before the date of registration, but in certain cases it is possible to have the registration antedated.

Certain concessions have been made by educational authorities, in respect of the grant of certificates of general education, to students who have served with the forces during the war. For information on this point application must be made to the authority concerned.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools, and when forwarded it should be accompanied by the certificates as to age and general education.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION.

The rule is that it is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts.

There are, however, certain important exceptions to this rule: thus (1) to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. (2) Graduates in arts or science of any university recognized by the General Medical Council, who have spent a year in the study of physics, chemistry, and biology, and have passed an examination in these subjects for the degrees in question, may be held to have completed the first of the requisite five years. (3) The Council will accept as six months of that year six months passed, subsequent to obtaining a certificate in general education, as a student of chemistry, physics, or biology at any teaching institution recognized by a licensing body and approved by itself. In any case, the period of five years must be one of bona fide study, and during its course education in the following subjects must be pursued and examinations passed:

(i) Physics, including the Elementary Mechanics of Solids and Fluids and the rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the study of medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Pharmacology and Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene. (xv) Mental Disease. (xvi) Anaesthetics.

The practical study of Subject (xi) shall not commence until the student has held the offices of Clinical Clerk and Surgical Dresser, and the work done in connexion with it must follow prescribed lines. The Council also expects that study of the Subjects (vii) to (xvi) shall extend over not less than twenty-four months subsequent to success at the examination in Subjects (iv) and (v). It also recommends licensing bodies to require of candidates at their final examinations evidence of instruction in the administration of anaesthetics, in ophthalmology, and in infectious diseases, and of having given attention in hospital wards, out-patient departments, and *post-mortem* rooms, as clerks and the like.

Wherever the first of the five years is spent, the next three must be passed at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858. The final or fifth year the Council recommends should be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

SPECIAL CONSIDERATIONS.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

(1) Pass an examination in arts;

(2) Study science at a university, school or other scientific institution approved by the Council;

(3) Get himself registered as a medical student;

(4) Study for a minimum of five years certain prescribed subjects;

(5) Succeed in passing sundry intermediate examinations, and at the end of the fifth year pass a qualifying examination which entitles him to receive from a licensing body a legal authority to practise.

The Arts Certificate.—It is not, however, a matter of indifference what certificate of proficiency in general education, or arts, the student obtains. The General Medical Council, it is true, will accept any of the large number of tests to which reference has been made, and this, too, is the case with practically all the college corporations in England, Scotland, and Ireland. But some of the universities require that their own ordinary matriculation should be passed, others have special matriculation examinations for those wishing to join their medical faculty, and a third and larger number will accept any arts degree and certain matriculation examinations, as well as several other of the tests entered in the Council's list. The first thing, therefore, the future medical student should, if possible, decide is at what degrees or diplomas he intends to aim, and then find out what arts certificates will be required. If he cannot decide the question in advance, the best course probably would be to obtain a school leaving certificate of the English or Scottish Education Departments, or, failing this, to matriculate at London University.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required even by the man of good abilities and reasonable industry. Besides these qualities, a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss enough of them to make it impossible for him to be "signed up." Then, again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards refuse to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, must in some cases those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

The Normal Course.

In conclusion, a sketch may be given of the general fashion in which a student passes his five years or more, but discussion of this need not be prolonged, because once a student has entered at a school, and chosen the degrees or diplomas at which he wishes to aim, the dean of the school will guide his steps in every particular.

Whatever the goal, the path thereto is in all cases identical in broad outline. Practically it is divided into three stages, the conclusion of each being marked by an appropriate examination. In the first stage the student acquires some knowledge of the preliminary sciences—chemistry, physics, and biology; in the second he studies anatomy and physiology; and the third he devotes to the real work of his future life—medicine and surgery and their branches. During each of these the student must attend the prescribed number of lectures and classes to ensure getting "signed up" in the subjects of the stage, and also do much practical work. The examinations at the end of the stages are known by different titles by different examining bodies, but "preliminary science," "intermediate," and "final" are in common use. Some bodies demand that all the subjects of one stage should be passed at one time; others allow the candidate to present himself in each of the subjects separately, thus multiplying the number of examinations, but limiting their scope. There are also differences in the requirements of licensing bodies as to the length of each stage, but practically all demand that the second shall be longer than the first, and the third not shorter than the second. By the length of the allotted stage the candidate may gauge the comparative importance the licensing body attaches to the subjects within the stage and the difficulty of the tests it will impose; in any case he may feel certain that the time allotted is none too much.

It will be the aim of the student to get through his first two stages as quickly as his abilities and the regulations allow; as a rule, he should have completed the first stage by the end of his first year, and may hope to complete the second stage not later than the end of his third year. He will then have two crowded years in which to prepare for his final examination, the subjects of which include medicine, surgery, and midwifery proper, and many other allied subjects, such as pathology and bacteriology, forensic medicine, gynaecology, and therapeutics. In the first of the final two years he may be able to complete his formal lectures, and thus have the fifth year free for practical work and private study; during those two years, too, he will take part in the work of his hospital by holding clerkships and dresserships in the wards and out-patient department. Then, at length, after perhaps a few weeks of special coaching, he will be ready to present himself for his final examination, which the regulations of most bodies allow him to divide into two or more parts. The final examination passed in its entirety, he will be able to claim registration as a qualified medical practitioner. There is still room for him to continue a student's career if he will, for, apart from the higher qualifications to which reference has been made, it may seem to him worth while to devote time to acquiring greater knowledge of some particular branch of medicine, such as ophthalmology or laryngology, or to study for a diploma of special proficiency in public health (page 371), or in tropical medicine (page 370).

The English Universities.

THERE are eleven universities in England and Wales, and some account of each of them follows. With one exception they all have fully developed medical faculties. The exception is the University of Wales, whose constituent colleges are those of Aberystwith, Bangor, and Cardiff. It is in a position, however, to grant degrees, and has laid down a six years' curriculum for candidates for the M.B. degree, and it already provides, at the School of Medicine at Cardiff—of which an account will be found at page 360—thorough training in the work of the first three or four years.

UNIVERSITY OF OXFORD.

THE professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in State Medicine and a diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in Arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period; for some of the subjects chosen for the final stage of the arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees. Women are now admitted to the B.A. and B.M. degrees, and follow the course set forth below.

A candidate may obtain the B.A. degree in either of the following ways:

(a) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture examination, or, in the event of a candidate objecting, an examination on some substituted book; and the Final Pass School in three subjects, two of which may be the same as two of the preliminary examinations in natural science.[1]

(b) By passing Responsions, the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] or the Honour School of Mathematics in the first public examination; and one of the final honour examinations.

Responsions and chemo-physics preliminary may be passed before a candidate is a member of the university;[2] Moderations and Scripture can be passed in or after the second term; the final pass school may be taken any time after Moderations; a final honour school may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions have been passed.

PROFESSIONAL DEGREES.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First B.M. is examined in human anatomy, in physiology and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the Examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine, and hygiene, materia medica, and pharmacology[3] (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation, and not until a period of at least twenty-two months have elapsed from the date of his passing the first examination, and he must take all the three subjects at one and the same time.

D.M. AND M.CH. DEGREES.

A Bachelor of Medicine who wishes to proceed to the M.D. must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners. If a candidate for the M.Ch., he must have entered his twenty-first term and must pass an examination which is held in June.

TEACHING.

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M., and in part those of the Final Examination. For the diploma in State Medicine and the diploma in Ophthalmology certain of the courses can be taken in Oxford.

SCHOLARSHIPS.

Several colleges grant scholarships of £80 a year, tenable for four years, in natural science, chemistry, physics, and biology. Exhibitions of varying value are also awarded in these subjects.

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[1] The four subjects of the medical preliminary examinations are four of the subjects in the Natural Science Preliminary, and can be commenced directly after passing Responsions.

[2] Membership is constituted by matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

[3] A candidate who passed in materia medica and pharmacy under the old regulations in the First Examination before April 14th, 1909, is exempt from the examination in materia medica and pharmacology in the second examination.

Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges, from the principals of whom details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolleston Memorial Prize, for research in natural science (including pathology), and the three Theodore Williams Scholarships in Anatomy, Physiology, and Pathology, of the value of £50 each, tenable for two years. A Burney Yeo King's College Hospital Scholarship of £80 is awarded annually.

FEES.

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are—the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £180, or for women not less than £140.

UNIVERSITY OF CAMBRIDGE.

THE Professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Ch.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in Tropical Medicine, in Public Health, in Psychological Medicine, and in Medical Radiology and Electrology to persons who are registered medical practitioners, but not necessarily graduates of the university.[1] A candidate for the M.B., B.Ch. degrees need not possess a degree in arts; it is sufficient if he has passed the previous examination or some other examination accepted by the university as its equivalent.

PROFESSIONAL EXAMINATIONS.

To obtain the M.B. degree the candidate must pass three examinations, of which the latter two take place twice a year, in the Michaelmas and Easter terms; those who are finally successful receive the B.Ch. degree without further examination.

First M.B., or Preliminary Examination in Science.—This comprises (1) chemistry, (2) physics, (3) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the previous examination, paid the matriculation fee, and entered on his first or some later term of residence. During the continuance of the war students could be admitted to this examination though they had not commenced residence. The examination is held three times a year—in October, December, and June.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, comprises: Part I, human anatomy and physiology; Part II, elementary pharmacology, including pharmaceutical chemistry, and the elements of general pathology. No one can enter Part II unless he has passed Part I. The candidate must be signed up in both subjects and have attended [illegible]. The examination for Part I is held in December and June; that for Part II, in October and April.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part [illegible] surgery and midwifery, must have completed [illegible] years of medical study and be signed up in these subjects and have completed [illegible] year of hospital practice. [illegible] have completed five years of medical study and be duly signed up [illegible] and have completed three years of hospital practice. He must also produce certificates showing that he has fulfilled all the [illegible] as well as the requirements of the General Medical Council. The examination is in the principles and practice of physic, pathology, and pharmacology.

M.D., or Doctor of Medicine.—Before receiving the M.D. degree, a candidate who has been successful at the Final M.B. has to write a thesis. This he reads in public on an assigned day and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence, the candidate sending to the Regius Professor of Physic a thesis, which is laid before the Board.

THE HIGHER DEGREES.

The M.D. degree may be taken by an M.B. of three years' standing after keeping a further Act and writing a short extemporary essay, in which he may deal at his choice with either medicine, physiology, pathology, or State medicine. The M.Ch. degree may be granted to a candidate who has qualified for the B.Ch. at least three years previously; he is then examined in pathology, surgery, surgical anatomy, and surgical operations, or submits books or writings of his own which constitute original and meritorious contributions to the science and art of surgery.

FEES.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable: First M.B., £4 4s.; Second M.B., £4 4s.; Third M.B., £9 9s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON.

UNDER the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination, and this is of so peculiar a kind that candidates should secure and carefully study the booklets relating to it.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way; and, unless they are already registered medical practitioners of a certain age and standing, all students must pass not less than five and a half years in professional study subsequent to matriculation.

PROFESSIONAL EXAMINATIONS.

M.B., B.S.—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination, Part I, cannot be passed within six months of the passing of the First Examination. It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination. It is a pass examination, but a mark of distinction may be won. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit.

No candidate is admitted to the Third M.B., B.S. Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and midwifery and diseases of women. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

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[1] See pp. [illegible] and 371.

THE HIGHER DEGREES.

M.D.—An examination for the M.D. is held twice yearly —in December and July. Every candidate must have passed the examination for the M.B., B.S. unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) Medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine, and, if he wishes, may pass also in another branch at a subsequent examination.

The period that must elapse between acquiring the M.B. and sitting for the M.D. in any branch varies between one and two years, according to the nature of the candidate's previous work, and in all cases evidence must be afforded of special study of the subject chosen; both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case o branch (4), pathology in branch (1)—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery.

FEES.

The examination fees have been raised from pounds to guineas for all examinations held after September 1st, 1918. For Matriculation: 2 guineas for each entry. First Examination: 5 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination, Part I: 2 guineas for the first and each subsequent entry. Second Examination, Part II: 8 guineas for each entry to the whole examination. For re-examination in one subject the fee is 4 guineas. M.B., B.S. Examination: 10 guineas for each entry to the whole examination, and 5 guineas for examination or re-examination in either group. M.D. and M.S. Examinations: 20 guineas, and 10 guineas on re-examination.

Inquiries should be addressed to the Registrar, the University of London, South Kensington, S.W.7.

UNIVERSITY OF BIRMINGHAM.

THIS university confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M., and also diplomas and degrees in State medicine and dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M.B., Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. those who have passed elsewhere an examination considered to be its equivalent. A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university.

Students entering the Medical Faculty for the M.B., Ch.B. degrees must have passed either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham; (*b*) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester.

PROFESSIONAL EXAMINATIONS.

The candidate for the M.B., Ch.B. degrees has five examinations to pass. In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. deals with chemistry, physics, and elementary biology; it may be passed before the student commences residence at the university, provided the regulations as to matriculation have been met. The Second M.B. deals with anatomy and physiology, and the student must pass in both simultaneously. The Third M.B. deals with general pathology and bacteriology, materica medica, and practical pharmacy. The Fourth M.B. takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health, therapeutics, and special pathology.

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, and ophthalmology. In respect to the latter he must show that he has learnt refraction work. He also has to present to the examiners reports by himself on six gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy and notes on two others.

M.D.—An ordinary candidate for this degree must be a M.B., Ch.B., of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

FEES.

The fee for matriculation is £2, and for each of the first four professional examinations the same amount; M.B., Ch.B. degree fee, £8; M.D. and Ch.M. examination, £10 each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

UNIVERSITY OF BRISTOL.

THE university grants the following degrees: In medicine and surgery, M.B. and Ch.B., M.D., Ch.M. (the M.D. may be taken in State medicine); in dental surgery, B.D.S., M.D.S. Diplomas in public health (D.P.H.) and dental surgery (L.D.S.) are also granted. Candidates for degrees must qualify for matriculation in the university by passing either one of the school certificate examinations held twice a year in July and in September by the university itself, or the *Higher School Certificate*, or any one out of a list of similar examinations which will be found in the university regulations for matriculation. Candidates over the age of 23 may, under certain circumstances, be permitted to matriculate without examination. The winter session opens on October 1st, 1920.

Candidates who possess a *Higher School Certificate* approved by the Board of Education in physics, chemistry, and biology may count the first year of the curriculum and the first examination; the curriculum being thus reduced to four and a half years in the university.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are three examinations for these degrees. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The first M.B. comprises chemistry, physics, botany, and zoology. The second M.B. comprises organic chemistry, elementary anatomy (Part I), advanced anatomy, physiology (Part II). The two groups may be taken separately or together. The Final Examination includes materia medica and pharmacy, pharmacology, and therapeutics, general pathology, morbid anatomy and bacteriology (Part I), special pathology, forensic medicine, toxicology and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative), medicine (systematic, clinical, and practical), including mental diseases (Part II). The two groups may be taken separately or together. At the option of the candidate, forensic medicine and toxicology may be taken either with Group I or Group II. First or second class honours may be obtained by a candidate whose work is deemed of sufficient merit, but cannot be awarded to one who has recorded against him a failure at any examination after the first M.B.

M.D.—A candidate must be a M.B. and Ch.B. of at least two years' standing. He has a choice between presenting an original dissertation, undergoing a general examination in medicine (including medical anatomy, medical pathology and bacteriology, systematic and clinical medicine), or passing an examination in State medicine.

Ch.M.—A candidate must have attended, since becoming M.B., Ch.B., and for not less than two years, a public institution affording opportunities for the study of practical surgery, and produce certificates to that effect; the candidate shall be required to pass a general examination in surgery (including surgical anatomy, surgical pathology and bacteriology, operative and clinical surgery), and to present a dissertation in some department of surgery. He must be of two years' standing as a M.B., Ch.B.

Applications for other information should be addressed to the Dean of the Medical Faculty.

DENTAL DEPARTMENT.

The university grants the degrees of Bachelor and Master in Dental Surgery (B.D.S., M.D.S.) and a Diploma in Dental Surgery entitling to the letters L.D.S. The courses of the university are available equally for these qualifications and for those of other licensing bodies. Both courses are open to men and women alike.

Fees.—For the entire curriculum, including the mechanical laboratory, lectures, laboratory work, and hospital practice, if paid in one sum: For the B.D.S., 180 guineas; for the L.D.S., 155 guineas. If paid by annual instalments: For the B.D.S., 193 guineas; for the L.D.S., 161 guineas. Fee for the mechanical laboratory if taken alone, 40 guineas paid in one sum. Further details may be found in the Prospectus.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this university grants the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and Bachelor and Master of Surgery (B.S. and M.S.); it also grants special degrees and diplomas in State Medicine, Psychiatry, and Dental Surgery. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, Newcastle-on-Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere, but not less than a year must elapse between the date when the student satisfies the requirements of the university as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

The university has its own matriculation examination, but accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations for the M.B., B.S. degrees. Each is held twice a year in March and June. The first deals with elementary anatomy and biology, chemistry, and physics; the second with anatomy and physiology; the third with pathology, elementary bacteriology, medical jurisprudence, public health, materia medica, and pharmacy. At the final M.B., B.S., the candidate is examined in medicine and clinical and psychological medicine, surgery and clinical surgery, midwifery and diseases of women and children, clinical and practical gynaecology, therapeutics, diseases of the throat, nose, and ear, diseases of the skin, and diseases of the eye.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing and must comply with the regulations printed in the Calendar of the College of Medicine for 1920-1. If the candidate is not a M.B. of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests.[1]

B.S.—A candidate for this degree must have passed the examination for the M.B. of the university, and have attended courses on operative surgery and regional anatomy. He must then perform operations on the dead body before the examiners.

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming B.S. Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

FEES.

The following fees are payable: Matriculation or its equivalent, £1 10s.; First, Second, and Third M.B. Examinations, each £5; Final M.B., £10; M.D., B.S., and M.S., £5 for each examination and £6 6s. for the degrees of M.B. and B.S. The fee for the degree of M.D. is £10.

Further information may be obtained from Professor Howden, Registrar, University of Durham College of Medicine, Newcastle-on-Tyne.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.), and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Dental Surgery (M.Ch.D.) It also gives diplomas in public health, psychology, and in dental surgery.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in (1) English composition and literature; (2) English history; (3) mathematics; (4) three of the following, one of which must be a language: (*a*) Latin, (*b*) Greek, (*c*) French, (*d*) German, (*e*) some other modern language approved by the Board, (*f*) either mechanics or physics, (*g*) chemistry, (*h*) geography, (*i*) natural history or botany, (*j*) general experimental science. Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., Ch.B. number three. The first deals with (1) physics and chemistry, (2) biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects.

Second M.B.—This may be taken in two parts: (*a*) anatomy and physiology, including practical work; (*b*) materia medica and pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This may be divided into three parts. The first (pathology and bacteriology) may be taken at the end of the tenth term; the second (forensic medicine and public health) and the third (medicine, surgery, and obstetrics) cannot be taken before the end of the fifth year; before admission to the examination in its subjects the candidate, besides ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, in diseases of the eye, skin, or larynx, and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. First and second class honours may be obtained in this division.

M.D.—A candidate for this degree must be a M.B., Ch.B. of the university of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted.

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[1] See page [illegible]

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on bacteriology; he is then examined in the subject of surgery in all its branches.

FEES.

The matriculation fee is £2, and on readmission £1 10s. For each of the other examinations £5, and £2 on readmission. On conferment of the degree of Ch.M. £5 is payable, the same remark applying to the M.D. degree.

UNIVERSITY OF LIVERPOOL.

THIS university, besides granting degrees in medicine (M.B. and M.D.) and in surgery (Ch.B. and Ch.M.), gives degrees in dental surgery (B.D.S. and M.D.S.), a degree in hygiene (M.H.), and degrees in veterinary science (B.V.Sc., M.V.Sc., and D.V.Sc.). Diplomas are awarded in dental surgery (L.D.S.), tropical medicine (D.T.M.), public health (D.P.H.), veterinary hygiene (D.V.H.) and medical radiology and electrology (D.M.R.E.).

MATRICULATION.

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts under certain conditions the test of several other bodies as its equivalent. The Faculty of Medicine has power to exempt from examination in corresponding subjects in the first M.B. examination any student who has obtained a certificate at a Higher School Certificate examination in the group including chemistry and physics, and who has reached a standard deemed satisfactory in the subject of exemption. Of the five years' curriculum, not less than two must be passed in the university itself, one such year being subsequent to the date of passing the first M.B. Examination.

PROFESSIONAL EXAMINATIONS.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) chemistry, inorganic, organic and physical; (2) biology, including zoology and botany; (3) physics. Section 2 may be taken alone or in conjunction with Sections 1 and 3.

Second M.B. — This test covers (*a*) (1) anatomy, (2) physiology, including physiological chemistry and histology; and (*b*) (3) materia medica and pharmacy, (4) pharmacology. Candidates may present themselves in (*a*) and (*b*) separately.

Final M.B.—The subjects of the Final Examination are: (1) General pathology, morbid anatomy, and bacteriology; (2) forensic medicine, toxicology, and public health; (3) obstetrics and diseases of women; (4) surgery, systematic, clinical, operative and practical, including ophthalmology; (5) medicine, systematic and clinical, including mental diseases and diseases of children, and therapeutics. The examination is divided into three parts: Part I, subject 1; Part II, subject 2; Part III, subjects 3, 4, and 5. Candidates may present themselves for examination in the three parts at the same time, or in any two parts together, or in each part separately. Part III may not be taken until five years of study have been completed.

M.D. and Ch.M.—Candidates for these degrees must have received the M.B. and Ch.B. at least a year previously. The M.D. candidate submits for approval a dissertation covering original work, the M.Ch. candidate undergoing an examination. Other information concerning the diplomas of this university and its medical school will be found on page 361.

FELLOWSHIPS, SCHOLARSHIPS, AND EXHIBITIONS.

The university awards Fellowships annually to students of distinguished merit, as follows:

(1) John Rankin Fellowships in Anatomy: two, each of the value of £120, tenable for two years. (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year, open to fully qualified medical students of either sex. (3) John W. Garrett International Fellowship in Bacteriology, value £100 and tenable for one year. (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year. (5) Holt Fellowships in Physiology and Pathology, two in number, value £100 each and tenable for one year. (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year. (8) University Fellowship.

There are, in addition, scholarships and exhibitions open to medical students.

VICTORIA UNIVERSITY OF MANCHESTER.

THIS university grants the four ordinary degrees in medicine and surgery, M.B. and Ch.B. and M.D. and Ch.M.; a diploma and a degree (B.Sc.) in public health; a certificate in factory and in school hygiene; a diploma in psychological medicine; and a degree and diploma in dental surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof; see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the five years' curriculum, one such year being subsequent to the passing of the First M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history; (4) English history; (5) two subjects at choice, one of which must be a language approved by the Joint Board, the other being elementary mechanics *or* physics, chemistry, geography, natural history, *or* botany. It is held in July and September.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. At all examinations the subjects, or groups of subjects, prescribed can be taken separately or together, as the candidate pleases. The First M.B. is divided into Part I, inorganic chemistry and physics; Part 2, biology (including animal and vegetable morphology, physiology, and laboratory work); Part 3, elementary organic chemistry and biochemistry. The parts may be taken separately or together. At the Second M.B. the candidate is examined in anatomy and physiology; at the Third in pathology and pharmacology (including materia medica and practical pharmacy). The Final Examination includes medicine, systematic and clinical (separate papers being given on mental diseases), and diseases of children, surgery (systematic, clinical, and practical, with a separate paper on ophthalmology), obstetrics and gynaecology, preventive medicine, forensic medicine and toxicology.

M.D.—A candidate for this degree must be a M.B. of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject to be selected by the candidate.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than six months, a post in a public institution affording opportunity for the study of practical surgery, and produce certificates of having attended certain courses of study. The examination comprises the general field of surgery, including ophthalmology and bacteriology.

FEES.

The following fees are payable: Matriculation, £2; on readmission, £1 10s. Each M.B. examination, £5; on readmission, after failure, £2. M.D., including the conferring of the degree, £10. Ch.M., £5 each for the examination and degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF SHEFFIELD.

THE degrees of this university (M.B., Ch.B., and M.D. and Ch.M.) and the diploma in public health are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose.

PROFESSIONAL EXAMINATIONS.

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 21 years by the day of graduation; that he has pursued the courses of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation, three of such years at least having been passed in the university, one at least being subsequent to the passing of the first examination. The following examinations must be passed in due order:

First Examination.—The subjects are chemistry, physics, and biology. The Intermediate examination in science—chemistry, physics, and zoology—will, on payment of the required additional fee, be accepted instead of this examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, in (i) chemistry, inorganic and organic; (ii) physics; (iii) biology.

Second Examination.—The subjects are anatomy and physiology. The candidate must have completed the third winter session of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy, and dissections during five terms; (2) lectures on physiology during four terms; practical, experimental, and chemical physiology during four terms, and histology during one term.

Third Examination.—The subjects are pathology and pharmacology. Candidates must have completed the fourth year of medical study and the requisite courses in these subjects, including *post-mortem* clerkship for three months.

Final Examination.—The subjects are medicine (including forensic medicine, public health, mental diseases, and diseases of children), surgery, and obstetrics (including gynaecology). Candidates must have completed the fifth year of study and must satisfy the examiners in all subjects at the same examination.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES.

THE Supplemental Charter and statutes of the University of Wales provide for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M.B.), Bachelor in Surgery (B.Ch.), Master in Surgery (M.Ch.), and Doctor in Medicine (M.D.).

A candidate for the M.B., B.Ch. cannot be admitted to examination until the completion of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed as a student in one of the constituent colleges of the university. He must also hold an Arts or Science degree of the University of Wales, or of some other university approved for this purpose. Some of the courses of study pursued for a B.Sc. or B.A. degree may be counted as part of the courses required for the degrees in the Medical Faculty.

The courses for the M.B., B.Ch. are divided into two sections, of which the first include the preliminary subjects—physics, chemistry, botany, zoology, and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects must extend over at least one academic year; study of the ancillary subjects must extend over at least two academic years, and, excepting organic chemistry, cannot be commenced until all the preliminary courses have been completed; hence the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, medicine, surgery, and obstetrics, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in the earlier subjects are held at the end of each academic year, and in the subjects of the second section each July.

The University Registry is at Cathays Park, Cardiff.

English Medical Corporations.

THERE are three medical corporations in England—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component colleges, and the third licensing body here follow.

THE CONJOINT BOARD.

THIS body deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the Licence and for the diploma of Membership respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in State medicine and tropical diseases jointly issued by the two Colleges in question. It obliges all candidates to pass one of a large number of examinations which it considers satisfactory tests of general education, and thereafter to pass five years in professional study at a recognized medical school, allowing, however, six months to be spent at any institution which may be recognized by the Board as giving efficient education in chemistry and physics. A list of such institutions, as also of the tests accepted in regard to general education, can be obtained from the Secretary of the Board at the Examination Hall, Queen Square, Bloomsbury, W.C.1.

PROFESSIONAL EXAMINATIONS.

There are three examinations for the Conjoint diploma, or L.R.C.P., M.R.C.S., which are commonly known as First Conjoint, Second Conjoint, and Final.

First Conjoint.—This examination is in three parts: (1) Chemistry, (2) physics, (3) elementary biology. A candidate must present himself for examination in Parts (1) and (2) together until he has reached the required standard to pass in both, or in one of these parts, but he will not be allowed to pass in one part unless he obtains at the same time half the number of marks required to pass in the other part. A candidate may take Part (3) separately, or he may present himself for the whole examination at one time.

Before admission to any part the candidate must show that he has undergone certain courses of theoretical and practical instruction, but these courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. A candidate referred in any part or parts will not be admitted to re-examination for three months. He must produce evidence of further instruction in the subjects in which he was referred. Those who are already graduates in medicine, or who have passed an examination in the same subjects before a university board for a degree in medicine may obtain exemption from re-examination in those subjects at this examination.

Second Conjoint.—This examination is in two parts—namely, Part (1) anatomy and physiology, Part (2) materia medica and pharmacology. A candidate must have attended at a recognized medical school lectures on anatomy, physiology, and a course of practical physiology and histology, and have dissected for twelve months during the ordinary sessions. He must also attend three months' lectures or demonstrations in pharmacology, and receive instruction in practical pharmacy. Part (2) may be passed at the same time as Part (1) or before or after that part, provided the conditions of admission to the whole examination have been fulfilled. The study of anatomy and physiology before passing in two of the three subjects of the first examination is not recognized. If rejected, a candidate before being admitted to re-examination must continue his studies at a recognized medical school for not less than three months.

Final Conjoint.—This examination consists of three parts: Part 1, medicine, including medical anatomy, pathology, therapeutics, forensic medicine, and public health; Part 2, surgery, including pathology, surgical anatomy, and the use of surgical appliances; Part 3, midwifery and gynaecology. The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of having conducted twenty labours. A candidate will be admissible to Parts 1, 2, and 3 of the Third or Final Examination at the expiration of two years (twenty four months) from the date of passing the Second Examination, and on production of the required certificates of study, provided that the examination is not completed before the expiration of five years (five winter and five summer sessions) from the date of passing the Preliminary Examination. A rejected candidate must produce evidence of further instruction during at least three months.

NOTE.—A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scottish, or Irish university are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their university the subjects included in the First and Second Examinations of the Board.

A member of an Indian, Colonial, or foreign university recognized for the purpose, who shall have passed examinations at his university for the degree of Doctor or Bachelor of Medicine or Surgery in the subjects of the First and Second Examinations of the Conjoint Board, will be eligible for admission to the Third or final examination two years after passing in the said subjects.

FEES.

First Examination, £10 10s. Re-examination in chemistry, £3 3s.; re-examination in physics, £2 2s.; re-examination in biology, £2 2s. Second Examination, £10 10s. Re-examination in Part I, £6 6s.; re-examination in Part II, £3 3s. Third Examination, £21. Re-examination in Part I, medicine, £6 6s.; Part II, surgery, £6 6s.; Part III, midwifery and diseases of women, £4 4s. Members of English, Scottish or Irish universities, £5 5s. for first admission to the examination, and £36 15s. for the diplomas.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THIS College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership is only granted to those who have passed the final examinations for the Licence, or those who are registered practitioners and graduates of a recognized university; in any case they must be persons over 25 years of age, who do not practise in partnership, dispense medicines, or engage in trade. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce. Those under 40 are also examined in Latin, and either Greek, French, or German. The examination fee is £6 6s.; the Membership fee is £42, or the difference between that sum and what the candidate has already paid if a Licentiate. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, which may be passed after the third winter session; the second, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees.

Fees.—At first examination: £8 8s.; for re-examination, £5 5s. At second examination: £12 12s. Diploma fee for non-members, £10 10s.

The College also issues a diploma (L.D.S.) in dentistry.

SOCIETY OF APOTHECARIES OF LONDON.

THIS body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations:

Primary Examination.—This is divided into two parts, of which Part I includes elementary biology, chemistry, chemical physics, practical chemistry, pharmacy. Part II includes anatomy, physiology, and histology, and cannot be passed before the completion of twelve months' practical anatomy with demonstrations. Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination.—This is divided into two sections, the first of which is subdivided into three parts. Part I includes the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes: (*a*) The principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology; (*b*) forensic medicine, hygiene, theory and practice of vaccination and mental diseases. Part III includes midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances. Section 2 consists of clinical surgery and clinical medicine and medical anatomy.

The fee for the primary examination is £5 5s.; for the final, £15 15s. Further information may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C. 4.

The Scottish Universities.

THERE are in Scotland four universities, each possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of Edinburgh, Glasgow, Aberdeen, and St. Andrews. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.) The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry and public health. As for public health, registrable degrees in this subject are granted both by the University of Edinburgh and that of Glasgow, while diplomas in public health may be obtained from the universities of St. Andrews and Aberdeen.

PRELIMINARY EXAMINATION.

There is a special preliminary examination for medical students, the subjects being English, Latin, elementary mathematics, and either Greek or French or German. Candidates are required to pass in all these subjects either at one or at not more than two examinations, but they can present themselves as often as they please. Many corresponding tests held by other bodies are accepted as the equivalent of this examination.

After January 1st, 1921, the conditions for admission of graduating students of medicine will be the same as those in the Faculties of Arts or Science (for degrees in pure science).

PROFESSIONAL EDUCATION.

The regulations comply in all respects with the requirements and recommendations of the General Medical

Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the end of June.

PROFESSIONAL EXAMINATIONS.

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in physics and chemistry. At the end of the first summer session he can finish with botany and zoology, and with anatomy and physiology at the end of the second. Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects at the end of the fifth year of study. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, forensic medicine and public health, and clinical gynaecology. The first three examinations are held three times a year; the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an arts or science degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved.

THE HIGHER DEGREES.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or more of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES.

[illegible]

	£	s.	d.
First Professional	[illegible]	[illegible]	[illegible]
Second Professional	[illegible]	[illegible]	[illegible]
Third Professional	[illegible]	[illegible]	[illegible]
Final	[illegible]	[illegible]	[illegible]

[illegible]

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme* [illegible], published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND.

THIS body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P. Edin., L.R.C.S.Edin, and L.R.F.P.S.Glasg. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council.

PROFESSIONAL CURRICULUM.

Subsequent to registration as a medical student, the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year and these will fall to be held thrice in Edinburgh and once in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology; the second with anatomy and physiology, including histology; the third with pathology and materia medica, including pharmacy; and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine; (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes; (3) midwifery and diseases of women and of newborn children; and, if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own; but all candidates for the conjoint licence must sit for the final examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

FEES.

It is estimated that the total cost of lectures and fees for the conjoint licence is about £152. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final, £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects the fees are smaller.

Information concerning this Board should be sought either from Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh, or from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THIS College has three grades—Licentiateship, Membership, and Fellowship; all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates in medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, and in one further subject at choice. This may be either (*a*) one of the departments of medicine specially professed; (*b*) psychology; (*c*) general pathology and morbid anatomy; (*d*) medical jurisprudence; (*e*) public health; (*f*) midwifery; (*g*) gynaecology; (*h*) diseases of children; or (*i*) tropical medicine. Licentiates of the College pay £21, others £36 15s.. The examination is held quarterly, and application for admission to it must be made a month previous to its date. For the Fellowship, the candidate must have been a member of the College for at least three years, and, if accepted, pays fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THIS College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are now eligible also.

Licence.

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Fellowship.

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: Surgical pathology and operative surgery, ophthalmology, laryngology, otology and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials obtained specially for the purpose.

Licentiates of the College pay £35, and others £45. For further information application should be made to the Clerk of the College, Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THIS body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. Special regulations are in force for medical practitioners who served in the late war. The Faculty can also elect four Fellows annually without previously submitting them to examination, provided they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age. Further information can be obtained from Mr. Walter Hurst, Faculty Hall, St. Vincent Street, Glasgow.

The Irish Universities.

THERE are three universities in Ireland, each with a medical faculty. These are the University of Dublin (usually known as Trinity College, Dublin), the Queen's University of Belfast, and the National University of Ireland. The two former teach students, examine them, and grant degrees; while the third is an academic body only, inasmuch as its practical work is divided among three constituent colleges, situated, one at Cork, another at Galway, and the third in Dublin. Information as to the arrangements for the education of medical students will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE.

THIS university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a post-graduate diploma in public health. It also grants a post-graduate diploma in gynaecology and obstetrics for which one year's study is required. The degrees are granted to those who, having passed the Professional Examination, have also graduated in arts.

PROFESSIONAL EXAMINATIONS.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. At least three years of the five years' medical curriculum must be pursued at the School of Physic of the university. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must be duly signed up as regards study in the subjects involved.

Preliminary Scientific.—This covers (a) chemistry, (b) physics, (c) botany and zoology: the three divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (a) anatomy, physiology, organic chemistry, and histology; (b) applied anatomy and applied physiology. The two parts may be taken separately or together.

Final Examination.—*Part I:* Hygiene and medical jurisprudence, pathology, materia medica and therapeutics. *Part II:* (a) Midwifery and gynaecology; (b) medicine and mental diseases; (c) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the final examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and may also examine him viva voce on other medical subjects of a more general nature.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Dental Degrees.—The University of Dublin gives two degrees in dental science, namely, B.Dent.Sc. and M.Dent.Sc. The course for the former has a minimum duration of four years, for the latter five years.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST.

THE degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., B.Ch., B.A.O., are four in number. The first deals with (1) Inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology, and may be taken at the end of the second year of the student's course. The Third Examination includes (1) Pathology, (2) materia medica, pharmacology and therapeutics, (3) medical jurisprudence and (4) hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the First Examination has been passed.

The Final Examination includes (1) Medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts, namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

THE HIGHER DEGREES.

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (a) after a formal examination, or (b) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (1) Human anatomy, including embryology, (2) physiology, (3) pathology, (4) pharmacology and therapeutics, (5) sanitary science and public health, (6) forensic medicine and toxicology, (7) mental diseases. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND.

THE National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined thereat by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the University. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as diplomas in Public Health, in Mental Diseases, and in Tropical Medicine.

PROFESSIONAL EXAMINATIONS.

There are four examinations. The first, which should be passed at the end of the first year, includes Part A (chemistry and physics) and Part B (botany and zoology), which parts candidates may take separately or together. At the end of the second year they should pass in anatomy and physiology; and at the end of the third year in pathology, materia medica and therapeutics, hygiene and public health, forensic medicine and toxicology. The final examination is divided into two parts, each of which may be taken separately—namely, (a) medicine, including mental diseases and pathology, (b) surgery, including ophthalmology and otology, and midwifery and gynaecology.

The higher degrees are obtainable either by examination or on presentation of an approved work, but in each case not less than three years must have elapsed since the candidate acquired the corresponding degree of Bachelor except in the case of a graduate in arts or science, in which case only two years must elapse. Further information as to the constituent colleges will be found in the section relating to Irish Medical Schools.

The Irish Corporations.

THERE are three licensing bodies other than the Medical Faculties of the Universities, and, just as in London, there is a Royal College of Physicians, a Royal College of Surgeons, and an Apothecaries' Hall. In Ireland, as in London, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland gives its licence separately.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subjects of general education, or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the first winter session, nor the fourth before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first and second examinations deal respectively with (*a*) chemistry and physics, and (*b*) biology; and (*a*) anatomy, and (*b*) physiology and histology. All parts of these examinations, as also of the following one, which deals with (*a*) pathology, (*b*) materia medica, pharmacy, and therapeutics, (*c*) public health and forensic medicine, may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least four years have passed in medical studies other than those for the first examination, and five years, at least, since the beginning of the curriculum. The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including ophthalmic and operative surgery; (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the divisions (*a*), (*b*), or (*c*), provided he has completed his curriculum as far as concerns the division in which he presents himself.

Fees.—Preliminary Examination, £2 2s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; re-examination fee is £2 2s. for each division.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, 123, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members of the College, irrespective of sex.

Fees.—For the Licence in Medicine, 15 guineas; for the Licence in Midwifery, 5 guineas. Special examinations cost in each case 5 guineas extra. For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others; a special examination costs 10 guineas extra. The Fellowship £35, in addition to stamp duty, £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THIS body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.

Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the final examination includes the performance of operations. All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Register*; if, however, the candidate's name is on the Colonial or foreign medical *Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Two periods of dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent. Three professional examinations have to be passed; they are held three times a year. The Primary Examination deals with biology, physics, and chemistry, practical and theoretical; the Intermediate Examination is in practical anatomy and physiology, and histology and materia medica. A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects. The intermediate Examination, Part II, consists of pathology, medical jurisprudence, and hygiene. The Final Examination deals with medicine, surgery, midwifery, and pharmacy. The Hall's own examination in all these subjects must be passed. Women candidates are eligible.

Fees.—Primary Examination, £5 5s.; Intermediate Examination, £10 10s.; Final Examination, £15 15s.; Final alone, when the others have been passed elsewhere, £21.

Application for other information should be made to the Registrar, 40, Mary Street, Dublin.

MEDICAL SCHOOLS AND COLLEGES.

LONDON.

INFORMATION as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford and Cambridge. Apart from these facts, the only point to which attention can usefully be directed is that on personal inquiry and investigation reason may be found for regarding the teaching accommodation and general arrangements for students at some schools as superior to those at others.

CHARING CROSS HOSPITAL.

THIS school, with its hospital, is situated in the centre of London, and is easily accessible. Primary and intermediate students attend lectures and practical work at King's College. The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations. Departments are also available for the other final subjects of bacteriology, clinical pathology, materia medica, toxicology, public health, operative surgery, and for research work. An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school. Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research.

Women students are accepted by the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments. A separate common room and a female attendant are provided, but beyond this no further distinction is made.

Fees.—An entrance fee of 10 guineas and 8 guineas is payable by [illegible] course and final course students respectively, and an annual fee of 25 guineas covers all other expenditure, with the exception of 7 guineas for vaccination, dispensing, and fever hospital attendance, which must be taken outside the hospital. Membership of the Students' Club is included in these fees.

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

GUY'S HOSPITAL.

THE hospital contains 643 beds in constant occupation. Thirty-three beds are set apart for diseases of the eye and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the orthopaedic department, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are as well some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for 60 resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes. The Gordon Museum of Pathology, the Wills Library, the newly built Departments of Chemistry, Physics, Pathology, and Pharmacology, and the school laboratories in general, afford unrivalled opportunities for a liberal education and for research. Special classes are held for the First and Second Examinations for medical degrees of the University of London and for the [illegible]. Special teaching is provided to meet the requirements of the universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are given to students without extra payment, and according to the merits of the candidates as determined by a committee of the medical staff. [illegible] eight house physicians, twenty [illegible] house surgeons, eight [illegible] two ophthalmic house surgeons [illegible] are appointed annually. The house physicians and house surgeons [illegible] and ophthalmic house surgeons [illegible] for six months each, and receive free board and lodging in the college. Every student is provided [illegible] in the hospital during the period of [illegible]. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of [illegible], laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, [illegible] dentistry, orthopaedics, venereal [illegible] surgery, and [illegible]. [illegible] additional appointments have been added to the list of those annually open to students of the hospital, the majority of them being in the special departments, and numerous [illegible] clinical assistantships in the various special departments are open to post graduates.

Scholarships, Prizes, etc.—The following entrance scholarships are awarded annually in the month of September: A. Junior Scholarships in Arts, Classics, Mathematics, and Modern Languages, and Science, of the value of £1[illegible]0, £100, and £50, open to candidates under 21 years of age. B. Senior or University Scholarships of the value of £75 and £55, open to candidates under 25 years of age who have completed their study of Anatomy and Physiology. In addition there are two War Memorial Scholarships: Junior, annual value £40 for five years, and Senior, value £80. Subjects, any two of the following: Anatomy, Physiology, and Pharmacology, General Pathology, Organic Chemistry. Junior prizes for general proficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sands-Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology, the Beaney Scholarship in Materia Medica, of the annual value of £150 and £40 respectively, and the Anderson Demonstratorship in Clinical Chemistry, value £150 per annum, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Douglas Research Studentship in Pathology, value £300 per annum, and the Hilda and Ronald Poulton Fellowship, value £140 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

KING'S COLLEGE HOSPITAL.

THE medical school carried on in connexion with this institution, at Denmark Hill, deals with the advanced or final subjects of the medical curriculum. The hospital was opened in 1913, and is the most modern and best equipped in England. In the education at the hospital a special feature has always been the individual attention given to each student. There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology and rhinology, dermatology, radiology, and physico-therapy. The laboratory and pathological department are specially noteworthy.

Appointments.—Sixteen resident medical and surgical officers are appointed yearly, as well as dressers and clerks in the wards, out-patient departments, *post-mortem* room, and special departments. Each of the special departments has several clinical assistants. There are three registrars and three tutors, all of whom receive salaries. The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Scholarships, etc.—At entrance: Arts Scholarship, £50; Science Scholarship, £50. At commencement of Final Studies: Anatomy and Physiology Scholarship, £50; Pathology and Pharmacology Scholarship, £50, two Burney Yeo Scholarships, each £50 for Oxford and Cambridge students; Senior Scholarship, £40; Todd Prize, Tanner Prize, Class Prizes and Medals.

Fees.—The composition fee is 95 guineas if paid in one sum. Entrance fee 10 guineas, includes membership of the Clubs and Societies Union.

The prospectus of the school can be obtained on application to the Dean, H. Willoughby Lyle, M.D., F.R.C.S., or to the Secretary, S. C. Ranner, M.A., King's College Hospital, Denmark Hill, S.E.5.

THE LONDON HOSPITAL.

THIS hospital, with its medical college and dental school, are situated in the Mile End Road, E.1. The hospital contains 953 beds, and during 1919 19,699 patients passed through the wards and 118,6[illegible] out-patients received treatment. Of the latter number [illegible] received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the obstetric, orthopaedic, venereal, radiographic, electro- and physico-therapeutical and inoculation departments. The number of major operations which were performed amounted to 7,793.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

The clinical units in medicine and surgery co-ordinate the teaching of these subjects in the hospital. The directors and their assistants give practical instruction in elementary clinical medicine and surgery to all students before they are allowed to enter the wards and out-patient department. Senior students are encouraged to work with the units. Special courses of lectures and demonstrations are arranged in medicine and surgery and their ancillary subjects. Opportunities for research will be provided under the supervision of the staffs of the units.

All the departments are modern and adapted for the teaching of all subjects in the curricula. Special courses of instruction are held in preparation for the examinations for degrees of the University of London and the Fellowship of the Royal College of Surgeons. A residential hostel on hospital ground is provided for the convenience of students who wish to live near the wards and casualty departments. The athletic ground, of over thirteen acres, is at Highams Park, and is open to all members of the Clubs Union.

Appointments.—The salaried appointments open to students are those of assistants to the clinical units, medical registrars, surgical registrars, obstetric registrar; medical, surgical, and obstetric tutors; clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments, and in the Pathological Institute. There are 2 resident accoucheurs, 6 resident house-physicians, and 9 resident house-surgeons, 7 receiving-room officers, 2 emergency officers, also unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships and Prizes.—The following is a list of scholarships and prizes: At Entrance: Price Scholarship in Science, £100; in Anatomy and Physiology, £52 10s., open to students of Oxford and Cambridge Universities; Entrance Scholarship in Science, £50; Epsom Scholarship, "Free Medical Education." After Entrance: Buxton Prize in Anatomy and Physiology, £31 10s.; Letheby Prizes in Organic Chemistry and Chemical Pathology, £25; Prizes in Clinical Medicine, Surgery, and Obstetrics and Gynaecology, £20 each; Duckworth Nelson Prize, in Practical Medicine and Surgery, £10; Hutchinson Prize in Clinical Surgery, £40; Sutton Prize in Pathology, £20; Sir Andrew Clark Prize in Clinical Medicine and Pathology, £26; Anderson Prizes in Elementary Clinical Medicine, £9; Dressers' Prizes, £40; Practical Anatomy Prizes, £10; Arnold Thompson Prize, in Medical and Surgical Diseases of Children, £15; Harold Fink Prize in Dental Surgery, £5 5s. The London Hospital Medical College and the Eliza Ann Alston Medical Research Funds amount to over £26,000.

Fees.—Entrance fee, 20 or 15 guineas, according to examinations passed; annual fee 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.1.

THE MIDDLESEX HOSPITAL.

THE school and hospital are in Mortimer Street, W., close to Oxford Circus, Goodge Street, and Great Portland Street stations. There is a residential college (overlooking the hospital garden) for a limited number of students, prosperous athletic clubs, and a gymnasium within the precincts of the hospital.

The hospital contains over 450 beds, including a wing containing 92 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for cases of venereal disease and for diseases of children and of the skin and eye.

The medical school, which includes the Bland-Sutton Institute of Pathology and the cancer research laboratories, is completely equipped for teaching the entire medical curriculum, including the preliminary science course. The Bland-Sutton Institute, under the charge of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation as well as a pathological and anatomical museum. Bacteriological, chemical and microscopic examinations of material from the wards, operating theatres and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Every facility is given for original research. The cancer research laboratories offer unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects. Several valuable scholarships are awarded in this connexion.

In the electro-therapeutic department, under the charge of the Professor of Radiology, special attention is given to the treatment of lupus and cancer by the x ray, and opportunities are afforded to students wishing to become acquainted with the use of the apparatus employed in this method of treatment. An electro-cardiographic department has also been established.

Appointments.—Twenty-two resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and two resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals of two months, after examination; six house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. In the out-patient departments the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases; dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon. Extern midwifery clerks and *post-mortem* clerks are also appointed. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Students must have held an out-patient clerkship and dressership before holding in-patient clerkships or dresserships. Non-resident qualified clinical assistants are appointed in the Medical, Surgical, Skin, Neurological, Ophthalmic, Throat and Ear, Odontological, Children's, and Electro-therapeutic Out-patient departments.

Scholarships.—There are three Entrance Scholarships, value £100, £50, and £25 respectively. An annual Entrance Scholarship, of the value of £50, is open to students of the universities of the United Kingdom who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientfic Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Brodrip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray Gold Medal and Scholarship, value £25; Hetley Clinical Prize, value £25; Leopold Hudson Prize, value 11 guineas; and the Second Year's Exhibition, value 10 guineas.

Fees.—(*a*) Preliminary Science students: For one year or less, £15. (*b*) Students who have completed the Preliminary Science course: Entrance fee, £15; four annual fees of £40. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £20. Three-quarters, one-half, or one quarter of the last annual fee may, at the discretion of the School Council, be returned if the student obtains a registrable qualification within three, six, or nine months of the annual payment becoming due. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course: Entrance fee, £10; two annual fees of £40; further annual fees as above.

Further information may be obtained from the Dean.

ST. BARTHOLOMEW'S HOSPITAL.

THIS institution fills one side of Smithfield and Giltspur Street, sharing with the Post Office buildings a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 750 beds. Extensive new buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library and the chemical, physical, biological, and physiological laboratories, and anatomical department, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to a new and extensive *post-mortem* room, large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M.Ch.Oxon., M.Ch.Cantab., M.S.Lond., and F.R.C.S.Eng. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Clinical Units.—During the present year a most important development has been made: special Clinical Units were established in Medicine and Surgery, each under the charge of a director who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation is provided. The appointments of clerks and dressers are open to all students in these departments.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Children's, Laryngological, Aural, Dermatological, Venereal, Electrical, and Dental), and in the *post-mortem* room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in the special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "Junior" house-physicians and house-surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two resident assistant anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Four entrance scholarships are annually awarded after an examination held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship, value £75, in not fewer than two and not more than three of the following subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) Entrance scholarship, value £100, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) The entrance scholarship in Arts, of the value of £100, will be given in Latin and mathematics, with one other language (Greek, French, or German). (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language (Greek, French, or German) of the value of £50. The value of the scholarships and prizes is over £900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical School, St. Bartholomew's Hospital, E.C.1.

ST. GEORGE'S HOSPITAL.

THIS school is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The School at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments, and a list of medical men and others willing to receive St. George's men as boarders, may be seen on application to the Dean.

Appointments.—Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. There is a large number of resident appointments, which may be held for six, twelve, or eighteen months, and are open without fee to every perpetual student of the hospital, and are made strictly in accordance with the merits of the candidates. Besides this, after the student has held a house appointment, the following are, among others, open to him: Medical registrarship at £200 per annum; surgical registrarship at £200 per annum; assistant curatorship of the museum at £100 per annum; obstetric assistantship, resident, at £50 per annum; the post of resident anaesthetist at £100 per annum; the posts (2) of junior anaesthetists, each at £30 per annum.

Scholarships.—Two university entrance scholarships in anatomy and physiology (70 guineas and £50) are awarded at the commencement of each winter session. The William Brown Exhibition of the value of £135 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £45 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees. First year, £36 15s. Second and third years, £36 15s. each. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £42. No entrance fee is payable by St. George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical School.

ST. MARY'S HOSPITAL.

THIS school and its hospital are situated in Praed Street, in the neighbourhood of the residential districts of Paddington, Bayswater, and North Kensington, and are thus especially convenient to students who wish to reside in the immediate vicinity. A register of approved lodgings is kept in the office of the Medical School.

The Medical School provides complete courses in the preliminary and intermediate subjects of the curriculum which are recognized by the University of London as approved courses for internal students. Students may join in October, January, or April.

The departments of biology, chemistry, anatomy, physiology, and pathology are under the direction of full time lecturers, and special courses are provided twice yearly for the Primary F.R.C.S. In addition, special tuition is provided for the Intermediate and Final Examinations of the universities of Oxford, Cambridge, and London, and for the Final F.R.C.S.

The hospital contains 305 beds, and the authorities have recently entered into an arrangement for teaching facilities at the Paddington Infirmary, Paddington Green Children's Hospital, and Maida Vale Hospital for Nervous Diseases, bringing up the total beds available for clinical teaching to more than 1,000.

All clinical appointments in the hospital are free to students of the school, and the resident medical officers are chosen by competitive examination. Six house-physicians, six house-surgeons, and four obstetric officers are appointed each year, and receive board and residence in the hospital. A large number of salaried appointments are open annually to qualified students, including those of medical registrar, surgical registrar, casualty physician, casualty house-surgeon, resident assistant anaesthetist, assistant curator, together with several demonstratorships. The hospital has recently instituted a Clinical Unit with directors and assistant directors in medicine and surgery.

The Institute of Pathology and Research is under the personal direction of Sir Almroth Wright.

Scholarships. There are entrance scholarships in Natural Science, one of £100, one of £50, one of £25, and two University Scholarships of £52 10s. awarded annually by competitive examination in September.

Fees. The composition fee for students is £200 if paid in one sum, or £210 if paid in four instalments. University students who have completed their examinations in anatomy and physiology are admitted on payment of a composition fee of 90 guineas paid in one sum, or 95 guineas if paid in two annual instalments. A system of annual fees is also in operation for students who prefer it. Separate courses of lectures, laboratory work, or hospital practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.2.

ST. THOMAS'S HOSPITAL.

THIS school and hospital are situated in Lambeth, on the bank of the Thames facing the Houses of Parliament, and forms one of the well known architectural features of London.

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories, and class-rooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturdays to 1 p.m. The students' Club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. Good meals are obtainable at a moderate tariff. The Terrace affords facilities for exercise and recreation. The sports ground, of more than nine acres in extent, is at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 632 beds. In addition to the ordinary provisions of a great hospital there are connected with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that students are enabled to follow closely the practice and teaching of the out-patient staff. There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students. There is a clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room; it is arranged also for lantern demonstrations. The maternity ward, containing 20 beds, gives students full facilities for maternity training, under supervision, within the precincts of the hospital. This obviates any necessity for supplementary instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

Appointments.—All hospital appointments are open to students without charge. A resident assistant physician and a resident assistant surgeon are appointed annually at a salary of £200 each, with board and lodging. Two hospital registrars, at an annual salary of £250 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An obstetric tutor and registrar is appointed each year at an annual salary of £50. Eight resident casualty officers and anaesthetists are appointed every six months. Five physicians, six house-surgeons, one resident anaesthetist, two obstetric house-physicians, two ophthalmic house-surgeons, and eight clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Two research assistants (bacteriological and chemical) are paid £200 per annum each. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance scholarships: Two in Arts, giving one year's free tuition; one of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £50 in any two of the following subjects: Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom, and have not entered as students in any London medical school. Valuable scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £150 given by the Salters' Company for research in Pharmacology, and the Louis Jenner Research Scholarship of the annual value of £60 for Pathological research.

Fees.—The annual fees are: For first year (preliminary subjects) £25, and for each subsequent year £50. These fees cover all tutorial classes, but do not include instruction in infectious fevers, pharmacy, and vaccination. Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the medical secretary.

Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school. Further information may be obtained from the Secretary of the Medical School, St. Thomas's Hospital, Albert Embankment, S.E.1.

UNIVERSITY COLLEGE HOSPITAL.

THE school, which forms part of the Corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology, pathology including morbid anatomy, clinical pathology and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, and for instruction in anaesthetics, electro-therapeutics, and skiagraphy. The Hospital and School have acquired the National Dental Hospital and College as their Dental Departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital, Dean Street, Soho, has also been amalgamated as the Ear, Nose and Throat Department.

The school thus provides the final course of study for the degrees of the universities of London, Oxford, Cambridge, and Durham, and for the diplomas of the Royal Colleges of Physicians and Surgeons in Medicine and Dental Surgery, and the Licence of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas of public health. Each department is also equipped for more advanced work, and provides facilities for research.

Whole-time directors of Medical and Surgical Units have recently been appointed, and are responsible for the systematic teaching of the principles of medicine and surgery. The teaching of practical medicine and surgery and of their special branches continues to be conducted by the honorary staff of the hospital.

The School has recently been the recipient of a large donation from the Rockefeller Foundation, which will enable it largely to increase its facilities for clinical and pathological study, and also to establish an Obstetrical Unit on similar lines to those of Medicine and Surgery.

Scholarships.—The following scholarships and prizes are open to competition: Two Entrance Exhibitions of 112 guineas each, awarded after a competitive examination in anatomy and physiology; Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £250; the Graham Scholarship in pathology of a sum not exceeding £400 per annum; Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200; the Atkinson Morley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £100; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £60; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery; the Bruce Medal in pathology and surgery; two Tuke Medals in pathology, and the Erichsen Prize for practical surgery.

Fees.—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments.

Appointments.—All the appointments at the hospital are reserved for students of the school, the dresserships and clerkships being open, of course, to those who have still to qualify. The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, surgical registrars, obstetric registrar, casualty medical officers, casualty surgical officers, assistant in ear, nose and throat departments, assistant in ophthalmic department, registrar in anaesthetic department, and deputy anaesthetists.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School.

WESTMINSTER HOSPITAL.

THIS school, with its hospital, situated in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College. The rest of the work is done in the school buildings near the hospital, which contains upwards of 200 beds, and affords most ample facilities for instruction in all branches of medicine and surgery.

Appointments.—A medical and surgical registrar are appointed annually, each with a salary of £50. Two house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination, and are provided with rooms and commons, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only. The assistant house-physician after three months' service becomes house-physician for a further period of six months, and the assistant house-surgeon after two months' service, becomes house-surgeon for a further period of six months. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of out-patient dresser for four months, and afterwards hold the office of in-patient dresser for four months. He is also required to serve two terms of four months each as medical clinical clerk to in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every four months to assist in the *post-mortem* room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

Scholarships.—The following scholarships are offered for competition during the year 1920-21: In the summer session two natural science scholarships, £60 and £30, and one in Arts, £60. In the winter session two scholarships in anatomy and physiology, £50 each. In the spring two scholarships in anatomy and physiology, £50 each.

Fees.—The annual composition fee is 35 guineas. An entrance fee of 10 guineas is payable by all students, namely, primary and intermediate students, £10 10s.; students entering for the final subjects, £8 8s. These fees include subscriptions for membership of the Clubs Union.

Further information can be obtained on application to the Dean at the Westminster Hospital, Westminster, S.W.1.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THIS school is carried on at 8, Hunter Street, Brunswick Square, W.C.1, in connexion with the Royal Free Hospital. An agreement has also been made under which students of the school receive clinical instruction at St. Mary's Hospital, Paddington. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of the Medical Faculty of London University. The school buildings have recently been enlarged. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London. Research laboratories are attached to all departments. A large, well-equipped library, common room, Union room, and refectory are provided for the use of students. Resident accommodation for 50 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 230 beds, all of which are available for clinical instruction. A new block contains the Obstetrical and Gynaecological Unit, which, with the Marlborough Maternity Department, contains 68 beds. There are separate departments for diseases of the eye, ear, and skin, massage, electrical and x-ray work, dentistry, and casualty. The instruction given covers the full curriculum for the M.B., B.S. degrees of the University of London. Students attending at St. Mary's Hospital ([illegible] beds) are admitted to the full clinical course and educational facilities of that hospital. Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals.

Arrangements are made for students to hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, the National Hospital for Nervous Diseases, and the Brompton Chest Hospital. The work of the school includes preparation for the Primary Fellowship examination, and also for the medical school and general hospital course for dental students.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne Entrance Scholarship value £30, the St. Dunstan's Medical Exhibition value £60 a year for three years, which may be extended to five years, and the Mabel Sharman-Crawford Scholarship value £20 a year for four years, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years, the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years, the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years, and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The Agnes Guthrie Bursary for Dental Students, value £50, is awarded each year for the present. The Ellen Walker Bursary of £25 for two years is awarded each year to a student beginning her fourth year of study. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Post-Graduate Scholarship of £100 is awarded annually. Various missionary societies also offer scholarships on certain conditions, and assist ladies who wish to go to India and other countries as medical missionaries.

Fees.—Courses for the University of London degrees and the diplomas of the Conjoint Board in England, and other qualifications: First medical examination, £35, course for second and third, £205; course after the second medical examination, £115. These sums include library and laboratory fees.

The Students' Union exists to promote corporate action of the students on matters of common interest, and to promote and maintain athletic and other clubs. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

KING'S COLLEGE.

SINCE the incorporation of King's College in the University of London the instruction given to medical students is carried out there in the classes of the Faculty of Science (Medical Division), and deals only with the subjects of the preliminary and intermediate parts of the curriculum. King's College Hospital (see p. 354) is now a separate institution, and the studies for the final examinations only are carried out there. A special class for the Matriculation Examination is also held.

There is a large athletic ground at Wormwood Scrubbs, managed by the Students' Union Society.

Scholarships.—The entrance scholarships are: 1. Three Warneford Scholarships, each £25 for four years; subjects—mathematics, classics, divinity. 2. One Sambrooke Exhibition of £25 for two years, open; subjects of examination: mathematics, elementary physics, inorganic chemistry, botany, and biology. The holders of the preceding awards must proceed to King's College Hospital. 3. Rabbeth Scholarship, value £20, in July for the best student of the first year. 4. Second year's scholarship, value £20, for the best student of the second year.

Information as to fees can be obtained from the Dean of the Medical Division of the Faculty of Science at the College, Strand, W.C.2.

Women Students.—King's College is now open to women students for the Preliminary and Intermediate portions of the medical curriculum. Applications for admission should be made to the Dean.

Information as to scholarships and subjects of examination can be obtained from the Secretary of the College.

UNIVERSITY COLLEGE.

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy, physiology, and pharmacology. These courses in intermediate medical sciences were opened to women students on the same terms as to men in October, 1917. The preliminary medical science courses have for many years been open to women students. The Department of Hygiene and Public Health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above-named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. The general arrangements for the benefit of students include membership of the Union Society with its gymnasium and athletic ground. There is also a collegiate residence for about forty men students at Ealing.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School), and two entrance exhibitions in the same subjects, each of the value of 55 guineas.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas. These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College.

Cooke's School of Anatomy.

This school is prepared to admit to its supplementary work all who may wish to join, but in regard to its curriculum work it does not receive more than half a dozen students a year. The operations of surgery are performed on the dead body. The school, which is open all the year round, possesses a good collection of anatomical models, physiological and chemical apparatus, and students preparing for the higher examinations (F.R.C.S.Eng., etc.) receive special instruction in the more difficult subjects. Other information may be obtained from Mr. Knight, 46, Mecklenburgh Square, W.C. 1.

THE PROVINCES.

There are in England and Wales, not counting London, ten medical schools, each, with one exception, supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases there is appended information concerning other hospitals than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

Oxford and Cambridge.

Both at Oxford and at Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently equipped, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The local hospitals are comparatively small. The university authorities therefore encourage the students, as soon as they have completed the earlier examinations, to join some London school, and thus spend the time of their preparation for the final examination in a city where the opportunities for gaining clinical knowledge are greater and more varied.

Birmingham.

The school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 500 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including one for lying-in women. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of corporations.

Appointments.—The large number of appointments open to past or other students includes the following:—At the General Hospital: Surgical registrar, £200 a year; one resident medical officer, salary £155 a year; one resident surgical officer, salary £180 a year; one resident pathologist, salary £100 a year; two visiting anaesthetists, salary £50 a year; four house-surgeons, office tenable for nine months, £100 a year; one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £100 a year; three house-physicians, post tenable for six months, £100 a year. At the Queen's Hospital: three house-physicians and three house-surgeons (posts vacant in January and April); one obstetric and ophthalmic house-surgeon (posts vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £90 per annum, with board, lodging, and washing. One resident dresser, tenable for three months; candidates must previously have attended their third-year lectures, etc., and need not be qualified; honorarium, £13 13s. on completion of duties. At the Maternity Hospital: one house-surgeon, salary £50 a year. At the City Workhouse and Workhouse Infirmary: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Lunatic Asylums: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year; four clinical assistants (non-resident). Four non-resident Poor Law appointments are in the gift of the Board of Guardians.

Scholarships.—There are numerous money and other awards for students of sufficient merit, among them being the following: The Walter Myers Travelling Studentship of £150; the Sands-Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on either matriculation or First M.B. marks); four Queen's Scholarships of £10 10s. each, awarded annually at the second, third, fourth, and final university examinations respectively; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men. The Ingleby Scholarship of £10 for proficiency in midwifery and diseases of women. There is also an entrance scholarship of £37 10s. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical Prize, Gold Medal; Senior Surgical Prize, Gold Medal; Midwifery Prize, Gold Medal; Junior Medical Prize, Silver Medal; Junior Surgical Prize, Silver Medal.

Fees.—The composition fee for university classes is £85. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations; but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine, and some other special work. The total cost for the five years' curriculum, including hospital and examination fees, is estimated at £158 2s. 6d.

Other information should be sought from the Dean of the Medical Faculty.

Bristol.

The school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas. The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them about 600 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental [illegible] large ones for maternity departments. At each of these institutions there are well-arranged pathological departments, comprising large pathological museums, post-mortem rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for x-ray work both in diagnosis and treatment, the various forms of electrical treatment, including high-frequency currents, electric baths, Finsen light treatment, and massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 108 beds, and that of the Bristol Eye Hospital, with 40 beds. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of medical and surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments.—(1) Undergraduate: Clinical clerkships, dresserships, also ophthalmic, obstetric, and pathological clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate.—At the Bristol Royal Infirmary: Four house-surgeons, £120 each per annum; two house-physicians, £120; resident obstetric and ophthalmic house-surgeon, £120; throat, nose and ear house-surgeon, £120; dental house surgeon, £120. All these appointments are made for twelve months. From the resident officers a senior resident officer is appointed at a salary of £200. At the Bristol General Hospital: Senior resident medical officer, £300 per annum; casualty house-surgeon, £175 per annum; two house-physicians, £175 per annum; house-surgeon, £175 per annum; obstetric house-surgeon, £175 per annum; dental house-surgeon, £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships.—[illegible] among the scholarships and prizes open to students of the school: Two Martin [illegible] Scholarships of £[illegible] each; the Tibbits [illegible] Prize, value 9 guineas, for proficiency in practical surgery; [illegible] Gold and Silver Medals for fifth year [illegible]; the Augustin Prichard Prize, [illegible] for proficiency in anatomy; the Henry Clark [illegible] guineas, for proficiency in [illegible]; the [illegible] Prize, value 7 guineas, for proficiency in [illegible] Prize, a gold medal and 7 guineas; [illegible] Prize, a gold medal and [illegible] guineas; the Henry [illegible] Prize, value £[illegible] for [illegible]; the H. M. Clarke [illegible], value £[illegible], for proficiency in surgery; the Sanders [illegible] for general proficiency; the Barrett [illegible] for proficiency in diseases of the eye, ear, [illegible].

Fees.—The fee for all the courses required for the medical [illegible] guineas if paid [illegible] guineas if paid by annual [illegible].

CARDIFF.

The school in this city is carried on by the University College of South Wales and Monmouthshire, and devotes itself at present principally to training students during the first three or four years of the medical curriculum, all courses being open to women students. The courses of instruction given are recognized by all licensing bodies in Great Britain, and after passing the examinations appropriate to the first three years of the curriculum the student can complete his course for whatever degree he is aiming at, in London or elsewhere. Besides this there is an arrangement with the Management Committee of King Edward VII Hospital, by which students of the school can take advantage of the opportunities for acquiring experience afforded by the wards of this large well-ordered hospital. [illegible] from Wales and Monmouthshire [illegible] able to pursue the earlier part of their medical [illegible]. They can also [illegible] and with [illegible] the degrees of the University of Wales. [illegible] the first three years [illegible] B.A. [illegible] degree for those students who propose to sit for the M.B., Ch.B. of the University of Wales. There is also a department of public health, in which all the work for diplomas in State medicine, whether for the University of Wales or other Examining Boards, can be done. A Chair of Pathology and Bacteriology has been established. It is hoped that before long a complete Welsh National School of Medicine will be established at Cardiff, owing to the munificent offer of Sir William James Thomas to erect and present to the college a school of preventive medicine and medical school buildings, in addition to the Physiological Laboratory he has already provided. A Mansel Talbot Professor of Preventive Medicine has already been appointed.

Post-graduate vacation courses are carried on in association with the Cardiff Infirmary.

Scholarships.—There is a considerable number of scholarships connected with the college, and open to students of the School of Medicine, information as to which can be obtained on application.

Fees.—The composition fee for the three years' courses required for students proceeding to the M.B.Lond. is £65; that for the two years' courses for students proceeding to a diploma of the licensing corporations being £41 10s. The composition fee for D.P.H. classes is £30.

Further information may be obtained on application to the Dean of the Faculty of Medicine.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and their clinical work in the new Royal Victoria Infirmary, an institution with over 600 beds and special accommodation for the benefit of students. In a new wing of the school itself there are the departments of bacteriology and physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union.

Appointments.—Assistant demonstrators of anatomy and prosectors for the professor of anatomy, assistant physiologists, pathological assistants, assistants to the dental surgeon, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected annually. Clinical clerks and dressers are appointed every three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in arts, open annually at the beginning of the winter season to intending students. The Pears Scholarship, value £150, for proficiency in arts (when vacant). The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for medicine, surgery, midwifery, and pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £[illegible] annually, for elementary anatomy, biology, chemistry, and physics, for students at the end of their first year. The Charlton Memorial Scholarship, interest of £[illegible] annually, open to full students entered for the course of medicine at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £[illegible] annually, for pathology, at the end of summer session. Gibson Prize, interest of £[illegible], for midwifery. Outterson Wood Prize, interest of £[illegible], for psychological medicine. The Goyder Memorial Scholarship, proceeds of £[illegible], subjects clinical medicine and clinical surgery. Luke Armstrong Memorial Scholarship, proceeds of £[illegible], for best essay in some subject of comparative pathology. The Stephen Scott Scholarship [illegible] annually. The Heath Scholarship [illegible], of the value of £[illegible], awarded every other year [illegible] in 18[illegible] [illegible] the highest [illegible] M.B. examination [illegible] March and June [illegible].

Fees.—[illegible] composition fee for [illegible] at the college is [illegible] Committee of the Royal Victoria Infirmary. [illegible] information should be sought from the Secretary of the College of Medicine at Newcastle.

LEEDS.

THE School of Medicine, which is open to both male and female students, in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar class-rooms. In addition, there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 620 beds, and includes gynaecological and ophthalmic wards and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge, attached to the Infirmary, have 88 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (800 beds), the Hospital for Women and Children, and the Leeds Maternity Hospital.

Appointments.—One senior anaesthetist, £50; seven anaesthetists, £25 each; a medical and a surgical tutor, at £125 each per annum; one resident medical and one resident surgical officer, each at £150 per annum; one casualty officer, at £125 per annum; one resident ophthalmic officer, at £100 per annum; one resident aural officer, at £100 per annum; one resident obstetric officer, at £50 (attached to the gynaecological ward); one ophthalmic house-surgeon, at £50 per annum; four house-physicians, each holding office for six months, and four house-surgeons, holding office for twelve months. Surgical dressers are appointed every six months; physicians' clerks, ophthalmic and aural dressers, gynaecological ward clerks, gynaecological out-patient clerks, maternity clerks, assistant physicians' clerk, dermatological clerks and assistant surgeons' dressers, dressers in the casualty-room, *post-mortem* clerks, and laboratory assistants every three months, and dressers in the venereal clinic every month. A resident medical officer (honorarium at rate of £60 per annum) is also appointed every six months for the Ida Semi-convalescent Hospital. Appointments are also open to students at the Leeds Public Dispensary (one senior and four junior resident medical officers, with salaries commencing at £80), at the Hospital for Women (two house-surgeons, at £50 per annum, and two anaesthetists, £20), and at the West Riding Asylums.

Scholarships.—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The university also awards a scholarship on the results of the first examination, of the value of 40 guineas, in the form of a free admission to the clinical teaching of the infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £202, *plus*, of course, the expenses of living during the five years covered by the curriculum. The fee for a complete course for the First M.B. is £27 11s.; the composition fee for the course for the second and third examinations is £73 2s. 6d. (for students who have passed the second examination, £48 16s. 6d.), and for the clinical work at the infirmary, £42.

Further information can be obtained from the Dean and Clinical Subdean, School of Medicine, Leeds.

Liverpool.

The Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well-equipped class-rooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratories and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which an account is given below, have amalgamated to form the clinical school of the university.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,000. They include the following: Two Holt Fellowships, one in Pathology, the other in Physiology; a Robert Gee Fellowship in Anatomy; two John Rankin Fellowships in Anatomy; a John W. Garrett International Fellowship in Bacteriology; a Johnston Colonial Fellowship in Biochemistry; an Ethel Boyce Fellowship in Gynaecology; and a Thelwall Thomas Fellowship in Surgical Pathology; a University Fellowship (one at £150, two at £120, seven at £100); a University Scholarship of £25, awarded on the results of the Second M.B. Examinations; a Scholarship in Mechanical Dentistry of £20; two Lyon Jones Scholarships, of the annual value of £21 each for two years, one for the junior and the other for senior students; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in Anatomy; John Rankin Exhibition in Practical Anatomy, £25; the George Holt Medal in Physiology; the Kanthack Medal in Pathology; Mitchell Banks Medal in Anatomy; the Robert Gee Prize of £5 5s. in Children's Diseases; Mary Birrell Davies Memorial Scholarship, £60 per annum for four years; two Robert Gee Entrance Scholarships, each of the value of £25 per annum for two years; Dental Operating Prizes (four); Orthodontia Prizes (two); one Thomas H. Bickerton Prize in Anatomy; Dr. N. E. Robert Prize in Zymotic Diseases; Ash's Prize in Dental Surgery, value £2 2s.; and other Entrance Scholarships.

Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School.

As many as nine hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Infirmary for Children, the Hospital for Women, the Eye and Ear Infirmary, St. Paul's Eye Hospital, and St. George's Hospital for Diseases of the Skin. Between them they provide about 1,140 beds.

Manchester.

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 670 beds, and has associated with it a large convalescent home (136 beds), and the Royal Lunatic Asylum at Cheadle (430 beds). Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: A surgical registrar, at £150 per annum; a pathological registrar, at £350 per annum; a medical registrar, at £150 per annum; a surgical tutor, at £30 per annum; a director of the clinical laboratory, at £400 per annum, and one assistant director at £300; three assistant medical officers and three assistant surgical officers, each at £35 per annum; one assistant surgical officer, aural department, at £35 per annum; five anaesthetists, two at £75 and three at £100 per annum; one radiological registrar, at £250 per annum; one resident medical officer, one year, £250 per annum; ditto at Cheadle, one year, £300 per annum; one resident surgical officer, one year, £250 per annum; two resident medical officers for Central Branch, £200 and £100 per annum; one accident room house-surgeon, six months, £200 per annum; one assistant medical officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; ten senior and ten junior house-surgeons and ten house-physicians, appointed during the year for a term of six months, at a salary of £50 for the first six months and £100 for the second six months. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months.

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school: Rogers and Seaton Scholarships in Arts (in alternate years), £40 per annum, tenable for two years. Two Dalton (entrance) Scholarships in Mathematics, tenable for two years, value £40, one being awarded annually, except in such years as a Cartwright Scholarship is awarded. Cartwright Scholarship, £35 per annum, tenable for three years. Three Hulme Scholarships, tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education. Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for proficiency in the branches of Mechanics and Chemistry. A Dora Muir Scholarship, £30 per annum, tenable for three years, and open to the competition of women students only. This is awarded triennially. Sir J. P. Kay Shuttleworth Scholarship, £30 per annum, tenable for three years, open to the competition of students from Sedbergh School, Giggleswick School, and Burnley Grammar School. Subjects: Mathematics, Chemistry, and Mechanics. Dreschfeld Memorial Scholarship, value £30, tenable for one year and awarded triennially on the result of the Entrance Examination. A Theodores Modern Languages Exhibition, £20, awarded annually. Two Dauntesey Medical Scholarships, value £45 and £35, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification. Subjects: Zoology, Botany, and Chemistry. Two Entrance Scholarships in Medicine, value £100, awarded annually for proficiency in Arts or Science respectively. Two Research Fellowships in Public Health of £50 each, awarded annually. Tom Jones Exhibition in Anatomy, £25, offered annually. Robert Platt Physiological Exhibitions: Two, about £20 each, offered annually. A Robert Platt Physiological Scholarship of £50, tenable for two years. A Robert Platt Zoological and Botanical Scholarship, £50. A Leech Fellowship of £100 for original research after graduation. A Graduate Scholarship in Medicine, value £25, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. A Dumville Surgical Prize, value £15, awarded annually at graduation. [illegible] Surgical Scholarship, value £100, tenable for one year, awarded usually triennially. The Turner Medical Scholarship, value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The John Henry Agnew Scholarship of £30, awarded annually for proficiency in the Diseases of Children. The Bradley Memorial Scholarship in Clinical Surgery of £20. The Ashby Memorial Scholarship, tenable for one year (£100), for research in the Diseases of Children; offered triennially. Sidney Redshaw Exhibition in Physiology: One offered annually. The details and regulations of the Dickinson Scholarships—(1) for Anatomy, (2) for Pathology, (3) Research Scholarship in Surgery, and (4) Travelling Scholarship in Medicine—will be announced later. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum, tenable for not more than four years, to women students who have passed the First M.B. Examination. The conditions under which these are awarded can be obtained from the Registrar. The Knight Prize of £50 for original research [illegible] factors in the causation of [illegible] open to holders of the Diploma in Psychological Medicine or medical practitioners who have been [illegible] for that diploma.

Fees.—The composition fee for the university course in medicine [illegible], but this sum does not include the fee to cover the work required for the First M.B. Examination. [illegible] payable [illegible]

A prospectus and further information about the school and scholarships may be obtained from the Registrar.

Clinical Hospitals.—The Royal Eye Hospital, the Manchester Northern Hospital for Women and Children, the Manchester Hospitals for Children at Pendlebury, and St. Mary's Hospital for Diseases of Women and Children afford ample arrangements for the instruction of students.

SHEFFIELD.

[illegible]

[illegible]

[illegible]

assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fever are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Asylum.

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) Casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. Except in the case of casualty dressers, these appointments are made for three months, commencing on the first day of October, January, April, and July. The casualty dresserships last two months, beginning on the first of any month. All students are required to hold them, and to have attended the tutorial classes for casualty dressers, before being eligible for any other of the above appointments.

Scholarships.—Entrance Medical Scholarship, value about £130, open to both sexes. Four Edgar Allen Scholarships of £100 a year for three years may be held by students taking the degree course in Medicine. Two Town Trustees' Scholarships, each of the value of £50, tenable for three years, for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees' Scholarships, value £50, for boys or girls under 19 years of age, educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Fellowship, value £50 with remission of fees, tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years. [illegible] for proficiency in anatomy and physiology, [illegible]. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete course in the university pay an inclusive composition fee of £30 for each of the five years. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

ABERDEEN.

The school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics, chemistry, anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction on public health and on tropical medicine are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are offered in the laboratories and museums attached to the several chairs.

[illegible]

Bursaries, Scholarships, and Fellowships, to the number of fifty and of the annual value of £1,180, may be held by students of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years. The winter session begins on October 14th, 1920; the summer session on April 19th, 1921.

Fees.—The fee for each university course is, as a general rule, £4 4s.; and for a second attendance, £3 3s. An inclusive fee of 90 guineas is now payable, covering the necessary instruction within the university. Matriculation fee, both sessions, £1 1s.; summer session alone, 10s. 6d. Royal Infirmary, perpetual fee, £10; or, first year, £5 10s.; second year, £5.

EDINBURGH.

THERE are three Schools of Medicine: the School of the University, the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Edinburgh School of Medicine for Women.

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for zoology, botany, chemistry, anatomy lectures, practical anatomy, physiology, pathology, materia medica, medical jurisprudence, public health, surgery, medicine, midwifery, and gynaecology is £4 4s. each. Second course £3 3s. Third free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, practical chemistry, advanced practical physiology, practical pathology, practical anatomy (winter), operative surgery, obstetric operations, practical materia medica, including pharmacy, pathological bacteriology, experimental pharmacology, vertebrate morphology and comparative embryology, are £3 3s. Practical anatomy (summer), £2 12s. 6d. Clinical surgery, £2 2s. per term. Clinical medicine, first term, £3 13s. 6d.; subsequent terms, £2 2s. No perpetual ticket in these subjects. Practical botany (besides garden fee of £1 1s.), elementary practical zoology, practical physiology (experimental), practical physiology (histological), practical botany (advanced), practical zoology (advanced), anthropology, anatomy demonstrations, diseases of children, diseases of the eye, diseases of the larynx, ear and nose; diseases of tropical climates, clinical instruction in diseases of the skin, regional anatomy, invertebrate zoology, organic chemistry, mental diseases, infectious diseases, venereal diseases, £2 2s. Physiological chemistry, applied anatomy (medical and surgical), £1 1s. Vaccination, £1 1s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself. No other university is in a better, even if in as good, a position to smooth the financial path of earnest students.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*; for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) New School, Bristo Street; (3) Nicolson Square; (4) Marshall Street; and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £130. The Calendar, giving full information regarding classes and fees, can be obtained gratis on application to the Dean of the School, 11, Bristo Place, Edinburgh.

WOMEN STUDENTS IN EDINBURGH.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed; but in the subjects of midwifery and gynaecology the women are lectured to separately from the men. From the appearance of women's names in the lists of winners of prizes, scholarships, and bursaries it would appear that women are eligible for these distinctions. The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extramural classes taught by the lecturers of the School of Medicine of the Royal Colleges.

GLASGOW.

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacology, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany; the Botanic Garden and the Hunterian Museum (Zoology and Pathology) are also open to students. New buildings and equipments have been provided for botany, for practical anatomy, for operative surgery, as well as for pathology; the very large additions made a number of years ago to the Chemical Laboratory rendered it one of the most extensive in Scotland. The class-rooms and laboratories for the departments of Physics, Physiology, Pharmacology, and Materia Medica, and Medical Jurisprudence and Public Health, are also of recent erection, and are elaborately equipped. Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the Professors being specially attached to the Royal Infirmary; and a number of University Lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otology, Psychological Medicine, and Tuberculosis have been founded there. Three other chairs have been founded at the University, in Bacteriology, Organic Chemistry, and Physiological Chemistry. There are also lectureships on the Surgical and Medical Diseases of Children. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post-graduation and research work. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached; the Royal Infirmary (630 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (200 beds), the Royal Maternity and Women's Hospital (108 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (630 beds) and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any faculty, amounting to about the same annual sum, may be held by [illegible] a number of both sets being open to women. [illegible] valuable scholarships may be held by medical students who have graduated in Arts.

The following bursaries are open to undergraduates of both sexes: The Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland, and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One Logan Bursary, annual value £16, tenable for four years; appointment by the Senate. The Mackintosh Mental Science Bursary in medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of insanity who stands first in an examination in that subject, the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. The following are tenable in any faculty: Two Pratt Bursaries (each £20 and tenable for four years); and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years; candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society's Bursaries, for students of Highland descent, of the annual value of £25, and tenable for five years; two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the *University Calendar*. The Dobbie Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships, and fellowships. Scholarships and Fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarships (£100 for one year) for graduates in medicine of the Scottish universities.

Fees.—The matriculation fee for each year is £1 1s. In most cases the fee for each university class is £4 4s., but in some cases it is £3 3s. For hospital attendance students pay an entrance fee of £7 at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; at the Royal Infirmary the fees are somewhat similar. The university fee for the four professional examinations is £23 2s. (£6 6s. each for the first and second examinations and £5 5s. each for the third and fourth). For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to £150.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class-rooms, reading room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 520 beds are available for their use, and in its dispensary, and sections in the Western Infirmary, also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hawkhead Asylum, the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill; and the Glasgow Royal Maternity and Women's Hospital.

[illegible] The Arthur [illegible] open to competition [illegible] at the First Professional Examination [illegible]

Full information can be obtained from the Mistress, Queen Margaret College.

Residence for Students.—A house of residence for women students, Queen Margaret Hall, is situated near the college, in Bute Gardens. The cost of board and residence is from [illegible] to [illegible] per week, according to accommodation. Apply to the Lady Superintendent.

Another hostel near the college is South Park House, Ann Street, gifted to the Student Christian Movement, and open to women students of all colleges in Glasgow. Cost of board is from 25s. to 30s. weekly. Applications to be made to the Warden.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds.

The infirmary has (including the ophthalmic department) over 700 beds, the average number occupied in 1919 being over 600. There are special beds and wards for diseases of women, of the throat, nose and ear, venereal diseases, burns, and septic cases. In the out-patient department the attendances in 1919 numbered 142,730. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, and year by year the latest and most approved apparatus for diagnosis and treatment is added.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £100. The classes are open to male and female students.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in all subjects of the curriculum both for medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the school Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, Queen's University of Belfast, the Irish Colleges, and the University of Cambridge.

Fees.—The fees for the lectures and practical work required by ordinary students range between 1 and 5 guineas a session. In the Public Health Department the fee for a six months' course is £12 12s. The Carnegie Trust pays the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a post-card by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W., who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, with over 90 beds, offers facilities for clinical instruction in the diseases peculiar to women. Particulars may be obtained from the honorary secretary, 149, St. Vincent Street, Glasgow.

ST. ANDREWS AND DUNDEE.

The medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects of the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are 3 guineas for systematic classes and 3 guineas for practical classes. The hospital ticket is £1 1s. for three months, £3 3s. a year, or perpetual £10 in one sum or £10 10s. in instalments. Added up, the fees for the curriculum, exclusive of the examination fees, amount to £136 10s. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

Clinical Work.

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish Universities, the University of London, the University of Cambridge, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND.

THERE is a choice of six schools for those prosecuting their medical studies in Ireland, and for clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

DUBLIN.

The School of Physic.

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland; the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students whether they belong to the university or not.

The Schools of Surgery.

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the College by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College.

Prizes. Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship £8; the Gold Medal in Surgery, the Stoney Memorial Gold Medal in Anatomy, the H. Macnaughton Jones Gold Medal for Midwifery and Gynaecology; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College.

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings on St. Stephen's Green, at those formerly occupied by the Cecilia Street School of Medicine, and at the University Buildings in Earlsfort Terrace. All the buildings of its permanent home are not yet ready. The section of the new college buildings at Earlsfort Terrace for the departments of physics and chemistry, and new laboratories for pathology, are now in use. It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. The teaching staff is numerous, and through it the college is connected with many of the hospitals of the city. Students, however, are allowed to pursue their studies at any of the hospitals recognized for the purpose by the university.

Clinical Work.

There are numerous well-arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the United Kingdom. Among them are the Mater Misericordiae Hospital, with 345 beds; Dr. Steevens's Hospital at Kingsbridge, with 200; Meath Hospital and County Dublin Infirmary, with 160; Mercer's Hospital, close to Trinity College, with 120; the Royal City of Dublin Hospital, with 124; the Adelaide Hospital with 140; the Royal Victoria Eye and Ear Hospital, with 100 beds; Sir Patrick Dun's, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 230 beds. As for that known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the United Kingdom. It receives nearly 3,000 patients every year, and, apart from ordinary out-patient work of a gynaecological order, annually attends approximately 2,000 women at their own homes during their confinement. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality.

BELFAST.

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital; the Benn Ulster Eye, Ear and Throat Hospital; the Union Infirmary and Fever Hospital; the Fever Hospital, Purdysburn; the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Twelve, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year; (2) sixteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially; (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student; (6) Magrath Clinical Scholarship, awarded annually, value about £112; (7) numerous sessional prizes. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £130. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

At the beginning of next session a Department of Dentistry will be opened, and in due course the university will confer a Licentiate in Dental Surgery, a Bachelor of Dental Surgery, and a Master of Dental Surgery. Lecturers have been appointed in dental surgery, dental mechanics, dental metallurgy and materia medica, and orthodontia.

The Calendar containing full information can be obtained on application to the Secretary, Queen's University, Belfast, price 2s.

UNIVERSITY COLLEGE, CORK.

THIS institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the new National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the new university, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglington Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland is granted. There is a large well-equipped Dental Hospital in connexion with the school.

Scholarships.—Over £4,000 are available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £120.

Further information can be found in the college regulations, or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY.

THIS institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Arts, Celtic, Science, Law, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University but for those of London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway County Hospital, the Galway Union Hospital, the Galway Fever Hospital, and the Galway Dispensaries. The Galway County Hospital is a general hospital, and at the other two hospitals and at the dispensaries students have ample opportunities of studying zymotic and chronic diseases. The Union Hospital has a special ward for diseases of children. Each year the Governing Body offers about £1,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any Faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND.

THERE are a great many hospitals in the United Kingdom which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house physicians, and house surgeons. These are usually paid offices, which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces and in Scotland and Ireland have already been mentioned in speaking of the medical schools in those localities, but it should be added that there are many other provincial hospitals where a like work is done and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford; the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Kent and Canterbury Hospital; Derbyshire Royal Infirmary; the Royal Albert Hospital and Eye Infirmary, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester; the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital; the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Infirmary at Hartshill; the Royal Hants County Hospital, Winchester; the Wolverhampton and Staffordshire General Hospital; the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals.

As for hospitals in the metropolis, so many of these play the part of clinical schools that it is worth while to classify them.

General Hospitals.—These include the Dreadnought Hospital at Greenwich, and its annexe at the Albert Dock, which form the head quarters of the London School of Clinical Medicine, and the London School of Tropical Medicine with its hospital at Endsleigh Gardens; the West London Hospital and the Prince of Wales's General Hospital, Tottenham, both of these being described in the article on post-graduate work; the Great Northern Central Hospital, Holloway Road, an institution containing 185 beds; and the Temperance Hospital in Hampstead Road.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 240 beds. There are also the East London Hospital for Children, Shadwell, with 124 cots; the Queen's Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 104; the Belgrave Hospital for Children, which has a considerable out-patient department, but in-patient accommodation for only 40 children; the Paddington Green Children's Hospital, an institution of about the same size; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 76 beds.

Hospitals for Women.—Queen Charlotte's Lying-in Hospital, Marylebone Road, with 70 beds and a residential college for students and practitioners, specializes in the teaching of midwifery. The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained on application to the secretary at the hospital. In addition may be mentioned the Hospital for Women, Soho Square; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road, with 138 beds and a very large out-patient department; others are the Royal Westminster Ophthalmic Hospital, near Charing Cross, the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street, W.C.1, each with about 40 beds.

Fever Hospitals.—The Metropolitan Asylums Board has under its control a good many institutions for the treatment of the more serious zymotic disorders, and makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. Detailed information should be sought from the Clerk to the Board, Victoria Embankment.

Chest Hospitals.—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds. There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 175 beds, and the Royal Hospital for Diseases of the Chest, City Road, which has recently reorganized its various departments with the object of better fitting itself to act as a tuberculosis school.

Nose, Throat and Ear Hospitals.—The institutions which confine their work to disorders of the throat, nose and ear all make special arrangements for the benefit of senior and post-graduate students. They are the Metropolitan Ear, Nose and Throat Hospital, Fitzroy Square, the Royal Ear Hospital, Dean Street, the Central London Throat and Ear Hospital, Gray's Inn Road, and the Hospital for Diseases of the Throat, Golden Square, the latter, which possesses 75 beds, being the largest of the four institutions.

Various Special Hospitals.—Among these are the Bethlem Royal Hospital, Southwark, which confines its work to the treatment of mental diseases; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum including cancer and fistula; St. John's Hospital for Diseases of the Skin, in Leicester Square; the Hospital for Diseases of the Skin, Stamford Street, Blackfriars; and the National Hospital for the Paralysed and Epileptic, Queen Square, W.C.1, an institution possessing 200 beds and a world-wide reputation.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

MEDICAL EDUCATION OF WOMEN.

WOMEN are admitted to all the medical examinations of the following qualifying bodies: All the universities of Great Britain, with the exception of Cambridge; the Royal College of Physicians of London, and the Royal College of Surgeons of England; the Society of Apothecaries of London; the Conjoint Boards of Scotland and of Ireland. The B.M. degree of the University of Oxford is now open to women.

The regulations of each body differ considerably, so that it is necessary for a student to decide, before beginning her course, which degree or diploma she will aim at obtaining. The ordinary regulations of the General Medical Council (see page 341) must be observed, and women can pursue their education either at certain schools only open to women, or at ordinary schools where they do their work more or less in common with men students.

The schools which admit women only are the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London, and Queen Margaret College, Glasgow (see page 364). Women are also admitted to the schools of medicine in connexion with King's College, University College, Charing Cross Hospital, London Hospital, and St. Mary's Hospital, London; the Universities of Dublin, St. Andrews, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol, and Aberdeen; St. Mungo's College, Glasgow; the Schools of Surgery of the Royal College of Surgeons in Ireland and of the National University of Ireland in Dublin, Cork, and Galway. The arrangements for women medical students in Edinburgh are indicated on page 363. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

Year by year the openings for women who adopt a medical career have increased, and the field open to their energies is now wide. Women hold many appointments as resident medical officers in general hospitals and in hospitals for women and children all over the country, and in a large number of sanatoriums, infirmaries, fever hospitals and asylums. Many medical women are also engaged in public health, tuberculosis, and school inspection work. Further, it is now possible for medical women to hold staff appointments at a number of London and provincial hospitals, to become prison medical officers, and to take charge of infant welfare centres and venereal disease clinics.

As regards the London School of Medicine for Women, particulars will be found at p. 358 in the article on London Medical Schools.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in England possess diplomas to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted that the M.D. degree of the University of Brussels is not registrable when it has been obtained subsequently to June, 1886.

University of London.

Registered medical practitioners who have passed the First Examination for medical degrees and the Second Examination for medical degrees, Part I, may proceed to the Second Examination for medical degrees, Part II, and M.B., B.S. Examinations without observing the intervals prescribed by the regulations, on producing certificates that they have gone through the required course of study at a school of the university; subject to the proviso that no degree of the university can in any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or after admission by the university of the candidate's right to exemption therefrom.

University of Durham.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed an examination in arts previously to the professional examination in virtue of which his name was placed on the *Register*, he is examined in classics and mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Æneid*, (first three books), or Celsus (first three books). Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene, and therapeutics; (ii) principles and practice of surgery; (iii) midwifery and diseases of women and children; (iv) pathology, medical and surgical; (v) anatomy, medical and surgical; (vi) medical jurisprudence and toxicology. The examination is conducted by means of printed papers, clinically, and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, towards the end of March and of June. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Registrar of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

University of Brussels.

This university grants its M.D. to such foreign candidates as are already duly qualified in medicine and surgery in their own countries, provided they pass the three examinations imposed. The examinations, which are conducted solely *viva voce*, begin on the first Tuesday in November, December, March, May, and the second Tuesday in June. The time required for the three parts of the examination seldom exceeds eight days. The examinations are conducted in English. The total fees charged by the university amount to £22. Information can be obtained from the Secretary of the University, 14, Rue des Sols, Brussels. The subjects are as follows: *First Part:* General medicine, materia medica and pharmacology, general surgery, and theory of midwifery. *Second Part:* General therapeutics, pathology and morbid anatomy, with the use of the microscope, special therapeutics and medicine of internal diseases, special surgery and mental diseases. *Third Part:* Public and private hygiene, medical jurisprudence, clinical medicine, clinical surgery, operative surgery, ophthalmology, midwifery—namely obstetrical operation on the mannequin—regional anatomy with dissection, and bacteriology.

POST-GRADUATION STUDY.

ALL who are interested in the matter recognize that post-graduate medical instruction in London, and indeed throughout the kingdom, has in the past been hopelessly deficient. Before the war the best known and largest centres for post-graduate study were those of Austria and Germany, whither for the purpose of "finishing" their medical education, or acquiring knowledge of the technique of special subjects, large numbers of medical graduates of England, America, and other nations were accustomed year by year to journey. More recently it has been recognized that other nations, which have made more numerous and more significant contributions to the advancement of medical and surgical knowledge than have the Teutons, possess at least equally abundant and appropriate material for graduate teaching and study. During the last few years the provision in Great Britain of opportunities for study by qualified practitioners has received much attention, and it has been widely acknowledged that the extension and proper co-ordination of this provision are greatly to be desired. In London several institutions, whose teaching was designed and is available for practitioners only, have been at work with praiseworthy zeal for some years past, but a comprehensive organization has been lacking.

Towards the end of 1918 the Fellowship of Medicine was founded in London. Its object was to draw together the members of the medical profession of all the inter-allied countries for the exchange of medical knowledge and the advancement of medical science. As a result of the enterprise and enthusiasm of the Fellowship an emergency post-graduate course was held in the early part of 1919 for the benefit of medical officers of the Navy, the R.A.M.C., the Royal Air Force, and of the Dominions, the United States, and the allied countries. The teaching schools in the metropolis co-operated in the course, and daily lectures and demonstrations on general and special subjects were given. This emergency course was greatly appreciated, and similar courses were arranged subsequently, and are still maintained.

In the meanwhile, and for many months previously, the establishment of a permanent post-graduate association in London had been under consideration. The object was to plan a national scheme for post-graduation training with London as its centre. The details of the scheme, as approved by representatives of post-graduate schools and special hospitals, were published in the JOURNAL of April 5th, 1919, p. 424. On October 24th, 1919, an important forward step was taken in the amalgamation of the Fellowship of Medicine and the Post-Graduate Medical Association. The amalgamated "Fellowship of Medicine and Post-Graduate Medical Association" has established, on what is hoped to be a permanent basis, a graduate course which is now conducted at twelve London medical schools and twenty-three other London hospitals. The officers of the Fellowship of Medicine and the Post-Graduate Medical Association are: President, Sir George Makins; chairman of the Executive Committee, Sir Humphry Rolleston; and the honorary secretaries, Sir John Y. W. MacAlister, Mr. Philip Franklin, and Mr. Herbert J. Paterson. At present the business of the Fellowship of Medicine and the Post-Graduate Medical Association is conducted at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1. This arrangement is temporary, and it is hoped that as the organization expands along the broad lines laid down in the 1919 scheme of the Post-Graduate Medical Association, it will secure a permanent central home.

In December last an important pronouncement on the future requirements of post-graduate work in this country was made by Sir Clifford Allbutt, the late Sir William Osler, Sir George Makins, Lord Dawson, Dr. J. G. Adami, and Sir Humphry Rolleston. Their main point was that to ensure the success of any comprehensive scheme in London it would be necessary to have one or more post-graduate teaching hospitals adequately provided in all departments and including a laboratory for clinical investigation and pathological research. Since time would not permit of the building and equipment of a new hospital for the purpose they appealed to the Government to help in equipping one or more of the large general hospitals in London for graduate teaching exclusively. These post-graduate hospitals, it was suggested, would provide themselves with such a teaching staff as would be second to none, if not superior to any other throughout the world. In our issue of December 20th, 1919, p. 825, we observed that this proposal harmonized with the opinion of the Royal Commission on University Education in London, which spoke of the propriety of organizing, after the University Hospital Units had been established, a hospital as a post-graduate school for the reception partly of graduates from abroad and the colonies, partly of students from other universities and hospitals who desire to pursue their studies further. Sir George Newman also, in his Memorandum to the President of the Board of Education on Medical Education in England, expressed the view that for the proper organization of the study of medicine after graduation the provision of an imperial post-graduate teaching school was necessary; the project was further developed in Sir George Newman's Memorandum on Preventive Medicine addressed to the Ministry of Health. A well-considered scheme for the organization of one or more post-graduate teaching hospitals, with adequate provision for research, should therefore command the sympathy both of the Board of Education and of the Ministry of Health. In the meantime the existing opportunities for post-graduate study in London as well as elsewhere are summarized below.

In Scotland the post-graduate classes in Edinburgh, conducted by the teachers of the University and Royal Colleges, have been resumed, and in Glasgow a post-graduate medical association has been formed under the management of the post-graduate teachers and of representatives of the institutions granting facilities for instruction. The arrangement is contemplated of "refresher" courses of four to six weeks, and of advanced and comprehensive courses intended for those particularly desirous of studying intensively certain special subjects; the latter courses are to occupy the post-graduate's whole time, and to be of not less than six months' duration. An account of the scheme was given in the JOURNAL of May 22nd, 1920, p. 721.

Besides the post-graduate courses specifically mentioned in the following paragraphs, post-graduate work has taken place during the past twelve months at Manchester, Birmingham, Leicester, and Bath, and at the Hospital for Crippled Children at Alton, Hants. The Birmingham course, held from July 5th to 17th, was organized in ten sections.

The remarks above refer almost entirely to comparatively short courses in the nature of revision classes. This country has not so far followed the example of America in establishing long courses extending into years, with a view to making men specialists in the various branches. It is questionable whether any attempt in this direction will be made in this country, where such training is usually obtained by holding junior appointments such as that of clinical assistant. Those who are interested in the matter, and wish to know what can be said for special lengthy organized courses, may consult the instructive account, given in our columns on June 19th, 1920, at p. 833, by Sir Humphry Rolleston and Mr. H. J. Waring, of graduate medical education in the United States.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.

An account of the institution of this Fellowship, and a list of its officers, has been given above. At present the offices are at 1, Wimpole Street, W.1 (telephone Mayfair 2236). The secretary, Miss M. A. Willis, is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s. 6d., or two dollars and a half.

The Fellowship has arranged with the medical schools in London and other hospitals for a post-graduate course admitting to their general practice, including clinical instruction in the wards and out-patient departments, clinical lectures and demonstrations, *post-mortem* demonstrations, laboratory work, etc. Tickets at the rate of 3 guineas for each month can be obtained from the secretary. The card of Fellowship for any period of the course admits the holder to twelve London hospitals, to which medical schools are attached, and to twenty-four other London hospitals. The Fellowship issues a weekly bulletin containing a programme of the work in these hospitals, specifying the names of teachers or lecturers, together with the time and place at which their instruction is given. This list is arranged under the heading of the various sections of the course—for example, diseases of the chest, ophthalmology, radiology, venereal diseases, etc. Announcement is also given of special courses of clinical lectures, some of which are occasionally held out of London.

EDINBURGH POST-GRADUATE COURSES.

Short advanced courses for graduates in connexion with the University and the Royal Colleges, will be held during the summer and autumn terms and the summer vacation. The individual courses will be held only provided that a certain minimum number of graduates enter for them; and, in certain courses, a maximum limit will also be imposed.

The courses will be conducted by teams of teachers, and the following subjects will be included: Clinical Therapeutics, Tuberculosis, Diseases of the Blood, Diseases of the Renal System, Diseases of the Alimentary System, Diseases of the Circulatory System, Diseases of the Ductless Glands, Abdominal Surgery, Genito-urinary Surgery, Surgery of Children, Clinical Gynaecology and Clinical Obstetrics, Child Welfare, Diseases of the Larynx Ear and Nose, Ophthalmoscopy and Errors of Refraction, Venereal Diseases, Advanced Bacteriology, Advanced Medical Anatomy, Advanced Surgical Anatomy. Arrangements will also be made, if necessary, for special instruction in Ante-natal Maternity Work, Psychiatry, and Dermatology.

Particulars in regard to the courses—dates of commencement, fees, etc.—may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

GRADUATE MEDICAL TEACHING IN GLASGOW.

For some years before the war post-graduate classes in medicine were conducted at several of the hospitals in Glasgow, but no organized scheme was in operation whereby the teaching in the different hospitals might be correlated. In March, 1914, a committee was appointed to promote co-operation between the various bodies concerned; the work of this committee fell into abeyance during the war. In 1919 an emergency course for the summer session was instituted partly to meet the needs of graduates who had been on service. This course was repeated in the autumn. Early in the present year, at a joint meeting of the Faculty of Medicine of the University of Glasgow and the general committee for post-graduate medical teaching, it was decided to form a central organization for the purpose of arranging, co-ordinating, and administering post-graduate medical teaching in Glasgow and the West of Scotland. This central body is known as the Glasgow Post-graduate Medical Association, the governing board of which consists of representatives elected by the teaching institutions, and by the teachers taking part in the post-graduate teaching. It is proposed to hold (1) twice a year "refresher" courses for the general practitioner of four to six weeks' duration; (2) weekly demonstrations for practitioners in Glasgow and the neighbourhood—one weekly meeting of an hour and a half; (3) advanced and comprehensive courses intended particularly for those desirous of qualifying specially in any one or more subjects; these advanced courses are to occupy the full time of the practitioner, and to be of not less than six months' duration. The post-graduate board is at present making arrangements for post-graduate teaching to commence next winter. The secretary is Dr. A. M. Kennedy, to whom inquiries may be addressed at the University of Glasgow.

COURSES FOR MEDICAL GRADUATES AT BRISTOL.

The University of Bristol provides a course of clinical demonstrations for medical practitioners. The demonstrations are given from 2.30 to 3.30 p.m. at the Royal Infirmary and General Hospital, Bristol, alternately, on Wednesdays. They have been held during May, June, and July. Each is given by a team composed of a physician, a surgeon, a pathologist or specialist, and any others who have co-operated in the diagnosis and treatment of the case. Attendants on the course have the further advantage of admission for medical instruction for one month to any or all departments of the clinical institutions included in the university. Practitioners wishing to take vacation or winter courses may become clinical assistants in medicine, surgery, obstetrics, pathology, rhinology and ophthalmology, dermatology, etc., for periods of a fortnight or a month. Inquiries should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol.

WEST LONDON POST-GRADUATE COLLEGE.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895, and the present building was opened in 1901; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the five years before the war the yearly entry has averaged over 220. The work of the college is eminently suitable for men who wish to revive their general clinical knowledge after war work.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2.15 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months. There is no charge to members of the college. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5.30 p.m. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist who attends every day. In bacteriology and microscopy special instruction is given on three mornings a week.

Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars. Lectures of a practical kind are given daily.

Fees.—Hospital practice, including all ordinary demonstrations and lectures, £1 1s. for one week, £3 3s. for one month, £4 for six weeks, £6 6s. for three months, £10 10s. for six months, £15 15s. for one year, and £30 for a life ticket. Every year in August there is a special vacation class lasting four weeks, for which the fee is £3 3s. Instruction in the administration of anaesthetics is given at the rate of £3 3s. per month.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees). A prospectus can be obtained on application to the Deans.

LONDON SCHOOL OF CLINICAL MEDICINE (POST-GRADUATE), DREADNOUGHT HOSPITAL, GREENWICH, S.E.10.

It has not yet been found possible to resume the entire course of lectures, demonstrations, etc., held at this school, but a certain amount of instruction is carried on. The usual facilities are afforded for operative surgery, and special classes are arranged for two, three, or four students for a cadaver. Arrangements are made for utilizing the unusual opportunities for the study of pathology. The venereal clinic is exceptionally well equipped, and arrangements are made for attendance, and certificates of efficiency are issued in accordance with the requirements of the Ministry of Health.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The head quarters of this post graduate school are situated at the Prince of Wales's General Hospital, in the midst of a densely populated North London district. It contains 125 beds, and is within a few minutes' walk of

South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London.

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H. diploma, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture room. Operations are performed every afternoon of the week except Saturday. Special classes are arranged in modern methods of the investigation and treatment of disease.

Fees.—One guinea for a three months' course of study in any one department, which may be begun at any time; a fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may be obtained for 10 guineas.

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital, or at 19A, Cavendish Square, London, W.1.

TROPICAL MEDICINE.

THERE are schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

DIPLOMAS AND DEGREES.

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained, the regulations relating to the curriculum and examination corresponding to those applying to the other branches.

LONDON CONJOINT BOARD.—This body grants a diploma in tropical medicine to candidates after an examination usually held in the months of April and July. Ordinary candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine, in an institution recognized for this purpose during not less than three months; (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than three months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £9 9s. The Board also grants diplomas in psychological medicine and in ophthalmic medicine and surgery. Candidates must hold a medical qualification registrable in the United Kingdom or be graduates in medicine of an Indian, Colonial or foreign university. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, Bloomsbury, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners. The subjects of examination are (*a*) tropical pathology, parasitology, and entomology; (*b*) tropical and applied bacteriology; (*c*) tropical hygiene and sanitation; (*d*) tropical medicine, including etiology, symptoms, diagnosis, and treatment of tropical diseases. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF CAMBRIDGE.—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examination of the university in this subject. Previous to admission to the examination he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates. Examinations are held in January and August each year, and last four days. The fee for the examination and diploma is 9 guineas on admission or readmission. Application for further information should be made to Dr. G. S. Graham-Smith, Pathological Laboratory, Cambridge.

SCHOOLS.

LONDON SCHOOL OF TROPICAL MEDICINE.—This school is under the auspices of the Seamen's Hospital Society. Its laboratories, museum, library, etc., are within the building of the Hospital for Tropical Diseases, Endsleigh Gardens, N.W., and excellent opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the services or going abroad. In the wards of the Hospital for Tropical Diseases are to be found cases of tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year lasting three months, beginning October 1st, January 15th, and May 1st respectively. The course is so arranged as to equip men for the Cambridge D.T.M. and H. and the D.T.M. of the Conjoint Board. Tropical Medicine has been admitted as a sixth alternative subject for the M.D. of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking out the M.D. in this subject. (In addition, short courses of a month's duration are arranged as required for the benefit of practitioners and pensions officers.) Further information may be obtained from the Dean, London School of Tropical Medicine, India Office, Whitehall, London, and the Secretary, London School of Tropical Medicine, Seamen's Hospital, Greenwich, S.E.10.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—This school is affiliated with the University of Liverpool and the Royal Infirmary of Liverpool. Two full courses of instruction are given every year, commencing about January 6th and September 15th, lasting for the term of about thirteen weeks, and followed by the examination for the diploma of tropical medicine given by the University of Liverpool. In addition to the full courses, an advanced course of practical instruction in tropical pathology and medical entomology, lasting a month, is given every year in June; it is of such a kind as to be very useful to medical men returning from the tropics on short leave. A special course of instruction in entomology, etc., is also given three times a year to officers of the East and West African Colonial Services. Students of the school who do not care to undertake the examination held by the university at the end of each term for the diploma in tropical medicine are given a certificate for attendance if the latter has been satisfactory.

Fees.—The fee for the full course of instruction is £13 13s., with an extra charge of 1 guinea for the use of a microscope if required. The fee for the Diploma Examination is £5 5s. and that for the Advanced Course is [illegible].

The new laboratories of the school adjoin the University and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 ft. in maximum length by 84 ft. in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has: (1) Lecture theatre, with accommodation for about seventy students; (2) library, 33 ft. by 27 ft., furnished in oak and with parquet floor; (3) museum, a spacious room 80 ft. by 69 ft. with preparation room adjoining. The first floor has twelve rooms, in which are housed the Departments of Tropical Medicine and Entomology. The second floor has the main class laboratory, 69 ft. by 58 ft., excellently lighted, and three other rooms, devoted to the Department of Parasitology. The third floor has a large research laboratory, 37 ft. by 30 ft., and two research rooms. On the roof is an insectarium, a mosquito-proofed house, and other accommodation.

Since it was instituted the school has dispatched to the tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs, besides textbooks and numerous articles in the scientific press, also in the *Annals of Tropical Medicine and Parasitology* of the school. In connexion with the school are (1) the Manáos Research Laboratory in Brazil, and (2) the Sir Alfred Lewis Jones Tropical Laboratory now in course of construction at Sierra Leone. Further information may be obtained from the Secretary, H. 24/25, Exchange Buildings, Liverpool.

PSYCHOLOGICAL MEDICINE.

THE study of mental diseases has long been a necessary part of the ordinary medical curriculum, and psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up. In addition, diplomas in psychiatry or psychological medicine can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, and the National University of Ireland, and from the Royal College of Physicians of London. The Medico-Psychological Association of Great Britain and Ireland also grants certificates of proficiency after examination, and encourages the study of psychiatry by the offer of prizes for original and research work.

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals, or similar institutions. In practically all cases they are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 per annum and senior assistant medical officers about £500, in both cases with board, lodging, laundry, etc., in addition; if married the value of board, etc., is commuted for cash. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act in 1909, all officers and others of the established staff of a mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribution 3 per cent. of the value of their appointments annually. This very favourable prospect may not appeal to juniors joining the services, but is an eventually valuable asset.

Mental hospital work has undoubtedly not been in favour with newly qualified medical men in years past, the principal reasons alleged for this being as follows: (1) It is a local and, except indirectly, not an imperial service; this tends to slow and uncertain promotion. (2) The rule or custom hitherto prevailing, that assistant medical officers may not marry and are merely perpetual house-surgeons, living as bachelors in rooms. (3) That much of their work is clerical, administrative and routine, which if not destructive to the medically trained individual is at least not conducive to scientific medical initiative, as in medical service in the army or other public services, rather than the possibly more attractive general hospital, or private practice, work.

In March, 1920, the Board of Control did useful service by issuing to visiting committees of asylums a circular upon the three following matters: (*a*) The dearth of suitable applicants when vacancies occur for the post of assistant medical officer, and the probable causes thereof; (*b*) the need for the provision for the more effective treatment upon modern lines of recoverable cases of mental disorder; (*c*) the necessity for raising the standard as to the training of existing and future assistant medical officers in asylum practice, and of affording facilities for such training.

Under (*a*) the Board of Control, after pointing out some of the disadvantages of the present state of affairs, made the following suggestions:

(i) That an improvement be made in the salaries of the assistant medical officers, at least to such an extent that in the cases of all those who have been in the service above a certain number of years and are regarded as permanent officials, the salary should be reasonably sufficient for a married medical man, and that in the case of the deputy superintendent it should more closely approximate than at present to that of the superintendent.

(ii) That, in the case of a permanent official, application for permission to marry be not required; that, according to circumstances, proper accommodation for a married man be provided, and that, subject to rules approved by the Secretary of State for the protection of the patients, and with due regard to the proper administration of the institution, permission to live out may be granted.

(iii) That to the title of assistant medical officer the words "and deputy superintendent" should be added to that of the one selected to be in charge during the absence of the medical superintendent.

(iv) That the use of the title senior assistant medical officer should not be restricted as at present to the post of first assistant, but should be extended and be indicative of a certain standing and expert knowledge. By the adoption of this suggestion there would in many asylums be two senior assistant medical officers, and perhaps even three or four in the largest asylums.

(v) That, except where there has been previous asylum experience, appointments to posts of assistant medical officers should in the first instance be temporary in character.

Under (*b*) the Board suggested that the treatment of recent recoverable cases should be carried out by members of the medical staff conversant with modern methods, and that the number of the medical staff should be sufficient to ensure that none of them is required to undertake the treatment of more than fifty recent cases at any one time.

Under (*c*) suggestions were made with a view to encouraging assistant medical officers to obtain a diploma or degree in mental diseases, including provision for study leave on full salary. The attitude of the Board of Control is clearly shown in the following sentence: "If the welfare, treatment and recovery of patients is not to be jeopardized and the study of mental diseases is not to lag behind the study of other branches of medicine, the Board feel the necessity of initiating measures to maintain progress and to secure the best possible treatment of the patients." Readers who wish to go further into this subject may be referred to an interesting paper[1] read before the Medico-Psychological Association in November, 1919, by Dr. C. Hubert Bond, on the need for schools of psychiatry. In this Dr. Bond urges the need for mental clinics and schools of psychiatry, and reviews the progress that has been made towards realizing the measures, powerfully advocated in 1908 by Lieut.-Colonel D. G. Thomson, for supplying adequate instruction in the institutes and practice of psychiatry.

Both the British Medical Association and the Medico-Psychological Association are working separately and together to improve present conditions of service, and have, for example, already removed the "celibacy" objection to the service.

Finally, it may be said that, as in the Army Medical Service or other public medical services, while routine, administrative, and clerical work bulk largely in mental hospital duties, there is ample material, time, and scope for purely medical work, difficult as the subject may be, in psychiatry as one of the branches of medicine open to young graduates.

PUBLIC HEALTH SERVICES.

THE Public Health Service, to use the term in a strict sense, consists of medical officers of health appointed by local public health authorities and holding office under varying conditions of tenure. In addition there are county medical officers appointed by the county councils. The latter are not, strictly speaking, public health authorities; the duties of their medical officers are somewhat similar to those of other medical officers of health, but include few executive functions. In many of the county boroughs and counties assistant medical officers of health or assistant county medical officers are appointed, and such appointments may afford stepping stones for promotion to higher offices. The service is, however, not unified throughout the country, and there is no regular system of promotion; appointments are to be obtained only by application to some particular local authority which has advertised a vacancy.

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[1] *Journal of Mental Science*, January, 1920.

Also ungraded are two other services which have been brought into existence by recent legislation, and whose members are charged with duties which bring them into more or less direct relation with public health authorities or county councils and their officers. The members of the one are called school medical officers, and those of the other tuberculosis officers. Appointments as school medical officer are made by education authorities, while appointments as tuberculosis officer are made in fulfilment of the duties imposed directly on the county councils and the county borough councils, and indirectly on the Insurance Committees by the scheme for the treatment and prevention of tuberculosis which was worked out by the late Local Government Board for England in consultation with the Insurance Commissioners, and is now under the supervision of the Ministry of Health.

The Ministry of Health for England, it may be noted, employs a staff of medical inspectors in connexion with the performance of its duty as the controlling department of the Government in matters of public health, and the same is true of the corresponding boards in Scotland and Ireland. The medical men forming these staffs have, however, been appointed to their position directly by the head of the Local Government Board in each country, and the posts are not open to public competition. The duties of the Local Government Board have now been transferred to the Ministry of Health, and it is to be expected that there will be an increase in the inspectorate and that the duties will undergo expansion to cope with the new efforts about to be made to deal still further with national health.

Medical Officers of Health.

The office of medical officer of health in a county borough—a designation which now includes nearly all the larger towns—is in practice a permanent appointment so long as the incumbent desires to retain it, and is the same by law in administrative counties and metropolitan boroughs. The position of a medical officer of health to an urban or a rural district, or to a combination of districts which have joined together to obtain the services of a whole-time medical officer of health, is much less satisfactory, for his appointment has hitherto been terminable at the will of the public health authority served by him. This, of course, tends to militate against the efficiency of the service. The British Medical Association, in co-operation with some other bodies, has long been endeavouring to induce Parliament to establish security of tenure of office and superannuation for medical officers of health, and is now at last within sight of success. A leading article on the subject appeared in our issue of June 12th, 1920, p. 803.

A medical officer of health to a district or combination of districts having 50,000 inhabitants must hold a diploma in public health. The first step which must be taken by any medical man who desires to follow the career of medical officer of health must therefore be to obtain such a diploma.

School Medical Officers.

School medical officers are appointed by local education authorities under schemes of medical inspection of school children which must be approved by the Board of Education. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard the education of such children, and to inform their parents of its existence. But practically their duties vary considerably in different areas. They also have under approved schemes of inspection certain systems of work which aim at facilitating the task of parents in obtaining for their children the necessary treatment, at checking the results of the latter, and at keeping each defective child under skilled observation both at home and at school until it has passed altogether out of the education authority's hands. The general object of all schemes alike is to make the inspection imposed by law of benefit not merely to the individual child, but to the community at large, by preventing conditions which lead to the existence of a large proportion of inefficient citizens among the adult population. In short, the work is so far related to that of a medical officer of health that in most areas the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole or part-time assistants. Whole-time assistants are commonly paid salaries commencing at a minimum of £500 a year, the chief attraction of the posts being that they may lead on to appointment as medical officer of health of some large area where the combined salary of medical officer of health and school medical officer will represent a fair income. In view of this consideration, if for no other reason, it is desirable for a prospective whole-time school medical officer to obtain a diploma in public health. In some counties and county boroughs it is now the practice for the officer to undertake certain minor ameliorative work, notably prescription of glasses when necessary, the removal of adenoids, and treatment in connexion with certain diseases of the skin. The added interest thus given to the work appears to make for increased efficiency and also enhances the value of the post.

Tuberculosis Officers.

The prescribed duties of tuberculosis officers are to act as advisers to Insurance Committees in connexion with the operation of the sanatorium clauses of the National Insurance Act and to take charge of the work of the tuberculosis dispensary, which is the main unit of the Departmental Committee's scheme. A tuberculosis officer is a whole-time officer, who should have special training in tuberculosis work, and be of suitable age and attainments to command general confidence. At present the number of appointments is small, and the salary generally attached to them is in the neighbourhood of £500 a year with an occasional bonus addition. In many cases they are now appointed on the staff of the medical officer of health, so that the work of prevention and cure of tuberculosis may be made part of the general health work of the Council.

Sanitary Science.

In June, 1919, the University of Cambridge issued regulations for the Examinations in Sanitary Science, conducted by the State Medical Syndicate of the University. Two examinations are held each year—one in April and one in October. Any person possessing a registered qualification in medicine, surgery, and midwifery may be a candidate, provided he has satisfied certain demands laid down in the regulations. The examination consists of two parts, the first having reference to the general principles of sanitary science, the second to State medicine and the applications of pathology and sanitary science. Information respecting these examinations should be sought from Mr. J. E. Purvis, M.A., The Chemical Laboratory, Pembroke Street, Cambridge.

Diplomas in Public Health.

Most of the universities and licensing corporations now grant diplomas in public health to candidates who pass the examinations imposed by them. Since all such tests must conform to the requirements of the General Medical Council, there is considerable similarity in their nature, though they differ not a little in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an honour and not a mere pass examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and at almost every medical school of any importance. It is desirable to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of M.O.H.—has a considerable amount of the manipulative dexterity only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

The regulations of the General Medical Council require that every candidate (subsequent to obtaining a registrable qualification in medicine and surgery) shall have passed through a stated curriculum in the subjects of sanitary science. This must last not less than nine calendar months, and include four months' study in a laboratory in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught, six months' practice study of the duties involved by public health administration, and attendance at least twice weekly for three months on the practice of a hospital for infectious diseases at which instruction is given in methods of administration. These rules do not apply to practitioners registered or entitled to be registered before January 1st, 1890, while that regarding six months' practical study of public health administration is waived in the case of a candidate who has himself been in charge of a sanitary district with a population of not less than 15,000 for a period of not less than three years. The study in question must be passed under the personal supervision of a medical officer possessing certain definite facilities for affording it, these being carefully described in the regulations. The period may be reduced to three months in the case of a candidate who has undergone a corresponding period of study in the public health department of a recognized medical school, or who has been resident medical officer at a hospital for infectious diseases with accommodation for 100 patients for not less than three months. The laboratory study must include at least 240 hours' work, not more than half being devoted to practical chemistry. The examinations imposed by the diploma-granting bodies must extend over not less than four days, one at least being devoted to practical work in the laboratory, and one to practical examination in, and reporting on, subjects within the duties of a medical officer of health, including those of a school medical officer.

The steps which examining bodies take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Every candidate, therefore, should, when he has settled what diploma or degree in State medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. A certain number of the universities grant degrees in the subject as well as diplomas.

THE PUBLIC SERVICES.

NAVY, ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES.

THE Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year. In the abnormal circumstances of the past five or six years the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance. Now that a return has been made, more or less, to peace establishments, we publish somewhat fuller information than we have given in recent years for the guidance of those who think of applying for regular commissions.

ROYAL NAVAL MEDICAL SERVICE.

IN the JOURNAL of July 26th, 1919, p. 121, the substance was given of an Admiralty order announcing the new rates of pay for naval officers, with special reference to officers of the medical branch and officers of the newly created branch of dental surgeons. The new scales involve a substantial addition to the pay of all commissioned ranks in the several branches of the Royal Navy. The revised regulations for the entry of candidates for commissions in the Medical Department of the Royal Navy may be obtained on application to the Medical Director-General, the Admiralty, London, W.

The rules regarding the promotion of medical officers have been altered in various respects. Successful candidates at the entrance examinations (of which notice will be given in due course) will be appointed acting surgeon lieutenants and will be required to undergo such courses of instruction as the Admiralty may decide. At the end of these courses they will be examined, and if approved will be given commissions as surgeon lieutenants, the commission dating from the day of passing the entrance examination. Surgeon lieutenants will be eligible for promotion to surgeon lieutenant commander at the expiration of six years from the date of entry, provided they are recommended by the Medical Director-General, and have served at sea for three years. In exceptional cases special promotion may be made in recognition of distinguished service or conspicuous professional merit. Surgeon lieutenant commanders will be eligible for promotion to surgeon commander after six years' service in that rank under conditions laid down in the new regulations, and who have passed the qualifying examination for this rank. Provision is made for accelerated promotion for those who obtain high marks at the qualifying examination. In exceptional cases special promotion to this rank also may be made. Promotions to surgeon captain and surgeon rear admiral will be made strictly by selection, and will be confined to officers who have proved themselves to be fitted both professionally and as administrators for these ranks.

The new rates of pay include provision for specialist allowances to junior medical officers who have specialized in the following professional subjects: anaesthetics, ophthalmology, ear and throat diseases, genito-urinary and venereal diseases, physical training, pathology and bacteriology.

Rates of Pay.

The rates of full pay per diem are as follows:

	£	s.	d.
Surgeon Lieutenant:			
On entry	1	4	0
After 3 years	1	9	0
After 6 years becomes Surgeon Lieutenant Commander.			
Surgeon Lieutenant Commander:			
On promotion	1	15	0
After 3 years	1	17	0
After 6 years becomes Surgeon Commander.			
Surgeon Commander:			
On promotion	2	5	0
After 3 years	2	9	0
After 6 years	2	13	0
After 9 years	2	17	0
Surgeon Captain:			
On promotion	3	5	0
After 3 years	3	10	0
After 6 years	3	15	0
After 9 years	4	0	0
Surgeon Rear Admiral	5	5	0

Promotion to Surgeon Captain and Surgeon Rear Admiral are by selection from among officers fitted professionally and administratively for these ranks. Surgeon Rear Admirals under the new regulations retire at 60, Surgeon Captains at 55, Surgeon Commanders at 50, Surgeon Lieutenant Commanders at 45.

ARMY MEDICAL SERVICE.

THE persistence of abnormal conditions has prevented the Army Medical Service from returning to its peace footing, such as existed prior to the great war. Not only have several thousand victims of wounds and disease contracted on active service to be provided for in military hospitals, but greatly increased responsibilities devolve on the Army Medical Service in consequence of the military commitments in Mesopotamia, Egypt, the Black Sea, and elsewhere. In addition, the present state of affairs in Ireland calls for extensive medical provision. It is still necessary, therefore, to supplement the Regular Officers of the Royal Army Medical Corps by a considerable number of Territorial, Special Reserve and Temporarily Commissioned Officers, who are continuing to perform excellent service in all parts of the world.

Commissions in the R.A.M.C.

To meet existing conditions, a small increase in the establishment of regular officers has recently been authorized, and these appointments have been filled by selected officers who have been serving on commissions other than Regular. No competitive examinations for entrance into the Royal Army Medical Corps are being held at present, but it is anticipated that, when the time

Royal Army Medical Corps.

Appointment.	Pay.	Rations.	Servant.	Married.			Unmarried.		Total per annum.	
				Lodging.	Fuel and light (average).	Furniture allowance.	Lodging.	Fuel and light (average).	Married.	Unmarried.
	£ s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£	£
Lieutenant	1 2 0	2 1	2 0	3 6	1 0	2 0	2 3	0 10	594	532
Captain	1 7 0	2 1	2 0	4 6	2 0	2 0	3 0	1 2	722	643
Captain, after 3 years	1 7 6	2 1	2 0	4 6	2 0	2 0	3 0	1 2	731	652
Captain, after 6 years	1 8 0	2 1	2 0	4 6	2 0	2 0	3 0	1 2	740	661
Captain, after 10 years	1 11 0	2 1	2 0	4 6	2 0	2 0	3 0	1 2	795	716
Major	1 15 0	2 1	2 0	4 6	2 0	2 0	4 0	1 7	868	815
Major, after 15 years	2 0 0	2 1	2 0	4 6	2 0	2 0	4 0	1 7	959	907
Lieut.-Colonel	2 10 0	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,142	1,098
Lieut.-Colonel, after 20 years ...	2 12 6	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,187	1,144
Lieut.-Colonel, after 25 years ...	2 15 0	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,233	1,189
Colonel	3 5 0	2 1	2 0	5 6	2 10	2 0	5 6	1 10	1,449	1,395
Major-General	4 15 0	2 1	4 0	11 0	3 7	2 0	11 0	2 7	2,147	2,092

(Charge pay (2s. 6d. to 10s. per day) and specialist's pay (2s. 6d. to 5s. per day) in addition for a considerable percentage of officers (from £45 to £180 per annum additional).

comes to recommence these examinations, the subjects for examination will be the same as those laid down in the Regulations for 1912, namely, surgery and medicine, but it is probable that some modification of the conditions of the examination may be decided upon.

It may be pointed out, however, that although no vacancies exist at present in the regular establishment, there is still a pressing need for officers to serve on temporary contracts for periods of six months with pay at the rate of £600 per annum for those without previous service, and £650 per annum for those who have served for twelve months. In each case rations, or ration allowance in lieu, are drawn, and the temporary officer receives an additional £50 per annum if serving outside the confines of Europe. Applications for such service should be addressed to the Secretary, War Office, Whitehall, S.W., when full particulars will be supplied and arrangements made for the medical examination of candidates at the nearest military station that may be convenient to them. It should be noted that when entrance to the Royal Army Medical Corps by competitive examination recommences, candidates with previous service in the Corps on Territorial, Special Reserve, or temporary commissions will, if successful, be permitted to count such mobilized service towards promotion and pension, and in the meantime selected temporary officers will be appointed to regular commissions from time to time as vacancies occur.

Scientific Work and Training.

The continued strain under which the Army Medical Service has been working during the past twelve months has made the full development of the scientific side of the training and work of its officers one of great difficulty, but in spite of this much has been accomplished.

The Departments of Hygiene and Pathology have [illegible] specially selected and [illegible] appointed as assistant or [illegible] of hygiene or pathology to all [illegible] to establishment. Arrangements have also been made for the [illegible] of schools of hygiene in each of the Home Commands, where all branches of the service will receive practical [illegible] to life in barracks or in camp.

[illegible] officers have attended [illegible] course of [illegible] Hygiene at the Army School of Hygiene [illegible] beside the methods of sanitation [illegible] and demonstrations have been given on the [illegible] pathological [illegible] of the [illegible].

[illegible] for officers to [illegible] specialist pay [illegible] at the rate of [illegible] per day, has been [illegible] and [illegible] operative surgery, medicine, ophthalmology, [illegible] venereal disease, [illegible] pathology, anaesthetics, mental diseases, hygiene, and pathology, while other subjects may be added at the discretion of the Army Council.

A considerable number of specialist appointments carry with them, besides the extra pay, a fixed tenure of appointment for three years, thus saving officers from the expenses incidental to moves of station, while at the same time enabling them to take a greater interest in and derive more satisfaction from the efficient performance of the duties of their appointments. It need hardly be pointed out what fine opportunities for research work this system offers, or what scope the Army, scattered as it is all over the world, presents to those who are keen and capable of taking advantage of the facilities provided.

The senior course at the Royal Army Medical College for captains for promotion to majors is at present of six months' duration, but officers who are desirous of qualifying in a special subject are, if recommended, permitted to extend the period for an additional three months. Officers are usually selected to go through this course about their ninth year of service, and thus have an opportunity to bring their professional knowledge up to date. Steps have been taken so that officers who are desirous of doing so may continue their professional subjects and be promoted to the higher administrative ranks while so doing. Lastly, it is worthy of note that many of the most responsible posts of the Ministries of Pensions and Health and of the Royal Air Force are held at the present time by past or present officers of the R.A.M.C.

Rates of Pay.

The rates of pay at present in force are shown in the table printed above.

Additional Pay and Charge Pay for Officers of the Royal Army Medical Corps.

Whereas We deem it expedient to revise the conditions governing the issue of additional pay and charge pay to officers of Our Royal Army Medical Corps and to make certain changes in the rates thereof;

Our will and pleasure is that [illegible] from 1st January 1920 the [illegible] of Our Warrant for the Pay, [illegible] of Our Army, dated [illegible].

[illegible] the following shall be substituted:

[illegible]

	Daily
	s. d.
[illegible]	[illegible]
[illegible] ...	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible] ...	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Hygiene	[illegible] 6
Pathology ...	2 6
Subjects other than above, at the discretion of Our Army Council	2 6

[illegible] higher rank while holding appointments [illegible] hygiene and pathology shall not be eligible for additional pay as specialists while holding such temporary rank.

2. The following shall be substituted for Article 361 (*a*):

"(*a*) Officer in charge of a hospital. If the number of equipped beds, as certified by the deputy director of medical services, exceeds—

	Daily. s. d.
50 beds	2 6
150 beds	5 0
300 beds	7 6
500 beds	10 0

"Officer in charge of a medical or surgical division of a general hospital with not less than 300 beds—half the above rates.

"An officer graded as a specialist appointed to the charge of a medical or surgical division of a general hospital may be allowed to retain his additional pay and to draw the rate of charge pay laid down above for the officer in charge of a medical or surgical division of a general hospital, provided that the total of additional and charge pay so drawn does not exceed the rate of charge pay drawn by the officer in charge of the hospital. With this exception charge pay and additional pay as specialist shall not be issuable concurrently."

Retired Pay.

Retired pay will consist of two parts, (*a*) a service element based on the officer's total service; (*b*) a rank element for the rank from which the officer retires. An officer with less than twenty complete years' service will not be eligible for retired pay.

The scale will be as follows:

(*a*) Service element: £15 a year for each completed year of service.

(*b*) Rank element:

Rank from which Retired.	After Completing 1 year's Service in the Rank.	After Completing each Additional Year's Service.	Maximum Rank Element.
	£	£	£
Major	12	12	120
Lieut.-Colonel	150	30	240
Colonel	290	50	390
Major-General	440	50	540
Lieut.-General	590	50	690

The retired pay of an officer retiring with less than one complete year's service in the rank from which he retires will be assessed as though he had retired from the rank below.

Maximum rates of retired pay (*a*) and (*b*) together:

Captain and Subaltern	£300
Major	£450
Lieutenant-Colonel	£600
Colonel	£800
Major-General	£1,000
Lieutenant-General	£1,200

An officer with eight and a half years' and less than twenty years' service may be permitted to retire with a gratuity varying from £1,000 to £2,500.

By a Royal Warrant issued in September, 1919, medical and combatant officers were placed on the same footing as regards retired pay, and the fact that medical officers enter the Service after a long and expensive training some five years later in life than combatant officers was overlooked. This inequality of treatment has now been rectified, with the result that a medical officer of twenty years' service or over gets £75 per annum more pension than a combatant officer with the same number of years' service.

ROYAL AIR FORCE MEDICAL SERVICE.

THE Royal Air Force Medical Service is now definitely established, and, except for a few points which are still under consideration, the conditions of service have received the sanction of His Majesty's Government.

This new service offers a career for medical men which should prove both attractive and interesting. The rates of pay and allowances are good and a new field of scientific interest is opened up by the manifold problems which the circumstances of aviation produce. The physical and mental fitness for, and reaction to, the varied conditions under which the flying personnel perform their functions provide much scope for research.

As promotion to the higher ranks of the service is to be entirely by selection, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for young medical officers who exhibit ability and energy in scientific research as well as for those who develop a talent for administration.

Commissions.

The establishment will consist partly of permanent and partly of short service officers.

Short service officers will be admitted by direct entry for a period of two years, which may be extended to four years at the discretion of the Air Council on the recommendation of the Director of Medical Services. Those who are not selected for permanent commissions will pass into the Royal Air Force Medical Reserve at the expiration of their period of service on the active list, and will then receive the gratuity to which their service entitles them.

Short service officers who are approved for permanent commissions, but for whom there are not vacancies in the Royal Air Force Medical Service, may, under certain conditions, transfer to the Royal Army Medical Corps, counting their time served in the Royal Air Force towards increments of pay and retired pay in the Royal Army Medical Corps. Arrangements are being made to allow post-graduate courses after selection for permanent commission.

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical) and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for permanent commissions will be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be carried out, in a limited number of cases, of officers who show exceptional ability after the completion of eight years' service. Promotion to the rank of Wing Commander will be by selection at any period after sixteen years' total service, and to that of Group Captain by selection at any period after twenty-two years' service.

There will be no competitive examination on entry; candidates must be under 28 years of age, be nominated by the dean of a recognized medical school or teaching hospital, and will be interviewed personally by the Director of Medical Services, Royal Air Force, before acceptance. Each candidate must produce:

1. Birth certificate.
2. Medical registration certificate.
3. A declaration containing the following information:
   - (*a*) Age and place of birth.
   - (*b*) That he is of pure European descent, and the son of a subject of the British Empire.
   - (*c*) That he labours under no constitutional or mental disease or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate in peace or war.

     (All candidates will be required to pass a medical examination as to their physical fitness before acceptance to ensure that they fulfil the standard laid down in this declaration.)
   - (*d*) That he is ready to engage for general service at home or abroad as required.
   - (*e*) The qualifications he is possessed of and what medical or other appointments he has held (if any).
   - (*f*) That he is willing to fly whenever called upon to do so, and to qualify in such aviation tests as may be required.

If the applicant is in possession of a certificate of training in an Officers' Training Corps this should be submitted.

An applicant who at the time of application holds or is about to hold a resident appointment in a recognized civil hospital, may be seconded for the period, not exceeding one year, during which he holds such appointment. Whilst seconded he will not receive pay from Air Council funds, but his seniority will count from the day on which he is seconded to the civil hospital.

Uniform and Equipment.

Medical officers will be required to provide themselves with the uniform of their rank and with the distinguishing badges of the Royal Air Force Medical Service. Officers accepting four year short service commissions will be required to provide themselves with service dress and mess dress. For officers accepting two year commissions mess dress will be optional. (The question of the grant of an outfit allowance to medical and other officers of the Royal Air Force is under consideration.) Officers on entry are required to provide themselves with the regulation pocket case of instruments.

Rates of Pay.

Rank and Years of Service.	Rate per Diem. s. d.
Flying Officer:	
On joining	24 0
Flight Lieutenant:	
After 2 years' total service	26 0
" 4 years' "	28 0
" 6 years' "	30 0
Squadron Leader:	
On promotion	34 0
After 2 years in the substantive rank	36 0
" 4 " " " "	38 0
" 6 " " " "	42 0
Wing Commander:	
On promotion	46 0
After 2 years in the substantive rank	50 0
" 4 " " " "	52 0
" 6 " " " "	54 0
Group Captain:	
On promotion	60 0
After 2 years in the substantive rank	64 0
" 4 " " " "	68 0

[illegible] for Group Captains and lower ranks is [illegible] table:

Age.	Commissioned Service.	Rate of Retired Pay.	Addition for each Extra Year of Service.*	Deduction for each Deficient Year of Service.
		£	£	£
[illegible]	24	[illegible]	22	15
[illegible]	24	[illegible]	22	15
[illegible]	23	742	22	15
[illegible]	[illegible]	720	22	15
[illegible]	22	697	22	15
[illegible]	22	675	15	15
[illegible]	21	637	15	15
[illegible]	21	600	15	15
[illegible]	20	562	15	15
[illegible]	20	525	15	15
[illegible]	19	487	15	15
[illegible]	19	450	15	15
[illegible]	18	412	15	15
42	18	375	15	15
41	17	337	15	15
40	17	300	15	15

* Limited to five years.

Group Captains retire at [illegible]; maximum retired pay £[illegible]
[illegible] retire at [illegible]: [illegible]
[illegible]: Leaders retire at [illegible]

[illegible] qualifying period for retired pay of [illegible]

Gratuities.

[illegible] will receive gratuities at the rate of £100 [illegible] years of service and at the rate of £150 for the third and fourth completed year. (If granted permanent commissions these gratuities will not be [illegible] the period of service under the short service commission [illegible] for retired pay.)

[illegible] permanent commissions [illegible], at the [illegible] Air Council, be allowed to withdraw from the service after ten years' service with a gratuity of £1,250 or after [illegible] with a gratuity of £2,000 in lieu of retired pay.

[illegible].

The usual allowances will be payable to medical officers under [illegible] Royal [illegible]

INDIAN MEDICAL SERVICE.

At the Annual Representative Meeting of the British Medical Association in 1919 the following resolution was [illegible]:

[illegible] Secretary of State for India [illegible] the British Medical [illegible] that the [illegible] could [illegible] to keep up recruiting for the Indian [illegible]

It is well known that for some years prior to the war the pay and conditions of service in the I.M.S. were unfavourable. The pay, furlough pay, and pensions were inadequate; [illegible] difficult to obtain, the [illegible] of [illegible] medical officers was unsatisfactory. The [illegible] the same high [illegible] of recruit [illegible]. The new terms offered by the Secretary of State [illegible] the above resolution have [illegible]. They comply with the demands [illegible] by the British Medical Association. The [illegible] have [illegible] the position. The sympathetic attitude of the Secretary of State towards the Indian Medical Service augurs well for the future. The [illegible] a young doctor equipped with the proper [illegible] of a great career. A [illegible] from the day of his arrival in India. [illegible], the great traditions of the I.M.S. should not be maintained or [illegible] its former prestige [illegible] of the medical [illegible]

Pay and Allowances.

[illegible]

[illegible]

given below. It will be seen that there is an incremental rate rising every three years to a maximum of Rs. 2,100, as against a maximum of Rs. 1,400 formerly. This is a great improvement. Two new grades of increment have been introduced, after eighteen years' service and after twenty-three years' service. Senior officers of proved [illegible] are certain to be in receipt of command allowances of Rs. 240 or Rs. 180 in addition, while a certain number of captains and junior majors have the opportunity of drawing the lesser allowances of Rs. 120 or Rs. 90. A young medical man, therefore, on joining the I.M.S., should be able, from the day he arrives in India, to live comfortably and reasonably on his pay.

The pensions have been improved as follows: After seventeen years' service an officer can retire on £400 a year, instead of £300 as in former days. The maximum pension is £850 after twenty-seven years' service, in place of £700 after thirty years. Additional pensions are also given for administrative officers—namely, £125 for a Colonel after two years' active service, and £250 after four years; £300 for a Major-General after one and a half years' active service as such, and £350 after three years.

Leave and Study Leave.

The Secretary of State undertakes to carry into effect the proposal to increase the reserve to 25 per cent. for furlough and to maintain the 2½ per cent. reserve for study leave in addition as soon as the strength of the service permits. That is to say, as soon as recruits are forthcoming, the furlough and study leave reserves come into being automatically. The above percentages are considered as ample to guarantee regular and frequent periods of furlough and to ensure the study leave permitted under the regulations.

The rules governing study leave provide for a maximum of twelve months during an officer's service. It is granted to the extent of one month for each year's active service. Any approved course of study in any subject or subjects in any country can be taken. The time counts as duty and is in addition to furlough. The pay is furlough pay with an extra 12s. per day as lodging allowance. The opportunity thus afforded for post-graduation study and for the acquirement of the higher qualifications is of inestimable value, both to the individual and to the State. Accelerated promotion of six months to the rank of Major is granted under the rules for study leave.

Passages and Furlough.

The cost of passages for an officer and his family to and from England has always been an unfair tax on the resources of individuals, and more especially for those who because of ill health have been compelled to return to England to recuperate at short intervals. This question of passages is still under discussion. It affects the whole of the army and is not confined solely to officers of the Indian Medical Service. The Secretary of State has announced that he is willing to undertake that officers of the I.M.S. in military employ will receive the same advantage as combatant officers, and that those in civil employ will receive such concessions, if any, as may be granted to other officers in civil employ. It is unfortunate that no decision has yet been reached. The above undertaking, however, is distinctly satisfactory so far as it goes.

A young medical man in considering whether to join a Government medical service looks in the first place to the pay and pensions. In these two matters the Indian Service offers distinct monetary advantages over the Home and Colonial State medical services. This is, of course, as it should be in order to compensate for service in the East. The intending candidate should, however, [illegible], if he is to serve abroad, the all important provision for furlough home. In the past the difficulty of obtaining regular and necessary leave home has been a source of constant and legitimate grievance in the I.M.S. The service has been under[illegible]. The demands made on the I.M.S. owing to the war and its consequences [illegible] the former difficulties. The position can only be remedied by increasing the normal cadre and by [illegible] the furlough reserve. The Secretary of State has given his undertaking to do this whenever it is made [illegible] by the requisite number of recruits joining the service.

[illegible]

The Indian Medical Service offers [illegible] of two kinds. A young officer on appointment spends his first [illegible] years entirely in military service. His duties are with Indian troops and he is posted to an Indian military [illegible] hospital. He can if he so wishes remain in military [illegible] service; on the other hand, if he is desirous of civil employ he has a very varied field open to him. The majority of those who join the civil side become civil surgeons in charge of districts and the headquarter district hospital. The work is often heavy and always interesting. Private practice is negligible in the smaller districts, and only becomes attractive as officers in virtue of capacity and seniority are posted to the larger towns. Much depends on the personal equation in India as elsewhere.

There are professorial appointments at the medical colleges, research appointments in the bacteriological department, hygiene and public health appointments in the sanitary department, and forensic medicine and toxicology appointments in the chemical examiners department; such appointments carry with them extra departmental allowances. In short, in the vast field of medical work in India there is scope for any officer who has special talents or inclinations in any direction, military or civil. While in civil employ the I.M.S. officer forms the war reserve for the Indian army, and he is promoted in the military grades on a time scale comparable with that of his brother officer who remains in military service.

Prior to the war an officer who elected for civil employ could count on being nominated after a period of four to eight years' military duty, a period which varied according to the number of vacancies. The exigencies of the war demanded the calling up of most of the civil I.M.S. officers for military duty, and the civil side of the medical service is still being utilized for this purpose, and until peace conditions are restored it is impossible to estimate how vacancies will occur on the civil side. Officers with high qualifications are specially selected for professorial and departmental appointments.

The Indian Reform Act.

There remains the question whether and to what extent the interests of the officers in the I.M.S. will be affected under the new Indian Reform Act which is now coming into operation. It is difficult, of course, to foretell what the future will bring forth. The essential feature of the Act is the greater participation of Indians in the government of the country. Consequently the Indian Medical Service will absorb in its cadre an increasing proportion of Indian medical men. The admission of Indians to the I.M.S. is no new thing. In the pre-war days of competitive examination the proportion of successful Indian candidates was from 7 to 12 per cent. In the two years preceding the war the number of Indians successful at the competitive examination varied from 12 to 25 per cent. At present admission is by nomination only. Recently in nominating selected candidates with approved and high qualifications, and with war service, for permanent commissions the practice has been to admit one Indian candidate to two European candidates. Each candidate so nominated has been recommended as suitable for a permanent commission by two regular officers of the Indian Medical Service, and subsequently interviewed by a Selection Board, which in India was presided over by the Director-General I.M.S. For this personal interview candidates were called to Delhi from all theatres of war, and the greatest care was exercised in selecting Indian doctors whose merit has been proved in the field and who have been recommended as suitable by their brother officers.

Temporary Commissions.

To meet the present conditions and shortage of European officers a special contract is provided for the grant of temporary commissions. The terms of this contract are well worth the consideration of those young medical men who, for private reasons, do not wish to make a definite decision for permanent service in India.

A temporary commission is granted for two years with pay at Rs. 700 per mensem for lieutenants and Rs. 750 for captains. Three years' service as a medical officer with the Home, Colonial, or Indian forces qualify for the higher rate. A first-class passage to and from India is granted and a £50 outfit allowance. Leave is granted under ordinary rules, and if an officer has not been able to take one month's privilege leave for each year of service, he may get the balance at the expiration of his term of engagement. Applicants who at the end of the period of temporary service apply, and being eligible are accepted, for permanent commissions in the I.M.S., will be allowed to count their temporary service for rank, gratuity, and pension.

Under such a contract any young medical officer has an opportunity of seeing the world on favourable terms, and deciding on the spot whether the local conditions justify him in joining the service permanently.

For full details and particulars intending candidates should apply to The Secretary, Military Department, India Office, Whitehall, London, S.W.1.

Scale of Pay: Indian Medical Service.

Rank.	Year of Service.	Basic Pay and Overseas Allowances.
Lieutenant	1	Rs. 650 per mensem.
,,	2	,, 650 ,,
,,	3	,, 650 ,,
Captain	4	,, 800 ,,
,,	5	,, 800 ,,
,,	6	,, 800 ,,
,,	7	,, 950 ,,
,,	8	,, 950 ,,
,,	9	,, 950 ,,
,,	10	,, 1,050 ,,
,,	11	,, 1,050 ,,
,,	12	,, 1,050 ,,
Major	13	,, 1,200 ,,
,,	14	,, 1,200 ,,
,,	15	,, 1,200 ,,
,,	16	,, 1,350 ,,
,,	17	,, 1,350 ,,
,,	18	,, 1,350 ,,
,,	19	,, 1,500 ,,
,,	20	,, 1,500 ,,
Lieut.-Colonel	21	,, 1,750 ,,
,,	22	,, 1,750 ,,
,,	23	,, 1,750 ,,
,,	24	,, 1,850 ,,
,,	25	,, 1,850 ,,
,,	over 25	,, 1,950 ,,
,, on selected list		,, 2,100 ,,

Charge allowances and second in command allowances for station hospitals in addition to above rates:

(a) Charge Allowances.

First class hospitals	Rs. 240 per mensem.
Second class ,,	,, 180 ,,
Third class ,,	,, 120 ,,
Fourth class ,,	Nil.

(b) Second in Command Allowances.

First class hospitals	Rs 120
Second class ,,	,, 90

All existing general allowances paid to holders of professional and bacteriological appointments and certain other special classes of appointments on the civil side to be maintained.

Pension Rates.

After 17 years' service	£400	After 23 years' service	£620
,, 18 ,,	430	,, 24 ,,	660
,, 19 ,,	460	,, 25 ,,	700
,, 20 ,,	500	,, 26 ,,	750
,, 21 ,,	540	,, 27 ,,	800
,, 22 ,,	580		

Additional Pensions for Administrative Officers.

Colonel after 2 years' active service	£125
,, ,, 4 years' ,, ,,	250
Major-General after 1½ years' active service	300
,, ,, 3 ,, ,,	350

PRISON MEDICAL SERVICE.

CANDIDATES for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

The pay of the whole-time prison medical staff is: Medical officer Class II, £300, rising by annual increments of £15 to £500; medical officer Class I, £550, rising by annual increments of £20 to £700. Unfurnished quarters are provided, or an allowance in lieu is made. The Civil Service bonus is paid on the salary. There are 15 medical officers Class II, 10 medical officers Class I, and 33 part-time medical officers.

The number of vacancies is never large, and promotion is slow. Although there has recently been some improvement in the scale of pay, the remuneration both of whole-time and part-time prison medical officers is unsatisfactory.

MEDICAL PRACTICE IN BRITISH COLONIES AND FOREIGN COUNTRIES.

MEDICAL Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee, provided they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical connexions as an independent State. The result has been that reciprocity of practice has been established between this country and all the Provinces of Canada except British Columbia, where certain obstacles have not yet been overcome. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register.

Italy, Belgium, Japan, Egypt, and the Principality of Monaco are the only foreign States which accord a right to practise in virtue of British degrees and diplomas, though the authorities in Spain occasionally issue a temporary permit in favour of British practitioners, and those of Holland and Greece sometimes exempt British practitioners from portions of the examinations imposed on ordinary candidates for registration. In all other Continental countries a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations; some of them admit any holder of a degree or diploma to their Register, but the majority require a candidate for registration to submit to an examination.

APPOINTMENTS UNDER THE COLONIAL OFFICE.

Medical appointments are from time to time filled up by the Colonial Office in various Colonies and Protectorates, and vacancies in the West African Medical Staff are of [illegible] or three months' course of instruction at the London or [illegible]

[illegible]

[illegible]

[illegible]

certain allowances; (2) divisional inspectors, beginning at £E480 a year, and rising to £E600 a year, with pension. Candidates should be under 30, and unmarried.

Information with regard to medical appointments under the self-governing Dominions may be obtained from the High Commissioners or Agents-General in London for Canada, Australia, New Zealand, the Union of South Africa, and Newfoundland.

Apart from Government appointments, a large number of men find employment as medical officers of mining companies and other commercial undertakings in various parts of the tropics. Much caution should be exercised in accepting these posts.

MEDICAL MISSIONARIES.

To medical men suitably endowed the mission field offers opportunities for interesting work. Just before the war over 450 medical practitioners holding British degrees or diplomas were employed in different parts of the world by missionary societies, and the latter seem to stand in constant need of men and women to fill vacancies as they occur, and also to enable them to take advantage of fresh openings. Since the conclusion of the war there has been a large number of such vacancies, as most of the mission hospitals are working with depleted staffs. Further, the development of native medical schools as training institutions in connexion with some of the larger mission hospitals affords excellent scope for most useful work to medical men who are qualified to teach. It is not usually expected or desired that a medical missionary should take a position such as would otherwise be occupied by an ordained clergyman or minister. But it is essential that he should be prepared to take his share of definite missionary work in any hospital in which he may be placed. As for scientific and other qualifications for the work, a medical missionary, in addition to being physically capable of sustaining what may prove to be a trying life, should be a thoroughly well trained physician and surgeon. It is very desirable that he should have held a resident appointment at a general hospital and have a good knowledge more particularly of practical surgery, tropical medicine, and the treatment of eye diseases. Societies from whom useful information can be obtained are the London Medical Missionary Association, 49, Highbury New Park, N.5; the Edinburgh Medical Missionary Association, 56, George Square, Edinburgh; the Church Missionary Society (Medical Mission Department), Salisbury Square, London, E.C.4; the Society for Promoting Christian Knowledge, Northumberland Avenue, W.C.2; and the Medical Mission Department of the Society for the Propagation of the Gospel in Foreign Parts, 15, Tufton Street, Westminster, S.W.1.

Dental Surgery.

[illegible]

than in medicine, and this has increased since a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

Such is the present state of the law, but should the recommendations of the Departmental Dentists Act Committee be given legislative force a more satisfactory state of things will be brought about, as well as possibly some modifications in the requirements for a qualification.

A legally qualified medical practitioner is, however, exempted from the prohibitive provisions of the Dentists Act, and is legally in the same position as though he had obtained a special dental qualification; but, since owing to the lack of technical training he is hardly likely to practise with success, it is not usual for medical men to do so without obtaining the special qualification. The control of the *Dentists' Register* and the supervision of dental education are vested in the General Medical Council, as are disciplinary questions; in all matters concerning erasure from, or restoration to (in the case of persons whose names have been erased for misconduct), the *Dentists' Register*, the General Medical Council must ascertain the facts of each case by means of a statutory committee, whose findings as to the facts are conclusive, but the decision as to the gravity of the facts found is made by the whole Council. Restorations of names erased for other causes, such as incorrect addresses, etc., are made by the Executive Committee. As the law stands at present, licentiates or graduates in dental surgery or dentistry of any British medical authority are entitled to registration; those possessed of colonial or foreign qualifications recognized by the Council as adequate, and those persons who were engaged in the bona fide practice of dentistry at the time of the passing of the Act, are similarly entitled to registration, though registration under the last-mentioned condition has been discontinued for many years. Dentistry in the Channel Islands and in the Isle of Man is regulated by separate dental Acts.

The preliminary examination in Arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education, and it is required by some of the licensing bodies, all of whom insist upon a curriculum covering four academic years. Qualifying licences are granted by the Royal Colleges of Surgeons of England and of Edinburgh and of Ireland; by the Royal Faculty of Physicians and Surgeons, Glasgow; and by certain of the universities in the United Kingdom.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; and the London Hospital. In the provinces there are the Leeds University School of Dentistry; the Liverpool University School of Dental Surgery; the dental departments of the Universities of Manchester, Sheffield, and Birmingham; and the Newcastle-on-Tyne Dental Hospital and School. In Scotland there are the Incorporated Edinburgh Dental Hospital and School; and the Incorporated Glasgow Dental Hospital. In Dublin there is the Incorporated Dental Hospital of Ireland, and a department of dentistry is about to be opened in Queen's University, Belfast.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up, and every prospective dental student should study not only the regulations of the General Medical Council but also those of the body whose licence he hopes to obtain. This is the more important as in the case of some licensing bodies changes in the curriculum, with the view of making it more closely adapted to the needs of the practising dentist, have either already been made or are in contemplation.

Medical News.

MOTIONS for inclusion in the provisional agenda for the Conference of Local Medical and Panel Committee Representatives must be received by the Medical Secretary, British Medical Association, 429, Strand, W.C.2, not later than the first post on Monday, September 20th.

A COURSE in clinical pathology arranged by the London Panel Committee has recently been concluded at Charing Cross Hospital. It was conducted by Dr. W. M. C. Topley, and comprised ten lectures, including two by Mr. S. W. Cole, lecturer in physiological chemistry at Cambridge, on the chemical examination of the blood, urine, etc. Dr. Topley dealt with the collection of material, the value of laboratory examinations in the prevention, diagnosis, and treatment of disease, and the use of vaccines and serums. The course was so successful that another will be held during October on Thursday afternoons. If not fewer than twenty practitioners apply a course in general medicine and general surgery also will be arranged. Colonel Harrison will give a second course on venereal diseases at St. Thomas's Hospital, beginning on September 23rd. There will be twelve sessions, including practical work in examination for spirochaetes and the administration of arseno-benzol compounds. The fee for any one of the courses will be three guineas.

FOR Part I—chemistry, physics, and botany—of the recently subdivided qualifying examination of the Pharmaceutical Society of Great Britian, the Board of Education recognizes and approves courses in technical schools and colleges already recognized by the General Medical Council. For the reason that efficient teaching in the subjects of Part II—pharmacy, materia medica, and other technical subjects—entails considerable expenditure on equipment and stores, and in certain subjects the appointment of a specially qualified teacher, the Board of Education does not propose to recognize any course for Part II which has not been previously approved by the Pharmaceutical Society. The Society has approved courses preparing for Part II in nine technical schools and colleges, where provision can be made for 700 students.

THE Manchester Royal Infirmary Old Residents' Dinner will be held on October 9th. Should any member of the Old Residents' Club have failed to receive a notice, he is asked to communicate with the secretaries, Drs. G. B. Warburton and T. H. Oliver, the Royal Infirmary, Manchester, in order that the list may be complete.

THE Committee of the Institute of Tropical Medicine at Townsville, North Queensland, has decided to recommend to the Federal Cabinet proposals for strengthening the staff of the institute and extending and intensifying its work. These include the opening of experimental stations at Port Moresby, Papua, and Rabaul, and an addition to the staff of officers to carry out investigations on the spot into outbreaks of tropical disease without interfering with the routine of the laboratory work and tests. It is hoped that eventually all medical officers appointed to posts in the Pacific territories will take a course at Townsville.

PROGRESS is being made with the plans for a British Empire exhibition in London in 1923. Its main object will be to display the resources of the empire, and to make plain the need for scientific research for the development of those resources and for the prevention of disease.

UNDER the Dangerous Drugs Act, which came into force on September 1st, the import and export of opium, morphine, diamorphine (heroin), cocaine, and ecgonine are prohibited except under licence of the Home Secretary. The prohibition extends to salts of these alkaloids and also to any preparation containing not less than one-fifth per cent. of morphine or one-tenth of cocaine, ecgonine, or diamorphine.

IN a circular addressed to local sanitary authorities, the Ministry of Health states that numerous complaints have been made recently regarding unsatisfactory sanitary conditions—more especially in the accommodation for the performers and the staff—of theatres and music halls; the complaints have concerned structural conditions and inadequate precautions against fire, as well as lack of proper lavatory accommodation, insufficient ventilation, and dirty dressing rooms. The Ministry is satisfied that many of these complaints are justified, and requests sanitary authorities to arrange for periodical visitation of places of public entertainment by inspectors of nuisances, whose reports of unsatisfactory findings should be addressed both to the local sanitary and to the licensing authorities. The latter bodies are being asked, on receipt of such reports, to press the licensee of the defective or insanitary premises to have the faulty conditions speedily remedied. Licensing authorities are asked, in granting or renewing licences of theatres or music halls, to require and consider the reports of inspectors of nuisances.

THE Bishop of London asks us to make known his appeal for donations towards the Children's Country Holiday Fund, by whose aid several thousand children from the poorest parts of London are given a fortnight's holiday in cottage homes by the seaside or in country villages. Except in a few really necessitous cases all parents contribute according to their means towards the cost. Cheques should be sent to the Earl of Arran, 18, Buckingham Street, Strand, W.C.

THE twentieth Congress of the Association Française d'Urologie will be held in Paris beginning on October 6th. Professor Pourson will open a discussion on "Ultimate results of different methods of operation for prostatic enlargement."

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"AMARYLLIS" was employed as medical officer in India; he returned to this country in June, 1919, and took up practice in October 1919. He received in August, 1920, part of his remuneration for 1919. What is his liability?

*** He is not entitled to "six months free of tax"; that applies only where that period is not exceeded. The remuneration in question presumably related to the period prior to his residing in this country; if so, we are of the opinion that it is not liable to income tax here. If the emoluments [illegible] he would be [illegible] part of the income to include [illegible] of the [illegible] if his appointment terminated in July.

"[illegible]" [illegible] the proper deduction to be made [illegible] [illegible] April, 1919 [illegible]

*** [illegible] presumably a [illegible] the [illegible] April, 1919 [illegible]

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages [illegible] 36, 37, 38 and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34, 35 and 36.

THE following appointments of certifying factory surgeons are vacant: Dingwall, Ross; Poole, Dorset.

Naval and Military Appointments.

INDIAN MEDICAL SERVICE.

Major J. R. J. Tyrrell, Agency Surgeon, Bundelkhand, was granted privilege leave for one month (June 18th).

Brevet Colonel E. Jennings has been permitted to retire from the service (February 5th).

The services of Major T. C. Boyd have been placed temporarily at the disposal of the Chief Commissioner, Delhi, for employment as Assistant Health Officer, Notified Area, Delhi.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Majors: Major C. B. Whitehead from General List, Captain W. F. Munro, M.C.

Captain E. S. Taylor, O.B.E., resigns his commission and retains the rank of Captain.

QUEEN MARY'S ARMY AUXILIARY CORPS.

Auxiliary Section, R.A.M.C. (attached). Medical Official O. M. Anderson relinquishes her appointment.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER

7 Tues. London: Scrutiny Subcommittee, 2.30 p.m.
10 Fri. London: Propaganda Subcommittee.
15 Wed. London: Hospitals Committee, 2.30 p.m. (*provisional*).
16 Thurs. London: Dominions Committee, 3 p.m. (*provisional*).
London: Ministry of Health Committee.
17 Fri. London: Organization Committee, 2 p.m.
21 Tues. London: Medico-Political Committee, 2.30 p.m.
23 Thurs. London: Insurance Acts Committee, 2.30 p.m.

OCTOBER.

6 Wed. London: **Council**, 10 a.m.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Dr. Stewart: Out-patients; Mr. Armour: Operations. Tues., 2 p.m., Dr. Burnford: Out-patients; 2.30 p.m., Mr. Addison: Visit to Surgical Wards. Wed., 10 a.m., Dr. Saunders: Diseases of Children; 2 p.m., Mr. Gibb: Eyes. Thurs., 2 p.m., Mr. Armour: Operations; Mr. Sinclair: Orthopaedics. Fri., 10 a.m., Mr. Buxton: Dental; 2 p.m., Mr. Davis: Throat, Nose and Ear. Sat., 10 a.m., Dr. Saunders: Diseases of Children; 2 p.m., Dr. Owen: Out-patients.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

[illegible]WOOD.—At Epping, N.S.W., on [illegible] 4th, 1920, to Dr. and Mrs. W. L. [illegible]wood, a son.

DEATH.

[illegible]-SMITH.—On August [illegible], at Honddu House, Brecon, [illegible] Smith, M.D., B.C. Camb., Physician, Brecknock County Infirmary, aged [illegible]

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

A British Medical Association Lecture

ON

THE WAR PHYSICAL CENSUS.

DELIVERED AT AYLESBURY, MAY 11th, 1920,

BY

SIR JAMES GALLOWAY, K.B.E., C.B., M.D.,
SENIOR PHYSICIAN, CHARING CROSS HOSPITAL.

GENTLEMEN,—Meetings of the British Medical Association such as this give an opportunity for discussing subjects of interest to the community at large as well as the problems of diagnosis and treatment of sick folk. I have been informed that there will be present at our conference to-day not only medical men of the district in general practice, but also medical officers of schools and others engaged in carrying out the work of the Ministry of Health and the Board of Education. I venture, therefore, to draw attention to the record of the physical condition of the people now being published by the Government, derived from an analysis of the medical examinations carried out for the purpose of forming and reinforcing our armies during the war.

Earlier Attempts to obtain an Estimate of the Health and Physique of the People.

This is not the first time that there has been an outcry and some danger of believing the statement that there is widespread and progressive deterioration in the condition of the people. Before and after the South African war the "progressive physical degeneration of the nation" became a catchword in the mouths of some of those interested in social reform. The opinion thus expressed was reiterated so often that belief that it was true was widely accepted. One good result of this outcry was the establishment by the Government of an Interdepartmental Committee on Physical Deterioration, which reported in the year 1904. This report is of great value, and should be freely in the hands of our profession, especially those who are concerned in watching and preventing the commencement of physical deterioration and disease. The report now being issued is based on a much greater body of observation, and gives therefore a sounder foundation for the conclusions that will be drawn, and much better reason for any action that may result. My purpose to-day is to draw attention to some of the main features of the present report, with the intention of inquiring what we may do as practising physicians in the course of our daily work to lessen the unnecessarily large incidence of debility and disease seen in the adult, but so often commencing in the young.

Before leaving the subject of the report of 1904, I desire to draw attention to the very wide terms of reference of the Interdepartmental Committee. The original terms of reference were:

> To make a preliminary inquiry into the allegations concerning the deterioration of certain classes of the population, as shown by the large percentage of rejections from physical causes of recruits for the army, and by other evidence, especially the report of the Royal Commission on Physical Training (Scotland), and to consider in what manner the medical profession can best be consulted on the subject with a view to the appointment of a Royal Commission, and the terms of reference of such a Commission if appointed.

These terms of reference were subsequently extended and enlarged as follows:

> 1. To determine, with the aid of such counsel as the medical profession are able to give, the steps that should be taken to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people.
> 2. To indicate generally the causes of such physical deterioration as does exist in certain classes; and
> 3. To point out the means by which it can be most effectually diminished.

It is interesting to note how the terms of reference were widened and varied, and especially to know the reliance on our profession to give counsel and aid.

The mental attitude of the people and the Government brings to recollection the state of mind of our difficult patients—they are pressingly anxious to have our advice and assistance when in trouble, but so soon as the immediate cause of anxiety is past they are often unwilling to follow advice or to take the precautions necessary to prevent a recurrence of trouble, and to forget their medical advisers in more ways than one. A good doctor, however, learns how to manage his difficult patients. Let us hope that a reformed medical profession may understand better how to deal with a more reasonable nation.

The somewhat excited outcry years ago about "progressive physical deterioration" originated as a result of the medical examination of recruits for the army, especially before the South African war. It was found that from 40 to 60 per cent. of the young men offering themselves for service in those days were of so feeble development or suffered to such an extent from disease as to be unfit for military service. The knowledge of this fact, and especially the pained observation of the degenerate specimens of humanity offering themselves for service at the various recruiting centres, gave rise to the clamour to which I have referred. The late Sir William Taylor was then Director-General of Medical Service of the army, and I well remember speaking to him many times on this subject. It was owing to his common sense and breadth of outlook that these exaggerated statements were reduced to their proper dimensions and that the work of the Committee was directed along lines that should have proved fruitful. He remarked that the idea of "progressive physical deterioration" had occupied a much too prominent position in the mind of those who had to consider and report on the advisability of inquiry, and drew attention to the fact that the results obtained by the recruiting officers for the army gave no trustworthy basis for the conclusion that there was general physical deterioration, that the numbers concerned were too small, and that the recruits of that day were drawn in excessive numbers from the most defective members of our population. Both Sir William Taylor and General Borrett, who had previously been Inspector-General of Recruiting, agreed that the real lesson of the recruiting figures was the failure of the army in the conditions then existing to attract a good type of recruit, that a great many of those who drifted to the army were young men who had no opening in life, who had no occupation, who were not fit for, or disinclined for, permanent work. The result of these criticisms was that the Committee proceeded to investigate the nature and causes of the deterioration which was manifest, following the advice of Sir William Taylor, given in his evidence—namely, "I trust that the inquiry will end in suggestions that will lead to the institution of measures which will result in bringing about a marked improvement in the physique of the classes from which our recruits are at present drawn." (December 3rd, 1903.)

This report led to very little result. As the effects of the war receded in the distance interest became less in the physical condition of the people, so far, at any rate, as the necessity of providing soldiers was concerned. Very few dreamt that in ten years the whole nation would be under arms, and that compulsory service would be introduced up to the age of 50 years and over. A good deal of interest continued to be shown in the physical condition of certain groups of people—for instance, school children, operatives and employees in some of our great industries—but fitness for war service was lost sight of, or even willingly forgotten.

I have mentioned the report of 1904, and that now being issued, but I recommend that anyone interested in these matters, and in their bearing on our everyday practice, should have by him also certain other documents, such as the Report of the Anthropometric Committee of the British Association, 1883; the Reports on the Physical Welfare of Mothers and Children, published by the Carnegie Trust; Mr. Arthur Greenwood's Report on the Health and Physique of School Children, published for the Ratan Tata Foundation, London School of Economics, University of London; and the Current Reports of the Medical Officers of the Board of Education, which must be familiar to their authors, some of whom I see before me. Certain of these documents possess the interest of historical romance rather than of statistical investigation, as, for instance, the Scottish Report written by Sir William Leslie Mackenzie.

The War Census: How it was made and what it shews.*

On August 4th, 1914, or immediately afterwards, it became evident that the manhood of the nation would have to be strained to the utmost to raise the armies necessary to permit of our survival as a State. The physical condition of the male population once more became a question of supreme importance and urgency, but it was too late to think of measures of reform needing inquiry and time for development—the nation had to take what it possessed. Under the strain of war conditions it was at first hardly possible to obtain a record, or at any rate an accurate record, of our manhood offering themselves for military service. It was only in the later years of the war, and especially in the last year, that methods of systematic medical examination evolved and became so comparatively efficient that trustworthy information on a large scale could be collected for investigation and for the information of the country in the future. A faithful few remembered the lessons of 1904, and so it came about that as opportunity offered arrangements were made to secure accurate information as to the condition of the people which had for so long been desired, even under the pressure of vitally urgent duties. It is to the results of nearly 2,500,000 examinations carried out by some among my audience and many of our colleagues from November 1st, 1917, to November 1st, 1918, that I wish now to draw attention. It may safely be said that such a review became possible in our country only under the compelling circumstances of a war for existence. It would be evidence of unthinkable carelessness and neglect if full advantage of the information now at our disposal is not taken by our fellow citizens and by ourselves, in view of future emergencies and for the immediate purpose of meeting the crying need for the improvement of the health of the people.

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* Much of this lecture was given as a lantern demonstration.

During the twelve months preceding the Armistice—1917–1918—2,425,184 medical examinations were conducted. The men examined were classified in the well-known grades established by the Ministry of National Service, with the following results:

Grade 1	871,769 (36%)
Grade 2	546,276 (22–23%)
Grade 3	755,859 (31–32%
Grade 4	250,280 (10%)

Thus, out of every nine men called up for medical examination, three were placed in Grade 1, two in Grade 2, three in Grade 3, and one in Grade 4. By way of making a standard of ready comparison the results obtained by the examination of 1,000 young men of average health and strength, reared under favourable circumstances, were utilized and a proportional standard worked out by Professor Arthur Keith. This standard was found to correspond very closely with the results obtained by examining large numbers of men who had lived in ordinarily favourable circumstances, and the standard may be accepted as adequate for the purpose of the comparison which we desire. Comparing the actual figures with the results obtained by the examination of the normal group taken as representative of a healthy section of the population, we find that we should have expected the following result:

Grade 1	1,697,595 (70%)
[illegible]	[illegible]
Grade 3	[illegible]
[illegible] ...	[illegible]

Expressed in terms of Keith's standard of physical fitness for an average normal group, which we have ascertained to be [illegible] per cent., the result given by the medical examination throughout the country was [illegible] per cent., a loss of [illegible] per cent. in the fitness of our male population estimated for service in the army on the widest possible basis. I need hardly draw attention to the serious state of affairs disclosed by these figures, nor need I comment on the fact that the results are by no means comforting or flattering to our national complacency.

It is true that there are certain errors underlying these great masses of figures with which we are dealing. For instance, there were some re-examinations of the same individuals. In certain districts a large number of the fit young men had volunteered or been called up for service before the last year of the war. But, on the other hand, there are counterbalancing conditions, such as the fact that in many places the examinations were carried out for the first time on fit men who had been retained during the earlier years of the war on reserved occupations, such as mining and the making of munitions, and there were the young men presenting themselves for service on reaching the age of 18 in the year under review. It may, I believe, be safely concluded that the actual results obtained would be found to diverge not greatly from what would have been obtained in normal conditions if the whole male population throughout the country had come under review.

In order to understand some of the reasons for this widespread divergence from what we have a right to consider should be the average condition of health in our male population, and from a consideration of these reasons to draw such conclusions as may be helpful to us as the medical advisers of the people with whom we are dealing in our daily practice, it will be useful to review the three main causes which produced unfitness for service. On reviewing the results of large numbers of examinations three main causes of disability are apparent:

1. Poor physique and the presence of physical defects.
2. Tuberculosis, one definite infective disease responsible for widespread damage.
3. Diseases and degeneration of the heart and blood vessels, in many cases due to various infective conditions.

Poor Physique and the Presence of Physical Defects.

With reference to the first of these chief causes of degradation, there can be no doubt in our minds that much of it is due to conditions occurring in early life which are preventable. Take the effect of one disease alone—namely, rickets—on the future development of the child who suffers from it. Its effects on the growth of the body and on the proper development and function of the bone and the other tissues are known to all of us. On reading the reports of the medical officers engaged in this investigation much emphasis is laid again and again on the effects produced by imperfect feeding and on bad home life on large numbers of the children of the nation, especially in crowded industrial areas. One medical officer remarks: "Experience in Manchester teaches that the cause of 'poor physique' in children is the gross ignorance of the simplest forms of domestic economy and cookery amongst the mothers." "The defect was not due to poverty (except in a practically negligible number of cases), but to the lack of knowledge of the mothers (who could have afforded the necessary food) as to how to cook it." These errors in diet are known to us all, and recent investigations have emphasized their importance. They are known to be preventable, and as medical men we are largely responsible for keeping the attention of the public and of the local governing bodies on the fact that these causes of physical degradation exist, that to a large extent they are preventable, and that the proper steps for their prevention must be taken.

Another important cause of defects of physique and of degeneration is the effect of occupation on workers, especially when hard work under the unfavourable conditions existing in certain trades has to be undertaken in early life. One of the most striking features of the report of grading in the industrial districts is the rapid fall of the numbers of the young men who could be placed in Grade 1 at the age of 18 years compared to the numbers who could be placed in the same grade on being examined four or five years later. This is true of many industrial areas, but the most serious effects on health appear to be seen amongst the young workers in the textile industries both in cotton and in wool. A medical officer makes the note with respect to the south-eastern districts of Lancashire that the average man here is for military purposes an old man before he reaches the age of [illegible]. Again, in dealing with the physical condition of the men between 40 and 50 who came up for examination after the Military Service Act of 1918 increased the age limit, he remarks:

> "The question naturally arises as to why there should be this high proportion of disability.
>
> "The Lancashire man is hard working and industrious, and from an early age is absorbed in industry. Often on questioning youths as to their pastimes I have been told that they have no time for games of any sort. They begin work young and work long hours, and too often they are told that they are fully compensated if they can make big wages. Thus the growing boy gets no chance of healthy outdoor exercises to develop his frame."
>
> "That his physical condition is poor does not trouble him. He is only like his fellows."
>
> "The consequence is he contracts rheumatism, bronchitis, hernia on account of the slackness of tone of his muscles, and varix and flat foot as a result of long hours of standing."

Of [illegible] youths of 18 to 20 years of age examined and rejected in the north-western region of England, no fewer than 85 were rejected on account of poor physique and other physical defects. The result of the examination of men from 42 to 50 in the same part of England showed an enormous mass of disability arising from physical defects, most of them acquired not simply as a result of age, but mainly as a result of occupations in which they had been engaged. Take this criticism from Scotland, a part of the country which gave a comparatively good recruiting record of physical fitness. A medical officer writes:

> "The examination of the boys was disappointing; the proportion deferred for re-examination as not being up to the standard of physical fitness required for their age was unduly high. This was quite as noticeable amongst the agricultural as amongst industrial classes. Here again the determining factor was feeding and housing; in the case of the agricultural classes the evil of the bothy system, living on tinned foods, cakes and tea, lack of home comforts . . ."

Much of this knowledge is no doubt very familiar, although it has rarely been dragged out into the open day so prominently. It is impressed on us on considering this record that much, probably the most, of this degeneration is preventable, and it is our duty as medical men to aid and to insist on its prevention.

Tuberculosis.

The second great cause of rejection is one infective disease—tuberculosis. We know that its incidence throughout the country is great, but the reports seem to show that the occurrence even of recognizable cases is not sufficiently indicated in the official records. In London, from January to October, 1918, 160,545 examinations were made. Of these, 5,238, or 3.1 per cent., were placed in Grades 3 and 4, owing to tuberculosis; 2.6 per cent. of these suffered from tuberculosis of the lungs. It is by no means comforting to have it pointed out to us that numbers of these cases occurred amongst barbers, hair-dressers, and others brought into close association with their fellows. Certain very noticeable reports are made from Liverpool with reference to the incidence of tuberculosis even in its contagious and infectious stages. Out of 66,000 examinations from November 1st, 1917, to July 31st, 1918, about 1.75 per cent. were rejected on account of tuberculosis. This work was done in close association with the medical officer of health and his officials. The striking fact is brought out that of 277 cases proved to be tuberculous, 218, or 78 per cent., were previously unknown to the health authorities. And so the story of tuberculosis and its incidence is remarked on by medical examiner after medical examiner. Who can doubt that this widespread incidence is unnecessary? It has its origin in the close crowding of our population, the insanitary conditions produced by back-to-back houses, ill aired courts, and ill ventilated dwellings in our cities, villages and rural districts. These are pointed out as nurseries of the infection. It is clearly our duty to keep rousing the attention of the people and of the local and municipal authorities to the occurrence of a disease which is contagious, infectious, and preventable.

Disease and Degeneration of the Heart and Blood Vessels.

The third great cause of unfitness and of rejection is noted as diseases and degeneration of the heart and blood vessels. Included in this category are the various forms of heart disease—pericardial, myocardial and valvular—due to rheumatic inflammation of the heart. In such cases we have to deal with a fairly well recognized type of infection, but there can be little doubt that many individuals who show failure of the heart and of the circulation have suffered from other general infections not so obvious as that of rheumatic fever. As men become older the results of strain will show themselves much more readily on a cardio-vascular system only slightly damaged by infective process occurring in early life. This appears to be the cause of the fact that on looking over the report of the examinations of the older men, especially between 40 and 50, a great proportion of disability appears to be due to disease of the heart and of the blood vessels. In the London region, of 160,545 examinations, 15,947 were placed in Grade 3 or Grade 4 on account of heart affections alone, no less than 9.9 per cent.

One of the most important of the forms of vascular degeneration causing disability is venous varix in some form. Varicosity of the veins of the lower extremities to an extent sufficient to disable or to be dangerous was found to be very common, especially in the industrial districts and among the older men. The amount of this form of varix was surprising, even to experienced medical men. From the south-eastern region of Lancashire it is reported on the examination of the older men that "varicose veins are extraordinarily common, and a large proportion of them are of extraordinary severity, like tortuous knotted ropes extending up the whole leg and thigh. Including varicocele and piles, quite a quarter of the men suffered from varix."

I mention these three great causes of disability on account of their frequency, but also to draw attention to the fact that to a very large extent they are preventable. If the nation could be so educated that the children are better cared for, that the adolescents and the young men are not driven to hard work beyond their powers, and that the adult worker is protected from the more evil consequences of his labour by securing proper conditions in the field and in the workshop, a very large proportion of these disabilities would be mitigated or would disappear.

Oxford and Bucks: Some Figures and their Lessons.

May I now draw attention more particularly to the condition of this district, most familiar to the members of my audience, so that we may have a tangible idea of the state of the people of whom we are in medical charge. For this purpose the authorities of the Ministry of Pensions, in whose charge the medical records of the Ministry of National Service now remain, have very kindly furnished me with more detailed information than has yet been published. Among other documents, I lay before this conference the complete analysis of the causes of rejection during the year under review, arranged according to occupations. This information is not yet available for other parts of the country, with the exception of London and the South-Eastern Region, and we are much indebted to the Ministry for the trouble they have taken to get out these figures specially so that I may have the opportunity of placing them before you.

In the Eastern Region of England, including Oxfordshire and Buckinghamshire, 216,012 examinations were made, with the following results:

Grade 1	68,604 (31.8%)
Grade 2	51,360 (25.1%)
Grade 3	67,492 (31.3%)
Grade 4	25,556 (11.8%)

These figures, estimated by Keith's standard, give an index of fitness of 68.9 per cent., and show a deficit from the standard fitness of 20.4 per cent., the deficit on the whole country being 18.4 per cent. It will be seen, therefore, that the Eastern Region not only falls far below the standard of fitness that we should have the right to expect, but is considerably below the average of Great Britain. I have taken out certain groups from the analysis of the whole of the rejections to give some indication of the effects of the three great causes of physical unfitness in our own district.

In the area of Oxfordshire and Buckinghamshire 3,689 were rejected as being unfit for service during the year under review. Of these:

Poor physique and the presence of physical defects account for	422
Tuberculosis for	300
Diseases of the heart and pericardium, the arteries and veins for not less than	827

Bearing in mind our people in Oxford and Bucks these results certainly are arresting, and give cause for grave consideration. On looking over the reports of the medical officers to obtain indications as to the reason of so great and so severe an amount of disability, I note first this interesting criticism respecting an agricultural population:

> "The agriculturalist on the whole is a good type of recruit, but in Wales may be divided into men engaged on arable land and dairy farming and those on pasture farms. The former does not give a very good type of recruit, as the men engaged in this work suffer to a large extent from bad feet and rheumatism. Those on pasturage farms generally in the mountainous districts, engaged for the most part in shepherding, are a splendid body of men and are usually sound."

The Commissioner of Medical Services for the Eastern Region is a medical officer of wide experience. For many years as an officer of the Indian Medical Service he had the opportunity of observing the recruits in India for the Indian armies. Comparing Indian recruits with some of those seen by him, he makes the remark: "The prevalence of disease and defective physique among the young men of Great Britain presents a shocking contrast." The Deputy Commissioner of Medical Services, dealing with Buckinghamshire and stationed at Aylesbury, states:

> "The chief feature of this half-year has been the examination of the older men, that is, of 43 to 51, of whom there were 1,674. That only 6 per cent. of these men should prove fit for Grade 1 was a sorry result." "Bucks is essentially an agricultural county, the young farm labourer of 18 to 21 is a splendid specimen as a rule, but the same class of man at 40 instead of being in his prime is middle aged, with such disabilities as myalgia, arthritis, varicose veins, hernia, and flat-feet, all pointing to much standing, walking, exposure and hard manual labour." "Next to agriculture come chair-making and the boot trade." "The conditions in the latter need improving; much of the work is done in small, close, ill-ventilated rooms, with the result that the men of Chesham are, generally speaking, of poor physique and weaklings." "Very different were the men from the important London and North-Western Works at Wolverton; there the men and boys are medically examined before admission, and the work is done under satisfactory conditions, with the result that by far the majority were fit for Grade 1."

His colleague, a medical man of long experience in the two counties, stationed at Oxford and dealing with Oxfordshire, remarks on the poor physique of agriculturists in his area. He states: "In my opinion the homes of the agricultural working class are a disgrace to a civilized country. In pre-war days agricultural wages in Oxfordshire were as low as twelve shillings a week."

These criticisms are made by men of experience brought face to face with the results of degeneration and disease in our adult population. I have remarked on another occasion how depressing is the sight of so much suffering and disease when seen in bulk, and the influence that it has on the judgement of those who have to witness it. It is no wonder that the criticisms made are occasionally unduly weighted by the evidence of what they have seen in such concentrated form, but there can be no doubt in our minds of the existence of a large mass of deficiency, and equally that much of it is avoidable.

The Necessity of Obtaining "a Comparative Estimate."

As an important preliminary to the steps that must be taken to remedy the defects in the physical condition of the nation disclosed by the report, I would again urge the advantage of a continuous record of the health of our people. This suggestion is not a new one, although it seems to give a shock of novelty to some who have not thought of the great advantages that would be gained. You will remember that the Interdepartmental Committee of 1904 were asked to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people. There can be no doubt in any one's mind of the [illegible] of such a record. If we had periodical inspection of the health of our people we would soon be able to recognize the chief influences which produce physical degeneration and [illegible] and to understand more fully the causes and early signs of disease. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] difficulty, I [illegible] is greatly exaggerated. If the [illegible] of the [illegible] were [illegible] and [illegible] [illegible] [illegible] to the periodical [illegible] [illegible] would be [illegible].

[illegible]

If the time permitted I should like to refer to the interesting plan adopted for the medical inspection of the school children by the practitioners of Oxfordshire, and the arrangements made for obtaining a continuous record of each individual child. It is on such lines as those marked out in the neighbouring county that the "periodical data for an accurate comparative estimate of the health and physique of the people" will be obtained.

The Land, the Folk, their Work.

Coming from London to-day and travelling into your beautiful county, I could not fail to see the nature of the land. Leaving the great wilderness of houses I saw the characteristic features of the lower London tertiary formations, its clays and gravels, and the soil they produce; then the upper cretaceous rocks distinguished by the graceful outlines of the Chilterns; passing deeper into the secondary formation, the clays, sands and limestones of mesozoic time which give the characteristic features to mid England. Overlying were the various drifts of gravel, sand and clay masking, and sometimes softening, the basal geological features, but giving fertility and permitting of the cultivation of the land. On this foundation I saw the hills, the river valleys, the meadows, the plains of sand and fertile clay which characterize your counties and make them among the most pleasant parts of England to look upon.

Then I thought of your people, and my mind went back to the days before the Romans when your country was inhabited by races speaking the Celtic tongues, but who had their origin in ages long preceding the Celtic infiltration. Have these races left their mark on the population of your district? It is true that we read under the date 571 that Cuthwulf, brother of Ceawlin, again marched northward and "fought against the Welsh at Bedford, and took four towns, Lenbury, Aylesbury, Bensington and Ensham," and we can imagine the men of Wessex meeting the East and Middle Saxons just in this place, where your town is built on a rocky island rising from the fertile valley. It must have been a desirable place of habitation from remotest time. Historians, I think, look upon your district as one of the most thoroughly Saxonized in England, and the language and your place-names give evidence of this. But is it not more than probable that the invading West and East Saxons and their kindred from the north were not in overwhelming numbers, and that they mixed with the older races of the land? Without disregarding the Saxon tongue the older influences no doubt exist both in race and disposition, and your people are of the characteristic mixed stock of the greater part of our country, and possess their full share of its enduring and virile characteristics. It is only recently that the railroad has opened up the more secret parts of your counties, and the racial stock formed at the time of the immigration of the West Saxon men has remained almost pure. More recently, on your eastern and southern borders you had the overflow from London, but these newcomers are the more vigorous members of the racial swarms hiving round the lower Thames, and should not depress your native healthy stock.

Thinking of the occupations of your folk, I note that agriculture in various forms absorbs a large proportion. Your industrial centres are not large, and your workers are engaged in industries which should be neither unduly [illegible] nor unhealthy. The stranger who has the opportunity of walking on the Chilterns through the great beech woods down to the busy little towns in the river valleys is persuaded that the lot of the worker has fallen in a pleasant land. He is much in the open air, he has to care for the great woods and noble trees whose timber forms the material in his workshop.

[illegible] the country, your people, and their occupations are good beyond the average, and yet the records of our physical census show results not only far below what we have a reasonable right to expect, but very definitely below the average of the rest of the country. I ask you to [illegible] on the reasons for this. No doubt many will [illegible] to your minds; indeed, the explanations that I have [illegible] from the evidence of our medical [illegible] [illegible] [illegible], and of these [illegible] and reasons there are few that are not controllable by the medical profession as a whole and each of us in our individual sphere of work.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF ELECTRO-THERAPEUTICS.

ALFRED ERNEST BARCLAY, M.D., President.

THE PLACE OF THE RADIOLOGIST IN MEDICINE.

INTRODUCTORY REMARKS BY THE PRESIDENT.

THERE is something particularly appropriate in the fact that, after the lapse of six years, this Section should meet in Cambridge—a university which has stood through the centuries of change as the emblem of that which is highest and best in education. Yet, with all its traditions, with all its conservatism, it would be hard to find a wider outlook in scientific thought at the present time than in this University of Cambridge, and we, as representing the Cinderella of the branches of medical science, wish to acknowledge our debt to those who so readily opened the doors to the suggestion of a diploma in radiology and electrology.

In the public mind the possession of a medical degree of any kind argues that the possessor is qualified to practise in any branch of medicine, no matter how specialized; and yet we all know how completely out of touch any medical man with the usual qualifications must be with the rapid expansion of knowledge in so many different directions. Specialism is the feature of the present day, for no man can possibly be *au fait* with all the branches of medicine, and it must be admitted that there are medical men who pose as specialists in various branches in which they hold no particular qualifications to practise beyond their own desire to be regarded as experts. There is nothing whatever to prevent any man who possesses a registered qualification from becoming a specialist in any branch, and there are various routes that can be followed. (1) As already suggested, he may by self-assertion, the purchase of special apparatus, and so forth, work his way into the position of a specialist; and he may possibly succeed both in the eyes of the public and of his brethren. (2) He may go, as in the olden days, to serve with some master of his art, working as his apprentice or clinical assistant. (3) He may undergo a regularly ordered course of training in his art—that is, the method of education now universal in medicine, and which many years ago replaced the older and less satisfactory apprenticeship method.

I will just touch on these three methods of entry into specialist practice as applied to radiology and electrology.

1. Twenty-four years ago every medical man stood on the same plane as regards the application of *x* rays, and those who knew anything of other forms of electrical methods in medicine were few and far between, thanks very largely to the charlatanism of the qualified and unqualified practitioners who had exploited physical agencies. The medical men who commenced *x*-ray work in those days had no option but to learn as best they could, putting in their own apparatus and carving out their own path by a series of more or less costly experiments—sometimes costly also for the patients.

2. To-day such a course is quite unnecessary, for there is hardly a hospital that is not equipped with a more or less efficient department, supervised by a more or less qualified medical man. I say advisedly "more or less qualified," for it has been a matter of chance whether the man appointed as the head of a department knew anything about the subject to start with, and whether he took the trouble to keep himself and his department up to date in the rapid progress of a new development in medicine.

Those who followed the earliest pioneers had the opportunities of going to the hospitals where these men worked, and became more or less apprenticed. It is to this class that most of the present-day radiologists belong. There was, however, nothing to prevent a man from starting as a radiological or electrical specialist as soon as he knew one end of an *x*-ray tube from the other, and there are men whose mental equipment when they started was, to say the least, meagre, and who tried to make up for it by bluff and the costly showiness of their apparatus. I do not know that we can blame some of these men, for they did not realize the responsibilities they were so lightly undertaking; moreover, no concerted effort had been made by the established radiologists to enlighten the medical public or to establish organized teaching. Little wonder, then, that men who had been taking radiographs in the army thought that they could at once come home and turn their knowledge of military *x*-ray work into useful channels, taking up civil radiology and the attitude of specialists on knowledge which is the barest outline of a fragment of what will be required of the specialist in civil practice. Some have equipped themselves with perhaps a month's work in some well ordered department, but to-day there is no reason why any man should start practice without proper mental equipment and experience.

3. Such haphazard methods of equipping the specialist as I have suggested are no longer either necessary or tolerable in an organized medical profession. Because a medical man is qualified to practise the arts of medicine embraced in the medical curriculum it does not follow that he is qualified to open an abdomen, devise and criticize a sanitary scheme, or tackle the problems of any of the other branches of medicine and surgery that have now become so highly technical and specialized. In surgery no man can obtain an appointment of any surgical importance without the F.R.C.S., or a public health appointment without the D.P.H., etc; this has followed as a natural sequence.

The Diploma in Radiology and Electrology.

For a long time it has been felt that exactly the same conditions obtained in radiology as in the other specialized branches of medicine, but there was no qualification and no systematic course of training available—there was no diploma, no degree, nothing to "hall-mark" a man. In 1916, in the midst of the war pressure, steps were taken to establish a definite curriculum and a diploma which would be *the* standard qualification which must be held by all who sought to obtain radiological appointments. We turned to Cambridge, and in this old university the need of such a diploma and its value in the medical world was at once grasped. There was no need of arguments, and to-day we owe it to the receptive and broad-minded spirit of this university that the diploma in radiology and electrology is established. How great was the need of this diploma was hardly realized, but an entry of almost thirty for the first examination this month, after six months of a most strenuous course of training, and more than a dozen already started for the next examination, shows that the aims of the originators of the scheme were achieved none too soon. In fact, we know of many men who could not wait and have gone into practice straight from the army. I hope, for their own and for their patients' sakes, as well as for the status of radiology, that each one of them will make whatever sacrifice is necessary in order to gain this diploma, without which they will certainly not be able to obtain any appointment as soon as the value and standard of the diploma are known.

From this time onwards it should be impossible for a hospital to appoint a man as radiologist or electrotherapeutist who is not qualified for the work he undertakes; but it must never be forgotten that, as in other branches of medicine, no examination can give the personality which, coupled with knowledge, makes the consultant. Essentially the radiologist is a consultant; he is, of course, responsible for and knows all about the technical work of his department—the making of satisfactory radiographs, the fluoroscopic examinations, the *x*-ray and electrical treatment, etc., but his main function is that of adviser. It is for him and him only to prescribe the treatment in his department. Also he knows, or should know, the interpretation of *x*-ray shadows better than anyone else, and he must report on all cases; whether a surgeon or physician accepts his report is not of the slightest importance, for if the radiologist knows his work, the surgeons and physicians will in time gladly accept his interpretations, which, in the nature of things, are based on a far wider experience than theirs.

Of course the radiologist is not infallible, any more than the surgeon or physician, but if he learns from his mistakes and takes care to know of his mistakes, there is no reason why he should make the same mistake twice; the *post-mortem* room and the operating theatre are quite as instructive to the radiologist as to the physician. In short, the responsibility for the opinion of an x-ray examination rests on the radiologist; if the surgeon or physician cares to make his own interpretation of x-ray shadows, there is no reason why he should not do so, but the responsibility lies at his own door. My own experience in this respect is that I am often asked to take far greater responsibility in diagnosis than is justifiable, for the radiologist sees but one side of the case, and in a very large number of instances it is only by balancing the physical and x-ray examination with the clinical history and condition of the patient that a judicial and fair estimate can be given.

Sometimes, as in the presence of a foreign body, the radiologist's word is the first and last word in the diagnosis, but the surgeon is not justified in asking the radiologist whether the foreign body should be removed or not, neither is the radiologist, as such, justified in giving his opinion on the point. This is, of course, a very crude example of my contention that the radiologist can only give expert opinion in so far as his information is gained from his x-ray examination. The point crops up continually, especially in chest and abdominal examinations, when one is asked to express opinions which could only be arrived at by a consideration of all the available information. Private patients and general practitioners are especially to be side-tracked in this respect. My own unfailing method is to say that I have not yet examined the plates and that I will report when I have had the opportunity of examining them and comparing them with my notes, etc. A written report may mean additional work, but it gives the radiologist full opportunity of confining his opinion to such things as he has learned from his examination. I am not for one moment suggesting that the radiologist should shirk responsibility, but I do hold, and hold very strongly, that his expert opinion must be confined to the limits of his speciality. Within these limits he must not only accept but claim full responsibility; outside these limits, if he cares to express any opinion, he must make it clear that it is not the opinion of an expert. I hold that it is on these lines that the radiologist must base his relations to his colleagues as regards diagnostic work.

Past Mistakes.

The [illegible] necessary for this branch of specialism [illegible], and all through the war the need of competent men has been apparent. The tragedies of inefficient [illegible], even to the end of the war, are fresh in your memory, and [illegible] of a specialism which has [illegible] from the beginnings of medicine and surgery. It will be many years before the medical public [illegible] realizes the knowledge and experience that [illegible], and in the meantime [illegible] practice flourishes, while the legitimate practitioner [illegible] to think twice before he charges such fees as any ordinary medical and his specialist training warrant.

It is all very well for a radiologist to tell his brethren how they should behave to him, and to [illegible], and [illegible] at the other side of the picture. There must necessarily be many men practising as specialists who have not had the requisite training, for the diploma course has only been available this year. In modern hospital appointments in the past there was no standard by which to [illegible] as to who was competent to take charge, and it was entirely a matter of luck whether the man appointed knew anything of his work and was particularly adapted for it. Any man would take work after an [illegible] good [illegible] that was looked on as [illegible] that happened to be available, and it [illegible] that those [illegible] had not the foresight to see the possibilities of the subject. Great blame attaches to many of these appointments and the responsibility for the appallingly bad x-ray and electrical work then found in some hospitals rests with those who appointed the wrong man as medical officer. Only too often men were nominated whose special qualifications were sketchy in the extreme. In other words, men were placed in potentially responsible consultant posts who were not qualified for them. One cannot blame the men for taking posts in this way, but one can and does blame those in authority, particularly the consultant surgeons who had not the foresight to see that radiology and electrology would become the greatest of all the special branches on which they would have to depend, and that they must nominate a man who would eventually be their colleague, even though he was kept in his place for a year or two by making him a salaried officer on perhaps £100 a year. The results of this were deplorable, especially to the surgical work of these hospitals, for, as a natural consequence, the radiology, on which surgery and medicine had become increasingly dependent, was precisely on the £100 a year plane. And the man placed in charge has been treated by his colleagues, and consequently by the general practitioner, on this £100 a year basis. If all the men so appointed in this haphazard manner did not "make good," it is hardly to be wondered at, especially when one knows that in quite a number of instances the surgeons and physicians who advised their boards to make the appointments ignored their own nominee, and let him struggle for a living as best he could while they sent all their paying private work to others, as often as not to laymen. Team work is essential these days, and the radiologist is one of the essential workers in a team. If he has not the necessary apparatus, because of lack of support, his work is likely to be the weakest link in the chain.

Yes, there are plenty of charges that can be laid at the doors of the radiologist and electro-therapeutist. It should not be forgotten, however, that at the present time he is almost entirely self-educated, and more often sinned against than sinning.

Future Opportunities.

There is one relationship of the radiologist to his colleagues that I must just touch on. His department is full of intensely interesting work; it is like a profusely illustrated book. His illustrations come automatically from all departments of his hospital and from his private practice, and the waste of the superabundant material in every x-ray department is a tragedy. The x-ray department of a hospital is a centre to which a very large proportion of cases must necessarily be referred, and I hold that the radiologist should make it his business to see that there is as little waste of material as possible. For instance, if one of his colleagues is working on osteitis fibrosa or other rare disease, he should keep that man informed of all cases that come to the hospital. In fact, he should make his department a bureau for the distribution of information, supplying his colleagues with all the material he has available from his unique position as a link in so many diagnostic chains. His department should be lifted out of its cellar and brought into a central position, where each and all of his colleagues are always welcome to see the work and discuss their own and their colleagues' cases. Such a department has the opportunity of once more linking up the scattered units of a hospital, which tend to get further and further away from each other, each shut up in itself and not knowing what goes on in other units.

The radiologist has, I believe, a great opportunity in this respect, and, if he can get a suitable department built in a central position, he should be able to do something to break down the barriers that have sprung up in the big hospitals by making his department a social as well as a scientific centre, a common meeting ground for men from all parts of the hospital. Such a department would have a very marked stimulating effect on the scientific work of the hospital, and would give every one of the staff a chance of meeting each other such as they have never had since the old days when the whole staff of the hospital was crowded in inadequate quarters. There is something to be said for the old days when circumstances forced medical men to see a great deal of each other's work.

In the new era opened up by the granting of the diploma by this university every appointment will be held by men and women who have had greater advantages than we, and a higher standard than has been possible in the past will be expected and demanded of them. The future holds possibilities for development that demand the best workers. It is no stereotyped branch, and every year new side paths open out that should tempt any man who loves pioneer work. The fascination of discovery is great and as yet we are only on the fringe of whole tracts of uncharted by-ways that call for the sharp axe of the keen investigator, the open mind and quick perception of the prospector who can stake out a claim and "make good" in one of the richest fields of research that has ever been thrown open to those of us who have chosen to follow the study of life and death.

DISCUSSION ON DIAGNOSIS AND TREATMENT OF PARALYSIS CAUSED BY NERVE INJURY.

OPENING PAPERS.

THE PLACE OF ELECTRICITY IN THE DIAGNOSIS AND TREATMENT OF NERVE INJURIES.

BY

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During the war, owing to the illness of a colleague, it fell to my lot to be responsible for the large Physical Treatment Department at the British Red Cross Hospital, Netley, for more than six months, and though in that time it was impossible for me to acquire more than a superficial knowledge of electro-therapeutics, I certainly gained an insight into its aims and its difficulties that would otherwise have been impossible. If, as a surgeon, I had ever been impatient of the slow progress made by cases after operation and had been inclined to attribute it to defects in after-treatment, I now had it brought home that some of the difficulties in after-treatment might even be due to the surgeon's own want of foresight.

In the care of a limb in which a nerve has been severed there are many considerations other than those that appear on the surface. The inevitable paralysis of a certain group of muscles carries with it a whole train of consequences, many of which are by no means inevitable. Leaving on one side for the moment the muscles directly affected, the loss of the normal range of movement will lead to the formation of adhesions between other muscles, around tendons, and within joints. The limb may readily fall into positions of deformity which give rise to the stretching of muscles and of ligaments, the skin itself will suffer from disuse, and the limb will suffer from its corresponding loss of excretory power. It is therefore evident that in estimating the value of any one method of treatment we must consider the limb as a whole, and must not let our vision be bounded by the narrower field of the small group of muscles which may actually be paralysed.

Before considering, then, the place of electricity in the diagnosis and treatment of nerve injuries, I would lay stress on the great value of a varied course, which may include such diverse methods as massage, whirlpool baths, and Zander exercises, each playing its part in the prevention or resolution of some of the secondary results of the injury. A further advantage of such a course is the great degree to which it facilitates the application of electrical methods. The skin can be kept soft and moist, and the current will no longer be checked by a dry and resistant membrane, or diffused by underlying oedema. The paralysed muscles will no longer be asked to contract against a barrier of adhesions, or to flex joints stiff from disuse. The improvement in the blood supply of the limb will save these muscles from any risk of injury from the collection of waste products, and will bring to them a supply of food such as is demanded by the work they may have been forced to do.

When, then, I speak of the use of electricity in the diagnosis and treatment of paralysed muscles, it is to such a limb, and to such a limb alone, that I refer.

In the case of an injury of a peripheral nerve, the use of electrical methods, merely to discover whether the nerve is divided or not, is of no great interest. It is when we are approaching the period of recovery that the importance of refined methods becomes pronounced; but even here I am inclined to think that it is the eye and hand of the expert rather than the actual method which he employs that counts. After all the work that has been done, and all that has been written on the subject, it still remains true that the subtle change from slow to quick response, with all that it means of recovered nerve and awakening muscle, is as evident to the trained eye, whether it be produced by a simple galvanic set or by some elaborate electrical device. This change is, to my mind, by far the most important index of recovery with which we are acquainted. It precedes the return of voluntary power and of faradic response by a period which may vary from two or three weeks to several months; it invariably appears if recovery of function is ultimately to occur, and is a sure indication that a certain degree of recovery has already taken place. The actual response may be observed either in the muscle itself or in its tendon. Observation of the resulting movement of the limb is apt to lead to erroneous conclusions. Nothing is more likely to lead to a wrong diagnosis of recovery than observation of movements of a limb, almost all of which are produced by composite groups of muscles; this is especially true in the early stages of recovery, when the response of the affected muscles to any form of stimulus is feeble. Time after time we have thought that voluntary power had at last returned, or that a faradic response had been obtained, only to find on applying the more stringent galvanic test that we had been deceived, and that the typical slow wave of contraction was there to prove it. If the presence of a quickened response is an encouragement to be eagerly looked for, its absence should be a check to the undue optimism which has done so much to darken our knowledge of the results of nerve suture.

As regards the use of electricity in the treatment of paralysed muscles, I feel that it would be pure presumption on my part to express any opinion upon the various ways in which it may be applied. But I may be allowed to offer a few observations on the objects we have in view in applying electrical methods to treatment, and on the results we may hope to obtain.

Although I know that other views are held, I think that most will agree that in the application of electricity our primary object is to evoke contractions in the paralysed muscle. By doing so we force it to fulfil its normal function, in however diminished a degree, and this, in our universal experience, is essential for the prevention of atrophy in any tissue. A disused limb will shrink, even its bones will lose their lime salts, and its skin will become glossy and thin. A disused loop of intestine will atrophy till it is little more than a fibrous cord, though its blood and nerve supply are absolutely normal. A disused eye may become blind. The tissues require for their nutrition something more than the supply of food, even something more than perfect innervation. They must work.

I do not for a moment say that massage is of no value in the nutrition of a paralysed muscle. It is of the utmost value, for it can ensure an adequate supply of food, and the effective removal of waste products, and can assist in many other ways. Nor have I thrown over my old friend and ally, the whirlpool bath. It, too, has a field of action, in which it easily holds the first place, and perhaps not the least of its benefits lies in its wonderful power of preparing the limb for the masseuse and the electrician. But I maintain that electrical stimulation can do for the muscle something quite out of the reach of either of these methods.

Although the secret of muscle power is still undiscovered and we as yet know nothing of the mechanism of the simplest movements, certain broad facts about muscular contractions are obvious. At their basis must lie some molecular change in the material of which the muscle tissue is composed; this change must produce a mechanical change in each of the minute elements forming the tissue; and these small mechanical changes in the elements must be integrated into the gross contraction observed. A whole series of changes—molecular, microscopic, and massive—go to form a contraction, and these changes can only occur when the muscle contracts. In no other way can they conceivably be produced. The prima facie evidence of the value of contractions in the treatment of paralysed muscles is therefore overwhelming, and it would require the strongest practical evidence of their uselessness to justify us in ignoring them.

But the practical experience of those who have used electrical methods largely is overwhelmingly in support of the value of contractions, and there are even some who hold that if they can be evoked no other treatment is required. Personally, they seem to me to form a valuable climax in a system of treatment, forcing the very molecules of the muscle to bestir themselves and to make use of the supplies of food which a stimulated circulation has brought to their doors.

If, however, electrical treatment is to be really effective, there is one condition which must not be overlooked: it must be remembered that the results we have just seen apply only to those fibres which contract, and for the muscle as a whole to receive the same benefit it must be made to contract as a whole; this it is often exceedingly difficult to obtain. It is only too common for the operator to be satisfied with the twitch of a few superficial fibres, which merely disturbs the skin, whilst the great bulk of the muscle lies inert below. Obviously the ideal means of stimulation would be the passage through the whole limb of a current which would stimulate the paralysed muscles whilst leaving the intact muscles undisturbed. The researches of Lapicque and of Turrell have brought us within measurable distance of such an ideal, although I do not think that we can yet regard the problem as solved. When its complete solution is achieved, a new era will have dawned in the treatment of paralysis.

I think, then, that the primary object of the application of electricity to a paralysed limb should be the production of contractions in the paralysed muscles, and I feel certain that the surest direction of progress lies in the development of special forms of current for this purpose. At present we have the ordinary galvanic make and break, the same current modified by the introduction of a condenser, and surging galvanic currents. The first is the method of all-round utility, but it has the disadvantage that it must be applied locally, as otherwise an overpowering contraction of the healthy muscles would be produced, and that it is difficult to obtain by its means the deep effect which is so essential for success. The other two methods can, in skilled hands, give brilliant results, but they require a degree of attention to detail and a skill in adjustment and application which only a few can supply. The discovery of some simple means by which the contraction of every fibre of a paralysed muscle could with certainty be obtained would give a powerful impetus to treatment, and there are few objects more worthy of research.

There is a very prevalent tradition that the continued stimulation of paralysed muscles is attended with a danger of producing fatigue, and that the results of this may be so serious as even to outweigh all the good that the exercise might have done. Those who hold this view can scarcely have realized the extreme feebleness of the strongest contractions that we can obtain when compared with voluntary effort, and yet it is well known that voluntary effort, even if carried to the stage of utter exhaustion, is incapable of producing any considerable degree of fatigue in the muscle itself, so well is it protected by the nervous system. As a matter of fact my friend Major Cooper has put the matter to a direct test: he has found that after 600 contractions in fifteen minutes a paralysed muscle showed no evidence of fatigue at all. This certainly seems to indicate that we are usually far too timid in our treatment and although, as we all realize, a due period of relaxation between the contractions is essential, we might evidently exercise each muscle for a far longer period than is usual with great advantage.

So far I have only spoken of currents which are capable of producing contractions in paralysed muscles, but I should like to devote a few moments to the consideration of currents which have not this power, and to ask the question: Has a faradic current any place in the treatment of a paralysed limb? I feel convinced that it has. In the first place it can be used to exercise the normal muscles, to keep them from atrophy, and to restore them to their full vigour. And it must be remembered that these muscles whose nerve supply is intact are often capable of compensating to a quite remarkable degree for the loss of those whose nerve supply is destroyed. The [illegible] [illegible] [illegible] [illegible] general [illegible] of the limb, it [illegible] [illegible] [illegible] and healthy. Apart from its indirect action through the muscles, it is probable that a faradic current has a direct stimulating action upon the circulation, either upon the vessels themselves, or through the sympathetic system, and in this way it may have a direct action upon the vitality of the limb as a whole.

It has recently occurred to me that a faradic current, stimulating the muscles antagonistic to those which are paralysed, might very probably have an effect far more subtle than those to which I have referred, which would give it a very real place in the treatment of nerve injuries. It is true that we have no evidence to show that the mere passage of a current through a limb has any effect on the growth of a divided nerve. But there is every reason to suppose that the rate of growth of a divided nerve is influenced by the activity of the cell from which it arises, and what better means could be found of stimulating the anterior horn cell than the production of the physiological reflex arising from the contraction of the antagonistic muscle group? The possibility is certainly worth considering, and it at least shows the extreme complexity of the phenomena with which we have to deal, and the caution which we should exercise before condemning any form of treatment, however bizarre it may at first appear to be.

Part of the importance and the fascination of nerve injuries lie in the common ground which they afford for the physiologist, the electro-therapeutist, and the surgeon. Such common points of contact are worthy of our closest attention, of our most assiduous cultivation, for these are the starting-points from which the future advances of science will be made. I feel that it is because you realize this that you have done me, a surgeon, the honour of asking me to open this discussion. To realize it myself adds to my appreciation of your kindness, and of the honour you have done me.

THE VALUE OF ELECTRICAL TESTING OF NERVES AT OPERATION.

BY

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I PROPOSE to deal with one aspect of the electrical diagnosis of peripheral nerve injuries—namely, the examination that can be made when a nerve trunk has been exposed by the surgeon at operation. Many people have applied electrical stimuli in these conditions, but I do not gather, from the few notes that have appeared, that there has been any systematic study of the reactions obtained, such as would lead to a clear idea of the value of the findings, positive or negative, and the limitations of the method. If I may say so, the proceeding has been rather empirical and happy-go-lucky.

I was fortunate in being able to test rather carefully the electrical conditions in a series of about eighty cases, during the earlier years of the war, and my observations were conducted with the object of learning something about the nerves, rather than that of being of immediate help to the surgeon. I believe that a study of the results does indicate what conclusions are justified by the evidence procured by such stimulation.

Stimulation of a nerve trunk gives evidence of two of its properties—excitability and conductivity. We know that a localized lesion of a nerve trunk produces no change in the nerve for more than a very short distance centralwards. Stimulation above the lesion will therefore provide evidence of the conductivity of the nerve through the injured area and onwards to the muscle supplied. It is at and below the lesion that changes are to be expected; stimulation below the injury will therefore be a test of excitability as well as conductivity. The latter function has already been explored by the central stimulation, so that peripheral stimulation may be regarded as a test of the excitability of the peripheral portion of the nerve.

In my experiments the tests were made by means of a small [illegible] bipolar electrode—actually a telephone [illegible] connected to a [illegible] coil. The [illegible] of the electrode were applied to the nerve above and below the injury before any dissection had been attempted in the damaged area. The tests were repeated when dissection from fibrous adhesions was complete. The resulting contractions were noted and classified.

Without going into details I may say that the following general observations were made.

There were [illegible] cases of complete division of a nerve

13 of nearly complete division, 2 of very slight division, and 42 of involvement in scar tissue without macroscopic evidence of division of fibres. No case of complete division showed any sign of excitability or conductivity. I have heard that someone has reported a case with a contrary finding, which seems very difficult to accept. However, as I have not seen the paper I cannot fairly criticize the statement.

In the scar cases, of which a few may really have been partial divisions, 73 per cent. were found to have preserved some conducting power, and 64 per cent. were still excitable by stimuli before dissection of scar tissue. The interesting thing was that a number of these showed a definite improvement in both functions when tested immediately after neurolysis.

In the partial divisions contractions were fairly often obtained. Here one often found diminution of response after dissection, and the possibility arises of fatigue effects, due to handling and repeated stimulation.

The criticism of the value of response in these division cases is that it is only with a fairly sound nerve that anything like a general contraction of a whole muscle group is seen. Mostly one gets only a contraction of one or two larger muscles. Consequently, when a contraction of this sort is produced, it does not necessarily mean that no fibres have been divided.

The conclusions I draw from my experience of these cases are:

1. Conductivity is conclusive evidence of physiological continuity of nerve fibres.
2. Excitability is also conclusive evidence of physiological continuity of nerve fibres.
3. An immediate improvement in conductivity or excitability after neurolysis is suggestive of very slight compression, possibly chemical nerve block, and justifies a very good prognosis.
4. Absence of conductivity and excitability, even after neurolysis, indicates a fairly severe nerve disturbance, but is not proof of complete division.
5. All cases should be tested in this way, because the information is worth having, and can materially help the surgeon in his decision.

CONDENSER TESTS IN THE DIAGNOSIS AND PROGNOSIS OF NERVE INJURIES.

BY

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THE following observations are based upon experiences with some 2,000 cases of injury to nerves of the upper and lower limbs seen while I was acting as neurologist to the Woolwich Military District from 1916 to 1919. At first I used a condenser set merely as a secondary test to faradism and galvanism, but very soon becoming impressed with its value, I relied almost exclusively upon the condenser set, relegating faradic and galvanic reactions to a subsidiary position.

Mr. Souttar has remarked that the use of electrical methods to discover whether a nerve is or is not divided is of no great interest, but I venture to suggest that in a case of nerve injury it is of great practical importance to ascertain if surgical measures are or are not indicated, and if the muscular paralysis is likely to recover. It is only by aiming at scientific accuracy in estimating the degree of impairment of nerve function that exists following an injury that ultimate success in determining these points correctly is to be attained. Although far from perfect the condenser set is an important step in this direction.

Many observers have pointed out that the faradic coil is not an accurate instrument for testing muscle reactions, since the factors upon which the response depends—voltage, duration of each electrical impulse, rate at which the impulse is delivered—are variable; further, the majority of cases of nerve injury fail to show any response to the faradic coils in clinical use. Galvanism, as ordinarily used for testing, is similarly inaccurate, for voltage, milliampère readings, resistance, etc., require standardizing. In the condenser set the voltage is fixed and the duration of each impulse known; provided that the same precautions are invariably taken to minimize skin resistance and pads of the same size always used, we have a fairly accurate means of testing muscle reactions, and one which is not only useful for comparing observations made at different times on the same case, but also for the comparison of results with those of other observers.

The condenser I used was the modification of the Lewis Jones set suggested by Sir J. Purves Stewart. The condensers are charged from a direct current and by means of a rheostat and voltmeter; the charging current can be fixed at 100 volts; the condensers are alternately charged and discharged by a clockwork metronome and set of four mercury-containing cups. The scale consists of twelve stops varying in capacity from 0.016 to 4.0 microfarads;* for convenience, a muscle is spoken of as reacting on, for example, No. 6 stop, meaning a contraction occurs with a capacity of 0.10 microfarads at 100 volts, Lewis Jones scale.

Before testing, the limb is immersed in warm water for four or five minutes, and two wooden-handled electrodes, fitted with circular pads 1 in. in diameter, are used for the test. One electrode is placed on the motor point and the other electrode elsewhere on the muscle; excepting in the case of the intrinsic muscles of the hands, the pads are always pressed flat. The first test is made from one of the higher capacities, and, working from above downwards, the various capacities are tried until the lowest stop on which the muscle shows any appreciable reaction is reached. Consequently, when it is stated that, for example, peroneus longus reacts on No. 8 stop, we mean that the muscle will not react on any stop lower than No. 8 (0.5 microfarads).

All normal muscles do not react on No. 1 stop (0.016 mf. at 100 volts), and after extensive observations with the above technique, I adopted the following reactions as normal standards:

A. Upper Limb.

1. Musculo-spiral trunk: [illegible] supinator longus, extensor carpi radialis [illegible] = No. 1 stop (0.016 mf.).
   [illegible] extensors of thumb = No. 2 stop (0.025 mf.).
2. Median nerve: Flexor carpi radialis = No. 1 stop.
   Flexor sublimis and profundus digitorum, flexor longus pollicis = No. 2 stop.
   Abductor and opponens pollicis = No. 3 stop [illegible].
3. Ulnar nerve: Flexor carpi ulnaris = No. 1 stop.
   Adductor pollicis, interossei, and intrinsic muscles of little finger = No. 3 stop.
4. Other muscles: Trapezius, pectoralis major, brachialis anticus and biceps = No. 1 stop.

From the above it will be seen that the larger and more superficially situated muscles of the arm react on No. 1 stop, the deeper muscles, especially of the forearm, react on No. 2 stop, while the intrinsic muscles of the hand react on No. 3 stop. In individuals with a thick palmar skin the thenar and hypothenar muscles may only react when No. 4 stop (0.05 microfarads) is reached.

B. Lower Limb.

1. Sciatic trunk: Gluteus maximus, biceps, semimembranosus, and semitendinosus = No. 2 stop.
2. External popliteal nerve: Peroneus longus and brevis, tibialis anticus, and extensor brevis digitorum = No. 2 stop.
   Extensor communis digitorum and extensor proprius hallucis = No. 3 stop.
3. Internal popliteal nerve: Gastrocnemius, soleus = No. 2 stop.
   Flexor longus digitorum, flexor longus hallucis, and interossei = No. 3 stop.
   Flexor brevis digitorum = No. 6 stop (0.10 mf.).
4. Anterior crural nerve: Rectus femoris, vastus internus, and externus = No. 2 stop.
5. Other muscles: Adductor longus and adductor magnus = No. 2 stop.

It must be borne in mind that, in general, no definite conclusions can be drawn from condensor tests made within one month of the infliction of the nerve injury.

With regard to injuries to mixed nerves, it is to be remembered that although motor paralysis and complete sensory loss in the area of cutaneous supply may be found at an examination made more than a month after injury, the nerve may still recover its function, apart from operation. It is in these cases that condenser tests are of great value. If in lesions of the musculo-spiral, median, anterior crural, sciatic, external or internal popliteal nerves, the majority of the muscles react on No. 7 stop (0.25 mf.) or below, an incomplete lesion may be diagnosed and recovery almost certainly expected without operation. The same may be said of an ulnar nerve lesion in which the intrinsic muscles of the hand react on or below No. 8 stop (0.5 mf.).

To illustrate the type of lesion which may be associated with reactions at Nos. 7 to 8 stops, the following case may be mentioned:

Examination was made two months after injury to the ulnar nerve by a gunshot wound four inches above the wrist. There was paralysis of the ulnar muscles and the usual sensory loss.

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* The scale is as follows:

No. 1	stop	= 0.016	microfarads	at	100 volts.	
No. 2	,,	= 0.025	,,	,,	,,	
No. 3	,,	= 0.035	,,	,,	,,	
No. 4	,,	= 0.05	,,	,,	,,	
No. 5	,,	= [illegible]	,,	,,	,,	
No. 6	,,	= 0.10	,,	,,	,,	
No. 7	,,	= 0.25	,,	,,	,,	
No. 8	,,	= 0.5	,,	,,	,,	
No. 9	,,	= 1.0	,,	,,	,,	
No. 10	,,	= 2.0	,,	,,	,,	
No. 11	,,	= 3.0	,,	,,	,,	
No. 12	,,	= 4.0	,,	,,	,,	

The interossei reacted on No. 8, adductor pollicis on No. 9, and abductor minimi digiti on No. 7. A good prognosis was given and operation not advised. Owing to the report not reaching the ward, an exploration was carried out a few days later, when the nerve was found only slightly adherent to the surrounding tissues.

If in muscles normally reacting on Nos. 1 or 2 stops, no response is obtained below No. 8, most of the muscles supplied by the damaged nerve reacting between Nos. 8 and 10, the case should be treated on the usual lines and re-examined after an interval of six weeks. If no improvement is then found in the condenser reactions, operation should be advised, although sensory loss be not present over the entire area supplied by the nerve. At operation the nerve is usually found suffering compression from involvement in scar tissue or partially divided. In the case of moderate compression, even though recovery might eventually ensue, freeing the nerve often hastens recovery and renders motor function more complete. If actual retrogression is found after the six weeks' interval, exploration should be advised without hesitation.

If the muscles supplied by the injured nerve fail to react on any stop below No. 10, the majority reacting on Nos. 10 to 12, the nerve is suffering from severe compression, partial anatomical division, or, in some cases, complete division, and is most unlikely to recover apart from operation. Consequently, it has always been my practice to advise operation in such cases, and I have not seen a case in which subsequent exploration failed to show the necessity for surgical treatment.

It is not, of course, possible nor necessary to distinguish between anatomical and physiological division, but, as a matter of interest, I have found relatively few cases examined at a period exceeding two months from the date of injury, and in whom subsequent operation has shown a complete anatomical division of the nerve, will show a response on a stop below No. 12 in any muscle supplied by the injured nerve. In the case of the lower limb the muscles usually fail to show a response even on No. 12 stop when the nerve is completely divided. I have met with only one case of complete anatomical division of a nerve, even in the upper limb, which, examined not less than one month after injury, exhibited a muscle in the area of supply of the nerve reacting below No. 10 at 100 volts. Even in this [illegible], a severed median nerve [illegible], seen three months after damage from a gunshot wound—only one muscle, flexor carpi radialis, reacted under No. 10—namely, on No. 9.

If all muscles supplied by the injured nerve fail to react on the highest stop (No. 12), complete division, either physiological or anatomical, is usually present. If not anatomically divided, the nerve is found to be so intimately involved in scar tissue as frequently to render resection and end-to end suture necessary.

It has been suggested by Hernaman-Johnson and others that as in severe injuries involving the nerves of the lower limb the muscles often fail to react even on the highest capacity (No. 12 at 100 volts), it would be desirable to use a higher voltage than 100 for testing leg muscles. Although certainly desirable for the accurate estimation of reactions, for practical purposes my experience has been that if the muscles fail to react on No. 12 at 100 volts operation will certainly be required. In many such cases testing with galvanism shows a sluggish response, with ACC greater than KCC; others, especially if several months have elapsed since the time of injury, fail to show a response with galvanism, while a few show a fairly brisk response, with KCC equal to or slightly greater than ACC. Whenever I have seen a case in which the muscles supplied by the injured nerve failed to respond to any condenser stop at 100 volts, I have invariably advised operation, and in all cases has the subsequent exploration [illegible] a severe injury which apparently could only recover as the result of [illegible] intervention.

A [illegible] difficulty [illegible] Although [illegible] from the point of view of [illegible] the [illegible] of the [illegible] [illegible] might appear, for it may be safely assumed that the severity of the nerve lesion [illegible] require operation. In all cases I met with the exploration advised was never found to be unnecessary.

With regard to cases of injury to a mixed nerve with only partial sensory loss (that is, anaesthesia and analgesia over only a portion of the cutaneous area supplied by the nerve) the muscles innervated by the affected nerve seldom fail to react on or below No. 10 stop. If reacting on No. 8 or below, recovery almost invariably ensues without operation. Other cases in which the majority of the muscles react on No. 10 should be re-examined every four weeks; if no improvement be apparent after the second or third examination, exploration should be advised. Some cases appear to remain stationary; in such instances operation usually reveals moderate involvement in scar tissue or a partial division of the nerve, and surgical treatment is followed by rapid improvement. In cases with incomplete sensory loss and condenser responses on No. 5 to 6 stops, voluntary movement is almost always complete in four to six months.

As regeneration of a motor nerve proceeds there is usually a progressive diminution in the capacity of the condensers required to evoke a contraction in the muscles supplied by the damaged nerve. When the condenser reactions improve progressively month by month, it may be safely assumed that recovery is taking place in spite of the continued absence of voluntary movement. For some time following an operation on a nerve, however, there is an actual regression in the condenser reactions as compared with those taken immediately before the operation—that is, for some time following operation higher capacities are required to produce a response in a muscle supplied by the nerve involved than were needed prior to the operation. The period required before the condenser reactions return to their previous level is usually four or five weeks, and the regression occurs irrespective of the nature of the nerve operation—that is, it follows freeing from scar tissue as well as resection.

In some cases, particularly in injuries to nerves of the lower limb, the condenser reactions, apart from operation, may remain stationary for three or four months and then slowly improve. When the condenser reactions approach No. 8 stop from above, voluntary movement may be expected shortly to appear. Occasionally the reaction may improve down to No. 10 or 9, and then remain stationary while voluntary movement is developing. If after operation no change in the condenser reactions takes place month after month, it is probable that the operation has been unsuccessful and that no recovery of motor function will occur.

It is not suggested that one should rely solely on quantitative condenser reactions; there are other important factors that often have to be considered, such as the condition of the paralysed muscles, the absence or otherwise of systematic treatment, the quality of the reaction, sensory changes, Tinel's sign, etc. The purpose of the foregoing remarks is to illustrate the value of condenser tests in assisting one to arrive at an opinion as to the extent of a nerve lesion, the nature of the treatment to be recommended, and the ultimate prognosis.

DISCUSSION.

Dr. W. J. TURRELL (Oxford) expressed some disappointment that Mr. Souttar had not attached more importance to electro-diagnosis. The final decision in regard to the value of such investigation rested with the surgeon for whose information the tests were made, and if he felt that it was of little or no value the labours of the electro-therapeutist in this direction were largely in vain. Electro-diagnosis was probably the most advanced and best perfected of all the electrical procedures. When a new method of scientific investigation was introduced many workers usually complicated its technique by the unnecessary introduction of instrumental methods, which in course of time and as the result of experience were ultimately shown to be useless and a return was then made to the original method of investigation. This had occurred in relation to electro-diagnosis. The methods now used by the most experienced workers were practically those of Duchenne of Boulogne and Erb. But though little or no advance had been made in the technique, considerable knowledge of the scientific principles underlying these methods had resulted from the work of Lapicque, Keith Lucas, Adrian, and others. This method had the advantage of being a very definite one. The first thing to be realized was that two very different points had to be investigated. Dr. Adrian had very conclusively demonstrated[1] by some instructive experiments that the nerve had what he well termed "a quick mechanism"—that is to say, it reacted with an electrical stimulus lasting only about $\frac{1}{1500}$ second. The muscle, on the other hand, required a much longer stimulus for its excitation—at least $\frac{1}{100}$ sec.—and in the case of advanced degeneration $\frac{1}{20}$ sec. or even longer. In the case of the nerve the point to be ascertained was whether or not there existed a direct continuity throughout its axis cylinders with the end plate in the muscle. In the case of the muscle, its condition—excitability, contractility, etc.—had merely to be ascertained. As the desired information in the two cases differed so fundamentally, it was both reasonable and desirable to employ a different method in each case. The stimulus from the coarsely faradic coil as used in medical work had a time duration of about $\frac{1}{1000}$ sec.; this was, therefore, quite long enough to excite the quick nerve mechanism, but was much too brief to excite the more slowly responding muscle. If a contraction resulted from a faradic stimulus, it could be concluded that the nerve was functioning and was neither compressed nor divided. The only two exceptions to this rule were (1) cases in which insufficient time—less than three weeks—had elapsed since the injury, and (2) the rare cases of Erb's paradox—temporary nerve compression. On the other hand, with the galvanic current any duration of current was obtainable, and thus the more slowly acting muscle could be excited, and thereby an opinion could be formed of its condition, both from the number of milliampères required to excite it, or better still, from the type of contraction elicited. The points the surgeon required information upon were: (1) Is the nerve functioning? (2) If not, what is the degree of degeneration of the muscular fibres? These two simple methods supplied a clearer and more definite answer to these questions than an attempt to establish by the use of condensers or by other means a gradual and graduated recovery between the nerve and the muscle, which in reality did not occur.

Dr. F. **Hernaman-Johnson** (London) agreed with Mr. Souttar that one of the most important things to determine electrically was the point of time at which nerve impulses began to flow again, in however small a degree, into a muscle which had been cut off from its supply. It had been noted for many years that voluntary power might return before faradic response; yet one could not but believe that the power of the muscle under such circumstances to respond to electrical stimulation must be vastly different from what it was shortly after the nerve severance or blockage. It might be true, as Mr. Souttar said, that often the first electrical sign of recovery was an enlivened response to galvanism, but the recognition of this must depend a great deal upon the personal equation, which it was desired to eliminate as much as possible. His own experience of electrical testing had been chiefly with the Lewis Jones condenser set, as modified by himself in such a way that any number of impulses from 1 to 30 per second could be passed into a muscle at a given potential. The voltage, the capacity of each condenser, and the number of impulses per second were therefore under control; only the resistance of the skin remained uncertain, and this variable he had tried to stabilize as much as possible by the method mentioned by Mr. Souttar, namely, previous immersion of the limb in hot water and, later on, when he had them, by whirlpool baths. In general one found that, coincident with clinical improvement, smaller and smaller capacity condensers were required to excite the muscle, but there were puzzling cases in which the largest size condensers were still required, although voluntary movement had returned. Experiments made by doubling the voltage and halving the condenser capacity showed that muscle wholly severed from its nerve gave the same reaction to the same voltage-capacity product, with perhaps a slight balance in favour of the higher voltage. But a muscle which showed no improvement at 100 volts, though it had regained voluntary power, responded in a remarkable way to a doubled voltage, requiring usually a voltage-capacity product of one-quarter or less to produce the same excitation. Afterwards experience showed him that, even where there was no sign of voluntary power, ability to respond to a greatly lowered voltage-capacity product when the potential was raised from one to two hundred connoted a good prognosis. The advantage of the method was that the changes were definite and recordable in figures. On treatment he had to part company to some extent from Mr. Souttar. A muscle the nerve supply of which was cut off wholly or in part was no longer a normal muscle, and argument applicable to normal muscles must not be applied to it without modification. To suggest, as Mr. Souttar did, that it was practically impossible to tire by electrical stimulation a muscle cut off from its nerve supply was to run counter to a great body of expert opinion. Sir Robert Jones and his school at one time held that rest and relaxation alone would restore almost any muscle in which the nerve supply was not irreparably injured; and, *per contra*, that such a muscle could not recover if stretched and over-stimulated. This rest-and-relaxation business was, no doubt, at one time overdone, but nevertheless it effected many remarkable cures. Personally the speaker believed that a combination of Sir Robert Jones's original methods with suitable electrical treatment gave the best results. He was still doubtful whether a muscle should be stimulated to contract before there were some signs that its nerve supply was in process of being restored. Professor Langley had called attention to the fact that the individual fibres were—in the early stages at any rate—in a state of fibrillary contraction. This being the case, stimulation of the muscle as a whole would seem to be theoretically unjustifiable while this phase lasted. Professor Langley had also shown experimentally on animals that electrically produced contraction during the first few weeks did not prevent atrophy. Treatment of the limb in a bath by some form of interrupted current not strong enough to produce visible contraction was, however, of the utmost value. The old idea that months must elapse before any signs of motor regeneration could be detected would no longer hold water. In some cases after only five or six weeks electrical tests would show improvement, and he had known voluntary movement occur in the peronei muscles eleven weeks after suture. When it was decided to begin to produce contractions he preferred to use an interrupted current made up of a succession of condenser impulses, both poles being placed on the muscle—the current flowing for one second, and being off for an equal time, or rather more. This procedure needed to be done at first with extreme caution, and it was easy to lose the progress of weeks by two or three days of over-stimulation. After treatment, the limb should be put back upon its "relaxation splint," but the affected muscle need not be relaxed to such a degree as to overstretch its healthy opponents; nor would stretching it by passive movements for a few minutes do any harm. But he urged that such muscles required rest and relaxation, and should be stimulated too little rather than too much. With the passing of another year or two all would have been done that could be done for the lower neurone injuries due to the great war. But infantile paralysis would in all probability go on playing havoc with the limbs of children. Experience gained in the management of this disease formed the basis of our original treatment of nerve injuries in war; and now, in turn, war experience would be utilized in the treatment of paralysed children. The danger of over-stimulating muscles affected by lesions of their motor nerves could not be too much emphasized.

Dr. F. **Howard Humphris** (London) directed his remarks more particularly to the practical side of the treatment of paralysed muscles. He mentioned the melted paraffin wax bath as a valuable means of preparing the limb for massage and maintaining or restoring a healthy condition of the skin. As an electro-therapeutic measure for causing massive muscular contraction the static wave current was an agent which, in a discussion on the subject of paralysed muscles, must not be left out of consideration. While there might be no evidence to show that the mere passage of a current through the limb had any effect on the growth of a divided nerve, yet when the pathology was considered—the circulatory stasis, the chemical nerve block—and the action of a current, diathermic or ionic, in increasing the circulation and dispersing the stasis, it might logically be deduced that the effect of the current's passage would be to benefit the region of the divided nerve.

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[1] Physiological Basis of Electrical Tests in Peripheral Nerve Injury. By Dr. E. D. Adrian. *Archives of Radiology and Electro-therapy*, May, 1917.

Mr. SOUTTAR, in reply, said that he had had the greatest appreciation of the value of electrical methods in deciding in a doubtful case whether or not a nerve was divided. At operation it was his custom repeatedly to test the nerve he was exploring, and he could not lay too great stress on the value of the results obtained.

X RAYS IN THE DIAGNOSIS OF TUMOURS OF THE THORAX.

BY

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THE examination of the thorax for the detection of a new growth is by no means a simple procedure. It is not often that the investigation is undertaken primarily for this purpose; frequently in the routine examination unusual shadows are seen, and then it becomes necessary to rapidly pass in review the conditions which are likely to present abnormal shadows in the thoracic picture. On other occasions it is the primary object of the examination to demonstrate the presence of a tumour, to indicate its position, and to give some suggestion as to its nature. Practically any variety of tumour may be found at one or other time situated in the thorax either arising from the framework or from the internal structures.

A tumour of the thorax may either be: (1) Extra-thoracic—that is, arising from one or other of the structures forming the framework; (2) intrathoracic; (3) both extrathoracic and intrathoracic. It may be that a tumour belonging to one or other of the first two groups may originate in the bony framework and secondarily invade the internal structures, or, originating within the thorax, a tumour may invade the bony or muscular framework.

Technique.

Radioscopy is most useful in a preliminary investigation because it offers a great deal of useful information: the patient should be examined in as many positions as possible, and all variations in size and shape noted. Pulsation should be most carefully looked for because it is so very valuable in the differential diagnosis to know that the tumour pulsates and whether the pulsation is direct or transmitted. On this point alone a diagnosis can often be made. Negatives should always be taken as a final step in the technique, and it is often well to take these in several positions; a consideration of a number of negatives from different angles will afford valuable aid when we have to sum up and give an opinion on the nature of a shadow.

TUMOURS OF THE CHEST WALL.

These tumours, not very troublesome in diagnosis, may occasionally lead to error if the observer is not familiar with [illegible] remember that a [illegible] upon a flat [illegible] in [illegible] condition. There [illegible] better to remember that an [illegible] For example, an oblique view of the chest will be [illegible] and give rise to a [illegible] in the former.

[illegible] on the vertebral border [illegible] mistaken for a [illegible] It may be readily disproved by moving the patient in several directions and finally differentiated [illegible] when the patient raised the arm above the head [illegible] errors in diagnosis can readily be avoided if [illegible] are made.

Tumours of the soft parts and breast: fibroma, abscess (tuberculous and infective), [illegible] Malignant growths involving the skin and soft parts must be kept in mind. These are rodent ulcer, epithelioma, sarcoma, carcinoma. All are capable of giving a moderately dense shadow on the negative. A tumour of the skin, if shown on a plate which has been placed in contact with the surface on which it is formed, will be very sharp in outline and of almost the natural size, but when the same tumour is shown on a negative which was taken with the plate on the distal chest wall the shadow is larger, less well defined, and more difficult to distinguish. Such a structure, if of a sufficient density to cast a shadow, might quite well be mistaken for a tumour in the pleura or lung.

The difficulties are increased the deeper we go into the interior. Tumours of the ribs, the sternum, the clavicle, the scapula, and of the dorsal spine, may on occasion give great trouble in differential diagnosis.

The simple tumours of the bony framework are enchondroma and osteoma (exostosis). There are certain diseases of early life which may also give rise to changes in bone which in later life may give appearances which are misleading—of these the commonest is rickets, leading to deformity of bone, and changes in the appearance of the bone may be difficult to distinguish from some forms of malignant disease. Tuberculosis and other inflammatory conditions of bone may also give appearances which are difficult to distinguish from those of new growth. Calcareous deposits on the costal cartilage are a very common cause of error; shadows are thrown which will require to be distinguished from new growth or healed tubercle in glands, etc.

Malignant tumours of the bony framework are sarcoma (generally primary), carcinoma (usually secondary). Tuberculous diseases of these structures are frequently encountered, and when a localized inflammatory swelling or abscess results the appearances are likely to be confused with those of new growth. This particularly applies to tuberculosis of the dorsal spine. Tuberculous caries of the spine will lead to deformities which will give irregular shadows readily mistaken for new growth.

The pleura is from its nature and anatomical relations a structure particularly prone to inflammatory and other lesions. A consideration of its distribution on the parietal and visceral aspects of the thorax will enable us to realize how difficult it may be accurately to diagnose one of the many lesions to which it is liable. A careful study of this important structure and the diseases to which it is liable is well worth any trouble.

It is not possible to deal fully with the lesions of the pleura; it will be sufficient to mention the complications and to point out how important it is to have a clear mental picture of what is likely to happen when the pleura is affected, and the difficulties that changes in the pleura may give rise to when dealing with tumours.

TUMOURS OF INTERNAL ORGANS OF THE THORAX.

Of the progressive tissue changes the most frequent is tumour formation. The varieties of tumour are divided into benign and malignant; of the former, fibroma, lipoma, chondroma, osteoma, and angeioma may occur. These are not very common, but their presence may cause difficulty in diagnosis.

The most important of the malignant tumours is the endothelioma, which may grow to a large size and give a very definite *x* ray picture. It originates more often in the pleura than in any other situation save in the dura mater. The *x* ray appearances may not differ greatly from a secondary sarcoma or carcinoma. The chronic thickening of the pleura known under the name of "formative pleurisy" is also very cancer-like in its appearance, while all of these tumours may be accompanied by a fluid effusion in the pleural sac.

Sarcoma is occasionally found in the young, and the varieties in which it may be met with, namely, lympho-sarcoma, chondro sarcoma, and myeloid sarcoma.

The Mediastinum.

This region is a most important one, for it contains so many structures from which tumours may take origin. Of these the following must be mentioned: Dermoid cysts arising from the thymus gland; when of large size the tumour may be mistaken for aneurysm. The pulsation should be carefully watched to determine whether it is direct or transmitted. Malignant new growths are rather frequently met with. Sarcoma is one of the most common of the mediastinal tumours. It is either a pure sarcoma arising from the connective tissue of the mediastinum or a lympho-sarcoma arising in the lymph glands. There are other forms. The lymphadenoma is very frequently met with, and is generally associated with glandular enlargement in other regions. Any of these, when present, will give the appearance of a large mediastinal tumour. These will vary with the position from which the tumour arises, its rate of growth, and whether it is complicated by inflammatory changes, degenerative changes in its substance, or the formation of adhesions to other structures, such as the aorta, pleura, etc. A tumour of fairly regular outline may give the pulsation phenomenon, and it may be extremely difficult to decide between the diagnosis of tumour or aneurysm. Carcinoma is also frequently met with in the mediastinum.

The Lungs.

Tumours of a primary origin are rare. Of the benign varieties, fibroma, lipoma, chondroma, and osteoma may be found. Adenoma and teratoma are of great rarity.

Malignant Tumours.—The primary varieties are very rare; the most frequent is a carcinoma arising in the bronchi, a columnar-celled variety of growth, which grows with great rapidity and may assume a large size and soon end fatally. It cannot be distinguished radiographically from any other variety of carcinoma. Carcinoma may also arise in the peribronchial tissue. The bronchial type quickly leads to pulmonary symptoms because of the frequency with which the new growth causes pressure effects and collapse of portions of the lung. Of the sarcomatous types, the most common is that arising from the lung tissue or the lymphosarcoma occurring particularly at the root of the lung. Endothelioma is another tumour which may occur in the lung. It generally arises from the lining of the lymphatics and from the pleura, and may assume large dimensions. Secondary carcinoma is also common, it is most frequently an extension from the pleura or mediastinum. Chorionic epithelioma is another though rarer form of new growth which may be very malignant in type.

The Heart and Pericardium.

Primary neoplasms of the pericardium are rare and are generally sarcomatous or endotheliomatous in nature; they may give rise to shadows of considerable size. Secondary growths are rare; the pericardium is generally involved by secondary extension of a growth involving an adjoining structure, such as the lung, pleura or connective tissue. Examples are the lymphosarcoma or carcinoma. Cases of cysticercus and echinococcus hydatids have been described.

Cardiac enlargement from intracardiac diseases should be remembered when dealing with an enlargement of the cardiac shadow. Primary tumours of the myocardium are distinctly rare, although fibroma, myxoma and lipoma have been reported. The most typical primary tumour is the rhabdomyoma, a condition generally of multiple tumours found in children and of congenital origin.

Secondary tumours are not uncommon, sarcoma being more frequent than carcinoma. These generally involve the heart muscle by direct extension from the pericardium or connective tissue of the mediastinum.

Hydatid cyst of the heart will give a typical appearance: an oval tumour projecting from the cardiac shadow displacing it, and presenting the usual cyst-like outline; pulsation may be transmitted, when aneurysm of the heart will have to be considered as an alternative diagnosis.

RELATIVE OPACITY OF NORMAL AND PATHOLOGICAL THORACIC STRUCTURES.

The references and classifications given deal only with the types of tumour most likely to arise in the thorax. No attempt has been made to describe the histology of these tumours, yet it is easy to realize how important in interpretation will be an intimate acquaintance with the macroscopic and even the microscopic appearance of tumour formations.

The *x*-ray examination of a number of tumours removed from the body is yet another of the uses to which the rays may be applied. It is a method, in the living, of analysis of the composition of a structure—the study of the pathology of the living as contrasted with the more usual methods of pathology. There exists a large field for such investigation. A knowledge of the relative opacity of the component parts of a new growth will be extremely useful. Bone will give the densest shadow, because its opacity is greater than any of the other structures; cartilage will only show in high-class negatives or when it is so situated that a clear path exists for the rays to pass through it—that is, it must not be superimposed by the shadow of a denser structure.

The *x*-ray diagnosis of morbid conditions within the thorax is probably the most difficult problem of those we are called upon to solve. It differs from gastro-intestinal work in one respect—it is rarely possible to introduce, save in the case of the oesophagus, opaque material to give contrast and so aid in differential diagnosis. The more recent method of intraperitoneal injection of oxygen has its analogue in the thorax in the spontaneous production of pneumothorax; here we get all the advantages of gas in a cavity, with the collapse of the lung as a secondary factor. The artificial production of pneumothorax is also helpful, and in a number of cases of tumour of doubtful nature it might be used as an aid to diagnosis.

DIFFERENTIAL DIAGNOSIS IN TUMOURS OF THE THORAX.

There are a number of practical points in the diagnosis and prognosis in malignant growths of the thorax which are useful, and may be summarized as follows:

The points to observe and note are:

1. The *position of the tumour*. It is most important to determine where the tumour takes origin and the structures it is likely to affect by pressure, etc.
2. Its *size* and rate of growth. Its *nature*—that is, benign or malignant.
3. Its *effect* upon other structures. Lung tumours are much more likely to give rise to acute symptoms and end rapidly than mediastinal or pleural growths.
4. Pressure effects of malignant and non-malignant growths.
5. Whether primary or secondary.
6. The *x*-ray appearance of a tumour.
7. *Prognosis* depends upon the determination of the nature of the new growth, its position, its size, rate of growth, and effects on other organs.
8. The *method of spread*, very important as an aid in distinguishing between forms of malignant disease.

The diagnosis of an intrathoracic tumour is always difficult. The first point to ascertain definitely, when the presence of a new growth is demonstrated, or rather when a shadow appears which resembles a new growth, is whether it is intrathoracic or extrathoracic. Having decided that most important point, the next step is to accurately locate the new growth, for the correct determination of the site is often a direct guide to its nature. The next and most important is to decide whether it is a benign or a malignant growth.

There need be no real difficulty in determining whether a tumour is intra- or extra-thoracic if the investigator has a fair knowledge of technique and examines the patient in a number of standard positions. Stereoscopic radiographs will be the final method by which the question will be answered.

The exact determination of the site and origin will always be difficult and occasionally impossible. The possibility of showing the origin of a growth will depend largely upon the stage of its development. A small tumour may be situated in the mediastinum and it may even indicate the structure from which it is arising, but when the case is examined later it may, by reason of its size, obliterate all traces of its course except, perhaps, one which is obvious—namely, that it arises in the mediastinum. The majority of intrathoracic tumours, however, arise in the mediastinum, so that the fact is not of so great value in diagnosis.

An aneurysm may simulate in every detail save one the appearances of a slowly growing endothelioma or of a lymphosarcoma—the one point of value in differential diagnosis will be the pulsation observed in the tumour: if well marked and unmistakable, then the diagnosis will be aneurysm of the aorta or large vessels. The evidence of pulsation must be positive; if there is a doubt about it being direct or transmitted, then the sign falls at once in value. To complicate the matter still further, it must be remembered that aneurysm and tumour may occur in the same case, though this is of course comparatively rare. When they do occur in the same patient, both forms of pulsation may be observed. It may be possible to say definitely that an aneurysm exists, while at one spot the character of the pulsation is suggestive of new growth because the pulsation has not the clearly defined characteristics of an aneurysmal pulsation. These cases are extremely difficult to be positive about on *x*-ray evidence alone. Fortunately the diagnosis is rarely made on such evidence alone; there are other valuable aids to diagnosis upon which one may rely in these cases.

The majority of the thoracic tumours take origin in the mediastinum, and it is on distortions of the normal shadow of the mediastinal contents that a diagnosis of the presence of a tumour depends. What, then, are the indications which will aid in a differential diagnosis?

Ignoring for the time being the effects of pressure and the symptoms arising from it—always a most important guide in these cases—let us consider the nature of the distortion of the mediastinal shadow. The earliest manifestations may be very slight—a small protrusion at one or other hilus, rounded and fairly well defined, may indicate an early involvement of the lymph glands. A faint irregular shadow at the edge of the large mediastinal one may be the first hint of a mediastinal sarcoma, which later becomes very large and well defined. A bulging of the aortic shadow at one spot may indicate a pressure deformity of that structure from the gradually increasing size of a lymphosarcoma. Examples of these fine changes could be quoted at length, but these few examples will suffice to indicate the great value of a careful scrutiny of the contour of the mediastinal shadow in differential diagnosis.

Having determined the presence of an intrathoracic tumour (using the word in its broadest sense) the next point to consider is the nature of that tumour. Speaking broadly, an extension outwards from the mediastinum will indicate the presence of a tumour; it is, however, necessary, by a process of exclusion, to determine its exact nature. The cause of such a shadow will be ascertained to be, in order of frequency, tuberculosis, carcinoma, and sarcoma—that is, if we exclude the benign forms of tumour such as aneurysm, hydatid cyst, fibromyoma, etc. All three forms are frequently found originating in the mediastinum, and at a certain stage in the history of each it may be impossible to differentiate with certainty the one from the others.

Tubercle may give rise to very definite enlargement of the hilus shadows, but a careful examination of a large number of these cases will lead to the recognition of many definite points of difference. Tuberculosis of the mediastinal and root glands, if of long standing, is almost invariably accompanied by degenerative changes in these structures: these are caseation and calcareous degeneration, the former gives rise to large shadows of very indefinite density with regular outlines, the variation in density being due to the opacity of the caseous material not being equal and consequently offering a varying resistance to the passage of the rays through it. Calcareous degeneration will give well defined shadows showing up as light areas on the negative; in addition to these fairly obvious changes, the condition is accompanied by an increase of the fibrous tissue forming the basis of the bronchial and vascular trunks proceeding out from the mediastinum. This gives a characteristic appearance to the root shadows and the parenchyma of the lung which should readily be recognized. It forms a most important feature of great value in the differential diagnosis. When a mass of glands caseates and breaks down, an abscess may form which has a well rounded, smooth periphery; this will give an appearance similar to a new growth of the less malignant type [illegible] closely [illegible] sarcoma.

Carcinoma is the next most frequent of the forms of tumour-like shadows occurring in the mediastinum and invading the hilus of the lung. This form is almost invariably secondary to a lesion elsewhere, so the previous history will be a useful guide in such a case. Carcinoma of the mediastinum, which is already invading the hilus shadow, is not a very early stage of the disease; consequently it should possess a number of well marked characteristics. The shadows given by such a condition will therefore be more defined than [illegible], the patches are larger, more irregular, and there is an absence of the marked peribronchial thickening seen in a well marked tuberculous lesion. The glands are not uniformly enlarged, they are not so numerous, and therefore more localized to one particular area. The density is greater, and there is more inequality of the density. There is hardly ever a marked calcareous change such as would be expected in tuberculosis, though the latter is not always excluded because it is probable that a number of cancer cases may at an earlier stage of their life have suffered from tuberculosis and bear the scars of the disease [illegible] in the [illegible] of the mediastinum or lymph glands. At a later stage of the case [illegible] appearances arise which will be dealt with later.

Sarcoma.—This may be primary or secondary. A primary, which generally arises in the mediastinum, and frequently from the thymus gland. It may be a pure sarcoma, or, as is more frequent, a lympho-sarcomatous mass arising in the lymphatic tissue and having the sarcomatous elements mixed with the lymphatic structure in a varying degree, upon which will depend the degree of malignancy and the rapidity of spread. When seen at a stage in which it is just beginning to spread outside the mediastinal shadow, it will show as definite shadows at one or more points of the periphery, the edges are irregular, though in the slow growths there is not much invasion of the surrounding tissues. In this respect it differs materially from tubercle or carcinoma. The tendency is for the rapid development of large masses extending from one or other side, or both, of the mediastinal shadow.

Secondary sarcoma may also occur in the mediastinum when large bulging shadows are seen distorting the larger shadow of the structures in that region. The heart may be displaced or pressed upon from behind forwards and give the appearance of a large dilated organ. The lymph glands share in the enlargement, and may also exercise pressure upon these structures. A secondary sarcoma may extend along the bronchial trunks, and give rise to a coarse peribronchial thickening quite distinctive from that of tubercle by reason of its coarseness and wider spread. Another quite distinctive type of secondary sarcoma is occasionally found, though it is comparatively rare. It is met with in cases where the primary lesion has originated in a distant part of the body, such as one of the long bones. It may be met with two or three years after the primary lesion has been removed, and develops rapidly, for when the thorax is examined the mediastinum and the lungs show an advanced stage. The onset must be very insidious, since it is only at a late stage that attention is called to the thoracic extension, and that often accidentally when examining for other conditions. Such cases are obviously the result of a rapid dissemination of the sarcomatous elements by the blood stream, though the focus may have lain dormant for a considerable time. The nodular masses are fairly large, of uniform density, irregular in shape, and not very numerous. There may be pleural involvement, and other organs may become involved in the later stages of the disease. Calcareous degeneration is rare in this form of malignant disease.

Carcinoma, when widely distributed in the thorax, shows a picture which, when once seen, will never be mistaken for anything else. The mediastinal shadow is nearly obliterated, the edges being lost in the snow-flaked appearance of the lung and pleural involvement. The whole of the lung parenchyma is obscured by the masses of new growth of varying size which are spread all over the lung fields; very little of the lung tissue is left, so the normal appearance is entirely lost. Plaque-like masses are seen which are due to pleural involvement, in which both the parietal and visceral layers of the pleura partake. The masses vary in size from very small pea-like structures to large flakes one or more inches in diameter. The density of these patches varies considerably.

A thorax which is widely invaded by secondary sarcoma shows a typical and quite different picture: the masses are larger, often as large as a small apple; the density is more uniform and the edges of the masses are more uniform. The nodules are not nearly so numerous as in carcinoma, and there are larger areas of normal lung surrounding the infiltrating masses. The mediastinal shadow is not as a rule so completely obscured as it is in secondary carcinoma, though there may be considerable distortion of the shadow by large globular masses of secondary new growth. In neither case is there any marked tendency to caseation, which is so prominent a feature in an extensive tuberculous involvement of the lungs.

Tuberculosis of the bronchopneumonic type bears the closest resemblance to a widely distributed secondary carcinoma, and it rarely approximates to the appearance of a widely spread secondary sarcoma.

Syphilis of the lung is occasionally met with and may involve the lung or bronchi. It may occur in two forms—the interstitial or the gumma. Gummata may appear at the hilus in the form of rounded tumours of varying size. When very small these gummata may simulate the appearance of tubercles. A diffuse interstitial condition may involve large areas of the parenchyma and give the appearance of new growth. The appearance of a mass or masses giving shadows of doubtful nature which do not fit in with any of the generally recognized shadows should always lead to a suspicion of syphilis, then other tests may be made to confirm the diagnosis.

Infarct of the lung, if extensive, may give a tumour-like shadow. It generally comes on suddenly, is at first painful, and gives rise to symptoms of pulmonary embarrassment; the shadow is typical in form and follows the distension of a vessel.

Hydatid cyst must never be overlooked in the differential diagnosis; it has certain well defined appearances, though on occasion, if adhesions have formed and obliterate the oval outline of the cyst, difficulty may occur in determining the exact nature of the shadow.

Aneurysm of the Aorta.—The presence of an aneurysm should be suspected when there is an increase in the width of the aortic shadow and marked expansile pulsation confined to a localized area. It must not be mistaken for the diffuse pulsation and dilatation in aortitis. The tumours likely to give shadows similar to those of an aneurysm are endothelioma and sarcoma arising in the mediastinum. It may be difficult on x-ray evidence alone to differentiate between them.

Tumour of the chest wall, particularly of the spine and sternum, may give shadows which may resemble a large aneurysm or a mediastinal tumour. The lateral or oblique position for the screen examination should be useful in indicating from which structure the tumour takes origin.

DISCUSSION.

Dr. **HAROLD BLACK** (Birmingham) said that the radiographic study of intrathoracic tumours called for a wide clinical and pathological outlook. Without this the signs discoverable by x rays would usually prove inconclusive. The cases were fairly rare, but so many would come to examination in the x-ray department of a large general hospital that the radiographer had an unusual opportunity of studying them. They could be separated broadly into those that arose (1) in the region of the middle shadow, and (2) in the region of the lung fields. These could in turn be divided into primary and secondary growths. The most common of the primary lung tumours were the carcinomas. He thought about 500 cases had been recorded. Bronchial carcinomas affected the right side more than the left, in the proportion, roughly, of five to one, and were mainly of three types: (1) Fan-like growths spreading from the hilus; (2) lymphatic or miliary; (3) lobar. Diagnosis was difficult if the pleura was involved and an effusion was present. Help was afforded by aspiration and introduction of oxygen. Generally speaking, they were distinguished from the secondary growths in being irregular in outline and unilateral. A broad rule was that if an unusual type of shadow were seen in an unusual situation on the screen, growth should be suspected. Secondary lung growths had a typically rounded, regular form. Clinically they were difficult, as Barjon pointed out, because they did not communicate with the air passages and gave so little indication of their presence to the stethoscope, and being deep they gave no dullness. It was very important to recognize them, however, as they influenced prognosis and the advisability of an operation in many cases. Secondary sarcomas were fairly common, and the speaker had been struck with the riddled appearance of the lung which could obtain in patients who showed little inconvenience from them. The primary pleural growths were rare. They spread with great rapidity. The middle shadow or mediastinal tumours comprised sarcomata, carcinomata, lymphomata, and leukaemic tumours. These had to be diagnosed from aneurysms. He felt that pulsation in aneurysm was not constant enough to be relied upon, as the large fibrin deposit in a large aneurysm must prevent any considerable pulsation. Simple tumours were rare, with one exception—namely, the intrathoracic thyroid enlargement, which was worthy of more attention than it had received in the English literature. This condition was not rare, and was often responsible for the breathing difficulties of men of the apoplectic type at about the age of 45. He used to see several of these cases every week in the x-ray clinics in Vienna. He saw few in the Midlands of England. He thought the explanation was that the short-necked apoplectic Austrian, with his fondness for beer, was much more liable to them. This condition caused pressure effects on trachea, vagus, and blood vessels. It displaced the trachea, and might push the aortic arch so far down as to cause a recurrent laryngeal palsy from stretching. The outline of these tumours was curved, and they ascended on coughing. They displaced the trachea more than growths did, for the growths tended to grow around the trachea.

Dr. **HOPE FOWLER** (Edinburgh) mentioned the possibility of a pharyngeal pouch extending down into the chest and simulating tumour. Such a case, to be published by Sir Harold Stiles, had come under his observation. This condition might easily lead to confusion. Dr. Ironside Bruce had had a similar case sent to him as a case of tachycardia. Very few of these cases had been put on record. The more experience one had in the examination of chest tumours the more difficult it was to come to any definite conclusion as to an exact and reasonable diagnosis.

Dr. **IRONSIDE BRUCE** (London) said that his experience of tumours of the mediastinum was that although such tumours were easily seen it was most difficult to make differentiation. Aneurysm of the thoracic aorta could not be distinguished from other tumours, in his experience, by the presence of pulsation. Pleural effusion—a frequent complication of thoracic tumours, which so often obscured the whole of the suspected side—was one difficulty in diagnosis which could not be dealt with by simple aspiration, on account of the distress which was caused by complete evacuation of the fluid. But evacuation of fluid with injection of oxygen to replace the fluid did not give rise to any distress, and by increasing the translucency of the affected side rather aided the x-ray diagnosis.

Dr. **FLORENCE STONEY** exhibited three prints. The first showed a tumour in the right lung, diagnosed by physicians as an aneurysm, but probably either hydatid, dermoid, or tropical abscess. The second and third showed Hodgkin's disease of the thorax. The tumour, which was 5 in. across, disappeared under x rays, and the case remained cured for nine months as a result of x-ray treatment, when the man died from growth elsewhere.

Dr. **J. HALL-EDWARDS** (Birmingham) thought that these obscure chest conditions were much more numerous than was generally realized, and therefore Dr. Knox's contribution to the subject was all the more important.

THE DIAGNOSTIC VALUE OF THE RENAL OUTLINES,

AND THE METHOD OF DETERMINING THE RELATION OF ABNORMAL SHADOWS TO THEM.

BY

S. GILBERT SCOTT, M.R.C.S., L.R.C.P.

As it is now quite easy to demonstrate the outlines of the kidney without any very expensive and elaborate apparatus, I wish to summarize their diagnostic value and at the same time to describe a method dependent on their demonstration which I have for some years found of practical use in the differential diagnoses of shadows appearing in the renal region. It is as important to show the renal outlines as it is to show the bones. A certain amount of training is required to pick out the outline of the kidneys in every case, but the knack is soon acquired. In a number of cases the outline is obvious, but it is seldom that the kidney can be seen in its entirety; about the lower three-quarters can on the average be detected, but this is sufficient for the purpose of diagnosis. Occasionally the whole organ, together with the hilum, can be made out.

RENAL OUTLINES.

1. *Normal Kidney.*

Presence of Both Kidneys.—In some cases it is important to be able to state definitely that both kidneys are present. For instance, the surgeon may decide to remove one organ on account of disease, and the presence and condition of the opposite one is of vital importance. There may be a congenital absence on one side, in which case there is usually some hypertrophy of the single organ.

Size.—There is considerable variation in the size of the kidneys in adults, even in the same patient, and it is practically impossible to give the exact measurements of a normal organ as seen in the radiograph. Consequently, it is by no means easy to decide in some cases whether one is dealing with a congenital large type of kidney or with an early enlargement. A generous margin must be allowed, and considerable experience is required before an early enlargement can definitely be diagnosed without such accessory means as pyelography. Increased size usually manifests itself in an increase in the breadth rather than the length of the kidney—in other words, the kidney becomes more rounded. Size is also deceptive when the position of the kidney is low, as it frequently is on the right side in women. It appears very much larger than it really is, and one is wrongly led to suspect that there is an early hydronephrosis due to kinking of the ureter, owing to the low position of the organ. In children the size of the kidney is also very deceptive, as they are on a lower level, and are of relatively large size. Here again the size may be variable on either side.

Shape.—(1) Pointed or torpedo shape. (2) Rounded. (3) Lobulated. The long narrow kidney (1) is frequently met with and may give the impression that it is smaller than usual, while the rounded kidney, on the other hand, may suggest enlargement. It is possible to get both types present in the same patient. The outline of a normal kidney should be smooth and symmetrical, but one occasionally comes across a congenital lobulation without any disease. If this is present, however, congenital deformities in other parts of the urino-genital tract should be looked for.

Position.—It is difficult to lay down any hard and fast rules as to the position of a normal kidney; a generous margin must be allowed, and the respiratory excursion taken into account. The general radiographic topography of the kidneys, however, is as follows: Upper pole between the eleventh and twelfth dorsal vertebrae, lower pole at the lower part of the second and third lumbar vertebrae; so that one can say that a kidney is abnormal in position if its upper pole is on a level with the tenth dorsal or its lower border below the third vertebrae. In the female the kidney is reckoned to be half a vertebra lower than in the male, and it is seldom that both kidneys are on the same level, the right as a rule being slightly lower than the left, but this may sometimes be reversed. Another variable quantity is the long axis.

Respiratory Excursion.—The excursion between full inspiration and full expiration is half an inch to two inches, but in singers an excursion of even three inches may be attained. This movement is not always directly up and down, but a certain amount of rotation around the pelvis, normally tending to throw the pelvis forward, may take place at the same time. The full movements of a movable kidney can be detected radiographically as long as the outline of the kidney can be seen.

2. *Kidneys Abnormal in Size.*

Hypertrophy.—One kidney may be hypertrophied owing to congenital or acquired absence of the other. Various degrees of hypertrophy of the healthy organ will be seen as the diseased kidney gradually becomes functionless.

Hydronephrosis due to back pressure will cause an enlargement of the kidney as a whole. The ability to gauge the degree of back pressure caused by, say, a stone in the ureter, is of considerable value, for as long as evidence of back pressure is wanting there is no danger in waiting to see if the ureteric calculus will pass without surgical interference. Local hydronephrosis may be localized to one part of the kidney, [illegible] a distinct bulging of that part of the kidney may be observed, and [illegible] the cause of this local hydronephrosis can be detected, as, for instance, a small stone in one of the calyces. It is difficult to distinguish the condition radiographically from a new growth. Where general hydronephrosis has caused considerable dilatation of the kidney [illegible] is often present. Pyonephrosis can only be distinguished from hydronephrosis by the presence of calcareous material, which is opaque to the rays, in an enlarged kidney.

New Growth.—The outline may in this case show a localized enlargement or bulge, and one may have to rely on the history to distinguish this condition from local hydronephrosis or cyst.

Cystic.—Except for a general enlargement of the kidney there is frequently nothing to distinguish this from enlargement due to other causes, but occasionally an alteration may be seen in the density of the kidney where cysts are present. Local areas of translucency in an enlarged kidney usually indicate their presence. If there are several stones widely separated and distributed throughout the cortex, cysts are practically certain to be present.

Syphilitic.—This is a rare condition in which the kidney shows definite enlargement, and at the same time increased density owing to fibrosis, but otherwise there are no distinctive features.

Contracted or Atrophied.—It is not always easy to make out the outline of a small atrophied kidney, which may be congenital or acquired through disease; except for the small shrunken outline there is nothing distinctive about it, but in tubercle, in addition to the atrophy, opaque patches will be seen. The kidney may become functionless and contracted if a large dendritic stone is present.

3. *Large Abnormal Shadows Present.*

If a large typical dendritic calculus is present the diagnosis is easy, but at the same time the outline of the affected kidney will give additional data: (1) State of the kidney, such as the presence of hydronephrosis or pyonephrosis. (2) Its functioning powers as gauged by the thickness of the renal cortex; frequently the thin-walled functionless kidney can be seen moulded to the branches of a large calculus. (3) Fixation of the organ as shown by the absence of respiratory excursion, which should be tested, as the surgeon will be grateful for any information on the subject of fixation if the kidney has to be removed.

4. *Medium and Small sized Shadows Present.*

Unless the abnormal shadow is that of a typical dendritic stone, some method should consistently be used to prove that it is in connexion with the kidney. Appearances are very deceptive, and no matter how like a stone it may seem to be on the plate, guesses backed by experience should be replaced by a more scientific and accurate method. I have made it a rule for several years before giving an opinion on any abnormal shadow appearing inside the borders of the renal outline that it must be proved to be connected with or outside the kidney itself. This has saved me many a wrong conclusion.

METHOD OF DETERMINING THE RELATION OF ABNORMAL SHADOWS TO THE KIDNEY.

The method may be summarized as follows:

1. The outline of the kidney must be seen.
2. An abnormal shadow lying *outside* this cannot be in the kidney.
3. If the shadow lies inside the limits of the outline, then it is necessary to compare the plate taken at full inspiration with one taken at full expiration.

The respiratory excursion of the kidney is first measured, and the respiratory movements of the shadow under discussion are then compared. The direction of the movement of each is also noted. If the respiratory excursion and direction of the kidney and abnormal shadow are the same, the latter must be in connexion with the kidney. A rule, therefore, can be formulated that if an abnormal shadow or shadows, no matter how small and insignificant they may be, lying inside the renal outline, move to the same extent and in the same direction as the kidney, they must be connected with it. This rule will apply to one or several shadows, and in this way it is quite easy to pick out from a number of shadows those that are of renal origin. In some cases the kidney may be fixed, and no respiratory excursion obtainable. If, however, it be possible to demonstrate that the shadow under discussion has moved in some direction or other, while the kidney has remained unaltered, the shadow must be outside the kidney.

Once having diagnosed the presence of a stone in the kidney, its correct position in the organ itself can be given, and a rough estimate made as to its size, if the surgeon has confidence in his radiological colleague, he has only to make an incision into that part of the kidney in which the stone has been localized, just large enough to extract it with forceps, thus doing away with the somewhat drastic mutilation of the kidney which usually takes place when searching for stones.

This method of localization is invaluable where the shadow is extremely indefinite and doubt is left as to its nature. These ill-defined "smudges," a term their appearances suggest, are very often the only evidence of tuberculous disease in a kidney, consequently it is of great importance that they should not be overlooked; having been detected, the diagnosis is clinched if they can be located in the kidney itself. An abnormal shadow, however insignificant, must not be ignored, but unless these shadows can be proved to be of renal origin, they are of themselves not of much value.

EXAMPLES OF METHOD.

In order to make the method described clear, a few examples may be given:

1. A small single shadow is detected lying over the lower half of the kidney, say 20 mm., from the lower edge and 20 mm. from the outer edge. On comparing the inspiratory and expiratory plates it is found that the kidney and the shadow show the same respiratory excursion, say 30 mm., in a downward and outward direction, and the relation of the shadow to the kidney is unaltered. This proves that the opacity has moved with the kidney, both as to direction and extent, and is therefore of kidney origin.
2. The shadow is lying over the lower pole, but on comparing the inspiratory and expiratory plates, it is found to have moved clear of the kidney altogether. This at once demonstrates that it is outside the kidney.
3. The same thing can be proved if the opacity is found to move downwards, say 10 mm., while the kidney shows an excursion of 20 mm.

These examples will suffice to illustrate how the method can be utilised. The comparative measurements are quickly made, and a small transparent metre rule will be found very useful for this purpose.

X-RAY THERAPY IN "ORIENTAL SORE."*

BY

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AT the last pre-war annual meeting, held in Aberdeen, I contributed a short paper, entitled "Four Cases of Lahore Sore," to the proceedings of the Dermatological Section. In it stress was laid upon the probable rôle played by insects in its transmission. The four cases were those of a father and three young children who had recently returned from Sialkot in the Punjab. The three juvenile cases were of some interest in that they supported the theory of the disease being disseminated by insects. I understand this theory has been confirmed by Captain Acton, I.M.S., whose researches are recorded in the *Indian Medical Gazette* and *Indian Journal of Medical Research*.

The four cases had been treated with solid CO_2 at the Civil Hospital in Sialkot. In the communication to the proceedings of the Aberdeen meeting no allusion was made to treatment after arrival in this country. The lesions in the cases of the three children were small, and on coming under my care solid CO_2 treatment was continued with successful results. The lesion of the adult patient was large—at least 3 by 2 inches, and situated on the forehead. I did not resume CO_2 treatment in this case. *X*-ray treatment was begun on June 10th, 1914. Three half Sabouraud pastille doses of unfiltered rays were given, fourteen days intervening between the first and second, and thirty-three days between the second and third exposures. By August the lesion had so much improved that the protective dressing was finally discarded. Two more half-pastille unfiltered doses were given, the last one as a precautionary measure.

The result was in every way successful. I was curious to know what was the condition of the forehead from the aesthetic point of view after the lapse of time, so sent, a few weeks ago, for the patient, still resident in Glasgow. Close inspection was necessary to define the site of the old lesion. The only evidence that remained was slight whiteness of the skin, and scarcely warranted the designation of cicatrix.

Since 1914 two other cases of oriental sore have come under my care.

In April, 1919, an officer who had developed two lesions in Mesopotamia was sent to me from the Yorkhill Military Hospital, Glasgow. He had previously been treated daily for six weeks with ionization for Aleppo boils at the Millbank Military Hospital. I do not know what ions were introduced, but no apparent improvement, judging from the patient's description, had resulted. The lesions were situated on the back of the left wrist and the dorsum of the proximal phalanx of the left ring finger. Dr. Haswell Wilson, of the Pathological Department, Western Infirmary, Glasgow, very kindly examined blood films from the lesions, and found *Leishmania tropica* present in large numbers, thus confirming the Millbank diagnosis.

X-ray treatment was begun on April 9th, 1919. In this case a 0.2 aluminium filter was used and a half Sabouraud pastille dose given once weekly. Treatment was interrupted after the third exposure owing to the patient being ordered to appear before a medical board, with consequent temporary transference to a military hospital, from which, after an interval of some weeks, he was again sent to me for further treatment. This was begun on June 20th, 1919, and comprised six half Sabouraud pastille doses through 0.2 aluminium filter at intervals varying from fourteen to twenty-five days. The last two exposures were perhaps unnecessary, and were given with a view to the prevention of relapse. This gentleman has left the army and has returned to his pre-war avocation. During *x*-ray treatment wet boracic dressings were applied, but were soon discarded for a mild mercurial ointment.

On April 12th of this year a demobilized officer who had served in Palestine and Mesopotamia consulted me, on the recommendation of his family physician, for an affection of the lower third of the nose and upper margin of the pinna of the left ear. The lesions were suggestive of oriental sore, and blood films from them were kindly examined in the Pathological Department, Western Infirmary, Glasgow, by Captain Forsyth, I.M.S., who has had considerable experience of this affection. The causative bodies of oriental sore, *Leishmania tropica*, were found.

The patient had returned to this country *viâ* Port Said in May, 1919, and not until the end of October, or beginning of November, did the lesions appear—an interval of about five or six months after leaving Port Said. This is of considerable interest in illustrating the lengthy incubation period that may occur prior to any visible evidence of infection. He had passed several months at home with an apparently sound skin. The patient stated, however, that he had suffered from boils during the past winter (1919–1920), and, indeed, one was present at the time of consultation in the left external auditory meatus. Three intramuscular injections of colloidal manganese were given and no further boils have appeared.

X-ray treatment of the two sores, begun on April 17th, is still in progress, and at the present date (June 5th) five half Sabouraud pastille doses, through 0.2 aluminium filter, have been given at intervals varying from seven to fourteen days. There is evidence of improvement in the ear lesion. As in the preceding case, wet boracic dressings and a mild mercurial ointment have been applied.

Medium to hard tubes have been used.

Obviously it would be necessary to treat many more cases before presuming to come to any definite conclusions as to the therapeutic value of *x* rays in oriental sore, or as to the relative value of filtered and unfiltered rays in that condition. The advantage, however, accruing from the elimination of irritating soft rays by the interposition of aluminium screens far outweighs that of any curtailment in length of treatment which might possibly result from the employment of the unmodified output of the tube.

I am informed *x* rays are not invariably successful in treating oriental sore. It is quite conceivable, however, that this might be due to faulty technique. Assuming such to be the case, there is something to be said in favour of *x* ray therapy, especially where a patient objected to intravenous injection involved in treatment by antimony tartrate, or to the pain and discomfort attendant upon treatment with solid carbon dioxide.

THE MELTED PARAFFIN WAX BATH.

BY

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THE "melted paraffin wax bath" was introduced into the practice of medicine by Colonel Littlewood, C.B., C.M.G., O.C. 2nd Northern General Hospital, Leeds. Observations and tests have proved that it is of considerable therapeutic value in itself, and as a preliminary for massage and other treatment. It is an important factor in the armamentarium of modern physio-therapeutics.

A few years ago Mr. W. L. Ingle, of the firm of Messrs. W. L. Ingle, Limited, tanners and curriers, heard that a Frenchman was employing melted paraffin wax for the treatment of rheumatism and disorders of the circulation, and had set up a bath in Paris. He was a considerable user of paraffin wax in the course of his business, and had noticed that many of his workpeople were in the habit of immersing their hands and feet in a vat of the wax at his works at Cherwell, Yorkshire. The vat had a holding capacity of half a ton, and was heated by steam. So many cases were benefited at Cherwell that later Mr. Ingle presented this bath to the 2nd Northern General Hospital. Last November, by the courtesy of Colonel Littlewood, I was shown the bath, and was told that, in the opinion of the patients, no means of physiotherapy was more successful in giving relief in cases of stiffened joints, neuritis, and rheumatism. I installed a bath in London.

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* Synonyms: Lahore sore, Aleppo boil, and many other names arising from the localities where the disease is prevalent.

Colonel Littlewood kindly gave me this general summary of diseases and conditions which had been treated at the hospital. Stiffness of muscles and joints due to:

(1) Direct destructive effect of wounds, including cicatricial contractions,
(2) Spastic or other contracture due to nerve injuries,
(3) Deformity and stiffness due to long-continued splinting of injured limbs,
(4) Vasomotor dystrophies such as frostbite, etc.

Among other conditions in which I have found it useful are:

(1) Chilblains,
(2) Neuritis,
(3) Rheumatic and gouty joint,
(4) Fibrositis, especially in and around small joints,
(5) Scleroderma following old lymphangitis,
(6) Cramp in calf of leg, intermittent claudication,
(7) Eczema vesiculosum,
(8) Old phlebitis.

I am inclined to think that many other conditions would derive benefit from this form of treatment, Raynaud's disease among others.

[illegible] the bath, [illegible], is made of fireclay [illegible] to prevent the radiation of [illegible] white glazed [illegible] white glazed fireclay [illegible] and is fitted up [illegible] and heat regulating [illegible] of the bath, and keeps the [illegible] apparatus is [illegible] to a [illegible] fitted [illegible] switch, and two [illegible]. The bath [illegible] from a [illegible] in my case it is 230 volts direct, and the current taken can be regulated from [illegible] to use, [illegible] amperes from ten to twelve [illegible] melted.

When I describe here an electrically heated bath, which has its advantages, it would be well to note that electricity is only one means of heating. Steam or gas might be used where either happened to be the more convenient.

Paraffin wax is distilled from coal tar, wood tar, or [illegible], and formerly the largest supplies came from Great Britain, and it is interesting to note that although at the present [illegible] European countries, as well as America, are refining large quantities of paraffin wax, the most [illegible] for use in the wax bath is the "[illegible]" wax, a highly refined British wax, [illegible] and thoroughly impregnated with a [illegible] which gives it a refreshing odour. The [illegible] the treatment [illegible] to the most [illegible] skin.

The [illegible] point of this wax is 130° F. [illegible]

[illegible]

Major [illegible] Solly, [illegible] of the 2nd Northern General Hospital, to whom I am indebted for much information about the bath, and who has had much experience with it there, in a note tells me that a thing of importance for orthopaedic work is to have baths of two or even three different temperatures—say 110°, 120°, and 130° F.—as cases with nerve injury as well as stiff joints cannot stand a temperature of 130° to 135°, although this and even up to 140° can be taken with benefit by those who have stiff joints without nerve lesions. Patients with nerve lesions can stand and benefit by the 115°–118° bath when they could not endure the 130° bath without blistering, etc. For the lower temperature baths wax with a lower melting point is required.

In the early days of the use of the bath in Leeds the gradual fouling of the wax by the dirt, dead epithelium and sweat which comes from the patients' limbs presented a little difficulty. Experiments have shown that even if the wax peeled off the patient's limb on removal from the bath is put back and melted up in the bath, the melted wax shows no living organisms of which cultures can be made, and the watery and solid contamination sinks to the bottom of the bath and could be run off from time to time, but the fatty elements of the sweat necessarily float up and mingle with the wax generally, which thus becomes gradually altered in composition. Experiments have been made in washing the wax in a cauldron, stirring up with boiling water, and after allowing all to cool, lifting off the solid blocks of "washed" wax and melting them up in the bath. This, however, does not remove the unsaponified matter. Neutralization of the fatty acid elements by adding caustic soda to the boiling water makes the washing process more efficient, but it would require a frequent careful analysis to prevent either an excess or deficit of the amount of caustic soda used in the washing. In practice, however, the only practical way is that the coat of solid wax clinging to the patient's limbs is removed on withdrawal from the bath and thrown away, and though Major Solly tells me that it may be sold for trade uses for only a little less than new clean wax, personally I have as yet been unable to find buyers. From an average of a good many treatments the quantity of wax removed from each patient amounts to about 1 lb.

The *rationale* of the treatment, I think, may be thus explained. The heat causes dilatation of the capillaries, and the surface is warm and red some time after being taken out of the bath. This capillary dilatation naturally increases the circulation in the deeper parts, whether these be nerves or joints, and if the pain be caused, which is more than probable, by the pressure of the stasis or congestion, then this being relieved, it seems only natural that the pain should also be relieved. That the circulation, both local and general, is improved is very evident, and patients have told me that the mere fact of treating chilblains on their hands has relieved the chilblains on their feet, and in another case in which the heart beat numbered 40 to 44 to the minute, it rose to 72 at the end of the treatment, and after four days' treatment was usually 72. In the treatment of chilblains, patients as a rule say that irritation ceases after the second treatment, and objectively the skin loses its tight-stretched character, and presents a much more normal appearance. Moisture appears on the hands an hour or so after taking them out of the bath. In some cases the patient remains cured, and in others fresh chilblains appear in a period varying from a few days to six weeks, when further treatment results in a return to the normal again, but if only a temporary normal can be obtained by this means, a temporary normal frequently produced will often result in a permanent normal.

It may be asked, Would not the same heat applied through a water bath have the same effect on the capillaries and circulation generally? The first answer is, the same heat cannot be applied through water, since the highest temperature admissible in a water bath is 105° to 110° F. Paraffin wax in the state of oil which it assumes when melted, is a much [illegible] conductor of heat than water. Weber estimated the relative conductivities of oil and water as [illegible] and [illegible] respectively, which is to say that water conducts three times as well as oil, or oil [illegible] a heating agent, and therefore a higher temperature can be borne through it.

As another theory of the way in which the wax bath acts as a curative agent, I venture to put forward the following. It would be an [illegible] condition [illegible] by the [illegible] of a sheath of nerve or nerves being damaged, and the consequent escape of nerve current or electricity being evidenced to the patient as pain, it is possible to theorize that the wax, being an efficient insulator, might oppose sufficient resistance and block the exit of electricity, and thus account for the relief of pain. In connexion with this theory it was suggested to me by Colonel A. H. Tubby that when the limb is taken from the bath the wax, instead of being peeled off, should be allowed to remain on and a bandage placed over it, and thus continue the beneficial effects of insulation.

But whatever the reason is for the therapeutic result of the wax bath, I think a case has been established for a more extended trial of this new agent, whether as an interesting adjunct to orthopaedic work, a valuable preliminary to massage, or a therapeutic agent in its own right, as which, I am quite convinced, it has a great value.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

OPTIC NEURITIS DUE TO DENTAL SEPSIS.

On March 8th, 1920, I was consulted at the Birmingham and Midland Eye Hospital by Miss I. T., who was sent by Dr. John C. Griffiths of Kidderminster. The patient complained of fairly rapid loss of vision in the left eye and pains across the forehead, both of one week's duration.

Examination.—R.V. = $\frac{6}{18}$; with 1.25 dioptre sphere = $\frac{6}{9}$. L.V. less than $\frac{6}{60}$, not improved by glasses. There was a slight divergent strabismus of the left eye, said to be of one week's duration. The left fundus showed a typical optic neuritis, the disc being almost completely obscured, and the vessels, particularly the venules, were very engorged. The urine was normal. The teeth were good on the whole, but on the left side there was a carious upper molar whose crown was almost completely eroded. The patient did not complain of pain or anything wrong with this tooth, but, as it appeared to be the most probable cause of her loss of sight, I advised its removal. I also prescribed a mixture containing sodium bicarbonate and sodium salicylate.

A fortnight later (March 22nd) I saw her again; the optic neuritis had diminished, and the visual acuity of the left eye was $\frac{6}{36}$, and $\frac{6}{18}$ when her slight myopia was corrected. The carious upper molar had been extracted, and at each of the three roots an abscess was found.

On April 19th I saw her for the last time. The fundus was almost normal, and the left vision with correction was $\frac{6}{9}$.

The case is interesting, first as an example of optic neuritis due to neighbouring sepsis, and secondly, on account of the rapid improvement with recovery of vision which followed removal of the foci of toxic absorption.

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Birmingham and Midland Eye Hospital.

REMOVAL OF A PIN FROM THE LARYNX BY AN IMPROVISED METHOD.

A young man came to me recently complaining that he had just been choked at his dinner while eating some beef-steak pudding. He was suffering a good deal of pain and had frequent attacks of coughing and retching, with excessive secretion of mucus, but no dyspnoea. There was nothing visible in the pharynx, but the laryngeal mirror revealed a shining object looking like a pin—which it proved to be later—lying obliquely across the larynx about midway between the epiglottis and the vocal cords. For want of a better instrument I bent a plated sponge-holder with a safety catch into a curve, and, arming it with a small pad of cotton-wool, passed it into the larynx and succeeded in lifting the pin up from its position without, however, recovering it. The mirror now showed it attached to the mucous membrane on one side of the larynx at a higher level. It was again dislodged by the same method and lifted into the pharynx, where, being visible to the unaided eye, it was easily removed with nasal forceps. There was the merest trace of haemorrhage on the wool.

The observations were made with reflected daylight and no local anaesthesia was employed, the passive demeanour of the patient being of material assistance.

South Nutfield. L. N. HARDING, M.B.Cantab.

ACUTE ULCERATIVE STOMATITIS CAUSED BY DRUGS.

About fourteen years ago, with the object of relieving hemicrania, to which I am subject, I tried 10-grain doses of antipyrin. At the same time I became subject to attacks of stomatitis, sometimes simple and sometimes ulcerative. On two occasions I had concurrently anal ulcers. I soon discovered that this disease always followed a dose of antipyrin. On stopping the use of that drug I brought the attacks of stomatitis to an end.

During my absence at the Cambridge meeting of the Association my partner saw a young lady for me who was suffering from exacerbation of old sphenoidal sinus disease. The most distressing symptom she had, however, when I saw her was acute ulcerative stomatitis. Learning from my own experience, I inquired what drug she was taking, and found it was aceto-salicylic acid. She told me her mouth was worse after each dose. The stomatitis had resisted all local treatment. Cessation of the drug led to a rapid and complete cure.

Both cases are instructive.

Wrington. HUBERT C. BRISTOWE, M.D.Lond.

A CASE OF HEPATIC ABSCESS.

On May 28th, 1920, A. B., aged 24, was referred to the Royal Halifax Infirmary by the Local Pensions Committee. He complained of abdominal pain and looseness of the bowels, which had commenced six weeks previously, whilst on passage home from India.

Condition on Admission.—The temperature was 98.4 F., the pulse 76, the respirations were 20. Urine specific gravity 1020, clear, acid, no albumin, no sugar. The pain was of a diffuse character: he indicated its site by sweeping his hand over the right side of the abdomen. Since the onset there had been three or four motions daily, containing mucus but no blood. Hitherto he had always been healthy, having had neither dysentery nor malaria whilst in India, so far as he was aware. On examination there was a slight fullness of the right lower chest wall, but the outstanding physical sign was a transverse zone of hyperaesthesia on the right side 1½ in. in width, reaching the middle line both in front and behind, situated just below the umbilicus—that is, in the cutaneous distribution of the eleventh right dorsal nerve. The lower border of the liver was just palpable below the right costal margin. Over the right lower chest vocal fremitus was slightly diminished, the percussion note dulled, and the respiratory murmur and vocal resonance were impaired. After one or two attempts pus was found by exploration in the tenth intercostal space in the posterior axillary line.

Operation.—Part of the tenth rib was resected, and the pleural cavity incised. A large abscess was found extending deeply between the base of the right lung and the diaphragm. It contained bile and pus, which were not intimately mixed together; the evacuated matter was odourless. A drainage tube having been inserted, the wound was sutured.

A specimen of the pus was sent to Dr. Taylor, the borough bacteriologist, who reported that it contained liver débris, bile, blood, and pus. No amoebae were found, nor did subsequent scrapings from the wall of the cavity nor examination of the faeces reveal their presence. The patient made an uninterrupted recovery.

The zone of hyperaesthesia, with its strictly segmental distribution, suggested at first the premonitory stage of herpes zoster.

I have to thank Dr. Wishart for his courtesy in assisting me with the operation and for permitting me to publish the case.

Halifax. WILLIAM OLIVER LODGE, M.D.

OUTWARD DISLOCATION OF THE HEAD OF RADIUS.

This dislocation being of rare occurrence, I venture to give a few details of a case met with recently in practice. The patient, a boy, aged 9 years, jumped over a low seat, tripped as he reached the floor, and fell forwards with outstretched hands. He was brought to my surgery in half an hour from the time of the accident. On examination the left forearm was at right angles to the humerus, the elbow-joint was much wider than that of the other limb, and there was a large haematoma on the inside of the joint. The head of the radius was on the outside of the external condyle, and could be felt rotating during the movements of pronation and supination. The dislocation was reduced by traction forwards and pressure on the neck of the radius downwards. Two weeks later the joint had recovered its mobility.

Bishop's Waltham. W. DREW MITCHELL.

Rebiews.

INFECTIONS OF THE KIDNEY.

MR. FRANK KIDD'S book on *Common Infections of the Kidney*[1] is based on a course of lectures delivered at the London Hospital. He is a vigorous writer, and though the text of his discourse is furnished by bacterial infections of the urinary tract, the reader is entertained throughout the book by digressions into subjects of general interest; the digressions by no means detract from the value of the book, but, on the contrary, add to it. We heartily agree with Mr. Kidd in his suspicion of laboratory workers whose experience is confined to the laboratory. Whether "short post-graduate courses in clinical medicine for laboratory workers" will furnish the salvation of these unhappy gentlemen we are not prepared to say, but it is certain that closer mutual co-operation between clinician and pathologist is essential if progress is to be achieved. The author believes that the danger of the clinical side of medicine being neglected is very acute.

> [illegible] problem," he writes, "has been missed because [illegible] study of bacteria bacteriologists have [illegible] the infected human being. They have failed to notice the numerous factors which are at work to predispose a certain individual to pathogenic infection with bacteria which utterly fail to cause disease in the large majority of the race."

In his book, therefore, Mr. Kidd sets out to achieve two things: first, to furnish a dogmatic clinical picture of bacterial infection of the genito-urinary tract; secondly, to bring forth certain general principles underlying these observed facts. In his explanation of the phenomena of urinary infection he starts from Adami's conception of intermittent bacterial blood invasions, but maintains that [illegible] enough. Mr. Kidd holds that "blood invasion by bacteria is a common daily occurrence in most healthy individuals," and that it is only when an exceptionally heavy invasion of bacteria has taken place, or when certain secondary "predisposing causes" have injured the vitality of the tissues, that trouble occurs. In order, therefore, to be in a position to deal effectually with urinary infections we must consider not only the primary invasion but the secondary causes that have led to the increased severity of the invasion or to the damage of the tissues.

The question of ascending infection of the kidney receives considerable attention. After a critical review of the work of various investigators the final conclusion reached is that, although ascending infections occur, they account for very few of the cases seen by the surgeon, the vast majority being the result of blood-borne infection. The [illegible] draws from these conclusions [illegible] in a vain attempt to [illegible] of inevitable [illegible] on avoiding the [illegible] breaking the [illegible]

[illegible]

[illegible]

[illegible] prostatitis, and [illegible] hydrocele. He believes that these hydroceles are nearly all due to an old chronic inflammatory nodule in the epididymis, set up in the past by an infection with the colon bacillus. The practical section of the book includes a chapter on the bacteriology of the urine, written by Dr. Philip Panton, clinical pathologist to the London Hospital.

Mr. Kidd has produced an interesting and suggestive book, clearly arranged, and written in vigorous, dogmatic language. As he explicitly states in his general preface, he has made little use of literature, and has relied on "personal deductions drawn from personally observed facts." Where criticism of conflicting opinions has been necessary he has not hesitated to indulge in it, vigorous criticism being a "healthy tonic for seeking after truth."

DEMODEX.

MR. S. HIRST, of the Natural History Museum, has tackled a subject of quite unusual difficulty in his review of the genus *Demodex*.[2] These mites, which inhabit the hair follicles of man and other animals, are better known by name than by sight to the average medical man. Very little indeed is known of their habits, and it is difficult to see how we shall ever acquire any knowledge; their anatomy is almost equally obscure, for they belong to those difficult border-line animals which can neither be manipulated nor dissected nor yet treated as entirely microscopic. On the whole we congratulate Mr. Hirst on the result of his efforts, for he has produced what is evidently sound, systematic, and morphological work. When he deals with the red mange of dogs, which is always associated with the presence of huge numbers of these mites, and with the treatment of that and similar affections, he writes with less knowledge and less confidence; however, his summary of other workers' results appears to be reliable. The figures and plates are good and plentiful, but we are inclined to wonder whether the monograph could not have been produced at a lower price.

As medical men, we should like to know more definitely than we can at present whether *Demodex* is really pathogenic to man. It is, as Mr. Hirst tells us, sometimes found in immense numbers in various unhealthy conditions of the skin, but this might be explained by supposing that its multiplication was secondary to the skin disease. We must also know more of the part this mite possibly plays as a carrier of bacteria. It has of course been suggested that it is concerned in the spread of leprosy, and one can hardly doubt that it distributes the staphylococci and streptococci of the skin, for it is said to occur on 95 per cent. of human beings.

THE BIOLOGICAL SOCIETY OF BARCELONA.

Few countries have had the good fortune to be so far from the theatre of war that their scientific life could continue uninterrupted, but in Spain "research as usual" was the order for 1918. The sixth volume of the reports of the Biological Society of Barcelona[3] contains a large amount of work in medicine and its allied sciences.

Among these physiology occupies a prominent place. In an important paper on respiration Professor Suner advances the view that the vagal nerve endings in the lungs are sensitive not only to mechanical but also to chemical stimuli. Dogs were used in his experiments. He holds that the composition of alveolar air is kept constant as much by the stimulation of the vagi by CO_2 as by the effect of the gas on the respiratory centre. The experiments are based on Scott's work, but Suner has modified and amplified his conclusions. Suner's observations are of interest to the clinician, since his experiments suggest that the extreme dyspnoea of acute pulmonary disease may be due to the chemical effect of inflammatory products on nerve endings. By their study of the pancreas of dogs, Cervera and Domingo have gone some way towards clearing up doubts as to the nature of the islets of Langerhans. They believe that the islets may be divided into four definite types, and the observation may form the starting point of valuable research. A contribution to the histology of the nervous system is made by Rio-Hortega, who describes and illustrates some very remarkable arborizations of the protoplasmic processes of the cells of the fascia dentata in old animals of various species.

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[1] [illegible]

[2] Studies on Acari. No. 1. The Genus Demodex, Owen. By Stanley Hirst. London: Trustees of the British Museum. [illegible] (Imp. 8vo, [illegible])

[3] Treballs de la Societat de Biologia. Any Sisè. 1918. Editats by A. [illegible] Barcelona: Institut d'Estudis Catalans. 1918. (Med. 8vo, pp. [illegible]; illustrated, [illegible] plates.)

There are several communications in embryology, among which perhaps the most interesting is that by Domingo and Vilaseca on the development of the genital gland and the origin of sex cells.

In biochemistry Carrasco Formiguera publishes a method for the estimation of blood sugar based on that of Scales. The method appears to be one of practical utility, and, according to the author, gives constant results. Nevertheless it is possible, as is the case with most blood-sugar estimations, that the results, though uniform, are comparative and do not necessarily represent the real percentage of sugar. An instructive theoretical criticism of the method is contributed by Gomez Bosch. Several studies on reactions of the cerebro-spinal fluid have been made by different observers, but they are concerned rather with amplifications of old work than with new discoveries.

Anatomy and zoology are well represented, and veterinary science also finds a place in the reports. Only one communication appears in surgery, however, and but few in medicine, doubtless because physicians and surgeons have fewer opportunities and less leisure for experimental work. The relation of melanoderma to the adrenal and sympathetic systems is discussed by Ferrer Solervicens, and some useful electrocardiographic observations are made by Agusti.

MEDICINE FOR THE LAYMAN.

PROFESSOR ROGER, Dean of the Faculty of Medicine of Paris, is to be congratulated upon the success with which he has written his book *La Médecine*[4] for the instruction of the general public. It is one of a series of volumes on the sciences of to-day, and gives a lucid and attractively written account of modern medicine, its origins, aims, performances, and methods of attack. Here the layman will find chapters or essays dealing with such subjects as sickness and health, the modes of pathological study, the evolution of medical science, the animate and inanimate causes of disease, the study and effects of infection and autointoxication in all their aspects, immunity, diagnosis, and the bases of treatment.

The text deals largely in generalizations and deductions, but plenty of facts are given to the reader where they appear necessary for securing the assent of his reason. Indeed, Professor Roger bases his method of description to a great extent upon historical evolution—a scheme of writing that has much to commend it when the writer's object is to explain to general readers the position and tendencies of so highly specialized and so far-reaching a science as medicine. Comparing the artist with the man of science, he sums up the two in an epigram: "The artist exteriorizes his personality; the man of science tries to interiorize Nature," and he goes on to point out the impersonal character of scientific work and discovery, and the importance of this character in the progress of medicine.

From the historical point of view he emphasizes the evolution of medical sciences in three main periods: those of clinical observation, of anatomical and pathological study, and of biological investigation; the causes of disease are classified as mechanical, physical, chemical, and animated. But just as the forces prevalent in the three periods of medical development overlap in their activity, so do the causes of disease overlap in the production of any given disease or illness, and Professor Roger gives an admirable description of the concurrence of several factors observable in the etiology of various illustrative diseases.

In the chapter on autointoxication—in which term the author includes intoxications arising by defect of secretions like those of the thyroid and suprarenal glands—that much used and much abused term "diathesis" comes in for definition. A diathesis, according to Professor Roger, is a particular mode of nutrition—or might one say an idiosyncrasy? Perhaps this chapter would gain in precision were the subject of sensitiveness to proteins considered in it, for it is to protein-sensitiveness that we must look for the further explanation of many of the disorders classed by the French as evidences of "arthritism" or the arthritic diathesis, and of spasmodic asthma in particular. Over 130 pages are devoted to the study of infections and infectious diseases, and a particularly broad outlook is taken in this section of the work, full weight being given to recent views and discoveries in this field of medical science. Discussing the problem of immunity to disease, the author gives a well balanced summary of the humoral and cellular theories and exhibits their interdependence. In his chapter on the evolution of pathology he gives an interesting analysis of the effects on daily life and daily ambition that may be expected to result from the social upheaval effected by the recent war. "Our young people have a much more practical spirit than our fathers," he writes. "They have suffered too much; they wish to enjoy life. So, too, is explained the double tendency to idleness and pleasure shown to-day by those whose age kept them from the front. How long will this state of mind last? What reactions will it produce?" These questions Professor Roger does not attempt to answer.

Writing about modern diagnosis and treatment, he points out how extensively the progress of medicine has converted these from arts into sciences demanding the most varied types of scientific knowledge and equipment; as for the future, he looks forward to still further advances in the application of the methods of scientific research to these purely practical questions. He writes with full knowledge and wide experience, and on every page gives due weight to the theories, past and present, that give or have given life to the dry bones of medical science, the brute facts and observations upon which it is based. Preserving a due balance between facts and fancies, he has written a stimulating narrative of the growth and present position of medicine that should be of great interest to medical men and intelligent laymen all the world over. How often have French writers shown their national aptitude for the popularization—or, as they term it, vulgarization—of the sciences! Professor Roger's book may be recommended with every confidence to the unusually wide circle of readers indicated above.

NOTES ON BOOKS.

PROFESSORS CRUCHET and MOULINIER of Bordeaux, whose short work on *Air Sickness*[5] now appears in English, were among the first to investigate the physiological effects of aviation and to pay special attention to the changes in arterial blood pressure. In the first chapter the observations made before the war, especially the rise in the diastolic blood pressure after a rapid descent from a high altitude of 1,000 metres or more, are summarized. The second chapter describes the advances made during the war in the physiology of aviation, and confirms their earlier conclusions. The etiology of air sickness is discussed in the third chapter; the rise in the diastolic pressure after a rapid descent from a high altitude is a normal reaction, due to vasomotor constriction, and is seen in perfectly trained athletes. It is quite peculiar to aviation, is due to increase of atmospheric pressure, and shows the strain to which the heart is subjected in continually adapting itself to different pressures. Hence cardiac fatigue is more readily produced in aviators than in other athletes, and the rate at which the change of atmospheric pressure is effected is an important factor in the causation of air sickness. Cardiac fatigue and myocardial weakness may prevent the rise of diastolic pressure or induce a definite fall. The authors do not consider that a true neurosis of aviators has any independent existence apart from the neurasthenia and psychasthenia in other persons. The last chapter contains general advice as to the health of aviators, and briefly gives the contra-indications to flying. The translation is well done, but the following sentence, "Digestive troubles, and especially gastro-intestinal atony, are of no use to the airman," though intelligible, differs from the otherwise ordinary style of this interesting handbook.

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[4] *La Médecine.* By G. H. Roger, Doyen de la Faculté de Médecine de Paris. Paris: Masson et Cie. 1920. (Cr. 8vo, pp. 432. Fr.10 net.)

[5] *Air Sickness, its Nature and Treatment.* By René Cruchet and René Moulinier. With a preface to the French edition by Professor V. Pachon, and an introduction to English readers by Wing Commander Martin Flack, C.B.E., M.B., translated by J. Rosslyn Earp, M.A., M.R.C.S. London: John Bale, Sons and Danielsson, Ltd. 1920. (Cr. 8vo, pp. 111; 12 figures. 5s. net.)

WE have received a copy of a useful little publication entitled *Income Tax and Super Tax, 1842-1921*,[6] which has been brought up to date to include the substantial changes effected by the Finance Act of this year. The various forms of relief by way of allowance for children and dependants, the methods of graduating the effective rate of tax, and the different advantages given to persons whose incomes are falling are dealt with briefly, but with sufficient clearness. But we suggest that in future editions greater space might be devoted to the "Reminders and Advice," even if the historical tables have to be curtailed; after all, what the average reader requires is a practical guide in present conditions rather than information as to the various rates of income tax in the nineteenth century—in the present day such comparisons are apt to be disagreeable, and are not very helpful. The publication contains all the necessary information on the important subject of "allowances," and many useful hints on points arising in the assessment of various forms of income; it has been carefully prepared, and within its limits should prove of real service to all taxpayers.

A new edition of the *Michelin Guide to the British Isles*[7] has been issued. The book is probably familiar to most motorists who use their cars for holiday tours. Anyone who has once used it is not likely to start without a copy. The information is arranged alphabetically, and includes particulars of the routes available between one town and another. By using conventional signs a great deal is packed into a small space. We have had the opportunity of testing it on many occasions, and seldom or never found it wanting. A special feature of the book is contained in Part II, where a list of fifty-two excursions is set out relating to the most interesting parts of England, Wales, Scotland, and Ireland. The new edition contains a number of plans of most of the principal cities, but the sketch maps which were a feature of other editions have been omitted.

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[6] London: Overend Bond. 1920. 3rd edition, rewritten. 1s. net; [illegible]

[7] *The Michelin Guide*. The Motorist's Vade Mecum. Compiled and published by the Michelin Tyre Co., Ltd. 5s. net.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from August 16th to September 4th, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

SIXTH LIST OF SUBSCRIPTIONS.

	£ s. d.		£ s. d.
[illegible]	[illegible]	H[illegible], Sir [illegible] K.B.E., F.R.C.S. [illegible]	2 2 0
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NEW CONCEPTIONS REGARDING IMMUNITY TO THE ENTERIC FEVERS.

(*Concluded from p. 3[illegible].*)

PART II.

The Efficacy of Vaccination in the Enteric Fevers.[1]

DURING the war, especially during the Argonne epidemic, Besredka had opportunities of judging the efficacy of protective typhoid inoculation. Among the patients in the French fever stations there were some who had never been inoculated, others who were insufficiently inoculated or inoculated a long time previously, and several who had been duly vaccinated according to the prescribed rite at a relatively short time before their admission to hospital. Amongst these last there were grave, even fatal, cases. In reaching a diagnosis only those were counted who gave a positive blood culture. In order to give an idea of the frequency of typhoid fever amongst the vaccinated he cites some unpublished figures. Of 102 patients showing typhoid bacilli in the blood, 23 had not been vaccinated, 38 had been insufficiently vaccinated (one, two, or three inoculations), and 41 had received at least four vaccinating injections. Besredka is of opinion that the vaccines—whether heated, etherized, sensitized, iodized, or mixed with oil—employed in the French army do not effectively prevent the contracting of typhoid fever. Such vaccines certainly confer an immunity, but an immunity different from that produced by a natural attack of the disease. The solidity of the latter immunity is well established, a second attack of typhoid fever in the same individual being an extreme rarity, if, indeed, it ever occurs. In the Argonne epidemic Besredka encountered amongst the patients some who had had a natural attack of typhoid fever five to twenty years previously. Taking into account only those who had the actual typhoid state, together with a positive blood culture, he had about 300 cases who had previously had typhoid fever. At that time the number of cases of typhoid fever during the epidemic approximated to the conjoined numbers of the two paratyphoid fevers. All those suffering from a second attack revealed a positive blood culture of *B. paratyphosus* A or B; in none was *B. typhosus* found. In other words, in comparison with the immunity conferred by artificial vaccination, that following a natural attack is of remarkable solidity; in all probability it is acquired for the remainder of life. Besredka set himself to see if the same degree of perfection might not be attained by artificial vaccinations.

Experimental Vaccination by Living Cultures.

As had been previously shown, the sensitization of rabbits by bile afforded a means of studying the question of immunity. The first series of experiments consisted in the oral administration of living paratyphoid bacilli, followed six days later by that of ox bile, and then by the intravenous injection of living cultures of bacilli. The rabbits thus treated survived for ten days, and died with profuse diarrhoea and haemorrhagic lesions of the small intestine, from which pure cultures of the bacilli were obtained. The control rabbits, which had not had a previous ingestion of living bacilli, died in twenty-four hours. In a second series the interval between the oral ingestion and the testing intravenous inoculation was lengthened to ten days without much difference in the result. Under these conditions one might conclude that the rabbits were not very appreciably protected by oral vaccination. Besredka, however, had recourse to animals previously sensitized by bile, and he found that the ingestion of living paratyphoid virus, preceded by that of bile, created a real immunity against the virus, so that when the rabbit was subjected to a fatal dose injected into the general circulation it resisted the infection. The experiments furnished two pieces of information: (1) That the ingestion of the living virus was only followed by immunity in rabbits which had previously been treated with bile, and (2) that as the rabbit acquired immunity under the same conditions as a man who has had an attack of the disease—that is to say, following oral infection—it was permissible to hope that a vaccine tested on the rabbit *per os* could be applied with success to man.

Properties of the Serum after Oral Vaccination.

Is the remarkable resistance of the rabbit prepared by bile subordinate to the production of serum antibodies?

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[1] *Ann. de l'Inst. Past.*, vol. xxx[illegible], December, 19[illegible], p. 882.

In rabbits prepared and infected *per os* there appeared in the blood in from five to fifteen days, according to the dose injected, an appreciable quantity of specific agglutinins—1 in 600 to 1 in 800. These increased in intensity during the following days, reaching a maximum about the twenty-fifth day, at which time it was not uncommon to find a titre for paratyphoid of 1 in 20,000 or even more. But this level was not long maintained; it fell rapidly, though it was still high for two months; even after four months it kept at 1 in 1,000, as contrasted with 1 in 50 or 1 in 100, which is a high normal titre. Along with the agglutinin content the protective power of the serum fell also when tested on rabbits and mice. The same results were obtained with horses. The conclusion seemed evident that, whatever the route of vaccination, oral or subcutaneous, it was always owing to the antibodies that the animal acquired its immunity, and Besredka admits that such a conclusion dominated his ideas for many months. It had all the force of *post hoc, propter hoc*, and all the fallacies. When, two months after the first ingestion of the virus, another dose of the virus was given to the rabbits or horses, and the operation again repeated two months later, it was found that the agglutinating power of the serum had sunk from 1 in 20,000 to 1 in 200 or 400, and that the protective power had vanished. Nevertheless, the rabbit, which ingested the virus on several occasions, and which had lost its antibodies gradually, had not lost its immunity. Inoculated intravenously with certainly fatal doses, it escaped the infection. What, therefore, was the value of the antibodies present in the serum after a first ingestion of the virus? Had they really been an expression of immunity, or was their formation merely a concomitant phenomenon of the latter? Besredka unhesitatingly favours the second alternative. He thinks that, in the first ingestion, a part of the virus makes a breach in the intestinal wall, and, penetrating into the blood in the form of soluble endotoxin, calls forth there the antibodies in question. The other part of the vaccine remains in the intestine; coming into contact with the closed follicles laid bare by the action of the bile, it vaccinates the intestine. When a second ingestion occurs, the vaccinated intestinal wall, impermeable to the virus, allows no more to pass into the blood. The antibodies previously existing are gradually eliminated. At each new ingestion the intestinal barrier becomes more and more "watertight," and all the while the antibodies in the circulating blood are diminishing. Thus one can conceive an animal actively and solidly vaccinated without having in its blood a trace of antibody. This is in opposition to the prevailing bacteriological opinion, which not only does not dissociate immunity and the antibodies, but goes so far as to consider the agglutinins and other antibodies as measures of immunity. Besredka, during his experiments, had several examples of the absence of parallelism between antibodies and immunity. For instance, in some rabbits which had not previously been sensitized with bile the ingestion of living paratyphoid virus brought about the abundant production of specific agglutinin of high titre, but when these animals were submitted to inoculation with the living virus they succumbed just as quickly as the controls.

Vaccination by Means of Heated Vaccine.

Some attempts to vaccinate the rabbit *per os* (without previous preparation) by means of living cultures were unsuccessful; there seemed to be reason for expecting a set back when endeavouring to vaccinate by means of heated cultures. Two rabbits were given killed paratyphoid bacilli by mouth, but one of these had in addition been treated with bile; three weeks later the two rabbits, as well as a fresh rabbit, were tested intravenously with a fatal dose of living organisms; only the animal which had ingested the ox bile survived this test inoculation. In another series the rabbits had no less than five abundant ingestions of paratyphoid bacilli spread over three months, the last ingestion being of living organisms, but when subjected to the intravenous test only the bile-treated animals survived. From these experiments it is concluded that though the animals have absorbed typhoid or paratyphoid bacilli once or on many occasions, whether the bacilli are alive or dead, no immunity results; whilst, on the other hand, a single ingestion of heated culture, preceded by administration of bile, suffices to confer immunity against the fatal infection. There is every reason to hope that by these means we shall arrive at a method of vaccination capable of being applied to the human subject because it is innocuous, and because it imitates the natural phenomena.

If one concludes that antityphoid immunity is not allied with the presence of known antibodies in the blood, the corollary follows that if any antisubstances participate in the establishment of immunity following oral vaccination, they are certainly not of the nature of the antibodies we have been accustomed to find in the serum. Perhaps the antibodies that ensure the immunity in the rabbits are to be found elsewhere. Ought we not, therefore, to revise our present ideas on the subject, and seek for the cause of the immunity in the vaccination of certain cells of the intestinal wall—for example, those of the closed follicles? Some of Besredka's experiments showed that the immunity was established in the first three days after the ingestion of the vaccine—a result so rapidly produced as to exclude the participation of antibodies of any known order. What is certain is that the reaction of defence, whatever be the mechanism, does not occur in the blood, but elsewhere.

The normal rabbit not prepared by bile is indifferent to the ingestion of typhoid or paratyphoid bacilli, either living or dead, and it would seem clear that this indifference is due to the fact that the normal lining mucosa of the intestinal wall is interposed between the bacilli and the sensitive cells. Not being able to come in contact with the latter, the organisms are borne along through the canal; this is natural immunity.

One may now consider the case of rabbits prepared by bile and see how they react after the administration of the living and of the dead virus. In the former case the virus, having arrived at the small intestine and profiting by the breach in the mucosa, reaches the receptive cells directly, as they have been uncovered by the action of the bile. If the dose of virus is too strong it overflows the receptor apparatus and, becoming disseminated, provokes a fatal infection; but if the virus is present in feeble quantity the receptor cells arrest it, destroy it, digest it, and in so doing vaccinate themselves. Should a new dose of infecting material come along by the alimentary or vascular routes, the whole of this virus will be restrained by the vaccinated receptor cells. When a quantity of dead virus is administered orally to a prepared rabbit, the virus enters into direct communication with the uncovered receptor apparatus, the bacilli are engulfed and digested, and there results a vaccination of the intestine which is also that of the whole body.

The mucosa of the intestine is thus a barrier with a double property: it is potent in assuring natural immunity, but is an obstacle to the establishment of artificial immunity. To produce the latter it is necessary to bring the bacilli into immediate contact with the receptor apparatus to break down the separating barrier. For this purpose Besredka employed ox bile, but one can conceive the possibility of attaining the same end by other means. In his experiments in the production of immunity by the oral route in the case of dysentery bacilli he did not need to have recourse to bile, because the dysentery bacilli themselves had a marked desquamating property for the intestinal mucosa. In the case of typhoid and paratyphoid bacilli, on the other hand, the use of bile was rendered necessary because, in the rabbit at least, these organisms do not possess in themselves the power of opening up a passage to the receptor cells. There are possibly other organisms which, absorbed by the mouth, traverse the intestinal canal, and are eliminated without leaving any trace, but which, if the canal had been prepared for them, would not have failed to confer immunity on their host.

THE committee of the Robert Koch Institute for Combating Tuberculosis has given 15,000 marks to the Robert Koch Institute for Infectious Diseases at Berlin, 6,000 marks to Professor Selter of Königsberg, and 8,000 marks to Professor Flügge of Berlin.

THE *American Journal of Obstetrics and Gynecology* will make its appearance next month in place of the *American Journal of Obstetrics and Diseases of Women and Children*, which discontinued publication in February. The new periodical will be the official organ of the American Gynecological Society, the American Association of Obstetricians and Gynecologists, and the obstetrical societies of New York, Brooklyn, and Philadelphia.

British Medical Journal.

SATURDAY, SEPTEMBER 11TH, 1920.

RECENT INVESTIGATIONS IN ENTERIC FEVERS.

The discovery of specific antibodies in the blood in infectious diseases—the agglutinins, precipitins, complement deviating substances, and the rest of them—has been productive of an immense amount of work by pathologists. It has generally been accepted that these specific substances are not only evidences of the operation of a defensive mechanism but are themselves directly defensive in nature. It is even widely believed that the powers of resistance of an individual to infection can be measured by the quantity (or rather strength) of these substances in the serum. One school of investigators in particular would seem to regard the degree of immunity as expressible by exact mathematical formulae. It is granted by most people, however, that the body must have many other means of resistance to infection than can be expressed in the terms of humoral pathology; some of these are known or suspected, others await discovery. The whole question, for example, of what constitutes natural immunity or resistance to infection has been barely trenched upon by investigators. Natural immunity and induced immunity do not necessarily run on the same lines. And there can be no doubt that local, as contrasted with general, immunity is an important factor in the struggle against infections.

It may be that in the intensive cultivation of this domain of pathology the necessarily indirect studies of the problems of immunity have obscured the greater problems that could only be solved by direct experiments. In no case is this more strikingly illustrated than in the group of enteric infections—typhoid and paratyphoid fevers, dysentery, cholera, and the rest. At the very beginning the investigator was faced with the impossibility of reproducing experimentally in animals a diseased condition that closely resembles the natural infection in man. Certainly pathological conditions could be induced, following the injection of the causative organisms, that resembled the human infection in certain features, but the complete clinical and pathological pictures were never reproduced. It is true that several years ago Metchnikoff succeeded in causing fairly typical typhoid fever in chimpanzees by the oral administration of the typhoid virus, but naturally no very extensive series of experiments could be conducted in these animals. Shortly before his death the same observer was able to produce fatal paratyphoid fever in newborn rabbits by feeding them on cultures of *B. paratyphosus*. No matter how the usual laboratory animals were prepared beforehand they proved resistant to the oral administration of all organisms of the enteric and dysentery groups. The prevailing conception of bacteriologists, indeed, has been that in the case of the enteric fevers the condition is a bacterial septicaemia.

The recently published work of Besredka which we have mentioned at pages [illegible][1] and [illegible],[2] shows that these diseases are primarily local, the septicaemia being a secondary phenomenon. The defensive mechanisms are, according to him, essentially local in the intestine; and the production of antibodies in the blood is quite a subsidiary occurrence, not essential to successful combat with the infective agent. The oral administration of killed or living cultures of the enteric organisms is not generally followed by any noticeable diseased condition, and no antibodies may appear in the blood. In the case, however, of dysentery bacilli clinical dysentery may be produced and may give the pathological features of the disease even with killed cultures. But in all cases the previous administration of bile, innocuous by itself, so sensitizes the intestinal mucosa that when living cultures of typhoid, paratyphoid, or dysentery bacilli are ingested the typical diseased state, comparable to that in man, is reproduced. If, again, subsequently to this sensitizing administration of bile, the organisms are injected intravenously, intramuscularly, or subcutaneously, the diseased process becomes localized in the intestine. No matter what the portal of entry of infection may be, the sensitized animal always responds in one way—namely, by showing intestinal lesions. It is not to be supposed that ox bile is the only thing that is capable of so irritating the intestinal mucosa that the bacteria ingested may lodge there and do their damage; in fact, in the case of dysentery the organisms themselves would seem to be capable of creating the necessary weakening of the intestinal defences, and probably many other irritants might produce the condition. Besredka found that animals which thus contracted the disease and recovered were solidly protected against subsequent infection, and this in spite of the fact that their serum might show no antibodies nor protective substances of known nature. He has advanced his researches to the point where further progress lies within the province of the clinician.

During the war all the contending armies suffered extensively from epidemics of bacillary dysentery. No successful method of protective vaccination was evolved. Subcutaneous inoculations of killed dysentery bacilli were early tried in the Russian army, but had to be given up because the benefits of the method were judged to be out of proportion to the accidents observed resulting from such vaccination. In Germany a sort of sensitized vaccine composed of bacilli, toxin, and antitoxin was employed, but afterwards abandoned. In our own and in the French army vaccination was tried on a small scale, but it was generally agreed that the toxicity of the vaccine was too great. The oral administration of killed cultures, though innocuous, did not seem to hold out any promise, because no reaction was produced and no antibodies appeared in the serum.

Besredka has now shown that in the case of dysentery, especially when some method of intestinal sensitization is induced, as by ox bile, the ingestion by the mouth of killed cultures does set up a complete protection against the natural infection, though no signs whatever of this immunity are otherwise apparent. The same thing applies in typhoid and paratyphoid infection. It would seem from the laboratory experiments that oral vaccination by killed cultures of the micro-organism, provided the recipient is suitably prepared, is productive of a much stronger immunity than subcutaneous inoculation, and is less likely to produce general reaction. If the application of these researches to man is followed by the results which experiment forecasts, the epidemics of cholera and dysentery, to say nothing of typhoid and paratyphoid fevers, may lose their terror.

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[1] British Medical Journal, August [illegible], 1920.

[2] British Medical Journal, September 4th, 1920.

HEALTH AND THE LEAGUE OF NATIONS.

THE Council of the League of Nations during its meeting last month at San Sebastian gave attention to the problem of international health, and adopted the scheme drawn up by the International Health Conference held in London last April. That conference was convened by Dr. Addison, at the request of the Council of the League of Nations. The constitution then drafted for an international health office under the League provided for the establishment of a general committee, consisting of delegates appointed by the various nations, and of a permanent committee for executive purposes. This permanent committee would consist of members delegated by the Council of the League of Nations, of the president and four members of the General Committee, of a representative of the League of Red Cross Societies, and of a representative of the International Labour Office set up under the League of Nations. The permanent committee would apply itself to drawing up new conventions or revising those that exist; the results being subject to the approval of the General Committee, wherein the vote of a two-thirds majority would be valid. The International Health Bureau would consist of an international staff under a medical secretary, who would be the chief executive officer. This important office, it is supposed, will be filled by a medical man with great experience in public health administration.

The functions of the health organization which it is thus proposed shall be set up under the League of Nations are: (1) to advise the League on matters relating to health; (2) to co-ordinate the work of national health administration; (3) to organize rapid interchange of information on epidemic diseases and rapid action where such information affects several countries; (4) to initiate or revise international agreements for administrative action in health matters when so requested; (5) to co-operate with the International Labour Office for the protection of workers against industrial diseases and injuries; (6) to co-operate with the League of Red Cross Societies in measures against world-wide epidemics; (7) to give advice on large questions of hygiene to other authorized voluntary organizations; and (8) to organize health commissions when requested. The general expenses of administration would be borne out of the consolidated funds of the League of Nations; extraordinary expenses by the Council.

This scheme has now been adopted by the Council of the League, and is recommended for formal adoption at a general assembly to be held in Geneva next November. It has been restricted, probably wisely, to main outlines such as are indicated above. Subject to certain general and unexceptionable principles, the practical working and orientation of the future international health office are left to be determined by the expert organization itself as soon as it has been formally set up. Care will obviously have to be taken in this regard to differentiate the functions which are to be fulfilled by this body, representing the national official public health services, and those which are already fulfilled by various international medical conferences and congresses, and by the new League which has united the Red Cross services in the different countries for purposes of international health work, and is also to have its head quarters in Geneva. The fact that the League of Red Cross Societies is to have special representation on the official body may, however, be taken as a guarantee that this important question will not be lost sight of. In this country we have daily experience of the necessity of voluntary and non-official work as a stimulant to and corrective of the functions of Government offices. The latter, however, are for many purposes a necessity, and without them the most devoted voluntary work would be of little avail. A like process of mutual adjustment will be required in many international affairs, including questions of public health.

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SPIROPTERA CANCER IN MICE.

ATTENTION has already been drawn in our pages to the experiments of Fibiger of Copenhagen, in which he succeeded in producing carcinoma of the stomach and of the tongue by feeding black-and white rats with the nematode *Spiroptera neoplastica*. In these experiments he obtained positive results in 53 per cent. of the cases, but it appeared to be extremely difficult to produce lesions either in other strains of rats or in mice, which offered in all probability as favourable conditions for the existence and development of the nematodes as were provided by the piebald rats. In the first series of experiments undertaken on mice,[1] spiroptera carcinoma was not produced in any one of the animals infected with the parasite, in spite of the fact that the spiroptera induced in the fundus of the stomach of mice exactly similar changes to those found in the stomach of the rats—proliferation, hyperplasia, and downward growth of the epithelium, as well as inflammation and papillomatosis. The experiments were conducted on a total of 207 white mice, some of which had been infected with the spiroptera for 597 days, a length of time exceeding that necessary for the production of carcinoma in the rat. However, in a later series of experiments Fibiger found 3 cases of spiroptera carcinoma in white mice; in one of these mice the tumour was very small; in the second, which died 410 days after the ingestion of spiropterae, there was found purulent peritonitis due to a perforation of the cul-de-sac of the stomach, which was the seat of a very extensive carcinoma infiltrating its wall. The structure of the carcinoma was exactly similar to that found in the rat experiments. The cancer itself as well as the rest of the fundus of the stomach contained nematodes. A metastatic nodule the size of a hemp-seed was discovered in the lung; it had the same structure as that of the primary tumour, but contained no spiropterae. Portions of the tumour transplanted into other mice failed to grow. The third case was that of a white mouse which had been infected with nematodes for 482 days before death and the excrement of which had shown spiroptera ova 322 days after the ingestion of the worms. Here the stomach was transformed into a nodular tumour of the size of a hazel-nut, a keratinizing epithelioma which completely invaded the greater part of the stomach wall and spread into the diaphragm, liver, and spleen. In the mesentery, the omentum, and the peritoneum there were numerous metastases similar in structure to the original tumour, reaching the size of a pea, and often invading the adjacent tissues. A spiroptera in perfect preservation was found in the stomach, but the metastases were quite free of parasites. Portions of a metastatic nodule were transplanted into twelve mice, with positive results in nine cases. The tumour was kept going for a year by successive transplantations, with approximately 50 per cent. success, and maintained its original histological characters and invasive properties. These transplanted tumours, which often attained the size of a nut in two to three months, contained neither spiropterae nor spiroptera ova. Thus the spiroptera carcinoma, which is much more difficult to produce in white mice than in piebald rats, shows a more intense development in the former, and the experiments just quoted derive considerable interest from the fact that proof has been furnished of the transplantability of spiroptera carcinoma. The result obtained from these and previous researches by the same author may be summarized thus: Spiroptera carcinoma is a typical keratinizing squamous-cell carcinoma which invades the tissues and various organs, which produces metastases in the lungs, lymphatic glands, peritoneum, and perineural lymphatic vessels, and which is capable of being transplanted. The action exercised by the spiropterae is due, according to Fibiger, to their toxic secretion, which operates to bring about the cancerous development. Once produced, in the stomach or in the tongue, the carcinoma will continue to grow quite independently of the complete or partial absence of spiropterae in these organs. The parasites play no part in the development and the growth of the metastases and of the transplants.

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[1] *C. R. Soc. Biologie*, Tome lxxxiii, No. 26, 1920.

THERAPEUTICS OF BENZYL COMPOUNDS.

By the pharmacological studies of Macht[1] the opium alkaloids were separated into a pyridin phenanthrene group and a benzyl isoquinolin group, of which morphine and papaverine were respectively the principal representatives. The alkaloids of the benzyl isoquinolin group, in contrast with those of the other, were found to lower the tone of non-striped muscle; this property was shared by benzyl benzoate and benzyl acetate, both of which appeared to be safe for clinical use, although, when taken by the mouth, the latter-named was somewhat irritating. Benzol has various poisonous effects, including a destructive action on leucocytes, but from a study of the action of benzyl benzoate in rabbits, Heller and Steinfield[2] find that the latter drug is devoid of toxic effect on the white blood cells, and that a wide margin of safety exists between its therapeutic and toxic doses. Macht found also that benzyl alcohol acts as a local anaesthetic; this has been confirmed by Hirschfelder,[3] who reports that saligenin (hydroxy-benzyl alcohol) is about twice as effective, and does not give rise to subcutaneous oedema nor irritation. The toxicity of this compound he reports as thirty times less than that of novocain; it has the advantage of being a stable, crystalline solid, and by using a 10 per cent. solution mucous membranes can be successfully anaesthetized. Both benzyl alcohol and saligenin are reported to possess antiseptic properties and, in 0.5 per cent. solution, to inhibit the growth of streptococci; both are vasodilators, and may therefore conveniently be used in combination with adrenalin. Hirschfelder is able also to confirm Macht's findings concerning the action of benzyl benzoate on smooth muscle, and gives a dispensing formula which disguises its objectionable taste. He reports good results from the use of benzyl benzoate in cases of cardiospasm, pylorospasm, and bronchial asthma. Litzen [illegible][4] has had a satisfactory experience of its use in cases of dysmenorrhoea. In a recent study Macht found that benzyl benzoate gave relief in 150 out of a series of 200 cases of bronchial asthma; similar results have been obtained, he says, in 60 cases by Storm van Leeuwen of Holland. Macht has now recorded the effects of benzyl benzoate administered in 115 cases of whooping cough,[5] occurring mostly in children. Of these 90 per cent. were improved, 50 per cent. to a marked degree. The drug acted as a palliative of the cough, but did not appear to shorten the course of the disease. It was given in water, and preferably in combination with a few drops of benzaldehyde, the dose [illegible] ranged from 5 to 35 drops of a 20 per cent. alcoholic solution. From pharmacological experiments the author concludes that in whooping cough benzyl benzoate exerts its beneficial effects by diminishing the [illegible] spasm, which [illegible] accompanies the paroxysms, [illegible] a sedative for the laryngeal muscles (for the tone of striped muscle also is to a certain extent inhibited); and finally it has a slight anaesthetic action on the laryngeal mucous membrane, to which it may gain access after its excretion both in the salivary and bronchial glands.

CATS AND DIPHTHERIA.

The commonly accepted belief that cats may suffer from diphtheria, and that they are a not uncommon source of infection in man, is disputed by Dr. W. G. Savage, Medical Officer of Health to the County of Somerset.[1] The evidence on which the belief was originally founded was both experimental and epidemiological. The lesions produced in cats by the inoculation or administration of diphtheria bacilli in the early experiments performed twenty or thirty years ago were so little characteristic, or open to such difference of interpretation, that they would not now be accepted by any pathologist. It was on the epidemiological side, however, that the foundation of the current belief was mainly established. The association of illness amongst cats with cases of human diphtheria has been noted by several observers; in a few cases swabs taken from the throats or lungs of these cats were reported as giving in direct films, more rarely in culture, organisms morphologically identical with the Klebs-Loeffler bacillus. The bacteriological details of all such findings are exceedingly meagre, and in no case were inoculation experiments carried out nor such information supplied regarding the cultural tests employed as would be necessary to establish the differences between such organisms and the large group of pseudo-diphtheria bacilli. Dr. Savage's investigations have been conducted along three lines of inquiry: (1) the bacteriological examination of the throat and nose of healthy cats not associated with any cases of human diphtheria; (2) the bacteriological and pathological examination of cats associated with human cases of diphtheria, and (3) experimental investigations with kittens. In the first part of the investigation none of twelve kittens examined showed any bacilli at all resembling diphtheria bacilli, but in two-thirds of the adult cats bacilli were found which bore a close morphological resemblance to the diphtheria bacillus. In one instance, in fact, the cultural characters were so typical that experienced bacteriologists could not detect the difference; the organisms were, however, non-pathogenic to guinea-pigs. It will thus be seen that cats harbour a diphtheroid organism which cannot be distinguished from the true diphtheria bacillus by the ordinary technique employed in the examination of throat swabs in the case of suspected diphtheria in the human subject. In five cases of human diphtheria investigated by Dr. Savage the cats showed similar organisms to the Klebs-Loeffler bacillus, in one case the similarity being so marked that the bacillus might possibly be regarded as a non-pathogenic strain of the true diphtheria organism. In the numerous experiments in which the throats of kittens were swabbed with known pathogenic strains of *B. diphtheriae* it was found impossible to infect them, although very massive doses were invariably used, as many as ten different strains being employed, all quite recently isolated from acute human cases of diphtheria, and four of them being shown experimentally to possess high virulence. No local or general symptoms were induced, and in four days they had practically all disappeared from the nose and throat. These experiments suggest that the secretions of the mucous membranes of the cat are peculiarly unfavourable to the growth of the diphtheria bacillus, and will not even permit it to remain as a saprophyte. The evidence therefore affords no support to the idea that the cat may act as a carrier of the bacillus in its throat and nose. That the fur of this animal may be infected with diphtheria bacilli is, of course, a possibility, but in view of the low resistance powers of the organism this is probably an unimportant factor in the spread of the disease.

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[1] [illegible]
[2] [illegible]
[3] [illegible]
[4] [illegible]
[5] [illegible]

[1] *Journal of Hygiene*, vol. [illegible], No. 4, 1920.

A GERMAN INSTITUTE OF PSYCHIATRIC RESEARCH.

In Germany one person in 500 requires asylum care, and Professor Kraepelin[1] of Munich considers that at least twice as many persons suffer from mental disorder in some form. In addition, there is an unknown and uncontrollable number of degenerates engaging the attentions of the police. He points out that asylums are primarily for the care of the insane, and that asylum workers are chiefly occupied in clinical and administrative duties and have no time for research. The author claims that the proper conditions for research work can only be realized in specially equipped institutes adequately endowed. Such an institute is already in being at Munich, and it is expected that money will be forthcoming from private sources to provide a large new building on a site already given by the city authorities. Five departments exist—three for anatomical work and one each for serology and statistical research. Distinguished scientists control the departments and enjoy complete independence. Departments of psychology and biochemistry are projected, together with a very complete library. As a result of considerable endowments it is hoped to engage suitable collaborators and to provide facilities for scientific journeys and investigations in foreign countries. Professor Kraepelin sketches a large field for research, including the influence of poisons such as syphilis and alcohol on the organism, and the nature and origin of dementia praecox, epilepsy, and the manic-depressive states. He anticipates that much progress will be made in these problems from researches in serology, biochemistry, and endocrinology. Degeneration presents another wide field, in which aid will be sought from large collections of statistics concerning the prevalence of mental disease, epilepsy, deaf-mutism, vagrancy, prostitution, alcoholism, and syphilis. The work was begun in April, 1917, and means are being found to carry it on and extend it, and to link the institute with a new hospital for the insane which the city of Munich proposes to build.

THE ROYAL EARLSWOOD INSTITUTION.

We welcome the appearance in pre-war form of the seventy-third Annual Report of the Royal Earlswood Institution for Mental Defectives. Like other charitable institutions, it had suffered severely from the financial stringency of the last five years, and a burden of debt to its bankers, amounting to £20,000, had been incurred; but the Board of Management are now able to announce with thankfulness the rehabilitation of their resources by the opportune receipt of a munificent legacy from an old subscriber (Mr. W. M. L. Ray), which it is hoped will enable them to pay off their debts and to proceed with urgent repairs and improvements hitherto of necessity in abeyance. The Board justly point out that, in spite of the provision by public authorities contemplated by the Mental Deficiency Act, there will still exist a scope for benevolent effort in giving increased facilities for the reception of cases of mental defect among the professional and middle classes—the *nouveaux pauvres* of to-day—and they are modifying their arrangements with this object in view. The report for the year 1919 of the medical superintendent, Dr. Charles Caldecott, gives the following statistics: The total admissions and readmissions had numbered 67 (51 males, 16 females); discharges 37 (31 males, 6 females); and deaths 50 (36 males, 14 females). The number resident on January 1st, 1919, had been 455 (288 males and 167 females), and on December 31st 435 (272 males and 163 females), the average number resident during the twelve months having been 446 (280 males and 166 females); 41 (65 per cent.) of those admitted were under 14 years of age. Eight were of the Mongolian type, 2 hydrocephalic, and 9 suffered from epilepsy, and 10 from paralysis. Of the 50 who died during the year, 15 (30 per cent.) succumbed to influenza, 13 (26 per cent.) to tuberculosis (in various forms), and 4 (8 per cent.) to senility. *Post-mortem* examinations were made on 34 cases (68 per cent.). The percentage death rate calculated on the average number resident had been 11.2, and it is stated that the mortality had more than doubled during the war, a lower standard of vitality being attributed to food restrictions and to the depressing effects of "blocked windows" (necessitated by D.O.R.A.), and consequent interference with normal lighting and ventilating arrangements. Dr. Caldecott considers that at least one-quarter of the present inmates must be regarded as "hospital cases," and he urges an amplification of the existing infirmary accommodation, including balconies for open-air treatment. It must be remembered that the activities of Earlswood have now extended over nearly three-quarters of a century, and it is stated that 15 of the present inmates have been in residence for fifty years, 4 for sixty, and one for sixty-eight years. Senile cases must consequently be expected to swell the mortality; while continuity of care, which is favoured by facilities for re-election and for life payments, is a valuable feature of administration. The arrangements for tuition at school, industrial training and recreation have undergone extension and improvement, and we trust that this pioneer institution will continue to occupy a leading position amongst the numerous agencies for dealing with defectives which have more recently come into existence. We note with satisfaction that its clinical resources are utilized for the instruction of medical students and post-graduate classes, for which its proximity to London offers advantages.

TYPHUS IN POLAND.

Mr. Balfour, on behalf of the Council of the League of Nations, of which he is President, has addressed to the various Governments an appeal for £250,000 to combat typhus fever in Poland and Galicia. He describes the wide prevalence of the disease at the present time in Russia and Poland, and quotes authorities to the effect that unless adequate steps are taken at once the epidemic is likely to be far more lethal in the coming winter than in the winter of 1919–20. Mr. Balfour details the reasons which make the prevention of such a disaster a matter which concerns all nationalities. In the first place, economic conditions in Poland and Galicia cannot be stabilized while the population is threatened by typhus. Secondly, if the development of typhus be not checked it may well overrun Central Europe, where every circumstance is in its favour. As infection spreads it becomes harder to deal with, and no European country can count itself wholly safe if Poland be allowed to succumb. Lastly, there is the claim of humanity; Poland is the victim of circumstances for which she is not responsible. According to the statement of the Polish Minister of Health, there were last year 229,821 cases of typhus in Poland and Galicia, with 19,904 deaths. In contrast with the conditions obtaining in Russia, where the enforcement of preventive measures meets with great hostility from the inhabitants, the natives of Poland are anxious to co-operate in the extinction of typhus, and have organized a Polish Red Cross Society, as well as a number of special hospitals. The commission sent to Poland by the League of Red Cross Societies has received during this year gifts or funds from the Red Cross Societies of almost every European nation, and has done useful work in co-ordinating the most important of the relief agencies. We alluded on August 21st (p. 286) to the successful control of typhus outbreaks in Italy and Serbia. As

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[1] *Journ. of Nervous and Mental Diseases*, June, 1920.

[illegible] Balfour remarks, the plan of operation is complete, the organization is ready, and the methods to be employed are successful and well understood. It appears, however, that the appeal for assistance issued last May has met with but scant success, and the Council of the League of Nations now repeats it with emphasis.

TRAUMATIC NEUROSES COMMITTEE.

In accordance with a promise made to Parliament some months ago a Departmental Committee has been appointed by the War Office "to consider the different types of hysteria and traumatic neurosis, commonly called 'shell-shock,' to collate the expert knowledge derived from the service medical authorities and the medical profession from the experience of the war, with a view to recording for future use the ascertained facts as to its origin, nature, and remedial treatment, and to advise whether, by military training or education, some scientific method of guarding against its occurrence cannot be devised." Lord Southborough, G.C.B., is Chairman of the Committee, and the other members are: Temporary Surgeon Lieutenant Thomas Beaton, O.B.E., M.D., M.R.C.P. (representing the Admiralty); Dr. J. L. Birley, C.B.E., F.R.C.P. (representing the Air Ministry); Dr. C. Hubert Bond, C.B.E., F.R.C.P. (representing the Board of Control); Dr. Maurice Craig, F.R.C.P. (representing the Ministry of Pensions); Wing-Commander Martin W. Flack, C.B.E., or Wing-Commander J. McIntyre, M.C. (representing the Air Ministry); Dr. H. W. Kaye (representing the Ministry of Pensions); Dr. Hamilton C. Marr (representing the Board of Control for Scotland); Surgeon Commander E. T. Meagher, R.N. (representing the Admiralty); Brigadier-General J. G. S. Mellor, C.B., C.M.G.; Sir F. W. Mott, F.R.S., M.D.; Major A. D. Stirling, D.S.O., and Colonel W. A. Turner, C.B., M.D. (representing the Army Medical Department); Mr. Stephen Walsh, M.P., Major W. Waring, M.P., and Major W. R. Galwey, O.B.E., M.C. Secretary. The first meeting of the Committee was held on September 7th at the War Office, with Lord Southborough in the chair, and the method of procedure was [illegible].

PRIMARY TUBERCULOSIS OF THE SPLEEN.

H. Koettlitz[1] records a case of primary tuberculosis of the spleen in a woman aged 24 years. The diagnosis was made mainly on the grounds of a positive cutaneous tuberculin reaction. The patient had cyanosis, but the highest red blood count was [illegible], which subsequently fell to 2,100,000. There were 750,000 platelets, as compared with [illegible] found normally. The author considers that primary tuberculosis of the spleen very rare, but in his account of the disease does not refer to [illegible] 1912 report of the subject with 51 collected cases and his [illegible] to splenectomy, which is usually considered to give good results. The association of primary splenic tuberculosis with polycythaemia is certainly rare, and reference is made to cases reported by [illegible], and by Wind and Koerth. Koettlitz compares primary tuberculosis of the spleen with Osler-Vaquez disease, or [illegible], with polycythaemia and cyanosis, and calls attention to the general similarity of the symptoms and to the increased blood platelet count in both.

FRACTURES OF GREAT TOE SESAMOIDS.

[illegible][2] is of the opinion that certain painful disabilities of the foot are due to injuries of the sesamoid bones on the plantar aspect of the metatarso-phalangeal joint of the great toe. [illegible] bones are liable to fracture has been known for many years, yet there are few references to the fact in the standard textbooks and the possibility is apt to be forgotten. Of the two sesamoids the internal is that most frequently damaged. The fracture may be produced by direct violence (as when the foot is run over by a wheel) or by indirect violence, the toe being violently extended and abducted. In the latter case the mechanism of fracture bears a close similarity to that of fracture of the patella. The bone may be broken into two or more pieces. The result of the break is a swelling of the great toe joint, with pain on standing or walking. Tenderness is characteristic by reason of its location over the internal sesamoid. Treatment is best undertaken on conservative lines: a thick felt pad being strapped to the foot just behind the metatarsal head, and a bar being placed across the sole of the boot. Difficulty in the interpretation of radiograms arises from the fact that the sesamoid bones are sometimes congenitally bifid. A comparison with the sound foot is then helpful, together with the fact that the bone segments are apt to have a rounded outline, and to have a complete casing of compact bone. Good radiograms are essential to correct interpretation.

PAYMENTS IN THE LONDON HOSPITAL.

The experiment by the London Hospital of making a charge to all patients except those obviously not in a position to contribute has, according to the last quarterly report of the house committee, proved successful. The charge is one guinea a week for adult patients and half that amount for children between the ages of 7 and 14. The amount received is about £50 a day. About 10 per cent. of the patients are exempted on the ground of poverty. In July 1,137 patients were admitted; of these 660 adults and 99 children paid, and 107 patients were exempted. No charge is made for children under 7. The committee's report admitted that it was at present too soon to form any opinion as to whether the system of payment would cause voluntary contributions to diminish. Reference is also made in the report to the fact that the hospital at present receives no payments from the insurance funds for insured persons admitted to hospital.

POST-GRADUATE COURSE AT ST. ANDREWS.

A short course of post-graduate study for general practitioners will be given at the Clinical Institute, St. Andrews, Fife, under the direction of Sir James Mackenzie, commencing on Monday, October 11th. The course, to which only a limited number of members will be admitted, will consist of lecture demonstrations dealing with the symptomatology of disease in its early stages, and will be supplemented by demonstrations on matters of clinical interest in anatomy, physiology, chemistry, bacteriology, ophthalmology, and radiology. The fee for the course is £10 10s. Graduates desirous of attending this course should communicate as early as possible with the Secretary, the Clinical Institute, St. Andrews, who will send them full particulars, and will be glad to advise them with regard to securing rooms in St. Andrews.

The International Society of Surgery, at its recent meeting in Paris, elected Sir William Macewen, of Glasgow, as its President for the next congress, to be held in Great Britain probably in London during the summer of 1923.

By a Royal Charter dated June 9th, 1920, the Incorporated Society of Trained Masseuses and the Institute of Massage and Medical Gymnastics were amalgamated. The council, of which Sir E. Cooper Perry, M.D., is chairman, includes the founders of the Incorporated Society and of the Institute, as well as sixteen elected members and eight co-opted members, of whom five are medical men. The Queen has consented to become patroness. The object of the chartered society is to afford protection to the profession of massage and its registered members by improving the training and status of masseuses and masseurs, by providing and supervising independent examinations, by setting up registers of persons qualified to practise, and by arranging post-graduate courses, lectures, and conferences.

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[1] [illegible]

[2] [illegible] Aug., 1920.

Scotland.

SMALL-POX AND TYPHOID FEVER IN GLASGOW.

THE Medical Officer of Health of Glasgow has recently published a report upon the small-pox epidemic, bringing the history of the outbreak up to August 21st. Up to that date 446 patients had been admitted to hospital—433 from within the city and 13 from adjoining areas. There were 120 children under 15 years of age, of whom 91 were unvaccinated. None of the remaining 29 children who had been vaccinated in infancy died, but 31 of the unvaccinated group died, giving a percentage death rate among unvaccinated children of 34. Among the 326 patients in the group aged 15 years and over, 8 were unvaccinated, 6 of whom died. Vaccination was doubtful in 5 cases, one of whom died. Of the remaining 313 patients vaccinated in infancy 51 died; a few patients in this group had been revaccinated in 1901 (during the epidemic then); but in no case admitted to hospital has there been any evidence of successful vaccination since 1901. Further, so far no cases had occurred among the medical, nursing, or administrative staff engaged in dealing with the patients. An interesting table is as follows:

	No. of Cases.	Deaths.	Mortality Rate.
Vaccination in infancy ...	342	51	15%
Unvaccinated	99	37	37%
No definite evidence of vaccination	5	1	20%

During the early weeks of August it seemed as though the epidemic were dying out, but during the third week 18 cases were admitted, and this recrudescence was accompanied by an extension of the area from which the cases came. Up to September 1st the admissions have been about two or three a day, but on September 2nd they numbered five, and on the 3rd four. Two suspected cases occurred in Edinburgh at the end of August; both were adults who had not been vaccinated since infancy; but neither of them seemed to have been in direct contact with Glasgow.

During the week ending August 21st there were 13 cases of enteric fever reported in Glasgow, and all the patients had been spending the Fair holidays at seaside resorts. The partaking of infected ice-cream is suspected to have been the origin of these cases. A few further cases have been intimated.

ANDERSON COLLEGE, GLASGOW.

The Governors of the Anderson College of Medicine, Glasgow, have appointed Dr. William Hislop Manson to the Chair of Ophthalmic Medicine and Surgery. Dr. Manson, who graduated in medicine at Glasgow University in 1906, and was admitted in 1912 as a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow, has been for some time a visiting surgeon to Glasgow Eye Infirmary.

SCOTTISH BOARD OF HEALTH.

The National Health Insurance Commission (Scotland) has issued its last report, covering the years 1917–19, for its duties have been taken over by the Scottish Board of Health. The number of approved societies in Scotland for National Health Insurance purposes was 245 in 1919, compared with 312 in 1912, and the total number of Scottish cards in August, 1919, was 1,275,029. The feeling evinced against compulsory insurance is stated to have greatly diminished or almost disappeared. Maternity benefit has been highly popular; there is abundant evidence that it has greatly helped mother and child, and there has been very little misapplication of this benefit. The Commissioners think there is some ground for uneasiness regarding the careful certification of illness as performed by some practitioners; and they express the opinion that medical referees should be appointed to whom doubtful claimants on the fund could be sent.

England and Wales.

NOTIFIABLE INFECTIOUS DISEASE IN 1919.

IN continuation of the annual statements of the Local Government Board (1911–18), the Ministry of Health has published a report on "The incidence of notifiable infectious diseases in each sanitary district in England and Wales during the year 1919."[1] The volume is mainly occupied by a statement of the total notifications (together with their incidence rate per 1,000 of population) of small-pox, scarlet fever, diphtheria, enteric fever, puerperal fever, and erysipelas. These figures are tabulated for each borough, urban, or rural district; for rural and for borough and urban districts within each administrative county; and for county boroughs and administrative counties. The naval and military cases are given as total notifications of each disease in England and Wales. The total notifications in England and Wales were: Small-pox, 294, as compared with 63 in 1918; typhus, 3 cases; scarlet fever, 82,398 (almost twice as many as in 1918); diphtheria 53,918, erysipelas 15,763, cerebro-spinal fever 848 (these three diseases showed slightly greater incidences than those of the previous year). Enteric fever (3,447 notifications) was rather less prevalent in 1919 than in 1918. Notifications of poliomyelitis were 553, as compared with 228 in 1918, 357 in 1917, and 689 in 1916; of encephalitis lethargica, 538, and of polio-encephalitis, 62. There were 45,260 notifications of acute primary and acute influenzal pneumonia in the last three quarters of 1919; and during the same period 1,657 of dysentery, 99 of trench fever, and 14,483 of malaria. The majority of the notifications of these three diseases are stated to relate to recurrent attacks in men who had contracted the maladies abroad, but 93 cases of malaria appear to have been notified, after March 1st, as contracted in Engalnd. Notifications of measles and German measles together numbered 269,111. Ophthalmia neonatorum was reported in 8,648 cases—2,116 more than in 1918. There were 12 cases of plague—8 in the Port of London and 2 each at Liverpool and Bristol.

In view of the figures given in the Registrar-General's Report for 1918,[2] when the tuberculosis mortality of the civilian population was in excess of that recorded for any year since 1904, special interest attaches to the notification of tuberculosis in 1919. In that year 65,229 cases of pulmonary tuberculosis were notified, 7,512 fewer than in the previous year; the notifications per 1,000 of population numbered 1.81 in 1919, compared with figures ranging from 2.10 to 2.20 in 1914–18. In non-pulmonary tuberculosis a like reduction was shown; there were 16,821 notifications in 1919—2,570 fewer than in 1918; the rate of notifications per 1,000 population, which was almost constant at 0.66 from 1914–17, and was 0.58 in 1918, fell in 1919 to 0.47. It must be remembered that, especially in London, there are many duplicate notifications. The report gives also a tabular statement of the incidence, week by week, of scarlet fever, diphtheria, enteric fever, measles and German measles, cerebro-spinal fever, poliomyelitis, and encephalitis lethargica; the chief seasonal variations noted are, for scarlet fever and diphtheria, increased prevalence from September to December; and for measles, diminished incidence from January to April and in September and October.

A GIFT TO THE WELSH NATIONAL MUSEUM.

Dr. H. Drinkwater of Wrexham has presented a series of four hundred coloured drawings of wild plants, made by himself, to the Welsh National Museum, Cardiff. The drawings are of natural size, and Dr. Drinkwater, who is a very accomplished amateur artist, has used a dull green paper to afford a natural background, and has been extremely successful in producing a most brilliant effect—far more effective than had white paper been used. The collection is, we believe, unique, not only in this respect, but also in its completeness. Some years ago Dr. Drinkwater gave a series of 150 drawings to the Grosvenor Museum at Chester. Many of his friends have expressed the opinion that the collection now given to Wales should have found a place in the South Kensington Museum.

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[1] Reports on Public Health and Medical Subjects. No. 2. H.M. Stationery Office. 1920. Price 1s. 3d. net.

[2] BRITISH MEDICAL JOURNAL, June 5th, p. 775.

Almost all the drawings, however, were made from plants growing in Wales, and the artist considered that their proper home was Cardiff.

ASYLUM WAR HOSPITALS.

Sir Marriott Cooke and Dr. C. Hubert Bond, the two Commissioners of the Board of Control, to whom at the request of the War Office were delegated in 1915 the duties concerned with establishment and supervision of asylum war hospitals in England and Wales, have addressed to the Secretary of State a comprehensive report.[1] In January, 1915, the Board prepared a scheme to supply the War Office with at least 15,000 beds; this was achieved by clearing some of the asylums of their insane patients and distributing them to other institutions. Five months later eight asylum hospitals, having been evacuated and having undergone the necessary adaptations, were receiving sick and wounded men from overseas. As the national shortage of hospital accommodation for military cases increased, other asylum hospitals were partially, or wholly, given up to military patients suffering from mental breakdown or nervous disease. The scheme when fully developed supplied twenty-four hospitals with 27,778 permanent beds, in which almost 50,000 sick and wounded (even more than one-sixth of the total number) were treated. It was a governing principle of the scheme that every person on the permanent staff of an evacuated asylum should be found a place in a corresponding war hospital. In nearly every case the medical superintendent became officer commanding and administrator to the hospital with temporary rank of lieutenant-colonel or major in the R.A.M.C.; surgeons and physicians practising near each hospital were secured as civilian visiting and resident surgeons and physicians. The mental and nervous cases accommodated up to May 1st, 1920, were 30,440; in order to avoid certification under the Lunacy Acts of those among this number who were insane, the military authorities decided to keep them, for as long as possible, in hospitals under military control. It is pointed out that the term "pauper," associated with county and borough asylums, conveys an altogether erroneous idea of the social status of the patients; the cost of their maintenance (at first in most instances a charge upon the guardians) is in many cases reclaimed wholly, or in part, from the patient or his relatives. It is surely a matter of congratulation, the Commissioners remark, that this accommodation should have been available in first-rate institutions, and that soldiers afflicted with the milder forms of mental breakdown or acute insanity should have their treatment directed by many of the highly qualified and experienced medical men on the permanent staffs of asylums.

Correspondence.

TREATMENT OF INCIPIENT MENTAL DISORDER.

SIR,—With reference to your observations in the issue of the JOURNAL of August 28th upon Clause 10 of the Ministry of Health (Miscellaneous Provisions) Bill, if you will allow me to supplement the criticisms of your last two paragraphs [illegible] what appear to be the weakest points in the new provisions.

1. Any extension of the "voluntary boarder" principle [illegible] as a [illegible]. [illegible] on the patient's consent in [illegible] of the person to be received will often act as a deterrent. Then there are the class whose mental state [illegible] that they are not in a position to give or withhold consent. [illegible] the incapacity to [illegible] or take a decision [illegible] yet the [illegible] [illegible] [illegible] "damaged" [illegible], and "tagged" on them? If so, where is the method [illegible] of the future [illegible] [illegible] both [illegible] to journey on to the asylum.

2. As regards the provision by which a person who "has been certified as a lunatic" is ineligible for treatment under the new conditions, is it possible this can mean that a person shall not be admitted to the new institutions and homes concerning whom there are in force certificates under the Lunacy Acts? Upon first reading the clause, as a plain man accustomed to understand plain English "as she is wrote," I naturally put the same interpretation as you do upon this proviso. I fear we must assume that this interpretation is correct, notwithstanding that it might well puzzle all the notaries in Padua to explain why persons aforetime certified under the Lunacy Acts, and recovered, are ineligible under the new conditions; are to be shuffled off as encumbrances on the march of progress. Those of us who have dealt with these cases—who are aware that large numbers of them need not have been certified under the Acts had the provision now contemplated been in existence, and who know that, in case of relapse, recertification and reconsignment to the asylum would be unnecessary were the provision in existence—anxiously await the reasons for this exclusion. Are these unfortunates, like the Board of Control, to whom access to the new institutions, etc., would be barred by some, looked upon as bespattered with unsavoury oils from the "machinery of the Lunacy Acts: as 'damaged goods'"?

Doubtless an early meeting of the Medico-Psychological Association and of the National Association of Mental Hospital Authorities will be called to consider the provisions of Clause 10.—I am, etc.,

EDWIN GOODALL,
Cardiff City Mental Hospital.

August 30th.

PSYCHOLOGICAL ANALYSIS.

SIR,—I cannot complain if my remarks upon the subject of psychological analysis—which occupied an interval of about fifteen minutes and had to be condensed into as many lines—should fail to represent adequately what I stated or meant to state at the annual meeting of the Medico-Psychological Association in Buxton on July 28th, and reported in the JOURNAL for August 28th last.

I ventured to express the belief that the elaborately sexual interpretation of the origin of the psychoses after the teaching of Freud had ceased to have a vogue in this country, and for that reason Freudism was dead. I added that the exploration of the mind by psychological analysis was nevertheless very much alive, and that experience of the war had given a fresh atmosphere to the psychogenetic origin of the psychoses as well as of the neuroses. I fully acknowledged the help afforded by Freud in the examination of the mind, and mentioned the methods of free association, stimulus-reaction time and the interpretation of dreams, although I do not admit that the mind is an evolution of the dream life.

The normal life of ordinary individuals is one of constant restraint and repression (or, as some prefer, of suppression), and to attribute all abnormal nervous symptoms to repression and to mental conflict is not in accordance with experience. The self-preservative instincts themselves normally imply repression, so much so that the control of conflicting tendencies in the unconscious mind has to many become an intuition or an instinct.

I can state from experience that one of the most frequent mental symptoms of the neuroses and psychoses is a loss of memory for some recent past series of events, and these have been dissociated by some emotional shock, and not mainly through repression or suppression (conscious or unconscious), and it is not enough to restore this by any of the methods of mental exploration; it must be restored to the mind in its proper place and relation to the total cognitive systems. Some psychologists claim by psycho-analysis to have brought back in hypnosis the memory of the infant christening—a process which is futile, even if credible. Following upon exploration must be a rational readjustment by persuasion, suggestion and re-education—the '[illegible]' alone.

It is not possible to explain mental processes upon a mechanistic or a material basis: the lowest and polymorphic layer of the cortex does not cause instincts, otherwise volition would be meaningless and motives would cease to have any agency, education would be useless, and high ideals would no longer have a place in the training of the young. Interaction (which the law of the conservation of energy does not sanction) will not explain the dominance of mental states over physical or bodily states, and the hypothecated parallelism is the statement of a fact and not the explanation of the phenomena. The latter presupposes two separate universes—that of mind and matter, but how they act still remains an unsolved problem, as unsolved as those connected with that all-powerful entity, the unconscious mind, which, nevertheless, the psychoanalysts claim to have explored by means of symbols, mostly of sex, and which their code has so interpreted as to enable them to escape the vigilance of the mystic endopsychic censor.—I am, etc.,

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[1] [illegible] London: [illegible] H.M. Stationery Office. Price [illegible] net.

Robert Armstrong-Jones, M.D., D.Sc.

105, Harley Street, W., Aug. 31st.

ARMY COUNCIL CONSTITUTION.

Sir,—I desire to express my complete sympathy with the suggestions made by Colonel Broome Giles in his letter published on August 28th, drawing attention to the importance of having the D.G.A.M.S. placed as an actual member of the Army Council. I regard it as fundamentally necessary that he should be a permanent and definite member of this central council of war.

2. The following points may be of interest. Some years ago Viscount Esher, the originator of the Army Council idea, wrote to me urging me to secure the cancellation of the ruling laid down by his committee excluding the D.G.A.M.S. from membership of the Army Council. I did all I could to secure such a change, but was not successful.

3. I held for some years the post of surgeon-general to Field-Marshal Sir Evelyn Wood when he commanded an army corps. I had the most direct, the most complete, and the most definite access to this most able soldier and most brilliant administrator. It would be absurd to imagine that on vital questions affecting human life that I, the responsible adviser of the field-marshal, should have to approach him through any but the direct personal channel. I could not have done my work effectively without this definite right of access.

4. In the Indian administrative system the chief of the Indian Medical Department dealing with the crowded millions of Indians had no right of access to the Viceroy. This rule, laid down by the Indian Civil Service officials, remained in force until the lamentable breakdown in Mesopotamia in the recent war. Then, and then only by the public outcry at the lamentable conditions in Babylonia and the most fortunate presence of that very able Minister Mr. Montagu as Secretary of State for India, was the right of access granted to the Director-General of the Indian Medical Service, and that right he now enjoys. He personally can have access to the Viceroy. If only my dear friend Florence Nightingale were alive, it can be imagined in what scathing words she would express her opinion of the old-world War Office ideals.

5. Day by day sanitary science goes forward by leaps and bounds. Who, then, is to set a limit to its advance, and who is to bar the way to health progress in peace or war for humanity?

If this right is denied to the public health services of peace or war, newer and further steps must be taken to secure the just right of civil or military sanitarians to achieve their splendid aspirations. Fight the good fight with all thy might.—I am, etc.,

George Evatt,
Major-General A.M.S. (ret.).

London, S.W., Aug. 29th.

THE TREATMENT OF FRACTURES.

Sir,—I have read with great interest the letters on this subject by Dr. Wm. L. Griffiths, Sir J. Lynn-Thomas, and Dr. J. E. Bowser. As surgeon specialist on a hospital ship, officer in charge of a surgical division, and officer in charge of the R.A.M.C. splint factory in Egypt, it was my privilege to follow the methods and see the results of others. The 21st General Hospital was originally equipped for service in France, and had on the staff a mechanic specially chosen for the manufacture of splints. At a critical period in the war the hospital was sent to Egypt, and ultimately a very large factory was established for the manufacture of splints, etc. One of my predecessors, Major Hey Groves, in charge of the surgical division, introduced special splints of original design, which were largely used throughout Egypt, and in the hands of many surgeons gave excellent results. Some of his papers will be found in the *British Journal of Surgery*, 1916 and 1917, giving in detail the methods he adopted and his results.

I well remember on going round my division remarking to the medical officer in charge of a ward that a leg did not seem to be in very good position, and the reply I got was: "But I've put it up in a Hey Groves splint." Many cases of gunshot wound had been "bipped" before they reached our hospital at the base; we were much struck by the fact that the cases from one casualty clearing station showed uniformly good results, and it was very pleasing to find that the surgeon specialist was one of our own surgeons from Scotland; "bipped" wounds were not so satisfactory from some of the other clearing stations, and we saw many wounds treated by other methods showing excellent results. A well united fractured femur (gunshot wound) came down to us, and we passed the case on to England. It was the worst deformity I have ever seen, and had been treated by a pin through the lower end of the femur and direct extension.

These cases seem to show that the man behind the method is the essential factor. In the treatment of fractured femurs most excellent results can be obtained by the use of Hodgen's splint, but only when the principles of the method are fully understood, when daily inspection is made, and sufficiently frequent measurement taken.

While associating myself with Dr. Bowser in the hope that the wider questions raised may not distract attention from the practical suggestion as to an instructional tour by Major Sinclair, may I suggest that Divisional executives endeavour to arrange more frequent clinical meetings? There must be few areas which cannot claim to have members who have served overseas and who have had wide experience in the treatment of gunshot wound fractures. If we wait until something is arranged it may be a long time before the instructor reaches Scotland. In the meantime, by means of Branch and Divisional clinical meetings, the ground might be broken and our minds rendered more receptive by discussions on reform in the treatment of fractures and other clinical methods.—I am, etc.,

George R. Livingston, M.D., F.R.C.S.E.

Dumfries, Aug. 23rd.

Sir,—I should like, with your courtesy, to make a few observations on this important subject which has been so opportunely raised by Dr. W. L. Griffiths. I think everyone with experience of fracture surgery must agree with your correspondents that the present treatment of fractures, in and out of hospital, is too often extremely unsatisfactory to surgeon and patient alike, and that definite steps should be taken to bring the standard of treatment up to the high level attained by many of the special hospitals during the last year or two of the war.

It is interesting to reflect on the causes of this backwardness in fracture surgery, and one at least of these should be remarked on for the sake of future amendment. The recent developments in the operative treatment of fractures often tend to engender a half-hearted and indecisive attitude of mind in the surgeon treating a fracture in its early stages—a time of vital importance; he is apt to think that in cases of difficulty a ready solution can be found in the open operation, whereas the difficulty can generally be met more safely and much more easily by non-operative methods if simple equipment and proper organization are at hand.

The proposal that Major Sinclair should give practical demonstrations in the provincial centres is a very good one; if put into action it would certainly stimulate interest and discussion; at the same time it would be unfortunate if a widespread impression were created that elaborate mechanical devices and equipment were necessary for the proper treatment of fractures.

A system of treatment, as organized by Major Sinclair at Wimereux, splendid and beyond praise, might well prove a failure in the provincial hospitals, with their constantly changing resident medical and nursing staffs.

Surely the time is ripe for the creation in all the larger hospitals of special accommodation for fracture cases—in- and out-patients—under the charge of a special medical and nursing staff, the senior members of which should be appointed on such terms as would secure some continuity of service. So long as it is the custom in hospitals to distribute fracture cases throughout all the wards, and under various members of the staff, so long will it be difficult to improve the standard of treatment. The heads of such special departments might, if necessary, obtain their knowledge and training by visiting the fracture departments already, or about to be, established in this country, for systematic courses of instruction. Some such system was created in 1918 by the War Office for training officers in charge of the newly established provincial hospitals for the treatment of fractured femur cases, and, I believe, answered very well.—I am, etc.,

Manchester, Aug. 23rd. H. H. Rayner.

DRIED MILK DIETETICS.

Sir,—Dr. H. Leader raises four important and practical points in his directions for using dried milk (British Medical Journal, August 28th, p. 335):—

1. The necessity for explicit directions is appreciated by one firm of manufacturers, and this firm has adopted the formula worked out by Dr. A. E. Naish—namely, three heaped dessertspoonfuls to half a pint of water. In the discussion on my paper on dried milk as a food, at the Congress of the Royal Sanitary Institute at Birmingham on July 21st last, Dr. Millard, M.O.H. Leicester, drew attention to the importance of proper mixing in the reconstitution of the product. He stated that one firm of manufacturers had elaborated an apparatus which produced a product indistinguishable from boiled fresh milk. The apparatus was, however, not suitable for domestic purposes. In my experience, with sufficient expenditure of energy it is possible to produce a reconstituted milk which might easily pass for boiled fresh milk. All directions for the use of dried milk which I have seen fail in not laying sufficient stress on good mixing.

2. I quite agree with Dr. Leader that close medical supervision is essential in the hand-feeding of infants. I have insisted on this point in the fourth edition of my *Care of Children*, which is now in the press. Most medical men are too much inclined to leave details of "childcraft" to more or less experienced nurses, forgetting that the worst trained medical practitioner should know more about child welfare than the most highly trained nurse.

3. The need for standards for dried milk was insisted on by Dr. Rideal and other speakers at the discussion on my paper at Birmingham above referred to. It is a burning necessity, and should at once occupy the attention of the Minister of Health. The only thing possible now is to select a good brand of constant composition and stick to it.

4. The question of cane sugar raised divided counsels at the discussion above referred to. All medical officers of health agreed that milk powder kept well, but whilst some considered that the added cane sugar enhanced its keeping qualities, others were of opinion that it had a prejudicial effect in this direction. Personally I find that the added cane sugar improves the flavour of the reconstituted milk, and I have seen no bad results from its presence. If Dr. Leader uses dried milk as an invalid food to the extent to which I do he will find that patients find milk powder free from cane sugar rather insipid and much prefer the sugared powder.

In speaking in support of my paper, the M.O.H. of St. Helens referred to the excellent results which he had obtained from dried milk in the dietary of typhoid fever. I am unable to find any reference to the use of milk powder in this disease either in the textbooks or current literature, but I consider that in view of the character of the [illegible] and the greater digestibility of the product than fresh milk, it should have a [illegible] place of usefulness in the treatment of this disease.—I am, etc.,

[illegible], M.D.,

[illegible], Aug. [illegible]. [illegible]

PUERPERAL SEPSIS.

Sir,—Every practitioner [illegible] the discussion on puerperal sepsis held at the annual meeting of the Association must [illegible]. After the able and convincing paper of Mr. Victor Bonney, it ought to be possible to suppose that the theory of the [illegible] was responsible for puerperal fever would have been abandoned.

But although the practitioner may be acquitted of the charge of [illegible] the organisms which cause puerperal sepsis, he is still accused of stimulating and displacing them. The theory is that his fingers remove pathogenic organisms from the entrance to the vagina, where they are harmless, to a site further up—say 2 in. higher—where they become extremely virulent, and this displacement is a common cause of puerperal fever. The fact that a large number of cases of puerperal sepsis occur in patients who have not been touched by doctor or nurse is sufficient to refute this absurd theory.

The truth is that in these days puerperal sepsis is in *every case* an autoinfection, and its incidence has no relation whatever to manipulations during labour. The reason why one patient contracts it and another does not is part of the general problem of individual incidence of infection, and of this at present we know little. It is impossible for anyone who has personally attended, say, a thousand labours to arrive at any other conclusion.

Prolonged tugging with forceps, manual removal of the placenta, extensive tearing, and the like, should in theory be followed by puerperal sepsis, yet it seldom occurs in general practice, and the bad case of puerperal fever is almost always one which the doctor has scarcely touched. Moreover, the fact that the rate of incidence of puerperal sepsis is practically the same in all civilized countries is almost conclusive evidence that the cause is entirely independent of methods of conducting labour.—I am, etc.,

Wanstead Park, E., Aug. 22nd. A. Campbell Stark.

Sir,—In connexion with the subject of puerperal sepsis, dealt with at Cambridge and recorded in the Journal of August 21st, I would like to give an outline of my own experience as a general practitioner during the past seventeen years. I have conducted something like 1,500 parturitions in that time. If any of my patients showed symptoms or signs of infection, likely to result in puerperal sepsis, I at once set about the simple method, as I was taught, of giving intrauterine douches with some antiseptic such as mercury biniodide, and latterly with lysol. I always gave the douches myself at least once a day, and often twice a day. I do not know what the present rate of mortality is in puerperal sepsis, but of all the confinements that I attended, only one died of this disease. A number of cases already septic which had been attended by midwives were thrown on my hands. One of these was moribund and died almost immediately. Another I sent into hospital; she also died. The rest recovered. I do not recollect ever sending one of my own septic cases into hospital. I am in accord with Mr. R. J. Johnstone, that many cases of puerperal sepsis are due to inflammation of parts other than the uterus, one part especially being infected lacerations of the vagina. Compared with the elaborate and cumbersome methods now advocated or experimented with, mine must seem old-fashioned and crude, but the proof of the pudding is in the eating. In my opinion the most important thing is to get at the cases early and to stick to them until better. I might add that I usually supplemented my treatment with quinine and ergot.—I am, etc.,

Bournemouth, Aug. 28th. J. M. Lovett.

DEATH CERTIFICATES AND CORONERS' COURTS.

Sir,—In your issue of August 14th (Supplement, p. 62) there is a very interesting account of a deputation from the British Medical Association to the Home Secretary and the Minister of Health, dealing with proposed changes in the laws relating to death certificates and coroners' inquests.

I note with satisfaction that Mr. Bishop Harman said that doctors should see the body in every case before giving a certificate of death, and that the British Medical Association felt that this was right and would be done. As things are now, the doctor who has attended the patient during the last illness need not see the body, and may accept the statement of an unqualified person as to the immediate cause of death. Mr. Harman's is a perfectly proper proposal, and it is to be hoped that it will be adopted, but I venture to suggest that it may be improved upon.

The doctor should be one trained to apply tests of death, and a proper fee should be paid to him for his trouble. It is a curious fact that anyone wanting a *copy* of a death certificate has to pay a fee to the official for it, while the original certificate itself is granted for nothing, and no one will deny that this is most unjust, as well as illogical and absurd. The proximate cause of death may be something outside the normal progress of the illness, and it is most important that a fully qualified person should make a careful examination to ascertain the immediate cause of death, and this is exactly what is *not* ensured by the present law. Why cannot the law be made more stringent on this point?

Mr. Bishop Harman, who was the chief speaker of the deputation, pointed out that the registrar of deaths could receive his information from bonesetters, herbalists, or other unqualified persons, or even from the accounts given by relatives, who might be quite uneducated persons; and the Home Secretary remarked that every uncertified death had to be reported to the coroner. Inquests, however, are rarely held except for grave reasons; and the weakness of the present system lies not in the laws affecting coroners and their courts, but in the inadequacy, and one might say absurdity, of a death certificate that means practically nothing. One might just as well have no certificate at all, as the present one is only a piece of paper that is a convenience to the undertaker.—I am, etc.,

Barnes, S.W., Aug. 26th. J. BRINDLEY-JAMES.

ANAESTHESIA IN TONSIL AND ADENOID OPERATIONS.

SIR,—Mr. Courtenay Yorke, in his note on anaesthesia in tonsil and adenoid operations (August 28th, p. 318) marks a very important step in the progress that is being made in this direction. Too often one hears it insisted upon that the proportion of deaths to administrations of choloroform and chloroform mixtures is very low (under the best conditions perhaps only 1 in 10,000). There should not be deaths from anaesthesia.

One should be able to inform parents not merely that the risk is small, but that it does not exist. Nitrous oxide and novocain are therefore the anaesthetics of choice in these operations, in spite of the greater dexterity required when gas is used.

With regard to enucleations in adults under novocain, I notice that Mr. Yorke makes no specific statement that the operation is painless. While it is certain that the pain of incisions can in normal tissues be abolished by novocain, yet in dealing with scarred tissues such as often surround the adult tonsil, it is not unusual to come upon tough areas which have resisted infiltration, incision of which is painful. Moreover, the dragging upon the tonsil necessary to its dissection gives rise to very unpleasant sensations. These disabilities may be overcome by combining novocain infiltration with nitrous oxide analgesia, as follows:

The tonsil bed having been infiltrated, one nasal passage is sprayed with 10 per cent. cocaine and adrenalin, and a vaselined rubber tube leading from a suitable gas apparatus is passed just so far into the pharynx as will not interfere with the movements of the soft palate. A gentle stream of gas is turned on, and the patient is instructed to breathe through the nose till he feels dreamy or drunken, but to prevent himself going completely under by breathing through the mouth when necessary. Patients—even girls in their 'teens—experience no difficulty in this manœuvre. Directions are cheerfully carried out (a great advantage over anaesthesia); and though consciousness is not lost, pain is not appreciated as such.

This combination may be employed with advantage in any intranasal procedures which give rise to jarring, the arrangement of the tube being varied with the requirements.—I am, etc.,

London, W., Aug. 29th. BEDFORD RUSSELL.

MEDICAL POLICE FEES.

SIR,—I write on behalf of our profession generally, but especially on behalf of police surgeons. Recently, when acting as locumtenent in London I was called on a Sunday afternoon, when every man should have the right of rest and recreation, to see a poisoning case at a police station. For this service I next day received a scrip for 3s. 6d. The City Police pay 5s. for a day call; for a night call only 7s. 6d., like the Metropolitan Police. The cases to which we are called are all serious, entailing great responsibilities. Every other duty has to be laid aside because the calls are urgent. The police avoid sending for us as much as possible to save their own exchequer. The remuneration is manifestly inadequate, and even unjust. The police themselves have received very definite increase of pay, and our section of police work should also be augmented.

The fee of 1 guinea for all inquests, and for *post-mortem* examinations, also needs revision. I hear that the undertaker gets £1 for the mechanical effort of removing the body.

I am told by Dr. Percy J. Clark, of Spital Square, Bishopsgate, E.C., honorary secretary of the Metropolitan Police Surgeons' Association, that a plea has been presented to the head quarters of the police authorities for 5s. for a day visit and 12s. 6d. for a night visit. I have no doubt that firm and continued action will bring about the desired result.

It is important that all concerned should take an active part in the matter. By inserting the above in our widely distributed JOURNAL attention will, I hope, be awakened, because the question affects the whole kingdom as well as the metropolis.—I am, etc.,

London, W., Aug. 29th. A. WITHERS GREEN.

TREATMENT OF GONORRHOEA IN WOMEN.

SIR,—I was much interested in reading Dr. Browdy's letter (August 21st, p. 295) on the treatment of gonorrhoea and its success in the female. I note that in his letter, though Dr. Browdy demurs from the widely accepted conclusion that gonorrhoea is much more difficult to treat when affecting the female, still he wisely abstains from giving his "successful" treatment of the chronic form in the female, and does not even attempt to give the points of diagnosis of this form, although he puts it into his classification of the disease. He also seems to disregard entirely the fact that gonorrhoea in the female is, in the majority of cases, most strongly entrenched in the recesses of the cervix uteri, and not in the vagina. How the treatment outlined in his letter will in any way affect disease in the cervix I fail to understand.

I, and I feel certain many others interested in the successful treatment of gonorrhoea in the female, would be deeply interested in obtaining a further basis for Dr. Browdy's statements.—I am, etc.,

LESTER SAMUELS, M.D.,
Medical Superintendent, Royal Chest Hospital, London.
August 23rd.

CAN ONE WORK WITH INTRACAPSULAR FRACTURE OF THE FEMUR?

SIR,—It is well known that a very trivial accident is sufficient to induce that condition which surgeons of a former generation delighted to expatiate about—intracapsular fracture of the head of the femur—but the patient is usually confined to bed in a helpless state, although there may be some doubt at first about the nature of the lesion.

I am now attending a patient—the usual typical woman of over 60—who exhibits all the classical signs, and to a remarkable extent, of intracapsular fracture at the hip-joint, but she never remained in bed a single day under the accident. She tripped on the stairs several months ago, and experienced a sharp pain in her hip, with a sense of fainting weakness. She immediately realized that something serious had happened, but feared to report the accident as she felt certain that she would be sent to hospital, and so jeopardize her situation. Her duties involved constant standing, walking and running up and down stairs, but with grim determination she persevered in this, never lying up for a single day. In the result, after almost twelve months, she is quite lame, due to the obvious and definite shortening, though to hide this deformity she tries to run rather than walk, and swings her body to the side opposite the long leg, twisting her spine half round, and she shows a very definite flattening over the gluteal region on the affected side. These are, of course, only the ordinary sequelae of intracapsular fracture which has received but little care. There is apparently slowly progressive absorption of the head of the bone. Pain is but little and infrequent, being mostly across the back, and due rather to her efforts to keep erect.

In a word, it is a most ordinary typical case of *intra*-capsular fracture of the head of the femur, but it is well to [illegible] record the fact that a patient may have suffered [illegible] although she has not given up her work for a single day. In those civil actions which are becoming so common under the Employers' Liability and other Acts one hears evidence based on tradition and opinion rather than upon knowledge and fact. To obtain justice for our patients it is necessary that we should be familiar with the possibilities of an accident of which the patient desires at the moment to disguise the effects.—I am, etc.,

J. C. McWALTER, M.D., LL.D., M.R.I.A.

[illegible]

GALL STONES AND INFUSIONS.

SIR,—I have received several letters giving extracts from old herbals on the use of parsley. They all agree in attributing diuretic and cholagogue properties to the plant.

Dr. Gerald Wallace (Liverpool) quotes an old *Family Herbal*, by Sir John Hill, M.D. (no date):

> "The roots are the part used in medicine. A strong decoction [illegible] the jaundice. It operates powerfully [illegible] obstructions."

Dr. Wm. Owen Jones (Bowden) gives an extract from *James's Dispensatory*, written by R. James, M.D., 1764:

> "[illegible] opening, detergent, and diuretic, and [illegible] of the liver, kidneys, and [illegible]."

Dr. Mildred Clark (Hospital for Women, Soho Square) quotes Culpepper's *British Herbal*, edition of 1865:

> "Parsley openeth obstructions of the liver and spleen . . . [illegible] the dropsy, and stone in the kidney, in this manner" (follows prescription [illegible] expelleth the dropsy and jaundice by urine."

Dr. [illegible] adds: "Apparently the herbalists of that day recognized its use in cases of jaundice, but attributed its action to the diuretic effect."

The [illegible] of parsley is probably antispasmodic chiefly, and may have some solvent action also. [illegible] infusion of fresh broom tops in lumbago, etc., as of infusion of [illegible] in dropsy.—I am, etc.,

H. [illegible]

The Services.

[illegible] R.A.M.C. COMMISSIONS.

[illegible]

[illegible]

[illegible]

[illegible] the Society of Medical [illegible]

interest, and thus to increase the liaison which exists at present between officers in the services and those medical men carrying out similar work under civil conditions. All medical men eligible for membership and interested in the opportunities thus provided are invited to communicate with Major W. N. W. Kennedy, O.B.E., Town Hall, Croydon, the acting honorary secretary. The first meeting of the group will be held on Friday, September 24th, at 4.15 p.m., when officers will be appointed and a paper on disinfection in the field will be read by Brigadier-General W. W. O. Beveridge, C.B., C.B.E., D.S.O., Director of Hygiene at the War Office.

DEATHS IN THE SERVICES.

Brigade Surgeon Lieut.-Colonel Peter Cullen, Bengal Medical Service (retired), died at Jubbulpore, Central Provinces of India, on July 21st, aged 84. He was born at Karnal on August 2nd, 1835, the son of Major Cullen, of the 9th Bengal Light Cavalry, and was educated at Calcutta and at Aberdeen, where he graduated M.B. and C.M. in 1867, after taking the M.R.C.S. in 1859. He entered the I.M.S. as assistant surgeon on July 27th, 1859, and retired with an extra compensation pension, on June 1st, 1892. Shortly before his retirement, in 1886, he took the D.P.H. in Edinburgh. He served in the second China war in 1860, and in 1862 he entered civil employment in the Central Provinces, where he remained for the rest of his service, having been for many years civil surgeon of Nimar. After his retirement he was ordained Deacon and Priest in [illegible], and appointed an honorary chaplain on the Indian establishment, so had put in over half a century of service, the first thirty-three years in the I.M.S., and twenty more as a chaplain. He received the Kaisar-i-Hind gold medal (first class) on June 3rd, 1916.

Captain [illegible], Indian Medical Service, died at [illegible]. He was born on January [illegible], 1885, educated at Madras University and Middlesex Hospital, took the M.R.C.S. and L.R.C.P.Lond. in 1912, and entered the I.M.S. as lieutenant on July 26th, 1913, being the first Madrasi who had done so, and was promoted to Captain on September 1st, 1915. He had served abroad throughout the war, first with the 108th Indian Field Ambulance in the Dardanelles, and later as specialist in operative surgery in the 5th Indian General Hospital, Egyptian Expeditionary Force. On his return to India in August, 1919, he was posted to the Indian Station Hospital at [illegible].

Dr. William [illegible] Christie died on board the ss. *Moghiler*, in the Red Sea, on July 22nd, and was buried [illegible] Gulf of Suez. He was educated at the University of [illegible], where he graduated M.D. in [illegible], and at the London Hospital, taking the M.R.C.S. in 1893 and the F.R.C.S. in 1894. [illegible] the Royal Hospital for Women and Children at Bristol, he entered the service of the Rajah of Sarawak, and served as [illegible] Hospital. He took a temporary commission as lieutenant in the R.A.M.C. in 1915, and was promoted to captain in the following year.

Dr. George Broadfoot Serle died of pneumonia, after a very short illness, at Loch Ranza, Arran, on August 8th, aged 49. He was educated at Edinburgh, where he graduated as M.B. and C.M. in 1896, and as M.D. in 1906, also taking the D.P.H. of the Scottish Colleges in the latter year. He had served for [illegible] years in the Malay [illegible] Principal Medical Officer [illegible].

HONOURS.

[illegible] to the Order of [illegible] for services rendered in Egypt and the Sudan:

[illegible]

[illegible]

[illegible]

[illegible]

Obituary.

PHILIP JOHN HENSLEY, M.A., M.D., F.R.C.P.,

Consulting Physician to St. Bartholomew's Hospital.

By the death of Dr. Hensley, which occurred at his home at Farnham on August 8th in his 82nd year, the profession has lost another of that fast diminishing class of physicians who were educated in the clinical school which drew its principles and inspiration from the teaching of Bright, Addison, Watson, and Trousseau. Born in 1838, Dr. Hensley entered Christ's College, Cambridge, in 1858, and devoted himself to the study of mathematics. It soon became evident that he possessed great ability in this branch of science, and it was no surprise to his friends to see his name placed fourth on the list of wranglers in 1861. He was soon elected a Fellow of his college, and, deciding to devote himself to the study of medicine, proceeded to St. Bartholomew's Hospital, where he became successively assistant physician, full physician, and consulting physician. He was also physician to the Royal Hospital for Diseases of the Chest, and spent a long career in the service of the hospital. In 1871 he was elected a Fellow of the Royal College of Physicians, and in the following year delivered the Goulstonian Lectures. He was an examiner in medicine to the College, and held the offices of councillor and censor.

Able as he proved himself to be, Dr. Hensley was scarcely known to the medical profession, and even in his own hospital he was appreciated at his true worth by a minority only of those with whom he came into contact. He contributed little to the literature of medicine, and possessed few of those qualities of presence and manner which do so much to arrest attention. In fact, Dr. Hensley spent a long and unobtrusive but most useful life at the hospital almost unheeded except by the more discerning. He himself was largely responsible for the fact that his great merits were unrecognized, for, besides being excessively shy and retiring, he was possessed of great mental and moral stature, which probably led him to regard it as derogatory to practise any arts for the purpose of earning the good opinion of the men he taught. He rather looked with a lofty contempt upon the world and its ways, and he met with the inevitable fate of those who, though in the world, are not of it – submergence. But with all his self-effacement there was no pusillanimity about the character of Hensley, for no man could hold opinions more tenaciously, and, whatever the cost, he was always prepared to defend the truth. He was perhaps regardless of the opinions of others, and his fate was to be treated with inadequate respect, and sometimes with ridicule. But those of us who knew him well and owe him a deep debt of gratitude are thankful for this opportunity of doing something, however humble, to rescue his name from partial oblivion, and of doing homage to a fine character and a powerful intellect.

Our memory carries us back many years when Hensley was assistant physician to St. Bartholomew's Hospital. He saw out-patients at that time, but students rarely disturbed the repose of his out-patient room, for no "tips" could be learnt there and no clinical demonstrations to assist the lame over the difficult mountain of the "Conjoint Examination" were offered. Nearly all who entered that room came to mock, and retired in the same spirit—but a few remained to bless. At first Dr. Hensley appeared to resent this intrusion, but soon he welcomed the small band and took a keen interest in teaching the principles of clinical medicine. His teaching was of the highest order, and was conceived in the broadest scientific manner. For therapeutics he had no great respect, but in diagnostics he displayed an ability that few could equal. With his clear-cut mathematical mind he approached this department of medicine in the true scientific way. Sometimes it was by the deductive road, but more often it was by that of synthesis, and he seemed always to know which road would lead him most easily to the conclusion. His clinical experience was wide, and it was a revelation to those who worked under him to find how much this unobtrusive man knew about disease. In the use of the stethoscope he was singularly apt, and his accuracy was at times astonishing. But if the class became large this clear and ample stream of knowledge and experience suddenly dried up, and there remained only the silent, shy Hensley of common report. He did not suffer fools gladly, and some, had they wit enough, must have smarted when subjected to a cutting sarcasm, scarcely heard, and muttered in the throat without so much as the twitch of a single facial muscle. But to the earnest student he was always the personification of kindness and attention. We speak thus concerning Dr. Hensley, first because we desire to discharge a debt we owe to his memory, and secondly because we feel that the general opinion likely to be formed of him will scarcely do adequate justice to his high character as a man and his great abilities as a physician.

A. C.

THE LATE MR. SINCLAIR WHITE.

MR. R. J. PYE-SMITH, Emeritus Professor of Surgery, University of Sheffield, writes:

Will you allow me, as an old friend and colleague of the late Sinclair White, to add a few words to the excellent account and appreciation of his work and life which appeared in the BRITISH MEDICAL JOURNAL of August 21st? He and I were closely associated during the greater part of the first twenty years that he spent at Sheffield, where, though ten years his senior, I had settled only three years earlier than he; and when, during another period of equal length, our fields of work were somewhat more separated than at first, we still kept up the most friendly relations. From the first he commanded the respect and confidence of all with whom he worked. To a logical and critical mind, a calm manner, and a strong will he added and developed sound judgement, and on such a foundation it was not long before a wide experience rendered him thoroughly well equipped for the leading position in surgery that he attained at Sheffield. An indefatigable worker, a good operator, a careful and accomplished surgeon, he never spared himself, but gave conscientiously of his best to all who sought his aid. As a colleague he was loyal and courteous, always helpful in conference, honourable and generous in thought and action. More than once have I known him courageously face illness and submit to treatment that it required determination as well as fortitude to meet and to undergo. It is, indeed, a matter for deep regret that he should have died, at a comparatively early age, at the very time when his hope of enjoying a well-earned retirement from practice seemed about to be realized; yet we may almost envy him in having completed his professional work before he had well passed the prime of life. That he was spared the downhill path of old age was no doubt due in part to the strain of the war. He had for several years prepared himself for its anticipated advent, and throughout its course he gave his ripe surgical experience and skill in the service of his country. The sympathy of all who had the pleasure of knowing him and his wife, of all who experienced the charm of her personality and witnessed the devotion with which she watched over and helped her husband throughout his long and busy professional career, will go out to Mrs. White in her bereavement and sorrow.

DR. A. W. DUNNING HUNT of Chagford died at his residence there on August 27th, at the age of 45. He had been in bad health for four years, but persevered in his work until a few weeks before the end. He was the third of his name in succession to practise medicine at Chagford; the first was Dr. Samuel Hunt, and the second his son, who practised for forty years. Dr. A. W. D. Hunt, who received his medical education at the Middlesex Hospital, took the diplomas of M.R.C.S., L.R.C.P. in 1899; he afterwards held appointments as house-physician at the Consumption Hospital, Brompton, and the Radcliffe Infirmary, Oxford. In 1904 he joined his father in practice at Chagford. He was greatly respected throughout the district, and much sympathy is felt with his widow and three young children.

WE have to announce with great regret the death of Dr. LIONEL SHINGLETON-SMITH at Brecon on August 21st, at the age of 43. On July 16th, while riding a motor bicycle, he came into collision with a motor car and sustained a compound fracture of the right leg. It was hoped that the limb might be saved, but septic complications necessitated amputation on August 9th. In spite of this, death resulted from pyaemia. He received his medical education at Cambridge University and Bristol, taking the degrees of M.B., B.Ch. in 1908, and the diplomas of M.R.C.S., L.R.C.P. in 1905. After holding resident appointments at the Bristol Royal Infirmary and the South Devon Hospital, Plymouth, he settled at Brecon, being appointed honorary physician to the Brecon Infirmary. He was the best type of general practitioner. A kindly, conscientious, and hard-working man, he endeared himself to his patients of all classes, and his early death will be deeply mourned in Brecon for many years. He leaves a widow and four young children, for whom, as for his father, Dr. R. Shingleton-Smith, of Clifton, deep sympathy is felt in their great grief.

THE death recently at Aberystwyth of Dr. MORGAN DAVIES, of London, has removed a man who was very highly esteemed in Wales and among Welsh people resident in London. He graduated M.B., C.M.Aberd. in 1879, and L.R.C.P. in 1880. After holding the appointments of house-physician, house-surgeon, and resident accoucheur at the London Hospital, he settled in practice in London, and had long resided in Goring Street, Bishopsgate. In 1882 he took the F.R.C.S.Eng., and proceeded to the M.D. degree in 1884. The *Welsh Outlook* in speaking of him said that there were "thousands of Welsh homes in London in which his devotion and skill would always be remembered and blessed. Had he not been a doctor he might have made an immortal name for himself in literature. The little he published appeared in out-of-the-way places, but those who read his work will never forget its distinction of form and substance."

DR. FREDERICK IRVING DE LISLE, of Hawkes Bay, New Zealand, who died last year, was a native of Guernsey, and was educated at Guy's Hospital, where he qualified in 1871. He was a dresser in the English ambulance corps during the siege of Paris, and for four years was surgeon to St. Peter's Hospital, Guernsey. After practising at Napier, New Zealand, he took the diploma of D.P.H. in 19[illegible] and afterwards settled at Hawkes Bay, where he acted as district health officer. A broad-minded man of many interests, he was Major in the New Zealand Territorial Force, surgeon to the Napier Hospital, and Justice of the Peace for the Colony. He was the author of *Increase of Cancer in New Zealand*, and of several other medical works. He is survived by a widow, three sons, and a daughter. His death, which took place at the age of 75, as the result of an accident, is widely deplored in New Zealand.

Medical News.

[illegible] the honorary staff of the Manchester Royal Infirmary will [illegible] the course of post-graduate lectures [illegible] year.

THE annual dinner of old students of University College Hospital will be held on [illegible] [illegible]. The chair will be taken by Professor [illegible]. Tickets, price [illegible], not including wine, [illegible] from the honorary secretaries [illegible] London, W.1.

AN [illegible] [illegible] will be held on Friday, October 1st, at [illegible] [illegible]

THE Blind Persons Act, 1920, comes into force on [illegible]. Under it any person so blind as to be unable to perform any work for which eyesight is essential is entitled to a pension in the same way as he or she would otherwise have become entitled at the age of 70.

DR. WILLIAM EDMUND THOMAS, O.B.E., Bridgend, has been placed on the Commission of the Peace for Glamorgan.

DR. D. J. WILLIAMS of Llanelly, at one time a member of the Council of the British Medical Association, who left estate of the value of £27,489, bequeathed £250 to the Llanelly Hospital for the better equipment of the operating theatre.

THE Ministry of Health has issued a revised list, with hours of attendance, of the treatment centres for venereal diseases approved by the Ministry down to August, 1920.

THE Médaille de la Reconnaissance Française in silver has been conferred by the President of the French Republic on Mrs. Bedford Fenwick, Honorary Superintendent of the French Flag Nursing Corps.

A JOINT conference of the Central Association for the Care of the Mentally Defective and the National Special Schools Union will be held at the Church House, Westminster, at the end of November. The President of the Board of Education, Sir William Byrne (Chairman of the Board of Control), and Dr. Eichholz (Chief Medical Inspector, Board of Education), are expected to take part in the conference.

THE current issue of the *St. Bartholomew's Hospital Journal* announces the resignation of Viscount Sandhurst from the post of treasurer to that hospital, which he has held since 1908.

THE tenth Italian Congress of Paediatrics will be held at Trieste on September 24th to 26th. The subjects to be discussed are vaccine treatment of children's diseases, introduced by G. de Cristina and G. Caronia, and protection of legitimate and illegitimate children, by Dr. G. B. Allaria and E. Modigliani. Further information may be obtained from the Secretary, Dr. E. Modigliani, Via Palermo 28, Rome.

THE Medical Sickness, Annuity, and Life Assurance Society, formerly a friendly society but recently converted into a company, held its first general meeting on August 23rd in accordance with the statute requiring such a meeting to be held within three months after incorporation. The chairman, Dr. F. J. Allan, reported that the change had been carried through smoothly. All the members of the friendly society had become members of the society with the exception of twenty-one, most of them bordering on the age of 65, when their connexion with the society would in any case have been severed. Since the conversion the amount of life and sickness business had increased. Dr. Ball had resigned the office of medical examiner for the society after many years' service, and had been succeeded by Dr. David Forsyth. The retiring directors were re-elected, and the auditors and Mr. Sutton, the secretary, were congratulated on their work during the conversion.

THE first volume of the malaria bureau reports of the Federated Malay States contains some interesting papers by Dr. H. P. Hacker, medical entomologist to the Government. As the author points out, it is of fundamental importance to determine accurately the relative malaria-carrying properties of the various species of anophelines and the conditions which control these properties. This is an intricate field of investigation which calls for co-ordinated research, and Dr. Hacker lays down the lines along which it might be carried out. He draws attention to some recent work by Barber who has suggested that in certain circumstances most of the species may become infected, and therefore may carry malaria. This suggestion calls for further investigation, for the fact, if true, would be of great importance. The volume contains six reports and is provided with an index. The photographs indicate the nature of the ground to be dealt with, and some of the measures that have been adopted for reducing and stamping out the anophelines implicated.

AN inquest was held at Birkenhead on August 26th in regard to the death of a married woman who had been under treatment by novarsenobillon. The first dose was [illegible] gram; a second dose of the same amount was given a week later, and a third of [illegible] gram, after an interval of another week. Eight days after the third injection the woman became unconscious and died. Chemical analysis [illegible] no evidence of [illegible] poison, but [illegible] to the amount of one grain was discovered in the organs. A post-mortem examination showed that the woman was suffering from pneumonia, and it is not clear that the death was caused by the novarsenobillon.

A COMMITTEE was formed in 1910 to arrange for the erection of a monument to Cesare Lombroso. As the sum subscribed is not sufficient to cover expenses the committee invite further subscriptions, which should be sent to Professor Enrico Ferri at Rome. The monument will be unveiled at Verona in the spring of 1921.

THE offices of the Director-General of Medical Services, Ministry of Pensions, have been transferred to the Crown Agents Annexe, 5, Millbank, Westminster, S.W.1.

THE first independent urological clinique in Belgium has recently been inaugurated at the University of Liége, under the charge of Professor A. Hogge.

THE well known French lunatic asylum at Charenton will shortly be converted into a maternity hospital containing a thousand beds.

LAST year there were 10,281 deaths from influenza in Paris.

PROFESSOR ADAM POLITZER, of whom a memoir appeared in our issue of August 21st, left his valuable otological library to the University of Vienna.

THE number of cases of plague in Java during May, June, and July was 536, 419, and 410 respectively. All of them were fatal.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"MEDICO" inquires as to his liability as a county tuberculosis officer, on a salary of £600 per annum plus expenses.

*** The expenses are not assessable, and the liability will be as follows:

	£	s.	d.
Assessable income £600 - 1/10th of £600	540	0	0
Allowance for self and wife	225	0	0
Income chargeable to tax	315	0	0
That is, £225 at 3s.	33	15	0
£90 at 6s.	27	0	0
	60	15	0

The allowance for children applies only to those in life on the first day of the financial year—that is, on April 6th, 1920.

"H.O.M.B." asks what tax is payable on his income, particulars of which appear in the answer below.

		£	s.	d.
*** Earned income: Service pension ...	£240			
Public appointments ...	£720			
	£960			
Deduct 1/10th	£96	864	0	0
Investment income		100	0	0
Disability pension exempt)		nil		
Amount of assessable income		964	0	0
Allowances: Self and wife	£225			
Children	£108	333	0	0
Income chargeable to tax		631	0	0
£225 at 3s.		33	15	0
Balance—that is, £405 at 6s.		121	16	0
Total tax payable		155	11	0

"VERTEX" inquires what tax can be deducted from an unearned income of, say, £550, partly derived from house property and partly from war loan and other investments.

*** All income taxable by deduction is taxable at the full rate of 6s. in the £. In the case of our correspondent the tax payable on an investment income of £550 would be:

		£	s.	d.
Amount of income		550	0	0
Allowance for self and wife	£225			
" " one child	£36	261	0	0
Amount of income chargeable		289	0	0
Of which £225 is taxable at 3s.		33	15	0
And the balance, £64, is taxable at 6s.		19	4	0
Total		52	19	0

If the tax deducted from and borne by "Vertex" exceeds that sum he will be entitled to claim repayment at the end of this financial year. If a substantial portion of the income is from house property, it might save him the trouble of claiming repayment if he filed a statement of his total income, etc., with his local inspector of taxes on the appropriate form, and requested that his allowances should be deducted from the income tax assessed on the properties. If his daughter, aged 22 years, is receiving full-time education at an educational establishment, he is entitled to a further allowance of the tax (at 6s.) on £27.

COMPUTATION OF INCOME TAX, 1920–21.

MR. WILFRED T. FRY (62 and 63, Queen Street, London, E.C.4) writes: Now that the Finance Act for 1920–21 has become law, the following short synopsis of its chief provisions may be of interest to your readers:

The standard rate of income tax remains at 6s. in the £. In computing the total "assessable" income (except for super-tax purposes) a deduction of 10 per cent. of the earned portion may be made, not exceeding the sum of £200. The "assessable" income is further reduced by the following abatements and the residue is the "taxable" income. These abatements are granted irrespective of the total of the income.

		Abatement.
For a married man		£225
For a single man		£135
For the first child	Under 16 or receiving full	£36
For every other child	time education	£27

N.B.—No allowance for a child is granted where the child has an income in his own right exceeding £40 per annum.

For a widower in respect of housekeeper looking after his children	£45
For a single man in respect of widowed mother or housekeeper looking after his brothers and sisters under 16	£45
For a dependent relative	£25

The first £225 of "taxable" income is taxed at half the standard rate of tax—namely, 3s.—and the balance at 6s. in the £. Life insurance premiums are also deductible at varying rates. Claims in respect of repairs to property are now extended to houses not exceeding £105 annual value in London, £90 in Scotland, and £78 elsewhere. Super-tax is chargeable on all incomes exceeding £2,000, at ascending rates. All amounts paid in land values duties can be reclaimed.

*** It should, perhaps, be added (*a*) that the payment for a single person is the same for either sex; (*b*) that the allowance for a dependent relative cannot be claimed if the dependant's income is in excess of £50; and (*c*) that the claim in respect of repairs to property is now extended to the total cost of repairs. The previous allowance was one-sixth.

LETTERS, NOTES, ETC.

DILATATION OF THE HEART.

DR. G. ARBOUR STEPHENS (Swansea) writes: On my return from a holiday I have read Dr. Kingscote's letter (p. [illegible]) referring to mine on dilatation of the heart (p. [illegible]), but he evidently misses the main point, as to whether the [illegible] can be discovered by his pleximeter [illegible] the authority is to decide as to the cause of the enlargement. Many practitioners jump to the conclusion that it is due to dilatation, without realizing how difficult it is to be exact [illegible]. My desire was to point out that for [illegible] it is very essential that the patient's general conditions, [illegible] the state of the intrapericardial pressure, should be taken into account.

TREATMENT AFTER COLOTOMY.

DR. S. SAXON BARTON (Liverpool) writes: I have a patient who has had a fairly extensive resection of intestine, including the lower part of the ileum, caecum, and part of ascending colon, and who has a large intestine colotomy wound on the left side. The patient is doing well, but is nearly distracted by the actions of the bowel at short intervals day and night. Opium and chalk mixtures, diet, intestinal antiseptics make no difference. The patient is gaining weight slowly. I should be very grateful for suggestions as to (1) diet, (2) treatment by drugs, (3) treatment by mechanical appliances.

DISLOCATION OF HUMERUS BY MUSCULAR ACTION.

DR. FRANK MARTIN (Dundalk, Ontario, Canada) writes: Referring to the communications in your issues of July 24th and August 7th, on dislocation of the humerus by muscular action, I have in mind a muscular young farmer, an epileptic, who dislocates his left humerus at almost every seizure. During the last three years I have reduced it under an anaesthetic a great many times. As he resides at least six miles from my office, it was causing him a great deal of suffering and me considerable inconvenience. I furnished his wife with an anaesthetic, instructed her how to reduce the dislocation by adduction and rotation, and she has reduced it quite successfully seven times.

RUPTURE OF VAGINA DURING COITUS.

DR. DANIEL O. TWINING (Salcombe) writes: I was called at 1 a.m. to see Mrs. X., aged 30, who had had three children; the youngest was six weeks old. The labour in this case had been precipitate, and the baby was born before my arrival: the recovery was uneventful. The history given was that "they had been doing as married people do," and that the wife had complained of sudden pain and had begun to bleed. The patient, when I saw her, had lost considerably and was still bleeding very freely. She complained of thirst; the pulse was 130. I plugged the vagina as tightly as possible with gauze, which controlled the bleeding, and sent her by car to the South Devon Hospital at Plymouth. She was seen on arrival by Mr. G. F. Aldous, who operated at once. There was a complete tear of the posterior fornix, and the cervix was also badly torn. The tear was stitched up, the cervix repaired, and the patient made an uneventful recovery. This injury in a young healthy woman so recently delivered of a child must be very uncommon.

POISONING BY SMALL DOSES OF ASPIRIN.

DR. ETHELBERT HEARN (Grindleford, near Sheffield) writes: I was most interested in the case of poisoning by 2½ grains of aspirin reported by Dr. R. Eccles Smith in the issue of the JOURNAL of August 21st, p. 300, as only three weeks ago I experienced personally almost the identical symptoms. In my case, however, 10 grains was the amount responsible, which I have frequently taken before, and even since, without any ill effects. My symptoms came on in about an hour, and my face was a sight to behold—eyes nearly closed with oedema of the lids; also intense itching. The inner sides of the thighs and the flexor surfaces of the arms and legs were the chief sites of the rash, which appeared in large raised patches, and disappeared in a few hours. I took a soda bath and saline purge, but felt rather seedy for a few days.

PUERPERAL SEPSIS.

DR. JOHN T. MACLACHLAN (Glasgow) writes: The very interesting discussion on the causation and treatment of puerperal sepsis reported in the JOURNAL of August 21st, 1920, recalls a paper which I had the honour of publishing in your columns on July 22nd, 1911, and in which I advocated treatment by disinfection of the uterine cavity, and by continuous drainage of the uterus by a rigid perforated tube of [illegible]. I advised [illegible] a thorough inspection of the parts, in a good light, with use of a speculum. If pus were found [illegible] the interior of the uterus was swabbed with pure carbolic acid or other efficient germicide. [illegible]

[illegible]

[illegible]

most frequent complaints. "Batni yābis," as they put it—"my bowels are dry"—is one of the first tags of medical Arabic the surgeon in those parts has to learn.

HOUSE-FLIES AND DISEASE.

THE Ministry of Health has sent to medical officers of health copies of the Natural History Museum's economic pamphlet No. 1—"The House-fly as a Danger to Health: its life history and how to deal with it." The pamphlet, which is from the pen of Major E. E. Austen, D.S.O., and embodies most of the matter contained in pamphlet No. 1A of the same series, reviewed in the JOURNAL on May 1st, 1920 (p. 607), is designed to aid the education of the public in the life-history of house-flies, the part which they play in the spread of epidemic diarrhoea and other diseases, and the most effective way of dealing with these insects. This useful pamphlet is illustrated by three plates containing six figures, and five figures in the text; additional copies may be obtained (price 3d.) by purchase direct from the British Museum (Natural History), Cromwell Road, S.W.7.

CHOLERA IN A NEW COUNTRY.

THE *Journal of Tropical Medicine and Hygiene* for August 2nd, 1920, contains an interesting account by Dr. A. L. Hoops of cholera as seen in Kedah, one of the non-federated Malay States. In 1906, even in the capital, a town of 10,000 people, there was no qualified medical man and no hospital, and the annual mortality—chiefly due to bowel diseases—in the overcrowded gaol was 25 to 50 per cent. Four cholera epidemics of increasing virulence are described; the disease appears to be endemic, and its spread is attributed to Osler's triad of causes—food, fingers, and flies. Dr. Hoops describes the prophylactic measures which he found most effective and tabulates the results of various methods of treatment; the injection of hypertonic saline solution appeared to be relatively most effective, but was suspected to aggravate the tendency to uraemia.

DEPILATORIES.

"C. I. E." recommends the following depilatory: Mix equal parts of barium sulphide and zinc oxide. Immediately before use make into a thick paste with water. Rub the paste on to the lip or chin, and leave it on until it causes a slight smarting (one or two minutes); then wash off with water. Apply some soothing ointment. The hair can be rubbed off in a short time—say ten minutes. The first application is sometimes not sufficient, so that a second or even third may be necessary. It is better to go slowly than risk wounding the skin by leaving it on too long the first time.

MEDICAL RESETTLEMENT.

DR. T. W. E. MORETON, Ex-D.C.M.S. Newport, Mon., writes: It depends upon the D.C.M.S. whether he gives sessions on medical boards to particular individuals, but he cannot morally refuse ex-service men except under very special circumstances. If he does so, an appeal can be made to the C.M.S. of the region, who will be sure to back the definite orders of the Ministry of Pensions. These were issued some time ago, and were to the effect that ex-service men were to be employed at the expense of civilian members of the board.

VERBUM SAPIENTI.

A CORRESPONDENT in one of the Home Counties informs us that he was recently visited by a man who represented himself to be a qualified instructor for an ambulance brigade which required a little more money to complete its equipment. He suggested to our correspondent that he should become local president of the British Red Cross Society. After reflecting on the matter our correspondent is disposed to advise brother practitioners to make inquiries before acceding to the proposals of the visitor.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 23, [illegible], [illegible], 34, [illegible], and [illegible] of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages [illegible], 30, and 31.

THE following appointment of certifying factory surgeon is vacant: Wotton under Edge (Gloucester).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor J. LORRAIN SMITH, M.D., F.R.S., President.

INTRODUCTION BY THE PRESIDENT.

THE discussions which have been arranged for the Section may be regarded as representing the three main branches of pathology.

In the discussion on cerebro-spinal meningitis we will learn from the bacteriologists the results of recent investigation. The experience of the war has added to our knowledge of the infection and its treatment, and from this discussion we hope to obtain not only a wider knowledge but also further guidance for the practical handling of outbreaks of the disease.

In discussing liver atrophies we have to deal with a subject which has been taken up primarily in the form of morbid anatomy. It is further a subject which has recently claimed much attention and study because of the occurrence of the disease in a number of patients in military hospitals. While the investigation of this type of disease has so far been chiefly an inquiry into the interpretation of the anatomical changes, its possible relationship to syphilitic infection and the treatment of syphilis opens up questions the answer to which demands other forms of inquiry.

In the discussion on tumour growth we propose to concentrate our attention on the results of experimental inquiry. Tumour growth as a subject of investigation is one of the most difficult in the whole range of medicine. It has been attacked from many points of view; but the study of the conditions which determine growth in experimentally produced tumour is of outstanding interest.

The development of the science of pathology has led to the division of the subject into the three branches—morbid anatomy, experimental pathology, and bacteriology, and the discussions illustrate and exemplify the division. The methods of the three branches differ widely, and there is a corresponding difference in the training and experience which is required for their application. The science has advanced too far for anyone to embody equally in his work all types of inquiry. One worker will devote himself to chemical inquiry, another to variations in histological structure, and another to bacteriology. Hence arises a certain limitation in the scope of individual researches, with the general result that in pathology separation into compartments begins to take place. Yet there remains the essential unity of the problem which each case of disease presents. The present occasion on which a variety of problems and methods are presented, while it illustrates the diversity which has arisen, seems to me a suitable opportunity for emphasizing the essential unity which underlies the division. If we restrict our attention to one type of investigation we are apt to lose sight of the unity of the problem. There are few problems in pathology which do not call for investigation by several methods, and often indeed by all the methods that are available. The pathological investigation of the deficiency disease beri-beri was in the first instance a morbid anatomy investigation of the structural changes which occur in the nervous and other tissues affected. Later the investigation became an experimental inquiry into the deficiency factor and the production of the disease in animals put on a deficiency diet. From this we have been able to study experimentally the development of functional failure in the affected organs and the extent to which at the different stages of the disease permanent structural changes have occurred, and lastly, the degree of recovery which is possible when the deficiency factor has been removed. The study of this disease is a combination of anatomical and experimental inquiries.

Another illustration is afforded at the present day by the pathological investigation of encephalitis lethargica. This disease is now receiving more exact definition by clinical observers, and at the same time the study of its morbid anatomy has shown the presence of certain changes in the brain. At the stage we have now reached we await the introduction of experimental inquiry. This will succeed when it has isolated and defined the etiological factor at work, and we may discover that we have to do with an infective agent to be dealt with by the methods of bacteriology. The complete investigation of this disease will involve all types of inquiry.

Pathological investigation receives much criticism on the ground that it is one-sided. The researches are stigmatized as too anatomical, too bacteriological, and so forth. So far as this criticism is sound it points to the insufficiency and danger of attacking problems from one point of view.

The clinician, in dealing with a case of disease, has the whole problem which the case presents obtruded on his attention, and when he turns to incomplete pathological investigations for the means of interpreting his difficulties he is apt to experience disappointment. This disappointment is due not so much to the fact that the pathologist occupies a point of view which differs from that of the clinician, but to the limitations of the pathological inquiry. The research does not go far enough. It often happens that morbid anatomy supplies the method for the introductory stage of an investigation, but it must be followed by experimental or by bacteriological inquiry, and the results of these must be often referred back to the morbid anatomist for criticism and verification. On the other hand, failure to solve a given problem is often due to the essential limitations of the methods of inquiry, and when this is clear we have perforce to admit that the solution is beyond our reach, but failure should never be admitted till all the known methods of inquiry have been applied. Pathology, like other branches of medicine, derives its methods ultimately from biology. These methods may require modification and elaboration for each particular problem, but change them as we may they are all still essentially biological methods, and no problem has been fully investigated till all the methods known to science have been applied. Failure which calls for criticism arises when pathology is not carried far enough. The reason why pathology has not solved the problem of encephalitis lethargica is, in the first instance, because it has not yet successfully brought it within the range of experimental inquiry. A certain amount of anatomical investigation has been carried out. This, when it is finished, will be nothing more than a contribution to the complete investigation. It will form an essential part of the complete investigation, but however extensive it may be, it will not solve the whole problem of the disease. Now, may I ask, should this lead us to discard morbid anatomy as a method of investigation? Are we justified in describing the morbid anatomist in terms of abuse as a useless cumberer of the ground? Shall we derisively speak of him as a deadhouse pathologist, and insinuate that his inquiries and results can have little or no bearing on any real investigation of the process of disease? Such criticisms are ill informed and arise from an insufficient grasp of the problem as a whole. The inquiry is incomplete, and must be extended by other methods, and probably we will find as a consequence a demand for still further study of the anatomical changes in the brain. We must admit, however, that we are tempted to be content with partial inquiries. Complete inquiry is difficult and involves the expenditure of much time and effort. Biology as a science is based upon chemistry and physics, and branches out in medicine into all the varied departments of anatomy and physiology. To complete pathological inquiries we must have at our disposal the means of applying all the methods of these basal sciences. In pathological departments we require a provision of staff and equipment which is difficult to obtain, and here I come to one of the fundamental reasons for the limitations of our inquiries. Our pathological departments are too frequently fitted up and staffed merely to aid the clinicians by the methods of laboratory diagnosis. Too often the interest in a case dies away at the point when the diagnosis has been reviewed in the light of a *post-mortem* examination or by the aid of a bacterial culture. No real attempt is made to continue the investigation until there is obtained an interpretation of the whole phenomena of the disease in its origin, progress, and results. The application of pathology to clinical diagnosis serves a useful purpose, but it is only an introduction to the problems which the case presents.

Let us take a case of Addison's disease. We find at *post-mortem* examination, let us say, that the glandular tissue of the suprarenal has been replaced by tuberculous foci. The diagnosis of Addison's disease is confirmed by the morbid anatomist. He has shown that the disease is a form of tuberculosis; but the problem of this particular disease remains unsolved, for we have still to show what were the conditions which determined the settlement of tuberculous infection in this particular organ of the body. The disease is a striking example of the question which arises in dealing with the pathology of all infections—namely, the incidence or distribution. What is it that determines the distribution of the tuberculous infection in the various organs? In one case it is chiefly in the lymph glands, in another it is in the lungs, and in rare cases it is in the suprarenal glands. The diagnosis of the case with which we are tempted to be satisfied—and I might say, indeed, with which we are often compelled to be satisfied—is merely an introduction to the fundamental study of the conditions of susceptibility and resistance to infection in the various organs of the body.

Progress in pathological investigation will come the sooner the more we realize the extent of the problem. At the present day we are all conscious of the need for better organization of our medical service, and this conviction has been strengthened as a result of our war experience. What pathology requires is to be put in a position to carry out complete investigation, and I am convinced that in making this claim we will have the support of the whole profession.

In the discussions which we have arranged we will have the opportunity of considering the results which have been obtained by various methods. It is my hope also that in reviewing the whole programme we may obtain a clearer conception of the extent of the problem which is before us in the reorganization of the pathological branch of medical investigation, and in equipping and staffing the pathological departments of hospitals and medical schools.

DISCUSSION ON
THE BACTERIOLOGY OF CEREBRO-SPINAL MENINGITIS.

OPENING PAPER

BY

J[illegible] A. A[illegible], M.D., F.R.C.P.,

[illegible] Institute of Preventive Medicine.

The [illegible] of cerebro-spinal meningitis during the war has produced [illegible] amount of careful bacteriological work. [illegible] immediate practical value and the [illegible] drawn from the data by the different [illegible] has been [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible] during the war, the chief interest centres round the classification of the meningococcus both for practical purposes and from the theoretical standpoint. On this largely depends the ability to recognize the meningococcus in the nasopharynx and the means to be used for this purpose, and also the desirability and possibility of detecting and isolating carriers.

The diagnosis and classification of the meningococcus may be made (1) by the morphology of the cocci and their colonies, and by cultural means, including fermentation; (2) by agglutination with a polyvalent serum with or without absorption of agglutinins, or (3) by agglutination and absorption of agglutinins using monovalent serums.

It is agreed that meningococci can be divided by agglutination into two or more main groups, but the sharpness of definition of the principal groups and the number and distinctness of small accessory groups which contain so-called aberrant strains are not fully agreed upon.

The possibility of further division of the two chief groups is also generally accepted; but the number of subgroups and the degree to which they overlap, their constancy in culture and in the human body, and the need or desirability of these finer subdivisions for practical purposes, are matters about which there is wide divergence of opinion.

Gordon and his co-workers maintain that 98 per cent. of spinal meningococci fall readily into four groups which are quite distinct and have only minor bonds of relationship; that these four groups can be distinguished by simple agglutination, but that the grouping is assisted and confirmed by the method of absorption of agglutinins. On the other hand, Griffith and Scott appear to have quite clearly shown that the classification into four groups is not inclusive of all strains, and that it is artificial and only accomplished by an arbitrary selection of standard strains for making the type serums. Moreover, that classification on these lines might equally well be carried still further, and that each of the two main groups might be divided into three or four subgroups, and that the more it is attempted to establish these finer subdivisions, the more other points of relationship come into prominence and the less sharply defined the main two groups appear to be.

Griffith and Scott further support these observations on the spinal strains by showing that strains from the nasopharynx have a special tendency to show affinities with both of the main groups or two or more subgroups. They also hold that their researches show that strains from the nasopharynx can be diagnosed by cultural means alone, and that agglutination tests, if sufficiently comprehensive, support these cultural results.

The General Position of Serological Diagnosis.

Before considering further the diagnosis of the meningococcus by serological tests it will be well to glance briefly at the general question as it relates to other kinds of bacteria.

In studying any pathogenic organism one of the most important data to settle is how this micro-organism can be identified conclusively when met with, and how it can be distinguished from other similar micro-organisms. Closely connected with this problem is the question why the organism is considered to be pathogenic and the cause of the disease with which it is connected.

To take the latter point first, in spite of the formulation and to a large extent the acceptance of the famous postulates of Koch, nevertheless these desiderata are only forthcoming in a very few of the diseases which are believed to be due to definite micro-organisms. In other cases the thesis that the disease is produced by infection with a certain bacterium is generally supported by analogy and by a mass of circumstantial evidence giving a strong *a priori* foundation for the claim, which is finally clinched by some one or more very strong special arguments which are different in each individual disease. These "conclusive" arguments are of very different kind and value in different cases.

Thus the *B. typhosus* cannot readily be made to reproduce a disease like enteric fever in animals unless [illegible] recent work on the [illegible] of rabbits with [illegible] is confirmed. Its acceptance, however, as the infective agent is amply justified by the almost constant presence in the blood of cases during the first week of fever, and the appearance of antibodies to the bacillus in the blood of the patient during the course of the disease. In addition to this there are very definite instances of laboratory infection.

B. dysenteriae produces death in rabbits and lesions in the bowel very like those which are found in man, though in animals it does not as a rule produce a continued state of disease.

The meningococcus, while it is not capable of producing a characteristic infective disease in animals, is constantly found in the meninges and purulent cerebro-spinal fluid of a certain class of cases of meningitis, which can also be diagnosed clinically, and *post mortem* on macroscopical evidence.

In any case the definite and certain recognition of a pathogenic bacterium after its removal from the body is of great importance, otherwise the statement that an organism is the cause of the disease, since it is in constant association with the disease, merely becomes the equivalent of saying that some uncharacterized bacterium is constantly found under the circumstances—a very different statement.

B. typhosus, though not so susceptible to the animal test as some other pathogenic bacteria, possesses the characteristic of remarkable uniformity when isolated, and thus it has the advantage of being readily recognized. The agglutination of the *B. typhosus* by specific serums has not only been studied for a longer time and probably by more workers than that of any other kind of bacterium, but it has been the special typical instance which has been taken when the subject of bacterial agglutination has been investigated. It so happens that the reaction between the *B. typhosus* and its appropriate serum is more uniform than in most cases, if not more than in any other instance, and as the serological relationships of the *B. typhosus* to other bacteria are with few exceptions remote, they seldom, if ever, complicate the diagnosis of the bacillus.

Value of Agglutination.

These facts relating to the agglutination of the *B. typhosus*—namely, that it was the prototype of all bacterial agglutination, that it is singularly constant and highly specific—appear to me to have given a prestige to the agglutination test which it does not quite deserve.

Even amongst such constant organisms as *B. typhosus*, *B. paratyphosus* A, and *B. dysenteriae* (Shiga) it must be remembered that inagglutinable and spontaneously agglutinable strains or cultures occur and thus depreciate the value of the test. I have recently been able to demonstrate[1] that variations of the *B. dysenteriae* (Shiga) can readily be obtained which show very greatly altered agglutination reactions.

If the value of agglutination for the identification of almost any other kind of bacterium is considered it is found that the course is not such plain sailing, though some pathogenic organisms present a fair degree of uniformity—for example, *B. paratyphosus* A and *B. dysenteriae* (Shiga). On the other hand, the attempt to identify by agglutination strains of the *B. paratyphosus* B group or *B. dysenteriae* (Y-Flexner) may immediately raise difficulties, and the unity or multiplicity of the vibrios of cholera and paracholera are matters which are far from settled. In the case of the *B. paratyphosus* B group (as has recently been detailed by Schütze)[2] cultures of bacteria from swine and other animals and from food poisoning cases may agglutinate equally and with the same serums as *B. paratyphosus* B strains from cases of "enterica" in man; and some strains resembling *B. paratyphosus* B, which have also come from enterica patients (*B. paratyphosus* C or Hirschfeld strains), do not agglutinate with all true *B. paratyphosus* B serums, though closely resembling this bacillus culturally and being agglutinable by serums made with other strains of the same bacillus.

The *B. dysenteriae* group also present difficulties of the same kind. An agglutination test with a serum prepared from a casually chosen strain of this group is of little value for diagnostic purposes, for its reaction embraces only a few members of the group. In this case, however, the diagnosis is much helped by the fact that at any rate a very large number of strains from cases of dysentery, selected in the first instance by their sugar reactions, are agglutinated by a serum prepared with one well known strain—the *B. dysenteriae* Y of His and Russell, as was shown by Morgan (1911).[3]

Absorption of Agglutinins.

In order to overcome the difficulties of these uncertain and apparently non-specific reactions, the method known as absorption of agglutinins, devised by Castellani for dealing with streptococci and used by him for the elucidation of mixed infections, was adopted by Boycott and Bainbridge for investigating the paratyphoid group.

Schütze (1920) has repeated and extended the work of Uhlenhuth and Bainbridge, and has shown that the *B. paratyphosus* B–Aertrycke group may be divided by the absorption technique into at least nine subgroups, and a number of further subdivisions which he calls substrains. A "substrain" is separable from the "superstrain" with which it is connected by the result of an absorption experiment in which the "substrain" is shown to absorb only its own agglutinins from a serum made with the "superstrain." He also records the derivation of a "substrain" from its corresponding "superstrain" in culture.

It seems certain that an attempt to classify this group by simple agglutination alone is not quite satisfactory, and that if absorption of agglutinins is taken as the criterion, the multiplicity of groups and subdivisions becomes confused and excessive for practical purposes. The researches of Andrewes and Inman (1919)[4] on the grouping of *B. dysenteriae* (Flexner-Y) by agglutination and absorption of agglutinins have focussed attention on the very numerous varieties of this group, also as regards their serological properties.

This inability to rely on the serum prepared from one strain for the identification of others, and the facility with which groups apparently uniform may be divided by "absorption" into a large and indefinite number of subgroups, are therefore phenomena not confined to any one group of bacteria. The widespread character of this experience seems to throw light on the limits of these methods of classification.

From these considerations it may be concluded that agglutination amongst nearly allied bacteria is an extremely valuable diagnostic test, but only final and decisive in a rather limited number of cases, and even then not infallible. It has the advantage of being a fairly inclusive test if due precautions are taken to select a suitable (polygerent) strain with which to prepare the serum.

Absorption of agglutinins for purposes of classification has the disadvantage that by its means strains which appear to be closely allied on other grounds are separated, and cross-connexions are found which make the formation of definite groups difficult and their limits uncertain. One undoubted merit of "absorption" is that it can be used when direct agglutination fails because the culture under examination is (1) inagglutinable, though capable of absorbing, or (2) spontaneously agglutinable, or (3) when the serum available is polyvalent and has far too large a scope for the purpose in hand.

If it were certain that an exact knowledge of the agglutinable substance, agglutinogens and agglutinins, were of unique importance for establishing the true relationship by descent of bacteria, then the method of absorption of agglutinins would have much to recommend it for classificational purposes. It is at the best, however, more complicated than simple agglutination and therefore more liable to certain errors. The assumption of its prime importance cannot at present be considered as fully justified in the face of the unexpected divisions and cross-relationships revealed by this technique, and the very striking changes which some strains undergo in culture.

If, however, it were maintained that a sound classification of pathogenic bacteria would be more securely based on the reactions produced in the animal body than on their assumed evolutionary kinship, it would be necessary to consider whether agglutination and absorption had any special relation to infectivity, virulence, or toxin production. These two classes of characters have, however, been found to vary independently in some cases, as Tulloch (viii, 1919)[5] has shown for the agglutination types of *B. tetani* and their toxin, and Miss Robertson[6] for the *Vibrion septique*.

Certain variations in *B. dysenteriae* (Shiga) which I have found to occur *in vitro* were associated with remarkable changes in the agglutination properties, but did not seem to be closely related to the toxicity of cultures. In the same way the cases of cerebro-spinal fever associated with different serological types of the meningococcus have not been shown to have any considerable differences clinically.

The above remarks are not intended as a criticism of the very arduous work undertaken as a research into the uses and limits of the method of absorption of agglutinins, and as an attempt to determine how far relationship (evolutionary or physiological) can be detected by this means. It is only when it is maintained that this method is final and necessary as a means of elucidating relationship and establishing a natural classification that the claim appears to outrun the evidence.

Absorption of Agglutinins in the Meningococcus Group.

The test of absorption of homologous agglutinins from a serum was used by Gordon in order to diagnose more accurately meningococcus-like cultures, and he was led to exclude a number of strains which were found in the nasopharynx by this means alone. He was also enabled to place more definitely certain strains of Groups III and IV. Tulloch by this method detected three subgroups in Group II, and thus explained defects in the behaviour of this group.

Gordon's four groups never quite covered all the spinal strains, though he found that 98 per cent. could be classified. He and his colleagues found that in order to be able to assign so large a proportion of strains to their appropriate groups, the technique of agglutination and absorption must be very exact as regards the details of the procedure, and that the time spent in immunizing the rabbits was of considerable importance; moreover, that the laboratory worker must be highly trained and in constant practice. Thus the work of others who found difficulty in reducing the strains to four distinct groups is criticized on account of the length of time over which the rabbits affording type serums were subjected to inoculations, since it was held that a prolonged immunization made the resulting serum too inclusive in its qualities.

The demand for such precision and hardly-come-by niceties of method requiring such arduous training unfortunately discounts as valueless much of the control work done by others. It recalls the technique by which Procrustes applied an arbitrary and inelastic standard to his guests.

Some of those who have experience of the cross-relationships demonstrable between different groups of meningococci as evidenced by the occasional change over of a strain from one group to another, the equal action of serum prepared from one strain on cocci from different groups, or the equal agglutination of one strain by serums made from cultures belonging to different groups, will hesitate before adopting a procedure which leads to further subdivisions.

The knowledge that the allied class of gonococci also can readily be divided into subgroups which independently cross agglutinate with meningococcus groups, and that some strains of gonococci more nearly resemble serologically some meningococci than other groups of gonococci, makes one pause before accepting such methods of classification as final.

If it were proved that a knowledge of the subgroups were of value for the production of therapeutic serum or for any such specific purpose, then this classification would become immediately of great importance.

Incidence of Carriers.

Attempts to correlate the incidence of carriers with the prevalence of the disease are very difficult and, considering the apparent capriciousness of the distribution of the disease, and the comparative rarity with which it attacks more than one person in a house or more than one soldier in a hut, and the large number of carriers often found, the chances of demonstrating the success of an isolation policy must be very [illegible].

However, a considerable advance has been made by accumulated knowledge of the rise and fall of cases in a small area with the change in the carrier rate. The practical measures required to abolish or prevent outbreak [illegible] have been especially studied by Dr. Glover (1918). In my opinion the position of the carrier question may be stated as follows:

1. The [illegible] carriers should be [illegible] [illegible] [illegible]

2. [illegible] are [illegible]

large number of somewhat similar organisms in the throat apart from meningococci, especially if regard is had to certain epidemics of bronchitis, etc., it seems desirable to use an agglutination test in addition. Polyvalent horse serum is probably too inclusive, and single rabbit serums would require to be too numerous. A polyvalent rabbit serum prepared with several strains from the meninges of as different serological reactions as possible appears to be the most suitable diagnostic serum.

3. The policy of isolation, even if desirable on other grounds, must depend on the proportion of the population found to be carriers. If this proportion is large—for example, 10 or even 50 per cent. in non contacts—the procedure seems to be an impossible one.

4. It seems doubtful if we know much about the proportion of carriers in the population between and at the earliest stages of epidemics, and the relation of the rise and fall of the numbers of cases to those of carriers at different periods of the epidemic. To ascertain these facts with any accuracy it seems almost essential that the same workers using the same technique should make observations at intervals over very long periods.

5. In all but very exceptional circumstances the detection and isolation of carriers appears to be a proceeding which should not be attempted in the present state of our knowledge.

6. Various methods for the disinfection of carriers have been devised, but this most difficult problem has not met with any decisive solution.

Therapeutic Serum.

The best methods of preparing therapeutic serum, and whether it should be polyvalent or monovalent, are still vexed questions. They are very difficult problems, since there is no recognized laboratory test of the efficacy of the serum which can be taken as an indication of its clinical value. Virulence and toxicity tests of living and dead cultures, and of preparations of "endotoxin," have been tried on mice and guinea-pigs in this country, on the Continent, and in America, but as far as I can ascertain there is no agreement in different laboratories as to the value of these tests.

Gordon in January, 1918, published a method for preparing "endotoxin" and standardizing serum by testing its efficacy in protecting mice against the toxin. Dopter reported very good results with univalent serum. Flexner's serum made at the Rockefeller Institute, with which some of the best results were claimed, and which has been credited with good results in a relatively small number of cases during the recent epidemic, is polyvalent, and care is now taken to include both the meningococcus and the parameningococcus in the cultures used.

I should like to enter a plea for multivalent serum. Most of the best results recorded have been obtained with multivalent serums. The type of meningococcus in any given case cannot as a rule be known for a day or two, and the difficulty of having two or more serums available is great, and must much increase the practical difficulties and cost of treatment.

CONCLUSIONS.

To sum up what appears to me to be the present state of our knowledge as the result of the advances made during the war:

1. The position of the meningococcus as the causal organism has been confirmed. Cultural methods have been improved and are at least as efficient as serological methods for diagnosis, but both means should be used.

2. The occurrence of two main groups of meningococcus corresponding to Dopter's meningococcus and parameningococcus has been recorded in all epidemic centres, and in about equal numbers.

3. These two main groups are capable of division into a further indefinite number of subgroups by making serums from a number of single strains for agglutination, and by the use of the absorption of agglutinins technique. Gordon's Types III and IV have a special prominence among these subgroups, but whether this is due to the specially selected strains for the diagnostic serums or to a greater definiteness of these two subgroups is not quite clear.

4. The meningococci from the nasopharynx compose a very ill defined group, and though many agree absolutely with the commoner strains from the meninges, others correspond only to the rarer meningeal strains. Other strains, again, show no relationship to strains from the meninges by agglutination tests, but a close affinity is apparently revealed when they are used to make agglutinating serums. In these circumstances, and since no

absolute criterion of a meningococcus is known, it is arbitrary either to include these among the meningococci or to exclude them.

5. The contacts and "non-contacts" who carry the meningococcus in the nasopharynx during an epidemic are so numerous that it is neither necessary nor desirable to attempt isolation of carriers. It is very probable that even when cases of meningitis first appear at the beginning of an epidemic the number of carriers is often too high to make an isolation policy possible, but the data for forming an opinion on this point are not very numerous.

6. The manufacture of therapeutic serum still needs much research and observation. In order to gain more knowledge on the value of different methods of immunization of horses and of laboratory tests of the therapeutic efficiency of serum, it is very necessary that the reference numbers on phials of serum should be carefully noted by the medical men who administer the serum, and that the result of its use should be reported in all cases to those responsible for its manufacture.

Only in this way can evidence be obtained of the value of special methods of manufacture, and progress be made.

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BACTERIOLOGICAL STUDIES OF CEREBRO-SPINAL FEVER AMONG TROOPS (1914–1918).

BY

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BETWEEN 1914 and 1918 cerebro-spinal fever prevailed with varying frequency both among troops and in the civil population of the United Kingdom. At the beginning of 1915 I was invited to act as bacteriological adviser to the War Office for this disease. A central military laboratory was established for the study of cerebro-spinal fever and maintained for a period of four years. Particulars of the researches and observations made during the outbreak have been published in a Special Report (No. 50) recently issued by the Medical Research Council. Some of the chief results may be summarized as follows:

1. *Pathogenic Components of the Meningococcus.*

As the meningococcus is pathogenic to the white mouse on intraperitoneal injection, comparison was made of the pathogenicity of a series of strains when alive, and when killed by ether or by heat (55° C.) respectively. It was found that the pathogenicity of the living coccus for the white mouse was especially pronounced in the case of two out of three strains recently isolated from fulminating cases. When killed, however, these exceptionally virulent meningococci were not materially more toxic for the mouse than other strains, some of which had been cultivated for several months outside the body before being tested in this way.

No certain evidence was found of the presence of extracellular toxin either in cultures in fluid media *in vitro* or in the peritoneal fluid of an infected animal containing the meningococcus in large numbers. An attempt was made, therefore, to define the intracellular constituents of the meningococcus of pathogenic importance. Three different substances were identified. The first of these is an intracellular reducing enzyme or reductase by means of which the living meningococcus exerts a strong deoxidizing action on its immediate environment. This action can readily be demonstrated by adding either washed red blood corpuscles or methylene blue to a dense suspension of living meningococci distributed in tubes in a water bath at 37° C. A change of colour occurs within half an hour, the scarlet of the corpuscles changing to mauve and the methylene blue being bleached. The intracellular reductase of the meningococcus that produces this effect withstands exposure to 55° C. for half an hour (which kills the coccus), but is destroyed in half an hour at 70° C., and in a few seconds at 100° C. As a rule the reductase does not long survive the death of the coccus, and for this reason it furnishes a sensitive macroscopic index of the suitability or otherwise of a fluid medium for that micro-organism provided that the cocci are present in sufficient numbers. The reducing power is far more active when the meningococcus is suspended in serum, broth, or cerebro-spinal fluid than in saline or distilled water, and it may disappear rapidly in the presence of disinfectants when these are present in concentration sufficient to injure or kill the coccus. As the meningococcus appears to share this reducing property with other bacteria, the reaction may prove useful when studying the effect of various factors on the vitality or virulence of bacteria.

The second substance detected in the meningococcus possesses haemolytic properties and is in evidence under opposite circumstances to the reductase; thus in young cocci the reducing power is active and haemolytic power in abeyance, whereas in older cocci the converse is the case. This haemolytic agent is improved, if anything, by exposure to 120° C., and as this treatment partially breaks up the meningococcus, it can be employed to demonstrate the presence of the haemolytic substance in the young coccus. The haemolytic substance is soluble in alcohol and acetone but not in ether; and when it is extracted from the coccus in alcohol or acetone and the solvent evaporated off, it can be redissolved in saline.

The third constituent of the meningococcus studied was its endotoxin. When the meningococcus is alive this intracellular toxin appears to be in some kind of union with its cytoplasm. When the coccus dies and conditions of temperature and moisture are favourable, the intracellular toxin is set free by the action of the autolytic enzyme of the meningococcus to which Flexner first drew attention. The endotoxin can be concentrated and stored by washing the growth off a large number of surface plates, centrifuging the cocci out and drying them. The powdered deposit of dried meningococci thus obtained is toxic to mice intraperitoneally in doses of a few milligrams. It was found that meningococcus endotoxin is remarkably thermostable. It withstands boiling for half an hour, but is destroyed in a variable time at 120° C. It is soluble in water, but apparently insoluble in alcohol and ether. It withstands dilute solutions of caustic soda (which can be applied to extract it from the bodies of the cocci), but is destroyed by strong caustic soda. The very important part played by this endotoxin of the meningococcus in producing the lesions of cerebro-spinal fever has been emphasized by therapeutic experience during the recent outbreak.

2. *Serological Types of the Meningococcus.*

By the macroscopic agglutination test (twenty-four hours at 55° C.), checked by the absorption test, meningococci isolated from the cerebro spinal fluid of military cases during 1915 were differentiated into four distinct kinds. Between 1915 and 1919 meningococci from the cerebro-spinal fluid of altogether 526 cases of cerebro-spinal fever were submitted to the agglutination test with these four monotypical agglutinating serums (prepared from rabbits), with the result that 518, or 98 per cent. of them, were identified with one or other of the four types. The frequency of each type was as follows:

	Type I.	Type II.	Type III.	Type IV.
Specimens	195	218	69	36
Percentage	37.66	44.05	11.38	6.94

Approximately 80 per cent. of the cases, therefore, yielded specimens of one or other of the first two groups; and 105 of the specimens—roughly one-fifth—belonged to Types III and IV.

3. *Source of these Meningococci.*

Of the 526 meningococci submitted to examination, 491 came from cases in the United Kingdom, 18 from cases in South Africa, and 9 from cases in the United States. The distribution of types among these meningococci was as follows:

	Type I.	Type II	Type III.	Type IV.	Total.
United Kingdom...	183	209	64	35	491
South Africa ...	9	6	3	0	18
U.S.A.	3	3	2	1	9

Meningococci coming from cases outside the United Kingdom therefore—which were forwarded as heated and phenolated suspensions were included within the four groups, and, whatever the country of origin, the majority of the cocci were found to belong to the first two groups.

Types found in Children.—Of the 491 meningococci investigated from cases of cerebro-spinal fever in the United Kingdom, 462 came from adults and 29 from children. The distribution of types among the meningococci isolated from the cerebro-spinal fluid of cases in children was as follows:

Type I	...	...	...	...	8	cases.
Type II	...	...	...	...	15	,,
Type III	...	...	...	...	2	,,
Type IV	...	...	...	...	4	,,

The meningococci from children, therefore, included representatives of all four types—23 out of the 29, or 79 per cent., belonging to the first two groups. It will be observed that Type II was more common than the others.

4. *Result of the Absorption Test.*

The preceding figures refer to the result of observations with the agglutination test alone. In order to check their accuracy the absorption test was applied to 235 of these meningococci. In the case of Type II Tulloch's careful researches showed that the group is complex, and that, in order to include all the specimens, it is necessary to use more than one monovalent serum. The result of the absorption test was a very striking confirmation of the agglutination test; the type found by agglutination being confirmed in the case of 231 out of the 235 meningococci examined.

5. *Further Observations with regard to the Types.*

The majority of observers have found that a patient suffering from cerebro-spinal fever harbours only a single type of meningococcus in his cerebro-spinal fluid. The investigations of Flack, Tulloch, Andrewes and Canti, Embleton, and others have confirmed the statement of v. Lingelsheim as to the constant presence of the meningococcus in the nasopharyngeal secretion of the patient at the onset of cerebro-spinal fever, and have established the new fact that this meningococcus in the nasopharyngeal secretion is of the same serological type as that present in the cerebro spinal fluid of the case. It has been found also that as a rule either a case or a carrier harbours only a single type of meningococcus throughout the whole period of carrying. The persistency with which cases continue to carry the meningococcus after recovery from the disease has been well demonstrated by the careful observations of Embleton.

6. *Relation of these Types of Meningococcus to One Another, and to the Gonococcus.*

Type I of our outbreak appears to be identical with the true meningococcus, and Type II with the parameningococcus of Dopter. While the chief agglutinin of each type is strictly monotypical and specific, Type III is closely related to Type I, and Type IV to Type II, as is proved by the presence of co-agglutinins. In the same way recent observations have shown that while the specific agglutinins of the meningococcus and gonococcus are distinct, agglutinating sera made to Types II and IV of the meningococcus contain abundant co-agglutinins for many specimens of the gonococcus.

7. *Identification of the Meningococcus in the Nasopharynx.*

Serological definition of meningococci present in the cerebro-spinal fluid of the cases was necessary in order to prepare the way for accurate identification of the meningococcus in the nasopharynx of carriers, and also to define a basis for specific therapy. At an early stage of the outbreak it was realized that Gram-negative cocci occur in many nasopharyngeal secretions that are indistinguishable from the meningococcus in morphological, cultural and fermentative characters, but are serologically distinct from any of the four types of that micro-organism, and therefore without the same pathogenic significance. These meningococcus-like organisms have been carefully investigated by Tulloch, who has found that they comprise a large number of different serological types. Tulloch's investigation also demonstrated the superior accuracy of monotypical agglutinating serums of known type over a polyvalent horse serum for the purpose of distinguishing proved meningococci from these dubious micro-organisms of the nasopharynx.

8. *Carriers.*

Observations made at Caterham and elsewhere have shown that during an outbreak the general carrier rate of a community rises considerably, and that in such circumstances it may be as high among non-contacts as among actual contacts of the cases. Fortunately it would appear that the majority of such carriers become free in a comparatively short time; a minority may continue to harbour the meningococcus for months or even years. Exactly what determines this chronicity is not yet clear. Cleminson's careful observations suggest that malformations may have some influence. What I have felt is that if we only knew the mechanism whereby the temporary carrier becomes free, such information might possibly be useful in application to chronic carriers. In spite of many and varied attempts, no certain means of clearing up chronic carriers has hitherto been arrived at.

9. *The Prevention of Cerebro-spinal Fever.*

Studies during outbreaks of cerebro-spinal fever among troops, which have included the examination of non-contacts as well as contacts, have shown that the serological types present in the nasopharynx of carriers in a given community correspond with those present in the cases. Furthermore, continued observation of the carrier rate maintained for a series of years by Flack and Glover has shown that the carrier rate of a community as determined by sample swabbing is capable of affording a direct index to the imminence or otherwise of an outbreak of cerebro-spinal fever, since an outbreak may be preceded by a rise in the carrier rate. The researches of Glover have also demonstrated the important fact that the meningococcus carrier rate is a direct index to the degree of overcrowding, and that when this is remedied (and facilities for the aërial transfer of droplets reduced) a high carrier rate falls automatically to the normal level. The carrier rate of known meningococci thus forms the most trustworthy index of "the meningococcus pressure" in a community at a given moment. It has been found that the normal carrier rate of 5 per cent. or less may rise during the height of an outbreak to over 60 per cent. For practical purposes a carrier rate of 20 per cent. or over has been regarded as the danger line and calling for active measures.

Bacteriological observations have thus demonstrated the actual manner in which overcrowding operates in promoting outbreaks of cerebro-spinal fever among troops. For this reason, and also because of its success in practice, Dr. Glover's method of spacing out would appear to be the most effective means of checking the spread of this disease. Where overcrowding is unavoidable and "spacing out" impracticable, use has been made of inhaling rooms where the air is kept densely charged with droplets of 2 per cent. zinc sulphate dissolved in normal saline. The atomizing apparatus may be actuated either by steam or by compressed air, and Major Hine has devised a particularly effective jet for producing the requisite degree of atomization. Men are treated in batches, and inhale the spray-laden air through the nose for five minutes daily. Though its effect on the carrier rate of a community is but temporary and the method fails to clear up chronic carriers, the zinc sulphate spray seems from present experience to have a beneficial influence in checking the incidence of cases during an actual outbreak of cerebro-spinal fever. It is advisable not to restrict the treatment to contacts, but to submit the whole community to the inhaling room treatment whilst an outbreak is in progress.

10. *The Specific Treatment of Cerebro-spinal Fever.*

The mortality among those attacked in the civil and military population respectively between 1914 and 1918 is shown in the accompanying table and chart. The proportion of infants attacked undoubtedly raises the civilian mortality somewhat, but if the average fatality of the disease in civilians between the ages of 20 and 30 over the period in question is compared with the military rate, it is seen that after 1914 a considerable reduction was effected in the mortality among military cases and that this higher recovery rate was particularly evident in 1918, when the military mortality was 35 per cent. as against 60 per cent. in males of the civil

Incidence and Fatality of Cerebro-spinal Fever among Troops in the United Kingdom, and among the Civilian Population of England and Wales, including London, 1914-18.

	Troops in the United Kingdom.			Civilian Population.					
				All Ages.			Males 20-30.		
Year.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
1914	46	30	65.2	300	206	68.7	9	4	44.4
1915	1,199	587	48.8	2,343	1,521	64.9	127	80	63 0
1916	967	430	44.4	1,278	838	65.6	45	23	51.1
1917	1,337	593	44.3	1,385	906	65.4	[illegible]	31	64.5
1918	709	252	35.5	715	484	67.6	12	7	58.3
Total ...	4,258	1,892	44.4	6,021	3,955	65.6	241	145	60.1

SUMMARY *Military* cases, 4,258; deaths, 1,892; mortality, 44.4 per cent. *Civilian* cases, 6,021; deaths, 3,955; mortality, 65.6 per cent. Total cases, 10,279; deaths, 5,847; mortality, 56.8 per cent.

NOTE.—The military figures are available by permission of the Editor-in-Chief, *Official Medical History of the War*. The civilian figures are taken from reports by Dr. R. J. Reece, C.B., in the *Report of the Medical Officer, Local Government Board*, 1917-18 (Cd. 9,169) and 1918-19 (Cmd. 462).

population between 20 and 30. There can be little doubt that this higher recovery rate among the military was due in great part to improvement in the quality of the therapeutic serum.

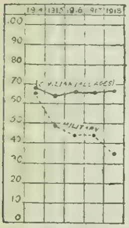

Chart showing fatality of cerebro-spinal fever among troops in the United Kingdom, and among the civilian population of England and Wales, including London, 1914–1918.

The sequence of events with regard to the serum was as follows:

In the early stages of the outbreak the only antimeningococcus serum available for military use gave disappointing results. On investigation it was found that while this serum contained agglutinins for Types III and IV, for which it was active at 1 in 500, it failed at 1 in 50 to agglutinate either Type I or Type II, with which the majority of the patients were infected. With the return of the disease in the following winter a more successful serum was available, but certain batches of it were found to be far more potent clinically than others, and the gross mortality still remained too high. A special research, therefore, was undertaken with a view to obtaining serum of greater potency. As no sure method of standardizing antimeningococcus serum was available, an attempt was made to define the special constituent that determines potency in the case of antimeningococcus serum. The antibody content of a batch of serum that had proved clinically to possess much potency was compared with that of numerous other batches clinically far less efficient. As a result it was found that the index of potency lay neither in the agglutinin content, nor in the complement-fixing antibodies, nor in the opsonin content, since several of the therapeutically inert serums were far richer in these than the serum that had proved to be clinically potent. Comparison was next made of the ability of the potent and other serums to protect mice against a fatal dose of the living meningococcus of each of the two commonest types, but without positive result. Lastly, a comparison was made of the antiendotoxin content of the serums. For preparation of the meningococcus endotoxin a modification of Besredka's method was used, the dried cocci being extracted with distilled water. The procedure used was to mix one minimum lethal dose of endotoxin with 0.5 c.cm. of serum, and after leaving them in contact for half an hour at 37° C. to inject the mixture into a mouse intraperitoneally. As a result the clinically potent serum alone had the power of neutralizing the endotoxin of a representative coccus of Type I and also of Type II; none of the other serums possessed this capacity.

It appeared, therefore, that the clinical potency of the serum was due to its antiendotoxic capacity. The accuracy of this conclusion was now tested by examining samples of some twenty batches of hitherto unused serum in the same way. Only one of these batches exhibited a capacity of neutralizing the endotoxins of both Types I and II in the same manner as the previous serum. This serum was now tried clinically, and found to be as successful as the potent serum previously in use. In one district where the mortality had receded to the neighbourhood of 50 per cent., the application of this serum was followed by a drop in the mortality to less than half that figure.

In order if possible to furnish a supply of antiendotoxic serum the Medical Research Committee provided horses which were prepared at Cambridge by Dr. Stanley Griffith. Each horse was prepared against a single type of the meningococcus, a plurality of strains being used. In view of the work of Besredka and Dopter, these horses were prepared by injecting a fresh suspension of the meningococcus intravenously, precautions being taken to avoid anaphylaxis in the later injections.

Before issue the serum prepared by Dr. Griffith was tested at the central laboratory. It was found to have an agglutination titre for the type coccus as a rule 1 in 4,000 to 1 in 8,000. In view of the previous experience, the serum was not sent for trial therapeutically unless it showed evidence of antiendotoxin. The standardization of the serum by the antiendotoxin method, however, was a somewhat arduous matter owing to the frequent absence of this antibody, and also owing to the fact that the serological types of the meningococcus as defined by the agglutination test are differentiated still further by the antiendotoxin test. This is especially the case with Type II, which Tulloch's researches showed to be complex, and to be divisible into a number of subgroups by agglutinin absorption.

Dr. Griffith's Type I serum was found in the laboratory to possess more antiendotoxin than the serum he was able to prepare against Type II. The clinical results obtained with these monovalent serums have been analysed by Dr. Hine. While the results with Type I serum have been excellent, serums prepared against other types have been less successful.

Before these observations were concluded the opportunity was taken of investigating the valency of meningococcus antiendotoxin, and from preliminary observations it would seem that not only are the various types of meningococcus distinct as regards their respective endotoxins, but also that within the same type—as defined by the agglutinin and agglutinin absorption tests—more than a single endotoxin may obtain. Progress in the serotherapy of cerebro-spinal fever, therefore, would appear to require a more detailed survey of the different types of meningococcus, with a view to defining the degree of this diversity in regard to endotoxin. Information is also needed concerning the production of meningococcus antiendotoxin—an antibody about which at present very little is known, and as a result its preparation is a matter of considerable uncertainty.

Valuable as the presence of antiendotoxin undoubtedly is in antimeningococcus serum, it is more than likely that in the septicaemic form of cerebro-spinal fever another quality—namely, ability to protect against multiplication of the meningococcus—is also desirable. The preparation and standardization of antimeningococcus serum are matters that are now being investigated further by Dr. E. G. Murray on behalf of the Medical Research Council.

A SUMMARY OF THE RESULTS OF THE SERUM TREATMENT OF 267 CASES OF CEREBRO-SPINAL FEVER.

BY

T. G. M. HINE, O.B.E., M.D.Camb.

THE reasons which led to the preparation of monotypical serums for curative purposes having been explained, it now falls to my lot to describe the results attained with these new serums so far as we have been able to ascertain them up to the present time. Many of us here are, perhaps, more interested in the treatment of the disease than in the somewhat academic question of the mechanisms set in motion by the action of this organism. I will therefore shortly give the results which some forty medical officers have been kind enough to send me concerning 267 cases of the disease all treated with the monotypical serum.

These reports, for the most part, were replete with notes showing the severity of each attack, the day of disease on which it was diagnosed, the day on which each dose of serum was given, with its amount, kind, and batch number, the type of organism found, and the quantity and appearance of the cerebro-spinal fluid withdrawn. In the majority of cases fairly full clinical notes were sent giving any special complication and impressions as to the value of any form of treatment. Thus I was able, in a large number of these cases, to form a fairly accurate mental picture of the condition.

A few of these notes, however, as may well be imagined, were rather scanty, for often my informants were not themselves responsible for treatment, and had, perhaps, only once seen the case when they first made the diagnosis. They had then to rely on others for their data. The majority of these reporters were in charge of bacteriological laboratories, and some few of them, by good fortune, were allowed to treat all their cases themselves from start to finish, while others, after diagnosing the case and giving the first dose of serum, never saw the case again.

In the Medical Research Council's Special Report, Series No. 50 [illegible] published June 30th, I gave an analysis of these cases, and I now propose to summarize these results so far as possible. Before doing so I should like to recall some of the published mortality figures.

[illegible] gives the mortality of non-serum-treated cases all over the world in the [illegible] as from 70 to 80 per cent. in some thousands of cases, while Dopter found [illegible] per cent. mortality in an outbreak studied by him. [illegible] found that in serum-treated cases the mortality was [illegible] per cent. in about 1,300 cases, while Dopter gives the mortality of 8.1 per cent. in those properly treated and [illegible] per cent. in cases in which the exhibition of serum was delayed or insufficient, the total mortality being [illegible] per cent. He, however, appears to think that any [illegible] after the third day were too long delayed [illegible] period in my view; he collected about 300 cases. [illegible], however, removed from his list, before [illegible] cases which were moribund when first seen and [illegible] to other diseases. The [illegible] must have considerably lowered his mortality figures, and I do not consider it justifiable [illegible] of the [illegible] word "moribund" [illegible] per cent. [illegible] appropriate treatment. Moreover, about [illegible] per cent. of his cases appear to be [illegible] type I; the importance of this will appear later.

[illegible] figures referring to the epidemic with which I am [illegible] by the Medical [illegible] 1915 [illegible] mortality in [illegible] per cent. [illegible]

[illegible] per cent. [illegible] 1919 and 1920.

[illegible] The mortality in the last year, it is seen, was 11½ per cent. in military cases against 58.3 per cent. in similar cases. In this last year a fair proportion of the military cases were treated with the monotypical serum either alone or combined with other serums, such as the Lister, Flexner's, or Mulford's. The last two were polyvalent serums, while some of the Lister serums were stated to be monotypical, though it was difficult to find any antiendotoxin in many of the samples tested.

Before considering the cases I have collected I wish to point out that the number, 267, is far too small to give really reliable statistical figures, but nevertheless much may be surmised from carefully analysing the material available, and I can only leave it to those present to attach their own values to the facts I shall put before them.

To begin with the 267 cases, 18 of these died of some other disease following on the cerebro-spinal fever; indeed, several of the cases were stated to have been cured of the cerebro-spinal fever before contracting the fatal one. Ten of these 18 cases had influenza and septic pneumonia—a sufficiently fatal combination.

We are thus left with 249 cases of proper cerebro-spinal fever, all diagnosed bacteriologically. In these cases the mortality was 31.72 per cent., or practically the same as Flexner's serum-treated mortality, but not so low as Dopter's figures, though, as already mentioned, these were favourably rectified. Every case reported as having had even one dose of M.R.C. serum has been counted, but some of the cases had several doses of other serum as well, and perhaps only one dose of M.R.C. serum; indeed, in one series of fatal cases it was expressly stated that the M.R.C. serum was kept as a final resort. This hardly gave it a fair chance.

Another consideration then came in, as the object of the analysis was not so much to find what reduction of mortality was caused by using serum, but to elucidate two points. The first was: "Has a serum, known to contain antiendotoxin experimentally, a more favourable action clinically than a serum made with the same organisms but showing by experiment an absence of antiendotoxin?" and the second question was: "Is the antiendotoxin specific with regard to the type of coccus?" So far as statistics founded on such a relatively small number of cases can afford an answer to such questions, the answer to the first problem is definitely "Yes," and the answer to the second is also probably an affirmative.

Now, to ask these questions effectively it is obvious that the type of invading coccus must be definitely known, and of the 249 cases it was found that in 48 the type was never clearly determined, or that it was found too late to be of any value in treatment. I may add that the death rate in this group rose to 45.83 per cent., 31 of them being severe cases with 20 deaths, or a mortality of 64.5 per cent. As we are only concerned with cases which receive the appropriate serum we may discard these 48 cases, which leave us with 201 cases having 57 deaths—a mortality of 28.36 per cent.

If now we divide these 201 cases into two groups—(*a*) cases in which treatment started before the sixth day (not Dopter's third day) and the serum was given in adequate amount, and (*b*) those in which serum was first given after the sixth day or insufficiently and cases moribund when first seen—we find that the first group contains 141 cases with 27 deaths—that is, mortality = 19.14 per cent., and the second group has 60 cases with 30 deaths—that is, mortality = 50 per cent.

These figures lead to my first conclusion—that the serum must be administered reasonably promptly to be of value. This will not occasion surprise, for the same is known to apply to other serum-treated diseases.

If the figures of the cases according to the day of the disease on which serum was first given be examined, it will be seen that the mortality is about the same till after the sixth day, when it rises quickly—that is, before the sixth day 25 per cent., and after the sixth day 44 per cent. These figures are slightly different from those given above, as all the cases, including those moribund and insufficiently dosed, are counted and not placed in two groups.

The next point to which I wish to draw attention, and one in my view of the greatest importance, is the type of [illegible] causing the disease in each case.

Of the [illegible] cases which were satisfactorily and completely tested bacteriologically

[illegible] were Type I with mortality = 9.[illegible] per cent.
[illegible] " Type II " " [illegible] "
[illegible] " Type III " " [illegible] "
[illegible] " Type IV " " [illegible] "

while of 48 cases tested too late or not at all the mortality was 45.8 per cent. Dopter's death rate of 8.1 per cent.

approximates to the 9.23 per cent. of the Type I figures just given, and there is evidence to prove that the 95 per cent. of his cases spoken of before were identical with our Type I, though at that time the meningococcus had not been divided into four types.

The Types I and III figures have the lowest death rate, but frequently Type III was late in being proved, and therefore did not always get the appropriate serum at once. When these cases eventually received Type III serum there was frequently a marked improvement, and often a cure of an apparently hopeless case.

It is perhaps as well to explain here that besides the four type serums a pooled I and II serum was issued which was to be given at the start to avoid waste of time while the tests were being made. As 80 per cent. or more of the cases were either Types I or II this method generally helped, but on the rarer occasions when a III or IV were at work the pooled serum seemed to be of little value. These observations and similar experiences with Types I and II cases, in which any improvement was only slight until the full dose of the true monotypical serum became available, led me to make my previous statement that the antiendotoxin is probably specific for the type of coccus. Dr. Gordon has proved this, experimentally, almost certainly, and the clinical evidence is strongly corroborative.

It will be remembered that I said one object of the analysis was to answer the question, "Has a serum, known to contain antiendotoxin experimentally, a more favourable action clinically than a serum made with the same organism but showing by experiment an absence of antiendotoxin?" and that, in my view, the answer was "Yes." The evidence on which my opinion is based is contained in the reports on these cases, and it is quite clear that the serum containing the greatest amount of antiendotoxin experimentally gave a far better result than that in which it was absent or much reduced—that is, the clinical results accurately paralleled the experimental work. In no case, for instance, which was more severe than a very mild attack was either a Type I or II serum found to benefit a Type III case, which only began to improve when it received the proper Type III serum. I find myself, therefore, in complete agreement with Dr. Arkwright's statement:

> If it were proved that a knowledge of the subgroups were of value for the production of the therapeutic serum, or for any such specific purpose, then this classification would become immediately of great importance.

It would obviously be impossible to give the appropriate monotypical serum unless the type of coccus can first be determined, as, in the present state of our knowledge, we are not able to make a combined serum containing effective doses for all types.

My second conclusion is, therefore, that it is of the utmost importance for proper treatment to ascertain the type of coccus at the earliest moment possible, as therein lies the only chance of applying curative serum scientifically. The pooled serum device was an attempt to save time until the bacteriological examination was complete, as it combined, though in small doses, the two antiserums which would be useful in about 80 per cent. of the cases. With our present difficulties in making a serum containing antiendotoxin of sufficient strength, it is obvious that to attempt to pool all four serums, either for preliminary use or for routine treatment throughout, is to court failure, for the capacity of the theca is limited, and with the serums diluting each other 1 in 4 the dose of the right kind would be inadequate.

In looking at the figures of typed cases just quoted, it will be seen that though the mortality for Type I, which formerly provided the greatest number of serious cases, has been reduced to under 10 per cent., the Type II cases still showed a mortality of nearly 40 per cent. This was unfortunate, but did not surprise us; it merely bore out the experimental evidence, which proved that the Type II serum, despite the great efforts Dr. Griffith made to produce as good a serum as his Type I, contained by no means the same proportion of antiendotoxin.

The great success of the Type I serum, for such it undoubtedly was, spurred on all to produce an equally good Type II. Once now and again a sample was obtained of nearly equal merit to the other, but the conditions for successful production have not yet been defined, and the few good results cannot with any certainty be repeated as they can be in the Type I serum. Had this been attained the total mortality of 28.36 per cent. would have been greatly lowered, for we find the Type II mortality of 39.4 per cent. is offset by a mortality of 16.5 per cent. for all the other types added together.

A third conclusion I [illegible] is one very difficult to prove by figures. It is the importance of giving the serum in adequate quantities and resolutely sticking to the treatment. It was laid down as a direction early in the epidemic that serum should be given not only as early as possible but repeated daily for at least four days after treatment had commenced, whether the patient was better or not. Those that followed this direction seemed to have the greatest success, but unfortunately there were more than a few instances in which, after great improvement following the second or third dose, the clinician determined to pause and watch progress, often with the result that in a few days a relapse occurred—sometimes of a fatal nature. One cannot avoid speculating on the probability of the patient being free from relapse had this simple direction, founded on experience, been more carefully followed.

THE MENINGOCOCCUS "CARRIER" QUESTION.

BY

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Pathologist and Assistant County Medical Officer, Kent.

I PROPOSE to deal shortly with the questions arising in Dr. Arkwright's fifth conclusion. He states:

> The contacts and "non contacts" who carry the meningococcus in the nasopharynx during an epidemic are so numerous that it is neither necessary nor desirable to attempt isolation of carriers. It is very probable that even when cases of meningitis first appear at the beginning of an epidemic the number of carriers is often too high to make an isolation policy possible, but the data for forming an opinion on this point are not very numerous.

With this conclusion I am in complete agreement. It is, however, still the practice of many bacteriologists engaged on public health work to attempt to isolate carriers when a case of the disease occurs, and as such work necessitates much labour and time which I believe could be spent more profitably, I would suggest that a definite expression of opinion would be of value to those of us who, owing to official suggestions in the past, are still asked to examine contacts in connexion with cases of this disease.

The work which I will briefly describe deals with this question and, I think, confirms Dr. Arkwright's point of view very strongly.

In 1916 I was asked by Dr. Newsholme to investigate the question of the extent to which meningococcus carriers could be found in a normal non-contact population. Accordingly, working on the lines recommended by Drs. Eastwood, Scott, and Griffith, I came to Cambridge and proceeded to examine the bacteriology of the nasopharynx of people who had not come in contact with a case of meningitis.

It is unnecessary to go deeply into the methods employed. Kutscher's media, which I believe to be more valuable than any other for getting growth of meningococci, was used in the primary culture. The sugar media were prepared according to Lingelsheim's formula and agglutination tests carried out on orthodox lines. The methods are fully described in my report to the Local Government Board.

Though the results in all classes of people living under different conditions are comparable, I propose to confine myself to one clean-cut section of the population tested, because I think the most useful lesson can be drawn from this set of experiments.

At Cambridge in 1916 two cases of cerebro-spinal fever had been notified—one in a girl aged 6 and the other in a girl aged 13, both in the month of March. In October, seven months after the last case, I swabbed the nasopharynx of most of the staff and employees at the Cambridge Scientific Instrument Company's works outside the town. It should be noted that these employees were earning good salaries and wages and therefore lived in comfortable homes; that none of them had come in contact, to his knowledge, with a case of cerebro-spinal fever; that for seven months in a town of about 40,000 population there had been no cerebro-spinal fever; and that most of the employees had lived and worked there for many months. I think it will be agreed that this may be described as a "non contact" population so far as such could be found.

Let me now state the results obtained.

Of the 100 employees swabbed, 41 yielded colonies on Kutscher's medium indistinguishable from meningococcus; in 28 plates such organisms were present either in almost pure cultures or in large proportions. From these plates, 38 of the meningococcus-like organisms gave sugar reactions of meningococcus and good agglutination (generally with serum 1 in 400 or 1 in 800) with one of the monovalent antimeningococcal serums employed. Thus 38 per cent. of the employees, by cultural and agglutination tests, would have been classified as meningococcus carriers if a case had occurred in the works. Further, absorption tests, following as closely as possible the technique recommended by Gordon, were carried out on 19 strains of the above 38 agglutinating strains; of these, 9 absorbed the agglutinin as well as the homologous coccus, and 4 absorbed it partially. Presumably, therefore, 26 per cent. of these employees who had not been in contact with cerebro-spinal fever were harbouring organisms in their throat which were indistinguishable by every test known from the true meningococcus.

Thus, working with the best possible media under ideal conditions, I was able to detect a much larger proportion of carriers where there had been *no case* of cerebro spinal fever than most observers, working under more difficult conditions, generally obtain amongst *actual* contacts. Is this result not sufficient to show that the finding of a few positive contacts in the usual circumstances has no meaning, and their isolation consequently no value?

It has been suggested that only those contacts found harbouring the same type of meningococcus need be isolated. But if a large proportion of the general population harbours, as I have found, the common types, it follows that they will still be considered dangerous unless one of the rarer types is the one cultivated from the patient with whom they have been in contact.

THE MENINGOCOCCUS CARRIER RATE: ITS RELATION TO PROPHYLAXIS AGAINST CEREBRO-SPINAL FEVER.

BY

J. Alison Glover, O.B.E., M.D., D.P.H.

Before we can deal rationally with prophylaxis against any disease we must know the chief etiological factors which tend to produce outbreaks of that disease. In the case of cerebro-spinal fever we believe these factors to include:—

1. The advent of virulent epidemic strains of the meningococcus, either by importation or by indigenous strains becoming virulent by some process of exaltation, such indeed as might be produced by the rapid transmission from temporary carrier to temporary carrier, which is implied by the existence of a high carrier rate in an overcrowded community.
2. Season—in Europe, the first quarter or four months of the year.
3. Severe weather, particularly sudden variation, snow, east winds, and prolonged cold.
4. Coincident catarrhal epidemics, particularly influenza.
5. Causes tending to lower the natural resistance, such as fatigue, stress of training, the first period of inoculation, nostalgia, and new entry into the [illegible] community.
6. Aggregation of susceptibles, such as occurs in recruiting depôts.
7. A high carrier rate of epidemic strains of the meningococcus in the population at risk.
8. Overcrowding.

The Relation of Carrier Rate to Overcrowding.

This relationship is extremely close. Extensive examinations amongst the troops in the London Command appear to show that, were it not for differences in the efficiency of ventilation, and for differences due to catarrhal diseases, which increase the spraying range of the infected, the relation between the distance separating the beds and the carrier rate of a unit would be almost an inverse ratio.

The chief thing to remember is that efficient ventilation and distance between the beds are the vital points; more floor space and more cubic space are not at all of the same importance.

It was noted also that if overcrowding occurred in a unit which had not previously been overcrowded two things happened: First, a marked rise in the carrier rate occurred, usually within a fortnight, reaching its maximum about three weeks after the overcrowding began—this is termed the "warning rise"; and secondly, when the other factors which have been enumerated were present, and the carrier rate reached 20 per cent., cases of the disease usually began to occur.

In nearly every case the carrier rate of non-contacts of the same unit was approximately equal to the carrier rate of the actual contacts of the case.

Rise in Non-contact Carrier Rate a Storm Signal.

A sharp rise in the non-contact carrier rate to over 20 per cent. is as sure a storm signal of imminent trouble as it is a sign of overcrowding or dangerously deficient ventilation. The same phenomenon is probably to be found in most epidemics of cerebro-spinal fever. Thus Olitsky, during the Hong Kong epidemic, took a large non-contact sample of inmates of the prison (in which no cases had occurred) and found a carrier rate of 25 per cent.

Carrier rates of 70 per cent. were found in two English camps in 1917, contemporary with sharp outbursts, and carrier rates of over 50 per cent. have been found in troops recently landed from crowded transports, and cases have developed just after disembarkation, usually fourteen to twenty-one days after the commencement of the severe overcrowding.

The rise of the carrier rate wave is greatly accelerated and heightened by the coexistence of catarrhal troubles, particularly influenza.

The accompanying diagram (Fig. 1) shows the influence of overcrowding upon the carrier rates, the "warning rise" to a 20 per cent. danger line being followed within a week by cases of the disease. It also shows that overcrowding has a more pronounced effect than season or temperature.

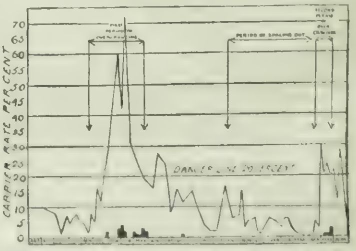

Fig. 1.—Showing effect of alternate overcrowding and "spacing out" upon case incidence and non-contact carrier rate of cerebro-spinal fever at X Depôt. Line = weekly carrier rate. Columns = weekly incidence of cases.

The low carrier rates at the end of the "spaced out" period correspond with the height of the danger season, and were contemporary with a sharp outbreak at another dépôt ten miles away, the latter being severely overcrowded.

We may therefore divide our measures of prophylaxis into:—

1. Measures designed to sustain the natural resistance, particularly during the stage of new entry.
2. Measures designed to diminish mass infection—that is, to lower the carrier rate of the community.
3. Measures designed to increase the natural immunity—that is, vaccines.

1. *Measures Designed to Sustain the Natural Resistance.*

These consist of efforts to tide the new recruit over his first one or two months of service. During the danger season for cerebro-spinal fever especially, the new recruit should have his antityphoid inoculation postponed until he is somewhat acclimatized—that is, until his second month. During the danger season training also should be more gradual, parades before breakfast forbidden, and all cases of catarrh with pyrexia admitted to hospital and isolated. Recruits are very frequently the most crowded section of the military community, whereas it is of the highest importance that they, above all, should be especially protected by "spacing out."

2. *Measures to Diminish Mass Infection—that is, to Decrease the Carrier Rate.*

A. The prevention of overcrowding and the provision of adequate ventilation are by far the most important of these; the space between the beds is of supreme importance.

The diminution in the carrier rate of four units, quartered in barrack rooms, who, at the first examination, were severely overcrowded (the beds being about 9 in. apart), and who were re-examined six weeks later (the beds during the interval having been rigidly 2½ ft. apart), is shown in Fig. 2, the ventilation being simultaneously much improved by simple devices.

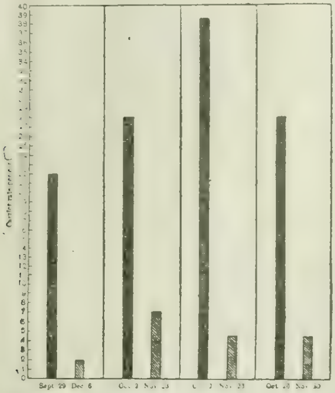

FIG. 2.—Effect of "spacing out" barrack rooms. Showing carrier rate per cent. before "spacing out"—black columns, and after "spacing out"—shaded columns.

The restoration in the British Army of the peace standard of 3 ft. between beds, 600 cubic feet and 60 square feet of floor space, with adequate ventilation, will probably prove almost an absolute preventive of an outbreak, though sporadic cases may occur.

The efficacy of emergency methods of improving ventilation was dramatically exemplified by Captain J. H. R. Yardley, D.S.O., in the Sudanese expedition to East Africa in 1917. An outbreak of cerebro-spinal fever occurring in the force, Captain Yardley had the walls of the huts removed and the men were left under roofs only. No case occurred in his company. It has been found, too, in Egypt that when native units were suffering from an epidemic whilst in barracks, transference to tents with permanently rolled up "flies" promptly arrested the epidemic. Unfortunately such methods are scarcely feasible during the danger season in England.

B. Treatment of the whole community by naso-pharyngeal disinfection. This is best done by treatment in a spray chamber with Hine's spray jets, supplied by steam from an exterior boiler, and using 1.5 to 2 per cent. zinc sulphate solution as a disinfectant.

Each jet suffices for 1,500 cubic ft. of chamber, sprays 80 c.cm. of disinfectant solution a minute, and works best at about 45 lb. of steam pressure.

Each member of the community should receive ten minutes' vigorous inhalation treatment every day for one week.

The Levick spray is useful for small numbers. Great difference of opinion exists as to the efficacy of this treatment.

It appears inferior to the hygienic measures of improving ventilation and spacing out (as indeed cure must always come second best to prevention), but it may be of great utility when (as on a crowded transport) hygienic conditions are bad, or when, as in a fortress, spacing out may be impossible. In certain outbreaks it certainly did appear to prevent the occurrence of fresh cases.

I did many experiments swabbing men before and after treatment, but without any convincing results. This method has little effect upon the chronic carrier. Its efficacy is probably due either to the community being less heavily infected after treatment or to some astringent action of the zinc sulphate upon the mucous membrane. I have tried a good many other preparations, but for steam spray treatment I prefer zinc sulphate to any other preparation.

C. Search for carriers. The elimination of all carriers by examination and isolation may be taken as impracticable, if only on account of their liability to relapse into carrying after "cure." If attempted it should be done very early, before the carrier rate has had time to rise.

In view of the fact that in a community in which an outbreak of cerebro-spinal fever is in progress, "non-contact" carrier rates will usually be found equal to "contact" carrier rates, the isolation of proved carriers who have been in close contact with cases would also appear somewhat illogical save for one important consideration.

This is that the isolation of such contacts proved positive will probably include the isolation of the actual carrier who infected the patient—that is, the actual source of the strain which has proved its virulence—and it will also include all those most likely, by close contact with him or with the patient, to have been infected with this strain of proved virulence.

The examination of persons who have been in prolonged and intimate contact with actual cases (particularly those contacts before the onset) may therefore be considered as a desirable prophylactic measure, and the isolation of such of them as may be proved carriers to be also desirable.

3. *Prophylactic Vaccination.*

Prophylactic vaccination against cerebro-spinal fever has been tried on a moderately large scale in at least two epidemics in England. At Salisbury in 1915 it appeared to give promising results (Greenwood), 4,000 persons being inoculated, none of whom developed the disease. During another outbreak, at which it was being tested, two men developed fulminating attacks of the disease on the day of inoculation, and although this may have been purely coincidence, the procedure was abandoned.

Gates gives the results of the prophylactic vaccination of 3,700 volunteers at Camp Funston in 1918. Three injections respectively of 2,000 million, 4,000 million, and 4,000 or 8,000 million cocci were given at weekly intervals. Three of the vaccinated developed the disease, one after one injection, one after two, and one nine weeks after his third injection (4,000 million). The incidence of the disease upon the vaccinated and upon the unvaccinated is not compared.

The value of the procedure cannot yet be said to be proven; but if a systemic invasion precedes spinal infection, it appears logical to build up antibodies in the blood stream as a second line of defence. Moreover, a large percentage of vaccinated men were proved by agglutination tests (Gates) to possess agglutinins of varying titre corresponding to those found in chronic carriers, who, it is generally agreed, possess some immunity to the disease.

In view of experience, however, it would appear highly advisable, wherever possible, to perform the vaccinations before the commencement of the danger season and not at the height of the epidemic. Instances of inoculation during the incubation period of the disease such as we have mentioned are likely to bring the procedure into disrepute should they occur. Personally I have had no experience with prophylactic vaccination against cerebro-spinal fever.

Had time permitted I should like to have described briefly the work at Caterham Dépôt. Here observation upon the non-contact carrier rate was kept for three years, weekly samples of 100 men being examined, first by Captain Martin Flack and then by myself. In all there were four outbreaks of cerebro-spinal fever at the dépôt, two occurring during the period of observation. In both cases the "warning rise" of the carrier rate was marked. However, time will not permit more than a reference; full details of this work will be found in the final report of the Medical Research Council on Cerebro-spinal Fever when it is published.

In conclusion, I should like to remind you once more of three things:

1. A high carrier rate is a storm warning of the danger of an outbreak of cases. In other words, an outbreak of cerebro-spinal fever consists of two parts. There is the [illegible] epidemic, which precedes and accompanies the case epidemic. If we can by examination detect the carrier epidemic we may alter or altogether prevent the case epidemic.

2. A high carrier rate usually denotes severe overcrowding somewhere, probably in the sleeping quarters, and the community infected.

3. In the same community and under the same conditions non-contact carrier rates approximate to contact carrier rates.

Summarizing the points of prophylaxis against cerebro-spinal fever it may be said that—

1. The prevention of overcrowding is of paramount importance.

2. Ventilation and distance between beds are of much greater importance than mere floor or cubic space. Wall space is essential.

3. The early isolation of cases of catarrhal disorder is of great importance in preventing the increase of the carrier rate. From one point of view it is almost of more importance to isolate a coryza patient who is not a carrier, than a carrier who

has not a catarrh. The former can spray the carrier at four or five feet, and if the carrier succumb to the coryza, he in his turn will spray the meningococcus with his catarrhal sneeze to a like distance.

4. In exceptional circumstances steam spray treatment may be of great assistance. The peace standard of the British army of 3 feet between beds, 60 sq. feet of floor space and 600 cubic feet, is adequate, and will probably render other prophylactic measures unnecessary.

PATHS OF INFECTION.

BY

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Others have dealt with the now well recognized fact of the presence of meningococci in the nasopharynx and its neighbourhood, and recently Embleton has especially discussed the relationship of the occurrence of sphenoidal empyema in epidemic cerebro-spinal fever. My own observations in the *post-mortem* examination of over a hundred fatal cases led me to believe that the spread to the meninges is not, as some have believed, by way of the perineural arachnoid prolongations round the olfactory nerves where these pass through the cribriform plate of the ethmoid, nor by direct inflammatory extension through the pituitary fossa or elsewhere; but the pathological anatomy of at all events this series of *fatal* cases appears rather to suggest that there is a ventricular infection *before* the meninges are affected, and that the infection reaches the choroids by way of the blood stream. The organism may reach the latter either by way of the lymphatics or smaller blood vessels, and may perhaps be determined by the occurrence of some such phenomenon as sphenoidal sinus suppuration, or in some other way. Its actual presence in the blood early in the disease is, of course, now well recognized. The problem of how the meningococcus reaches the meninges has been of especial interest to me.

From the *post mortem* examination of over a hundred fatal cases of cerebro-spinal meningitis occurring mostly during the war, I find that the ventricular system is the site of acute inflammatory changes often as marked as in the meninges, or not infrequently even more so. Turbid fluid containing large numbers of inflammatory cells was present in every case, in varying amount according to the degree of acute inflammatory hydrocephalus. There was usually a copious deposit of somewhat soft fibrino-purulent material upon the ventricular walls, especially in the more dependent parts, such as the horns of the lateral ventricles and in the third ventricle and infundibulum, the latter as well as the former cavities usually showing a varying degree of distension. The ependymal lining of the whole chain of ventricles showed swelling, and there was usually softening of the neighbouring brain tissue—an acute encephalitis, often with haemorrhages, generally small or petechial, but not infrequently considerable in size, and sometimes very extensive, ploughing up the cerebral substance, and in some cases bursting into the ventricles and extending down into the membranes of the cord, and diagnosed during life by lumbar puncture. Periventricular encephalitis appears to be one of the most important factors leading to a fatal issue, especially where it involves the structures in the floor of the fourth ventricle. From my examination of this series I am of opinion that, in these fatal cases at all events, although it is difficult by *post mortem* evidence alone to be certain of the direction of spread, the infection of the ventricles had usually preceded that of the meninges, the organism having been carried to the choroids by the blood stream from the nasopharynx or its neighbourhood, and setting up an endoventriculitis or ependymitis. In very acute cases with a rapidly fatal issue, the ventricular inflammation was usually more obvious than that of the meninges, which sometimes showed no naked-eye changes beyond simple congestion.

In practically all cases meningococci were more numerous in the ventricular than in the spinal fluid, and were sometimes present in large numbers in the former in cases where they could not be detected in the lumbar puncture fluid. From the ventricles the infection appears to spread to the surface of the brain, especially at three points, namely, (1) through the thinned and inflamed floor of the third ventricle and infundibulum, and so comes to be specially abundant in the cisterna basalis round the pituitary stalk, from the optic commissure in front to the crura and pons posteriorly; (2) through the pial roof of the fourth ventricle and its foramina to the surface of the medulla and under aspect of the cerebellum, etc.; and (3) backwards through the great transverse fissure to the central lobe and culmen of the cerebellum and the neighbouring parts, and sometimes through the valve of Vieussens or superior medullary velum. The surface exudate is usually found especially over these three areas, from which it may then spread and coalesce, giving the typical "basal" or rather "post-basal" distribution, and from which it spreads down the cord and to a varying extent over the surface of the cerebellum and cerebrum. The exudate appears to be very much less liable to spread forwards over the cribriform plates of the ethmoid, round the olfactory tracts and bulbs—a point which appears to militate against the view, put forward by some, that the infection spreads to the brain through the roof of the nose and cribriform plate. In three cases in which the ventricles were tapped during life, the ventricular fluid was found to contain more inflammatory cells and meningococci than the lumbar puncture fluid—in two of these, and in a number of the *post-mortem* cases, the organisms were so numerous as to resemble a "cultural" growth. In some cases this ventricular infection persists after the surface condition has cleared up under serum treatment, and may lead to a fatal issue, although the cord may be found "clean" at the necropsy. In other cases which have cleared up, but in which the foramina in the pial roof of the fourth ventricle have become blocked, a non-inflammatory or retention hydrocephalus may ultimately supervene and cause death. Another phenomenon which aids mechanically in the production of hydrocephalus is the pushing down of the medulla and the adjacent portion of the cerebellum into the foramen magnum, compressing the foramina in the pial roof of the fourth ventricle, and preventing the egress of fluid even when these foramina are not blocked by exudate. Such driving down of these structures into the foramen magnum, like a cork into the neck of a bottle, may be produced both by the congestion and swelling of the whole brain and by the accumulation of fluid in the ventricles—that is, this condition and the hydrocephalus, however produced, aggravate one another.

DIPLOCOCCUS CRASSUS AND MENINGITIS.

BY

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Medical literature supplies but few recorded cases of meningitis in which infection is attributed to or associated with the presence of *Diplococcus crassus*—a Gram-positive organism, first reported by Jäger[1] in 1895, during an epidemic of cerebro-spinal meningitis.

[Dr. Graham Forbes gave a detailed history of the organism and a complete account of the literature relating to it from the time of its discovery to the present day.]

Morphologically the diplococcus is stated to be a little larger than the meningococcus, and is always Gram-positive; culturally it grows readily at 20° C., slowly on gelatin at first, but later yields abundant colonies which are smaller than the meningococcus, grey to the naked eye, brownish under the microscope, and without producing any liquefaction. It ferments glucose, maltose, levulose, saccharose, and lactose. Macé[2] quotes it as being constantly agglutinated by antimeningococcal serum even up to 1 in 200 dilution, and states that this property, due to the presence of secondary group agglutinins, is lowered by the age of the culture.

On the other hand, the meningococcus was never agglutinated by anti-crassus serum, and complement reaction tests proved negative. He also alludes to the marked resistance of the organism, which retains its vitality and virulence for a considerable period. G. Rosenthal[3] has quite recently (1918) described a case of cerebro-spinal meningitis in which lumbar punctures yielded turbid specimens of fluid, rich in polynuclear cells, containing albumin, and usually giving the sugar reaction with Fehling's fluid. Direct preparations rarely showed intra- and extra-cellular diplococci, and cultures yielded *Micrococcus crassus* de Jäger. Cure was claimed to have been effected by intrathecal injections of solutions of chloride and citrate of soda, 7 and 8 grams respectively per litre.

Examination of the cerebro-spinal fluid in a case of meningitis, following on fracture of the base of the skull, resulted in the isolation of two strains of cocci, one of which may be regarded as conforming with *Diplococcus crassus* in its morphological and cultural characters:

A workman (W. B. C.), aged 50, employed in furniture removal, on January 8th was handling a heavy article and fell, striking the right side of his head. Blood is said to have spurted from the right ear at the time. He was taken to the neighbouring cottage hospital, where fracture of the skull base was diagnosed, but as the patient became maniacal he had to be transferred to the infirmary. There he made fair progress, and four weeks after the accident returned at his own request to his home in London, travelling by train and tram. His mental condition was described as rational but dull, and not quite normal. He made no attempt to return to work, but was feeling well enough to take walks. He complained of headaches from the time of his return home, and on March 20th they had increased so much in severity that he was obliged to take to his bed a day or two later. He was admitted to the local borough infirmary on March 27th in a state of subcoma. It was said that there had been no convulsions, and there was no evidence of paralysis and no optic neuritis.

Lumbar puncture on March 30th yielded about 10 c.cm. of apparently clear colourless fluid, which was forwarded the same day to the pathological laboratory of the London County Council and examined within four hours of collection.

Chemical examination showed the presence of albumin in considerable quantity, amounting to 0.07 per cent. by Aufrecht's albuminometer. Fehling's solution was readily reduced. There was no clot formation on standing. Centrifugalization yielded a visibly turbid deposit from which film preparations were made and stained by Jenner's stain, by Gram's method and for tubercle bacilli. Small quadrilateral crystals of cholesterin were present in fair numbers, together with leucocytes considerably in excess of the normal, the majority being lymphocytes (79 per cent.), degenerated endothelial cells (12 per cent.), and polymorphs (8 per cent.), and red corpuscles. A few scattered diplococci, definitely Gram-positive and not intracellular, were readily seen without any prolonged search. Careful search failed to show any tubercle bacilli.

Cultural Examination.—Five drops of the fluid were inoculated on to the surface of a plate of Gordon's medium. After twenty-four hours' incubation at 37° C., the area occupied by each drop yielded a collection of discrete round colonies, which under the hand lens were seen to be composed of two types—one, raised dense white with sharply defined edge about 2 mm. in diameter (Type II), and the other (Type I) somewhat smaller, opalescent with fading margins. Subcultures were made on to ordinary agar-agar slopes from each of the two types of colonies. Film preparations showed Type I to be composed of a small Gram-positive coccus measuring 0.6μ to 0.8μ, showing no characteristic grouping; and it was regarded as a staphylococcus and a possible contamination. Type II, also strongly Gram-positive, consisted of a large rounded diplococcus measuring 1μ to 1.2μ, with the opposing surfaces of each half in close apposition; its appearance suggested a resemblance to *Diplococcus crassus*. At this stage no particulars had been provided as to the past history of the case. The result of examination of the fluid was reported to the infirmary, and a tentative opinion expressed in favour of a chronic meningitis, type indeterminate.

The further course of the case was of brief duration. The patient died, without regaining consciousness, on April 1st, just twelve weeks after the accident. *Post-mortem* examination was performed the following day at the infirmary, and revealed:

1. Clear evidence of a still unhealed fracture at the middle fossa of the skull base on the right side.

2. A diffuse chronic leptomeningitis, shown by thickening and opacity of the membranes. There was no purulent exudate and no evidence of tubercle.

3. Well marked hydrocephalus affecting the lateral third and fourth ventricles as the result of obstruction to the foramen of Majendie by the chronic leptomeningitis.

[Dr. Graham Forbes gave particulars of further cultural tests which confirmed the diagnosis of the Type II organism as *Diplococcus crassus*. Animal inoculation experiments were being undertaken. Agglutination against antimeningococcal serums gave negative results.]

Remarks.

1. Meningitis, following on fractures of the middle fossa of the skull base which do not prove rapidly fatal, is regarded as one of the serious infective complications most likely to occur. Trotter[4] states, however, that the graver forms of meningitis are an uncommon event in fractures of the skull base, but there is reason to suppose that minor grades of meningeal infection occur frequently and are recovered from.

2. The changes found in the cerebro-spinal fluid in the case of the patient (W. B. C.) pointed, in the absence of any history, to a chronic form of meningitis, particularly the character of the cell deposit, largely composed of lymphocytes. Although open to question on the score of possible contamination, the discovery of Gram-positive cocci in direct film preparations from the cell deposit within four hours of withdrawal of the fluid, and the subsequent appearance in culture of the two strains of cocci described, seem to justify the conclusion that these organisms, originally saprophytic and of low virulence, gained access directly from the external auditory meatus to the cerebral membranes. The severity of the damage to the tissues at the seat of injury may be regarded as having been productive of a lowering of local resistance sufficient to enable the invading saprophytes to acquire necessary virulence and pathogenicity, and thus become responsible for a chronic leptomeningitis. It is possible also that the recovery of such saprophytic organisms—notably *Diplococcus crassus* — from recorded cases of cerebro-spinal meningitis may be due to primary or secondary invasion of the meninges from the nasopharynx or auditory meatus.

3. Confusion as to the identity of the organism first described by Jäger and Heubner[5] prevails in the original and later accounts given by Lingelsheim[6] and Stoevesandt[7] of the *Diplococcus crassus*. Particularly is this the case with reference to its quite unexpected behaviour and reported response to agglutination by antimeningococcal serum, the correctness and accuracy of which one can but doubt in the face of up-to-date and more exact observations in agglutination phenomena. Better definition is, however, derived from the more recent descriptions of Harvier[8] and Macé, although the latter in his account still quotes Lingelsheim's positive agglutination results as a feature of *Diplococcus crassus*.

4. The two strains of cocci isolated from the cerebrospinal fluid of the case here reported—No. 1, apparently *Staphylococcus albus*, and No. 2, suggested as *Diplococcus crassus*—conform in many respects to those obtained by Stoevesandt in association with his two cases of meningitis. Closer confirmation of the identity of No. 2 is provided by the account of the case given by Harvier, whose description of the morphological and cultural characters and negative response to agglutination of the organism he isolated as *Diplococcus crassus* closely agrees with the behaviour of the diplococcus I now bring to your notice.

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DISCUSSION.

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THE opening paper of Dr. Arkwright and those of subsequent speakers who have contributed to our knowledge of the meningococcus during the war contain such a wealth of experimental data as to render it extremely difficult even for the trained bacteriologist to adjudicate between the bacteriological points still at issue and for the hygienist to decide on the bearing of the findings on the control of epidemics in practice. It is with the hygienist and administrator that I am most in sympathy in this question, as during the war I had occasion to advise with regard to control measures both in Egypt and Mesopotamia, and was consequently compelled to look at the problem from two standpoints. I left this country for the East entertaining the belief, then widely held, and supposed to be well founded, that among the non-contact community meningococcal carriers were exceedingly rare; that at the commencement of an outbreak carriers among the affected population were also few; and that therefore, if carriers were thoroughly searched for and isolated, or treated when discovered, much good might be done in arresting the spread of the epidemic. I very soon found that in the first place an organization necessary to cope efficiently with the bacteriological side of the question was absolutely impracticable, and that the retention of contacts was an irksome affair to the unfortunate persons held up, and a decided nuisance to the military authorities responsible for maintaining the fullest possible complement of men. The result was a compromise based simply on common sense—namely, the avoidance of overcrowding in tents and billets, and certain other minor recommendations. All the time, however, I was deeply interested to ascertain what was happening at home, and one heard of the elaborate bacteriological organization at work in England, and the recommendations emerging therefrom. What was possible in England in this way was certainly not possible among operating troops on the Eastern fronts; and it is somewhat curious that one has heard little or nothing of what was carried out or attempted in this connexion on the Western front. Now, what after all have we learnt from this work at home which is of value to the hygienist? We have learnt—and I know this is the chief issue—that overcrowding has a definite influence on the carrier rate, and that therefore the common-sense procedure of "spacing out" is justified bacteriologically. On the other hand, I am not satisfied that any real evidence is available proving that the hunting for and isolation of carriers has had any significant effect in stemming the tide of an epidemic. The treatment of discovered carriers might be advised if it were to hasten the disappearance of the organisms from the throat; but it would appear, I think, from the work carried out on this question that for the temporary carrier no treatment tried is materially superior to Nature, and that the chronic carriers are little, if at all, influenced by treatment. I cannot see how Colonel Gordon's recommendation to submit the whole community to the sterilizing influence of the inhalation room during epidemics can be seriously entertained. Why is it now suggested that the whole community should enter the inhalation chamber? It is, I imagine, because of the discovery that a fairly considerable percentage of carriers exists among non-contacts. We require, I think, yet to have data with respect to non-contacts investigated at a time when cerebro-spinal meningitis has entirely ceased to be epidemic, but at present we have abundant data from the Ministry of Health bacteriologists which, allowing for some difference of opinion with regard to the serological grouping and epidemiological importance of certain nasopharyngeal strains, must profoundly affect our previous notions that the carrier rate can be controlled by starting early. That a carrier rate of 20 per cent. in the community is necessarily to be regarded as a danger signal may be a sound principle in practice, but it still lacks proof. It is curious that little or no attention has been paid to prophylactic vaccination in view of the promising results obtained by Penfold at Salisbury in the early days of the epidemic. On the purely bacteriological side I would offer a few remarks only. We are deeply grateful to the bacteriologists of the Royal Army Medical College and the Ministry of Health for the amount of data they have produced. Final judgement as to the exact number of serological types and their interrelationship, and as to the significance of certain nasopharyngeal types which it has been found difficult to place, must, I think, be postponed; at least I cannot adjudicate in the matter [illegible] [illegible] bacteriologist we have to face seriously the question of the relationship of pathogenic organisms to their host organisms whether as in cholera they occur in water and soil, or in cerebro-spinal fever in a saprophytic state on the nasopharynx.

It seems to me that the work done on the serological grouping of meningococci has had its chief result in serum therapy, and the inference to my mind is that the more polyvalent such a serum is the more generally potent it is likely to be. I cannot see where the practicability of monovalent serums comes in. With regard, finally, to the studies of Colonel Gordon on the reduction [illegible] of the meningococcus and the presence of a heat-stable haemolysin in its [illegible] extracts, I do not think that they bring us any nearer to an understanding of the way in which the meningococcus exerts its deleterious action on the tissues. Since the work of [illegible] and Hahn and Schultze and Kraus many years ago it is well known that practically all organisms tested exhibit reducing powers. The heat-stable haemolytic substance present in alcoholic extracts of bacteria has also been thoroughly studied, and does not seem to have any connexion with true haemolysis or with virulence or anything else. It appears, indeed, to be analogous with a similar heat-stable lysin which can be obtained from alcoholic extracts of organs.

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As the question of serological differentiation of microorganisms has been discussed by Dr. Arkwright in general terms, I should like to ask a few questions and to make a few remarks concerning this aspect of his paper.

Dr. Arkwright takes as the typical example of a satisfactory serological test, agglutination of *Bacillus typhosus*; but, surely, because of the ease with which flocculation of a "typhoid-anti-typhoid serum complex" can be demonstrated, he does not suggest that the application of similar tests to other organisms, although less easily conducted, is necessarily invalid. It so happens that the reaction in this instance is demonstrable under a greater variety of conditions than is the case with other organisms when these are exposed to their appropriate antiserums. Flocculation of antigen-antibody complexes occurs only under certain conditions, and sometimes these conditions are strictly limited.

Attention is also drawn by Dr. Arkwright to the occurrence of inagglutinable strains of *B. typhosus*, *B. paratyphosus*, etc. But are these of frequent occurrence? And are we not in danger of calling attention to exceptional strains, while neglecting to lay due stress on the great majority of strains which behave "normally"? Are the inagglutinable strains not really freaks? I feel, too, that Dr. Arkwright was unfortunate in citing inagglutinable strains of Shiga bacillus as an instance of the failure of agglutination as a method of differentiating bacteria. I presume that the strains of Shiga bacillus referred to were isolated from cases of dysentery. May not certain of these strains of inagglutinable Shiga bacilli really be Schmitz bacillus, which has been known to be responsible for the causation of epidemic dysentery in certain parts of Europe?

So far as the Flexner group of bacilli is concerned, one must agree with Dr. Arkwright that agglutination is an unsatisfactory method of examining such organisms, and does not lead to definite results; but, on the other hand, may I point out that, so far as the meningococcus is concerned, 98 per cent. of the cocci isolated from the *spinal theca* can be grouped by means of four monotypical agglutinating serums? Now, from the spinal theca it is easy to isolate an organism which, pus being present, one can be fairly satisfied is responsible for the causation of disease; but, on the contrary, with the numbers and variety of the organisms in the normal, let alone the pathological intestinal, contents, it is not so easy to be satisfied that any particular organism isolated is really of prime pathological significance. A criticism of the methods for differentiating the meningococcus used at the Central Cerebro-spinal Fever Laboratory, and the military laboratories co-operating with it, based on a discussion of the Flexner group of dysentery bacilli, appears to me, therefore, to be of very questionable validity.

Dealing with Dr. Arkwright's remarks concerning absorption of agglutinins, one must, of course, agree that this reaction obviously has its limits. But, again, I call attention to the fact that 98 per cent. of meningococci of spinal origin would, when tested by a standard technique as regards culture, agglutination, and absorption of agglutinins, fall into one or other of four serological types—absorption of agglutinins being necessary definitely to place a few only of these cocci in one or other of the groups. I have designedly laid stress on the employment of standardized technique in all phases of the investigation—in culture, because it is well known that a change of culture medium may alter the agglutination properties of certain micro-organisms. Bordet observed this change to occur in the case of the whooping-cough bacillus in a very striking manner, and since then it has been shown by other investigators that kindred changes in agglutinability or agglutinogenic capacity may be brought about by culture in the presence of antiserums and by other methods. Still more stress is laid on the standardization of the serological tests, for the obvious reason that we are ignorant of the intimate mechanism of these. We do know, however, that a slight variation in the conditions of an experiment may upset observable phenomena in physical chemistry, and there is more than a suggestion that the process of agglutination is a physico-chemical phenomenon. Of course it may be asked, What justification have you for setting up arbitrary standards? Well, even the metric system is a number of interrelated arbitrary standards, but it cannot be gainsaid that it is extremely valuable. Again, no one would contemplate carrying out a Wassermann test without most careful standardization of every reagent; the Wassermann test is a purely empirical reaction, and its success depends entirely upon setting up arbitrary standards, but its value is none the less considerable. My argument, then, is that as a practical method the agglutination technique as employed by Gordon and his associates gives valuable information otherwise unobtainable.

Turning to another matter, I should like to ask Dr. Arkwright what precisely he means when he quotes my work on tetanus. I do not wish to be misunderstood in this matter, and I ask forgiveness for making a short summary of the results which were obtained.

1. It was shown that the exotoxins of all the agglutinating "types" of *Bacillus tetani* appeared to be the same.

2. It was also shown that the exotoxin was not the only factor of pathogenic importance in infection with *Bacillus tetani*, for fresh whole cultures of that organism were found to possess antiphagocytic properties which could only be overcome by the use of *homologous* anti-serums. These results were perfectly definite *in vitro*, while corresponding experiments *in vivo* were suggestive when it is borne in mind that the technical difficulties of setting up a "controlled infection" with *Bacillus tetani* are almost insurmountable.

With regard to Dr. Ponder's paper, I should like to give my own experience in the investigation of inagglutinable strains from the nasopharynx which were supplied to me by Dr. Glover. In this series of 40 nasopharyngeal strains were a few cultures which Dr. Glover regarded, from the results of his routine agglutination tests, as true meningococci, but he gave me no information concerning which of these 40 he did regard as meningococci. Very many of these Gram-negative cocci obtained from the nasopharynx, although they exhibited all the cultural and fermentative reactions of the meningococcus, failed to qualify as that organism when fully tested by serological methods. With the exception of the cocci, which Dr. Glover regarded as meningococci, not one of the series of 40 qualified as a meningococcus on subsequent examination by agglutination and absorption of agglutinin, notwithstanding the fact that 23 out of 28 of these, when tested by cultures in carbohydrate media, gave the reactions of the meningococcus. These results, contrasted with the 98 per cent. of positive reactions obtained in the case of spinal strains using the same technique, are, to say the least, striking. Furthermore, when agglutinating serums were made from these cocci, which were inagglutinable with meningococcus agglutinating serum, it was found that the serums obtained did not agglutinate to any extent, at least the majority of meningococci, and the meningococci which did show group agglutination with these serums, failed to absorb from them the specific agglutinins for the ("inagglutinable") strain with which they were prepared. Moreover, the multiplicity of serums required to agglutinate these meningococcus-like organisms of pharyngeal origin is such that nearly every coccus of this kind requires a serum specific to itself—very different from what obtained in the case of thecal strains. It cannot be sufficiently emphasized that the starting-point of any investigation of this kind must be a thecal strain or thecal strains. Pharyngeal strains must not be used for the preparation of agglutinating serums which are designed to be used for diagnostic purposes.

Finally, it must be appreciated that all the work on differentiation of serological types of pathogenic organisms is only of importance if it can be correlated with the preparation of therapeutic serums. I submit that the case for monotypical therapeutic serums in the case of meningococcal infection is not proven; but I do think that the whole of the question of typing by agglutination is worthy of extended investigation, particularly in view of recent work carried out with other organisms, notably the pneumococcus. This question of relationship of "types" to the preparation of therapeutic serums should be gone into once for all on a large scale and definite information obtained for our guidance in future.

CHARLES GRAY, M.D.Edin.

As my work in connexion with cerebro-spinal fever has been almost entirely confined to the clinical side, any contribution I can make to this discussion must be limited to questions relating to the use of therapeutic serums.

I do not think there can now be any doubt as to the value in treatment of a good antimeningococcal serum. At Fulham we were treating all the military cases for the whole of the London area from December, 1915, to April, 1919, and our mortality had a definite relation to the intrathecal use of serum and to the quality of the serum employed. The experience of other observers, such as Flexner, Ker, Rolleston, Worster-Drought, and others is in the same direction. If any further confirmation be needed it is to be found in the facts to which Dr. Gordon has drawn attention as to the differing mortality among civilian and military cases in the past epidemic—a difference which must have been largely due to the special provision of serum for the military cases.

Dr. Arkwright refers to the alternative of the use of mono- or poly-valent serum as a vexed question. From the clinical point of view there can be, I imagine, no doubt whatever that a polyvalent serum must be employed for at any rate the first few days of treatment. The importance of early treatment cannot be too strongly emphasized. Of thirty-three cases treated at Fulham with the exceedingly good Lister serum of 1915–16 on or before the third day of disease, the mortality was only 9 per cent., whereas in cases treated with the same serum *after* seven days the mortality was 50 per cent. Owing to the circumstances of the case we had seldom an opportunity of commencing treatment on the first day, though I had one rapid recovery in a case treated within twelve hours of onset, but Worster-Drought had no deaths in five cases treated on the first day. Netter, Dopter, and Flexner report the same low mortality with early treatment. In my experience, in an overwhelming majority of the cases, it is the first three days of treatment which really settle the issue. Now, treatment in those days must be with polyvalent serum. So far it has not been possible to obtain information as to the type of coccus before at least the third day, frequently it is the fourth, and there will always remain a small percentage of cases in which, with the best will in the world, the type is never determined. I am so impressed with the value of early treatment, and I have had so little success with monovalent serum in cases which were doing badly with polyvalent, that I should be perfectly content, as far as treatment goes, to dispense with attempts to discover the type of coccus, given the provision of a serum which is really antimeningotoxic to all varieties.

It is not safe to anticipate the type in any given case, for although in different periods of a prolonged epidemic a majority of the cases may belong to one type, cases of other types turn up fairly frequently.

Not much appears to be known as to any relation between methods of preparation of serums and serum sickness, but in my experience the occurrence varies considerably with different serums.

Thus, in the series of cases treated with the 1915–16 Lister serum, the percentage of cases surviving ten days or longer which were affected was 37.5; in 1917–18, using a very good Lister serum, No. 47, this percentage was 57.7; and with the Medical Research Committee's serum, which gave us very good results with Types I and II, the percentage rose to 89.8.

This variation is not to be explained by variation in dose, as, with a few exceptions, the dose was the same. The day on which the symptoms first appeared varied from the third to the fourteenth day of treatment, the average being the ninth.

In my series of over 170 cases I have had only one instance of true anaphylaxis.

This occurred in a patient (K.), who, after a clear interval of fourteen days from the previous administration of serum, had a relapse, accompanied by a return of meningococci to his cerebro-spinal fluid. He was given 30 c.cm. of [illegible] serum intrathecally and 15 c.cm. of Flexner's serum intravenously. Within five minutes of the administration he passed into an alarming condition, with extreme pallor, imperceptible pulse, fluttering heart, and rapid sighing respiration. Within half an hour, adrenalin and oxygen having been administered, he rallied, and eventually made a good recovery.

Disappearance of meningococci from the cerebro-spinal fluid is not by itself a reliable guide for the cessation of administration of serum. The observation must be correlated with that of the patient's clinical condition. Cocci very generally disappear from the fluid after the third day of treatment, but if serum is then withheld it not infrequently happens that the patient becomes worse.

It is unfortunate that no reliable method of standardization has yet been arrived at. Many of the commercial serums on the market are quite useless, and may lull the administrator into a false sense of security. It is to be hoped, and I believe justifiably, that the Ministry of Health or the Medical Research Council will undertake to standardize and guarantee as far as possible all varieties of therapeutic serums.

Dr. GARDNER ROBB (Belfast) agreed with Dr. Arkwright that polyvalent serums were of more general use than monovalent serums. Had he Dr. Gordon at his elbow to type the organism it might be a different matter, but left to his own devices he would certainly use the polyvalent serum. In his opinion the results with polyvalent were as good as those with monovalent serum if the statistics were carefully studied. The disadvantages and want of experience of early workers must be remembered. Fallacies might arise if age periods were not taken into account. In infants, for instance, the mortality was much higher than in people of military age. In infants an early diagnosis was much more difficult. They were brought to hospital late in the disease, and the results of treatment could not be as good. The death rate of cerebro-spinal meningitis at Belfast, taking all cases, was 27 per cent. In military cases it was 12 per cent. But when infants were excluded the civilian death rate was only slightly above that of the military.

Dr. SCOTT agreed with Dr. Arkwright as to the difficulties of separating the different strains of meningococci. He did not think there were any magic number of types. The four types described by Gordon were the commoner ones. The meningococcus was a common inhabitant of the nasopharynx. Under conditions of overcrowding it passed rapidly from one individual to another and thereby acquired special virulence. If the passage of the coccus from one individual to another could be prevented its virulence did not increase.

OPENERS' REPLIES.

Dr. ARKWRIGHT, in reply, remarked that there were many things he would like to say but time did not suffice. In reply to Dr. Tulloch, he thought the latter had misunderstood his statement about *B. tetani*. He had quoted Dr. Tulloch's own work. The character of toxin production did not correspond to the varieties of agglutination reaction. With regard to the figures on the board to which Dr. Tulloch took objection, he had merely put them up to show that there were a certain number of strains which Dr. Tulloch had been unable to group. He assured Dr. Tulloch that it was not of Schmitz's bacillus that he was speaking when he referred to the difficulties of agglutinating varieties of *B. dysenteriae* (Shiga). In classification one must take several characters into account. To trust to one character alone was rather like putting the leopard and the giraffe into the same group because they both had spots. Agglutination alone was not a safe guide. For finding similarities one method, simple agglutination, was good; for finding differences absorption was useful. Gordon's groups were too hard and fast. The real importance of grouping lay in its practical application to clinical considerations and to the manufacture of therapeutic serums. So far, the division into numerous small groups had not been proved to have practical results. He wished there had been time to discuss other aspects of the subject. It would have been interesting to get more evidence as to the mode of entry of the organism.

Dr. GORDON said that any effort to limit the spread of the meningococcus must take into account the varying susceptibilities of different classes of individuals. Recruits were much more susceptible than old soldiers. Prevention of overcrowding was the most important measure. The steam spray was only advised when overcrowding was unavoidable. It was effective in lowering the incidence of the disease. Vaccination was inadvisable. Prophylactic inoculations were tried in one brigade but the results were not encouraging. The war was a test of bacteriological efficiency. The crucial test was the ability to prevent and cure cerebro-spinal fever. The differentiation of the meningococcus into four main groups by agglutination (and absorption) in 1915 was confirmed by the experience of four succeeding years. At the present time four groups of meningococci were recognized in France and apparently in America also. He thought Dr. Arkwright's doubts were answered by the results summarized in his paper. No doubt the groups of meningococci could be subdivided still further. The complexity of Type II had always been insisted on. For the successful identification of the meningococcus in practice the same standard procedure was used throughout. The same medium—namely, trypagar, which contains pea extract—was employed, and care was taken to obtain monovalent agglutinating serums representative of current strains. It was a testimony to the care taken by Major Bell, who prepared these agglutinating serums latterly, that out of the last 200 meningococci received at the Central Laboratory only one was unplaced. In practice the identification of meningococci was simple; there were needed: (1) suspensions of meningococci of four types (2,000 million per cubic centimetre); (2) monotypical agglutinating serums for these types of known titre; (3) control normal serum; (4) small tubes, racks, pipettes, saline, and 55° C. incubator. The procedure was so simple that bacteriologists who had never done it before were taught it in a few days. As regards monovalent *versus* polyvalent serums, monovalent serums were only undertaken as a preliminary to producing an efficient polyvalent serum later of standard quality.

A PHYSICAL THERAPEUTIC CENTRE:

AN EXPERIMENT BY THE NORTH STAFFORDSHIRE COAL AND IRON MASTERS ALONG THE SUGGESTED LINES OF FUTURE MEDICAL SERVICE.

BY

T. LISTER LLEWELLYN, M.D.LOND.,
MEDICAL OFFICER TO THE NORTH STAFFORDSHIRE COAL AND IRON MASTERS.

IN view of the great interest which is being taken in the interim report of the Medical Consultative Council,[1] and of the report of the Departmental Committee on Workmen's Compensation,[2] the following account of the establishment and the results of the first year's working of a "massage centre" for the treatment of injured workmen will be interesting both to medical men and to employers of labour.

In the interim report great stress is laid on the establishment of local centres; in the report of the Departmental Committee it is recommended that any medical and surgical aid necessary in addition to the medical treatment already available under the National Insurance Act should be provided at the cost of the employer under a comprehensive scheme to be worked out in co-operation with the Ministry of Health (2, paragraph 75).

The employers of the coal and iron industries are united in this district in a mutual indemnity society, and the "centre" has been established and financed by them for the free treatment of injured workmen in receipt of compensation. Although the methods of treatment employed are in common use to-day, it is thought that the "centre" in question is the first of its kind in this country, combining in itself the two principles of local centralization of the future scheme of the Ministry of Health and of medical responsibility of the employers under future Workmen's Compensation Acts.

Reasons for Formation of Centre.

It was pointed out to the employers that much time was lost by the workmen from lack of what might be called *intensive* after-treatment of injuries by *daily* massage, suggestion, and exercises. It was shown that the local institutions, largely from overcrowding by pensioners, were overworked, and that the panel practitioners were not in the position to carry out the necessary treatment. The employers realized that any efforts on their part to alleviate the sufferings and bring about the return to normal function of their injured workmen would be greatly appreciated by the workmen themselves.

Establishment of Centre.

The district is comparatively compact, and the train and tram services are good. The number of employees is

45,000, and 80 per cent. live within a five-mile radius of the centre. The President and Past-President of the local Branch of the British Medical Association were asked to advise as to procedure. It was decided that if the employers' medical officer thought that any man attending for examination in accordance with the regulations of the Workmen's Compensation Act would be benefited by special treatment at the centre—the medical practitioner in attendance should be notified and his permission obtained. The following letter was drawn up (to be sent by post):

> Dr. ....
>
> ....
>
> I saw your patient .... this morning, and think a course of massage (and electrical treatment would accelerate his recovery. With your permission I will arrange this course of treatment at our centre (address given). If you agree, no answer need be sent to this letter, but I should be pleased to receive any suggestion you desire to make.
>
> (Signed)
>
> ....
>
> Medical Officer.

Once the permission was given, the man was then considered to be under the care of the employers' medical officer. The staff and equipment of the centre was as follows:

Personnel.

Employers' medical officer in charge.

Two masseurs, both ex-sergeants of the R.A.M.C., with special experience of massage, physical drill, general athletic training, and electrical treatment.

Equipment.

One large furnished room in the local Church Institute was hired at a rent which included cleaning, light, and a supply of hot water, and equipped as follows:

Two couches for massage.
One Mennell's combination apparatus.
One bicycle on rollers (home-made at inclusive cost of £5 10s.).
Two pairs of Indian clubs (one very light—sceptres).
One pair of grip dumbbells.
One pair of Terry's spring developer.
Rubber balls and home-made finger exerciser.
One galvano set with hospital outfit complete—faradic coil, metronome, set of Schnee baths, etc.
One electrical vibrator.
One cupboard containing: Two blankets, four pillows, one dozen towels, four white coats, nail-brush and soap, box with cards and card index, stationery, olive oil, boracic powder, two dredgers, solutions of sodium iodide, sodium salicylate, and sodium chloride for ionic medication, iodine, lint, bandages.

ROUTINE OF TREATMENT.

The injured workman received, either directly or through his medical attendant, a slip containing diagnosis, prescribed treatment, and directions for finding the centre. Particulars of each patient were entered on a separate card, which was stamped for every attendance. Each week the workman was given a certificate by the masseur, stating the number of attendances and entitling him to travelling expenses.

The object of the treatment was explained to the man, and every effort was made to secure his intelligent co-operation. On his first visit successful cases were brought to his notice, and the influence of suggestion was employed whenever possible. Great stress was laid on the use of exercises which could be repeated by the patient at home. In the early stages of active movements the necessity for mental concentration on the movement is insisted on; for instance, if the man has to dorsiflex his foot he is told to say to himself with each movement "I am bending my foot."

Cases Illustrating the Results of Daily Massage and Exercises.

J. H. July 18th, 1919, fracture of femur, upper third. September 29th, treatment started. December 16th, resumed light work.

J. B. April 9th, 1919, fracture of left tibia. January 8th, 1920, treatment started. April 28th, resumed work.

J. K. January 9th, 1920, dislocated shoulder. January 20th, treatment started. February 6th, resumed work.

G. M., aged 61. August 16th, 1919, dislocated shoulder. August 20th, treatment started. September 8th, resumed work.

Compare the last two cases where treatment was started soon after injury with the following:

J. L., aged 64. Dislocation of shoulder one year ago. Marked limitation of movement and wasting of muscles of shoulder girdle. No work since accident. July 8th, 1919, treatment started. August 10th, resumed light work with good range of movement of shoulder.

One of the most striking cases was the rapid recovery of a crushed hand with marked swelling of all the fingers and complete loss of movement. There was no fracture, but all the finger-joints were swollen. Treatment was started two days after injury and there was complete movement in all the joints in twelve days.

Walking Exercises.—Special attention has been paid to walking exercises. Patients continue to use their crutches for long periods because they are afraid to trust to their injured leg, and forget how to use it properly. All men arriving on crutches are given walking exercise at once. They are taught to walk by numbers, and the results of a few lessons are very striking.

J. T. April 14th, 1920, fracture of second metatarsal bone. May 21st, came to centre on two crutches. May 26th, walking with one stick. June 5th, resumed work.

D. S. September 4th, 1919, sprained ankle and contused foot. September 24th, came to centre on crutches quite unable to walk. September 25th, walked across room without help. October 13th, resumed work.

Directions for Exercise.—From position of hips firm. *One*, the whole weight resting on the right leg, carry the left foot forward about twelve inches, toe raised, heel touching ground. *Two*, whole weight remains on right leg, left foot flat on ground, both legs braced. *Three*, weight transferred to left leg, right heel raised, both legs well braced. *Four*, flex right knee and prepare to carry right foot forward at "one."

In all cases massage was started in the proximal segment of the limb, and the value of "taking the stopper out of the bottle" (Mennell)[3]—that is, starting with massage to the thigh for injuries to the ankle—was strikingly proved in many cases.

H. B. February 17th, 1920, contusion of leg with septic wound on outer side of ankle, oedema of the leg, and varicose veins. May 27th, massage to thigh started. The wound, which had been open for over two months, healed soundly in a week. June 14th, resumed work.

W. P. January 11th, 1919, fracture of femur. June 24th, brought to centre in a chair. Marked oedema and swelling of the whole of the left leg. Movement at knee-joint lost. July 6th, the leg is still swollen but the man is able to get about on crutches. Movement at knee, 25 degrees. August 15th, walking with sticks. September 26th, started light work. Knee movement complete.

J. L. October 6th, 1919, laceration of hand. The wound, which extended across the back of the hand, refused to heal. December 3rd, massage started. The wound healed in less than one week.

Resistance Exercises.—Two cases of disordered action of the heart resulting from strain were treated with graduated resistance exercises combined with light massage and faradism over the cardiac area. The results were not satisfactory, although the men eventually returned to work.

Electrical Treatment.

In all cases where there had been marked wasting of the muscles interrupted galvanism was given in addition to massage and exercises.

J. D. Severe contusion of right leg with drop-foot and R.D. in anterior tibial group of muscles; resumed work in four and a half months.

G. F. January 9th, 1920, operated on for exostosis of femur said to have been caused by a blow. March 4th, very marked wasting of muscles of thigh with stiffness of knee-joint; treatment started. March 11th, knee can be completely flexed. May 1st, resumed work.

In the early stages of injury to the back, treatment with massage, exercises, and vibration was generally successful. In the more chronic cases, and especially where a state of neurasthenia had followed an old back injury, general galvanism with Schnee baths, and faradism to the spine were employed with a certain amount of success.

A. P. December 10th, 1918, strained back. July 12th, 1919, typical neurasthenic, complaining of general pains, palpitation, nervousness, and inability to bend back. Treated with general massage, suggestion, galvanism, with Schnee baths, vibration, and general exercises. He resumed work after three months, and is now working five turns a week driving an underground haulage engine.

G. B. October 30th, 1919, general bruising of body. April 14th, 1920, no work since accident. General pains in the back. Unable to lift any weights. Treated with general massage, exercises, and galvanism to spine. May 1st, resumed work.

W. D. January 24th, 1919, strained back shortly after return to civil life. Complains of constant pain in the back, increased on movement; unable to lift anything or to lace his own shoes. Magnificent physique sergeant major drill instructor. No physical signs, except a pulse rate of 100. August 11th, massage to spine and mild faradism through hand of operator. The man refused to attend after the second day. Pressure was put upon him and he attended irregularly for four months without any improvement. The case was then commuted.

J. L. January 14th, 1919, strained back lifting load. Kept in bed in cottage hospital for several weeks. October 8th, complains of pain and weakness of the back. Walks bent up with the help of a stick. Schnee baths and general massage. He attended regularly, and made such marked progress that he resumed work at the coal-face on February 13th, 1920. He was unable to satisfy his fellow workers, and gave up work on March 23rd. The man is quite fit for light work, but is still unable to follow his old employment.

Ionic Medication.—Treatment with ionic medication was carried out in cases of synovitis of the knee-joint which did not yield to the ordinary treatment. Ionization with sodium salicylate was used in painful affections of the joints. In three cases of chronic suppuration near the ankle ionic medication gave temporary relief, but all three cases were eventually transferred back for surgical treatment. One interesting case of miner's elbow yielded to ionization with sodium iodide:

G. N., whilst attending the centre for contusion of the right shoulder, suddenly developed a large bursa over the left elbow. Ionization with sodium iodide cleared up the condition in one week. The man returned to work and the bursa reappeared. It was again successfully treated in the same manner. The chief interest of the case is the sudden appearance of the bursa while the man was "playing."

GENERAL RESULTS OF TREATMENT.

It is interesting to note, as showing the growth of the centre in the esteem of the local medical men and the workmen, that 181 cases were treated in the first six months and 310 in the second six months. The appreciation shown by the workmen for the efforts made by the employers on their behalf has been very gratifying. It is important to note that many long-standing cases were taken over by the centre and that return to work does not necessarily mean return to old employment.

Table Showing the Number of Workmen Treated, the Average Attendance, and an Analysis of the Cases.

Total number of cases treated	491
Number of attendances	7.558
Number of working days	300
Average weekly attendance	145
Average daily attendance	25
Average attendance per case	15.4

491 Cases.

Completed cases	446
Still under treatment at centre	42
Transferred for surgical treatment	3
	491

Completed Cases.

Returned to work	425
Settled for lump sum	12
Not improved	6
Refused treatment	3
	446

Analysis of Completed Cases.

		Average Attendance.
Upper Extremity:		
[illegible] of hand	61	6.7
Cellulitis of hand	10	31.0
Fracture of thumb	2	16.0
Fracture of fingers	16	15.0
[illegible]	13	15.0
Amputation of fingers	9	12.0
[illegible]	15	12.0
[illegible]	11	9.0
[illegible]	18	13.5
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	2	5.0
Lower Extremity:		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	1	32.0
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	30.0
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	10.5
[illegible]	1	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	18.0
General:		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	9.5
[illegible]	[illegible]	48.0
[illegible]	1	9.0
[illegible]	1	24.0
[illegible]	1	[illegible]
	446	

Settled Cases.—Twelve cases were settled; all of these showed considerable improvement, but no suitable work could be found.

Injury to back 6 (3 neurasthenics who only showed slight improvement).
Fracture of pelvis 1, fracture of femur 2, fracture of leg 1 (all these men were able to do light work).
Fracture of thumb 2 (settled for small sums).

Not Improved (6 cases).—Injury to back 3, old dislocation of shoulder 1, old fracture of wrist 1, contraction of hand due to cellulitis 1.

Refused Treatment (3 cases).—Neurasthenia following injury to back 3.

Still under Treatment at End of Year (42 cases).—Twenty-three cases returned to work at the end of the thirteenth month, and in only two cases is complete failure anticipated. These are two cases of rheumatoid arthritis of the knee-joint where injury has supervened.

COST OF ESTABLISHMENT AND CURRENT EXPENSES.

The apparatus and electrical outfit cost £92. The current expenses were: Wages £366, rent £39, sundries (drugs, dressings, etc.) £14—a total of £419.

Allowing one quarter of the original cost for depreciation, the total cost of the year's working was £23 + £419 = £442. As the total number of cases treated was 491, the average cost per case was 18s. The cost of travelling expenses is not included, and will of course vary with each district. Where the medical officer is not a full-time official, it will also be necessary to add his pay to the current expenses.

With the present high wages the full compensation of 35s. a week is paid to everybody. It is only necessary, then, to expedite the injured man's return to work by one week to make the massage centre a financial success. The employers are quite convinced that this result has been achieved. If the recommendation of the Departmental Committee becomes law, compensation will be paid at the rate of £3 per week, and the saving effected correspondingly greater.

GENERAL CONCLUSIONS.

The loss of function which results from disuse, formation of adhesions in joints, and, above all, from the mental inertia which follows most serious injuries, can only be satisfactorily treated in large infirmaries, hospitals, or specially provided local centres. Treatment should be given daily, and begun as soon as possible after the accident. Return of normal function should be the only aim; it is useless to obtain perfect alignment of a broken bone with stiffness of adjacent joints or to preserve a finger which cannot be flexed into the palm. The results of the first year's working of this centre show that both employer and employee have benefited.

In this district the centre is no longer an experiment, and the employers have recently purchased accommodation for its permanent establishment.

REFERENCES.
[1] Report of Medical Consultative Council to the Minister of Health.
[2] Report of Departmental Committee on Workmen's Compensation, Cmd [illegible]. [3] Mennell, *Massage: Its Principles and Practice*, p. 19.

NEUROLOGICAL JOTTINGS. II.

BY

JAMES TAYLOR, C.B.E., M.D., F.R.C.P.,

[illegible]

Chicken-pox and Herpes.

Since the publication of my paper on "Neurological Jottings"[1] I have had several communications on one of the subjects on which I wrote, namely, the curious connexion between herpes and chicken-pox, and there have also been several communications to the JOURNAL on the subject. In my former paper I referred to several instances of chicken-pox occurring in the same house in which herpes had been present at or about the time at which chicken-pox occurred. In all the cases which had come under my observation or of which I had authentic first-hand information, herpes had occurred in an adult and had been followed by chicken-pox in younger persons, chiefly children.

Dr. Ingram Cooke relates the case of a girl of 16 who came to his surgery for some medicine for her father, who had developed shingles about two weeks before. She asked

Dr. Cooke about a "rash" which had appeared on her body on the previous day. Dr. Cooke found that she was in the early stage of an attack of chicken-pox. This subsequently developed into a characteristic attack, with a good crop of vesicles and a temperature of 102°. There was no other case of chicken-pox in the neighbourhood. Dr. Pereira Gray[3] of Exeter wrote as follows:

> "There is, no doubt, a close connexion between shingles and chicken-pox. At any rate, they frequently occur together or closely follow each other. But whether the one is the cause of the other or both are dependent on a common factor must be left an open question."

I am permitted also to quote the following two letters. The first is from Dr. H. G. Turney, Senior Physician to St. Thomas's Hospital. He writes:

> "I was much interested in your reference to the relationship between shingles and chicken-pox—a fact that I have been convinced of for some time past. Just now a somewhat striking example has come under my notice which may interest you. A married sister of my wife's now living in Edinburgh has two children who during February were laid up with mumps. A maiden aunt, while not actually living in the same flat, spends most of her time with them, and in fact carries on their education. On March 10th, after a day or two of malaise, she developed shingles and was received into the flat to be nursed. Both children developed chicken-pox on March 27th. One of them had, since the mumps, paid a visit to Glasgow and so came into possible contact with infection, but the other had been isolated, and so far as can be traced cannot conceivably have been infected from without. Moreover, the illness took both children on the same day and must presumably have arisen from the same focus. Suspicion points very strongly to the aunt and her shingles, for nothing is known of any other possible source of infection."

I am also allowed to quote the following very interesting communication from Dr. Dorward Brown of Harrogate. He says:

> "I was greatly interested in what you say in your paper as to herpes and chicken-pox and their relationship, and hope the following personal experience may interest you: A month ago I had a severe attack of shingles, radiating from the second, third, and fourth dorsal areas across the back and under the axilla to the sternum. A fortnight afterwards my daughter, aged 11, had a mild attack of chicken-pox. During my attack of shingles I also had some isolated vesicles scattered over various parts of my body. Following up this I found that a lady whom I was attending for shingles just before my own attack had been in contact with a family with chicken-pox. Lastly, I was consulted a few days ago by a patient from Bournemouth who has had an attack of herpes, and he informs me that his son and housekeeper followed him with chicken-pox."

I saw also, a short time ago, a lady, a patient of Dr. Edward Lewis, who told me that about a year ago she had had an attack of occipital herpes, and that her daughter within a fortnight had an attack of chicken-pox! Dr. Claude Wilson of Tunbridge Wells[4] also relates an interesting experience:

> "A patient, A. L., came to Tunbridge Wells with his wife and son, F. L., on April 10th. They lived in apartments, and on April 13th A. L., aged 49, complained of a pain in the right groin and leg. Two days later vesicles appeared on the right buttock, the commencement of a herpetic eruption which, commencing in the inguinal region, spread over the inner side of the right thigh and calf, and on April 17th he was seen by Dr. Wilson, when the condition was a characteristic one of herpes. On May 1st F. L., the son, aged 18, noticed a few pearly spots on his forehead, and by May 3rd he was covered with hundreds of typical chicken-pox spots, distributed all over the body, accompanied by considerable pain and much constitutional disturbance. So far as can be ascertained, he had not been near any case of chicken-pox."

These instances seem to me to furnish very strong evidence of the close connexion between shingles and chicken-pox, and to lend support to the plea conveyed in the paper by Dr. Le Feuvre, referred to in my first communication, that "shingles should be recognized as an infectious disease, and one, under certain unknown conditions, likely to become a starting-point for a chicken-pox epidemic."

Early Phases of Disseminated Sclerosis.

Disseminated sclerosis is now recognized as one of the most curiously protean diseases, especially in regard to its early symptoms. It often simulates hysteria, as Dr. Thomas Buzzard pointed out long ago, and there is little doubt that even now many cases, not all of them in the early stage, are wrongly regarded as hysterical. In the early stage there may be no sign indicating organic disease. A girl happens to knock or strain her arm, and finds that she cannot move it. In such a case a gentle application of faradism may remove what is apparently merely a functional disturbance. But after a few weeks or months, if there is a recurrence of the trouble, associated with tremor or nystagmus, there is then unfortunately no doubt that structural changes have supervened. I do not mean to say that every functional condition in which no evidence of structural change exists necessarily develops later into one of disseminated sclerosis, but undoubtedly some do, and it is well to be on the lookout and to recognize that functional paralysis may result from central changes which are slight and of which the obvious manifestations are transient.

I recall the case of a clever young Jewess who had worked very hard, and who consulted a colleague on account of paralysis of the left arm which she found to be present one morning. There were no signs of organic disease, and an application of faradism was followed by immediate restoration of function. Six months later she came again with a recurrence of weakness and tremor in the arm, and complaining also of slight difficulty in walking. The arm improved after treatment, but it was found that she had exaggerated knee-jerks and ankle clonus, also that nystagmus was present. This patient rapidly developed all the signs of disseminated sclerosis; she became unable to walk, and died four years after the onset of the transient paralysis of her arm.

Squinting and ocular palsies are sometimes also transient and of equal significance. Some years ago I saw a girl of 18 who was working for an examination, when her eyes began to trouble her. I saw her in consultation with an ophthalmic surgeon, who insisted that the condition was hysterical. I could not share this view because the squinting was such, in my opinion, as could not be feigned. It cleared up, however—a fact which seemed to favour the view that it was hysterical. There was a recurrence some months later, which also cleared up; but later marked nystagmus developed, and the case became one with all the classical signs of disseminated sclerosis.

As illustrating the various modes of commencement of disseminated sclerosis I may mention the case of a young lady whose physical health and hygienic environment seemed perfect. She had noticed some mistiness of vision, and consulted Mr. J. B. Lawford, who found that she had optic neuritis in each eye, and he sent her to me in order that I might examine her with the view of discovering, if possible, some cause for this. There was no headache or vomiting—nothing to indicate any intracranial trouble. The only definite sign I could discover, apart from the condition of the optic discs, was an extensor response from one sole. She had no difficulty in walking, although she confessed to feeling more easily tired than usual. I need only say that, in spite of enforced rest under excellent conditions as regards food, fresh air, etc., she rapidly developed all the signs characteristic of disseminated sclerosis, and died less than two years after the trouble with vision began.

It has often been noticed that there are several superficial points of resemblance between some cases of disseminated sclerosis and cases of general paralysis of the insane—especially is this the case with reference to mental symptoms. There is the same mental "facility" in many cases of disseminated sclerosis which is so striking and almost characteristic of general paralysis—one is struck by the fact that patients suffering from disseminated sclerosis so often express themselves as feeling so well and that they do not seem to be concerned about their helplessness. Frequently, too, they are even amused by their disabilities. In some instances it has been difficult to be sure of the diagnosis. I can recall two cases in which the original diagnosis of disseminated sclerosis was definitely contradicted by the course of the illness. One was a hospital patient who had nystagmus, slurred speech, weakness of the legs with exaggerated knee-jerks, and extensor responses, and volitional tremor of the hands. The pupils were equal and reacted to light and during accommodation. There was no history of syphilis, but there was extensive destruction of the palate, apparently of syphilitic origin. This man remained in hospital for some weeks, but no change supervened. I learnt afterwards, however, that he developed mental symptoms and had to be certified.

The other case was that of a man who was sent to me some years ago by Mr. William Lang, who found that he had definite pallor of his discs, with little or no visual impairment. There was nystagmus, but no pupillary change, and, although he walked rather feebly, the knee-jerks were present and active, and there was no change in the plantar response. He spoke slowly and with slightly slurred articulation. I regarded the case as one of disseminated sclerosis. He continued in the same condition for five years, when he developed mental symptoms of the grandiose character so often met with in general paralysis; he became very fat and then wasted and died, the mental condition becoming one of profound dementia before he died. In this case, in spite of the early changes in the discs which Mr. Lang had noted, there was no progressive deterioration of vision, but I think the case, although the progress was unusually slow, was really one of general paralysis and not of disseminated sclerosis.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, February 28th, 1920. [2] Ibid., April 3rd, 1920. [3] Ibid., April 3rd, 1920. [4] Ibid., June 19th, 1920.

A SIMPLE METHOD OF COMBINING ETHER ADMINISTRATION WITH THE VERNON HARCOURT INHALER.

BY

H. P. FAIRLIE, M.D.,

GLASGOW.

SINCE writing previously on the subject of the Vernon Harcourt inhaler,[1] advocating more extensive employment of this dosimetric method of chloroform administration, I have had considerable additional experience with the inhaler, and this has not caused me to modify the opinion expressed in that paper. It seems to me that the prevalent attitude towards chloroform, banning its use as an anaesthetic, is extreme, and that this agent still occupies a valuable place. I agree that it must be given with great care, but think dangers may be very largely discounted by the employment of the Vernon Harcourt inhaler, which limits the vapour strength to 2 per cent.

It is often asked, Why use a complicated mechanism such as this when a drop bottle and simple mask are so much more convenient? The principle in both cases is identical, air being drawn over the surface of evaporating chloroform, taking up a percentage in passing. In reply to this the British Medical Association Chloroform Committee pointed out many years ago that the percentage of chloroform taken up from the mask and drop-bottle method is difficult of control, it may easily exceed 2½ per cent., and when this happens the danger zone is entered. Levy has attacked this view. In a paper on "Cardiac fibrillation and chloroform syncope" he says:

> It [illegible] that the present day teaching that safety [illegible] to vapour percentages must be permanently [illegible] reaction, leading [illegible] practice, and again "The theory of [illegible] has, in my opinion, been a most deplorable [illegible]."

The experiments on which his conclusions were based were performed almost [illegible] on cats. Embley,[2] commenting on Levy's findings, suggests that experiments on cats with regard to chloroform action on the heart are misleading. Talking of ventricular fibrillation, he says:

> [illegible] during the administration of chloroform [illegible] several [illegible] has been carried [illegible] a great variety of conditions, [illegible] present when the [illegible] other [illegible] syncope in [illegible] at the [illegible] to [illegible].

Whether or not the explanation of Levy's theories [illegible] clinical experience. In using the Vernon Harcourt apparatus the [illegible] of cardiac failure has been considerably [illegible] than with ordinary drop bottle [illegible]. In those cases in which syncope [illegible] it has been [illegible] of slowly [illegible], and [illegible] of anaesthesia.

It is always advisable, however, to have ether available, and a disadvantage of the Vernon Harcourt inhaler is the impossibility of combining ether, or of changing to ether without a change of apparatus. To overcome this the following simple expedient occurred to me: I employ an ordinary Hewitt wide-bore ether inhaler, without the bag. To fit on in place of the bag attachment Messrs. Coxeter and Son made for me a metal diaphragm fitting to the distal end of the Hewitt reservoir and having a perforation cut through its centre to fit the tube of the Vernon Harcourt inhaler. The Hewitt reservoir is charged with the usual quantity of ether, and, as there is no bag and therefore no rebreathing, administers it by the open method.

In practice I induce anaesthesia by means of chloroform through the Vernon Harcourt inhaler and then introduce ether according to requirements. In cases of cardiac failure the chloroform may be shut off and ether alone administered. In my experience this combination apparatus has proved most useful.

REFERENCES.

[1] *Glasgow Medical Journal*, January, 1917. [2] *American Year Book of Anaesthesia and Analgesia*, 1915. [3] *American Journal of Surgery*, January, 1916.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DEATH AFTER TONSILLECTOMY.

THIS note deals with a case which was under the care of Mr. Alban Evans, who kindly agreed to publication and furnished information about the clinical features of the case:

D. R., male aged 14, at puberty, was first seen at the ear and throat out-patient department of Swansea General Hospital complaining of nasal obstruction and frequent sore throat. Examination showed large and unhealthy tonsils, chronic catarrhal rhinitis, and dull, retracted tympanic membrane. Operation was advised, and the tonsils were enucleated and a large adenoid mass removed by Mr. Alban Evans. Some thyroid enlargement was noticed before the operation; neither during nor after the operation was there abnormal haemorrhage. The boy was removed to the recovery room and appeared to be doing perfectly well, when about half an hour after the operation he suddenly collapsed and, in spite of prolonged remedial measures, did not recover.

A *post-mortem* examination made next day revealed no sign of asphyxia or violence; the thyroid gland was very obviously enlarged on external view. The brain appeared normal and showed no haemorrhages of any kind. The larynx was normal, the trachea free of blood, and its lumen between the third and fifth tracheal rings was diminished about one-half by pressure from the enlarged thyroid. The sites of the removed tonsils were clear of blood clot; removal had been complete. The thyroid gland was greatly enlarged, weighing 160 grams; a cut into the gland substance showed presence of colloid secretion and some congestion. The gland had completely enveloped the trachea and compressed the posterior wall so that the lumen was crescentic in shape. Histologically, the thyroid showed an unusually large proportion of secreting cells and congestion of the blood vessels; comparison of this gland with sections of simple goitre removed at a thyroidectomy showed it to contain less colloid. The thymus gland was larger than normal, weight 57 grams; it did not exert pressure on the air passages. Microscopic examination showed apparently normal thymic tissue. The oesophagus was normal, as were also the bronchial and cervical glands. The heart, save for a moderate degree of dilatation of the right auricle, appeared entirely normal; the ventricles were in diastole. The lungs were both well aërated and free from congestion or oedema; there was no collapse of lung tissue nor other sign of respiratory obstruction or failure. The right upper lobe was slightly adherent to the parietal pleura. In the abdominal viscera the only sign of disease found was mesenteric adenitis of tuberculous type, not advanced. The stomach was empty save for a trace of swallowed blood, and the spleen, pancreas, and suprarenals looked quite normal to the naked eye.

The exact mechanism of death in this case is obscure; the leading features were:

1. Enlargement of thyroid with narrowing of trachea—[illegible] extent and enhanced activity of the gland.
2. Enlargement of thymus.
3. An "adenoid" tendency, not very pronounced.

The boy did not die of asphyxia; apparently there was cardiac failure associated with hyperthyroidism, possibly of recent onset, and with an unusually large thymus.

In the discussion on status lymphaticus held by the Royal Society of Medicine at Bournemouth in June, 1914, the opener, Dr. Hugh Thursfield, laid stress on the probability of this condition being a disorder, not only of the thymus but of the whole endocrine system; and the discussion following indicated a possible relationship between deaths at operation for Graves's disease and deaths of the "status lymphaticus" type. From that standpoint this case is suggestive, and it has therefore seemed to me worthy of publication.

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Reviews.

FUNCTIONAL NERVOUS DISEASE.

THE volume on *Functional Nerve Disease*,[1] edited by Dr. H. CRICHTON MILLER, consists of a series of essays which serve to indicate certain aspects of the war neuroses that are of value to the medical practitioner in dealing with nervous diseases in his practice. The scope of the book may be indicated by a brief survey of its contents. In the first chapter the editor deals with the question of physical etiology, and he gives illustrative cases to emphasize the importance of an unprejudiced attitude in approaching nervous conditions, so that neither the physical nor the emotional factors may be neglected in arriving at a diagnosis. Dr. Miller also provides a contribution on the "mother-complex," in which he shows the influence of an unfavourable home atmosphere in the development of a neurotic mental make-up. Perhaps if, instead of giving a few brief notes on a series of cases, he had described one or two cases more fully, and had indicated the relation between the early family life, the mental characteristics, and the nervous symptoms, he would have developed his argument more convincingly.

Dr. Riddoch furnishes a useful contribution on differential diagnosis, in which he urges the necessity for the formulation of general principles in relation to nervous disorder, and for their investigation from the point of view of disturbance of function. Dr. Bramwell deals with physical treatment, and suggests in a practical article both the value and the dangers of therapy conducted along the lines of rest, massage, electricity, hydrotherapy, diet, and drugs.

Dr. Prideaux compresses rather much into his article on hysteria, and its value would have been increased if he had emphasized his points by reference to actual cases. Thus, when he states that he uses "the term 'anxiety neurosis' as distinct from 'anxiety hysteria' . . . for those cases in which the anxiety is of physical origin, and is secondary to organic conditions of the viscera and endocrinic glands," he should indicate more definitely what organic conditions he refers to, and what the symptoms of anxiety neurosis are, if his classification is to be of value to the reader.

Dr. Hadfield describes his method of treatment by "hypno-analysis." His article is thoroughly practical and the points are clearly and simply indicated. Dr. Rivers provides a short but useful contribution on "Repression and Suppression." His views are, of course, well known, and they have done much to influence the treatment of the war neuroses on sound lines. Dr. Maurice Nicoll furnishes an excellent article on "Regression." This conception as to the significance of neurotic symptoms is not only illuminating, but essentially scientific; as the writer says, it "links up with the central teaching of Hughlings Jackson on dissolution in the nervous system," and also with that of Janet in his biological conceptions of psychasthenia. Dr. Nicoll also writes, in association with Dr. Young, on psycho-analysis, the treatment of this subject being along the lines of the Jung school. In two useful chapters Dr. Bryce deals with the institutional care and Dr. Culpin with the individual care of the neurotic patient.

In the concluding chapter Dr. McDougall, at the request of the editor, summarizes the various views expressed by the writers in this volume. As Dr. McDougall says, "this is a difficult and invidious task," but nevertheless he performs it successfully; not only does he clearly indicate the essential principles which the various writers illustrate, but he harmonizes in a large measure views which appear somewhat divergent. This chapter, as the editor recognizes, gives a coherence to these essays as a whole which they would otherwise have lacked with a number of writers approaching the subject of the neuroses from such different angles. The volume may be recommended to the practitioner, who will find therein much of interest and value.

VENEREAL DISEASES.

IN his new publication, *Venereal Diseases*,[2] Mr. J. E. R. MCDONAGH has dealt with the clinical rather than the pathological side of the subject. In the opening chapter he expressly states that questions of pure pathology are beyond the scope of his present book, and will be referred to in a future work in course of preparation. At the same time, although questions of pathology are postponed for future consideration, they are never very far from the author's thoughts. Mr. McDonagh writes, it is true, of clinical matters, but the life-history of the *leucocytozoon syphilidis* crops up with some of the insistency of a King Charles's head. Mr. McDonagh writes with a purpose: he has a creed to defend, and he defends it with energy and enthusiasm. His creed is summarized at the close of the first chapter in the following words:

> I believe that the *Spirochaeta pallida* is only the adult male of a coccidial protozoon; that the complement fixation test is merely a physical reaction dependent upon the increased number and size of the protein colloidal particles in the serum; and that salvarsan only destroys the parasite indirectly by increasing the oxidizing action of the host's protective substance.

Having summarized his belief in this manner, Mr. McDonagh shows no hesitation or diffidence in his treatment of the many controversial points appertaining to his subject. Whatever the truth may be, Mr. McDonagh is undoubtedly a stimulating writer. He never shirks a difficult subject, and defends his views with considerable ingenuity. The most hostile critic would be compelled to confess that, whatever the merits or demerits of *Venereal Diseases* may be, the book is no colourless transcription of other people's views, but an original and uncompromising piece of writing.

Whilst we cannot fail to admire the author's ingenuity and originality, there is much that can be criticized in Mr. McDonagh's method of writing. However stimulating the book may be to the syphilologist, it will prove a somewhat mystifying work to the less experienced. The author rarely affords his reader any clue as to when he is discussing accepted fact and when he is indulging in speculation. Ingenious theories are so interwoven with time-honoured and attested fact, that considerable experience and knowledge are required to separate the one from the other. However plausible a theory may be it is still a theory, and should be presented as such. The author of this work repeatedly presents a theory to an unsuspecting reader as though it were a solid building resting on a solid foundation. Examined more closely by a competent critic, there is nothing to be found but a very ingenious speculation erected on a very insecure basis. It is for this, rather than for any particular opinion expressed by him, that we would criticize the author.

Mr. McDonagh is in favour of subdividing syphilis by a method other than the somewhat unsatisfactory one in common use. The primary stage is for him that period of the disease which elapses between the first appearance of the sore and the onset of a positive Wassermann reaction. The generalization stage lasts from the appearance of the positive Wassermann reaction to the time when the organisms, having spread over the whole body, become dormant; the latent stage, when the organisms are dormant; the recurrent stage, when the organisms become active again and produce lesions.

In dealing with the question of early diagnosis, the author lays special stress on the importance of clinical observation as opposed to bacteriological examination. Not only can a syphilitic chancre be distinguished from a non-syphilitic sore by careful clinical observation, but the future course of the disease can, according to Mr. McDonagh, often be prognosticated from the type of chancre present. A papulo-ulcerative chancre indicates a high resistance on the part of the host and the disease usually runs a mild course. The papulo-erosive chancre, on the other hand, is apt to be followed by recurrences. Granulating chancres, although resistant to treatment, are seldom followed by vascular or nervous sequelae. Of the majority of cases that are published as instances of re-infection the author is very sceptical. Judging from his own experience, he believes that over 95 per cent. of such cases, occurring within six months of the cessation of treatment with arseno-benzene, are really cases of recurrence.

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[1] *Functional Nerve Disease.* An Epitome of War Experience for the Practitioner. Edited by H. Crichton Miller, M.A., M.D. London: Henry Frowde, and Hodder and Stoughton. 1920. (Demy 8vo, pp. 208. 8s. 6d. net.)

[2] *Venereal Diseases: Their Clinical Aspect and Treatment.* By J. E. R. McDonagh, F.R.C.S. London: W. Heinemann (Medical Books), Ltd. 1920. (Double cr. 8vo, pp. 431; an atlas of 106 colour and 21 half-tone illustrations. £5 5s. net.)

In discussing treatment, Mr. McDonagh advocates the use of intramine in addition to arsenical compounds and mercury. He lays special emphasis on the power of intramine to prevent such accidents of arsenical medication as dermatitis, and is convinced that the employment of this substance diminishes the risk of neurosyphilis. In the late stages of syphilis, he says, the use of intramine should always precede that of arseno-benzene and mercury.

The illustrations and coloured plates are excellent, and add materially to the value of the book. Mr. McDonagh has certainly had a very large amount of clinical material to draw upon, and has used that material to great advantage. Whatever may be the conclusion the author may have drawn from what he has seen, his work is full of useful and suggestive observations.

ANAESTHESIA.

DR. SILK's little book on anaesthetics[3] first appeared in 1914, and the innovations which have been introduced into anaesthetic practice since that time are described in the present issue. At the same time the book has been kept to its very convenient and useful size. It certainly has no superior as a condensed view of the clinical phenomena of anaesthesia, and the means of their production. Generally speaking the author's preference is for open ether with an admixture of 5 per cent. chloroform. In his recommendations for the management of tonsil and adenoid cases, Dr. Silk does not mention the use of open ether to an extreme degree of [illegible]—a method which is now much practised in connexion with the enucleation operation deliberately performed. The author prefers to keep the swallowing reflex, and [illegible] anaesthesia with chloroform from a Junker's inhaler after an ether induction. He gives an illustrative and short account of recently introduced apparatus for prolonged nitrous oxide and oxygen anaesthesia, but does not appear very enthusiastic over it, either for general surgery or in the [illegible] form for dental extractions. He approves, however, of gas and oxygen for empyema operations, and gives interesting figures showing the danger of these cases. These statistics were obtained by Dr. Silk in his official capacity as consulting anaesthetist in the army, and though not very extensive are of much value. We are [illegible] to see that the author dissents from Crile's view that general anaesthesia "protects none of the brain cells against [illegible] from the trauma of surgical operations," and [illegible] that he is in the right. Dr. Silk is in favour of [illegible] and atropine before operations, but believes that [illegible] increases [illegible] and post-operative depression. [illegible] is likely to repeat and increase the [illegible] of the [illegible].

Dr. Barton, in this small book of essays[4] touches on matters [illegible] left out of textbooks on anaesthetics. This and a [illegible] manner of describing usual things give the book an attraction of its own. Thus, the reader will be told early in the book, by "commandments" in [illegible] print, closely followed by the "Law of anaesthetics" in equally emphatic type. He will find himself descending [illegible] in the author's company in [illegible] with him the "haven" of safe anaesthesia. The author's views in the main depart nowhere widely from those commonly held and practised by the anaesthetists of to-day. He has, however, designed an apparatus for the administration of ether which he has used with success for many years and of which he gives a clear description and illustration. He likes to precede ether by [illegible] and ethyl chloride, both given on an open mask, which is afterwards replaced by his own inhaler with ether. Many useful practical hints are given as to apparatus and the transport of anaesthetics, as well as good directions for the actual use thereof. One or two well described cases illustrating common difficulties and dangers are as good as anything in the book. A very good little summary is given of the explanation of sudden deaths under chloroform in early stages of narcosis, and Dr. Barton accepts whole-heartedly Levy's views on fibrillation. The author in his preface refers to "commencing and occasional anaesthetists," but we believe his book will be even more valuable to those who have already had considerable experience in the matters of which he treats.

THE MICHELL CLARKE MEMORIAL VOLUME.

As professor of medicine, as pro-vice-chancellor, and in many other ways, J. MICHELL CLARKE, whose lamented and premature death occurred in 1918, took a prominent part in the organization of the University of Bristol. It is therefore most appropriate that part of the memorial to this devoted worker should take the form of a collection of seventeen selected papers[5] from his hundred published contributions. This task has been carried through by Drs. G. Parker and J. M. Fortescue-Brickdale, who in a prefatory note refer to the difficulty in making the selection of the reprints. There are nine papers on general medicine and eight on various aspects of neurology—a subject in which Michell Clarke was specially interested. A complete bibliography of his writings is also given, and shows that sixty out of his hundred contributions were on diseases of the nervous system. A short biographical memoir is reproduced from the *Bristol Medico-Chirurgical Journal*, in which thirty-two of his published papers originally appeared. One of the earliest of the reprinted papers, that on Huntington's chorea, appeared in *Brain* in 1897, and the latest, on trench fever, in the BRITISH MEDICAL JOURNAL in 1917. The more important of the other papers are his Bradshaw Lecture for 1915 at the Royal College of Physicians of London, on the nervous affections of the sixth and seventh decades of life, the presidential address to the Bristol Medico-Chirurgical Society in 1905 on the relation of medicine to natural science, and the Long-Fox lecture for 1911 on cerebro-spinal syphilis. There are also interesting papers on degeneration of the spinal cord in anaemia, and on the special features of pernicious anaemia in persons older than those usually attacked. Recurrent and transient paralysis engaged Professor Michell Clarke's special attention, and his paper on recurrent motor paralysis in migraine contains the history and genealogy of a family in which hemiplegia and, as a rule, loss of speech, accompanied attacks of sick headache.

VITALISM.

SIR BERTRAM WINDLE's *Vitalism and Scholasticism*[6] is an expansion of his work *What is Life? A Study of Vitalism and Neo-Vitalism*, published in 1908, and is concerned with the nature of life and of living things. The old scholastic conception of the vital energy of the living body was seriously attacked in the second half of the nineteenth century by Lotze, Huxley, Burdon-Sanderson, and Le Dantec, who taught that all the manifestations of life can be explained in terms of chemical equations and physical experiments. The object of this book is, first, to set forth the arguments of the neo-vitalists who disagree with this mechanical conception, and secondly, to show the relations between the scholastic vitalism and the modern views, such as those of Dr. B. Moore, whose "biotic energy" appears to be identical with the vital principle of scholasticism. With this end in view the author has brought forward the biological evidence available in favour of a vitalistic or neo-vitalistic explanation of living matter. The question of the human soul and its relation to the activities of the human body—a subject for theologians rather than for biologists—has been touched on incidentally only. The argument is clearly stated, and can be readily followed by a reader without any biological training.

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[3] *Modern Anaesthetics*. By J. F. W. Silk, M.D. [illegible] London: E. Arnold. [illegible]

[4] *[illegible]*. By A. H. Barton, M.D. London: H. K. Lewis and Co., Ltd. 1920. (Cr. 8vo, pp. [illegible]; figures, 2 plates. [illegible] net.)

[5] *[illegible] and other Papers*. Reprinted from the writings of [illegible] Michell Clarke, M.A., M.D., LL.D., F.R.C.P. Bristol and London: J. W. Arrowsmith, [illegible] 1920. (Pp. [illegible])

[6] *Vitalism and Scholasticism*. By Bertram C. A. Windle, M.A., M.D., Sc.D., LL.D., F.R.S., F.S.A. London: Sands and Co. 1920. (Pp. 256; 5 figures. 8s. 6d.)

NOTES ON BOOKS.

IN writing the *Life and Work of Sir Jagadis Bose*,[7] who was this year elected a Fellow of the Royal Society, Professor PATRICK GEDDES has been actuated, not only by admiration for the first Indian of modern times to do distinguished work in science, but by his interest in raising and maintaining the professional standard and ideal above and beyond racial differences. This biography is, indeed, also a sociological study with the object of encouraging science students, especially in India, to overcome difficulties, and so follow the example successfully set by Sir Jagadis Bose. Born in 1858 in Eastern Bengal, and attracted to physics by the teaching of Father Lafont, professor in St. Xavier's College, Calcutta, Bose came to England with the object of studying medicine; but, as ill health rendered this inadvisable, he went up to Christ's College, Cambridge, and eventually, armed with science degrees from London as well as Cambridge, returned to India to take up teaching and research in physics. After considerable initial difficulties, he settled down to work and carried out further researches on Hertz's electric waves with results which met with warm approval from Lord Kelvin. Subsequently the electric response of inorganic and living matter engrossed his attention. A full account is given of the experiments on plant response, and there are good illustrations of the magnetic crescograph for magnifying ten million times the growth of plants, and of graphic records of those movements. These ingenious researches on the borderland of physics and physiology, which have attracted much attention, were followed by investigations in psycho-physics; and, though he retired as an Emeritus Professor in 1915, not only has he continued to work, but the Bose Institute for research in pure science will be a permanent memorial of this Indian pioneer.

A short but admirably written life of *Florence Nightingale*, by Miss ELEANOR FRANCES HALL,[8] appropriately appears in the "Pioneers of Progress—Women" on the hundredth anniversary of the birth of the "Lady with the Lamp." It is dedicated to the memory of Dr. Elsie Maud Inglis, "whose Crimea was Serbia, but whose post-war work is in another world," and whose life's story is told in a companion volume of this series. The difficulties that Florence Nightingale had to overcome the conventional prejudice against devoting herself to nursing at a time when Mrs. Gamp was no fancy picture, and the preparatory training that she accomplished at Kaiserwerth under Pastor Fliedner and as postulant among the Sisters of Charity in Paris, are well and sympathetically sketched. After a graphic account of her work at Scutari, her successful labours in reforming the army medical service, hospital nursing, and Indian sanitation are described; and the concluding chapter, entitled "The Lamp Within," sums up her long life and the changing phases of her many-sided temperament.

The principles and practice of Continental therapy by baths, waters, and climate are set out in full detail in the large textbook of STRASSER, KISCH, and SOMMER, recently published in Vienna.[9] The book is full of information, and may be recommended to medical men requiring a treatise on the subject.

Baillière's Nurses' Complete Medical Dictionary[10] is a serviceable little book, fairly complete, clearly written, and well printed, that may be recommended to nurses and members of the lay public who want a small dictionary of terms in common medical use.

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[7] *Life and Work of Sir Jagadis C. Bose, C.I.E., C.S.I., M.A., D.Sc., LL.D., F.R.S., Emeritus Professor, Presidency College, Calcutta.* By Patrick Geddes, late Professor of Botany University College, Dundee, St. Andrews University, and Professor of Sociology and Civics, University of Bombay. Longmans, Green, and Co. 1920. (Pp. 259; 9 plates, 231 illustrations in the text. 16s.)

[8] *Florence Nightingale.* By Eleanor Frances Hall. In "Pioneers of Progress Women," edited by Ethel M. Barton. London: Society for Promoting Christian Knowledge; New York: The Macmillan Co. 1920. (Pp. 84; 4 illustrations, 1 map. Price, cloth 3s. 6d; paper 2s. 6d.)

[9] *Handbuch der klinischen Hydro-, Balneo-, und Klimato-therapie.* By Professor Dr. Alois Strasser, Dr. Franz Kisch, and Professor Dr. E. Sommer. Berlin and Vienna: Urban and Schwarzenberg. 1920. (Sup. roy. 8vo, pp. 920; 48 figures. M. 210; Geb. M. 270.)

[10] *Baillière's Nurses' Complete Medical Dictionary.* Edited by Constance M. Douthwaite. Second edition. London: Baillière, Tindall, and Cox. 1920. (Cr. 16mo, pp. 214; 3s. net.)

THE Hufeland Society of Berlin has chosen as a subject for the Alvarenga Prize for 1921 the etiology, symptomatology, and morbid anatomy of lethargic encephalitis.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

RISING FUEL COSTS.

OWING to the increasing cost of materials, workmanship, and so forth, not a few medical men who have returned from the war and who formerly were owners of cars have equipped themselves with motor bicycles. The latest increases in the cost of motor fuel, however, have rendered the operation of these lighter machines as costly in respect of fuel consumption as were small cars before the war. Nor has the worst phase of the matter been reached. In America a gallon of petrol costs about 2s. 1½d. But it is certain that, unless consumption can be reduced there, of which there is no prospect, the cost will be raised very soon. To-day America is consuming 2,000,000 more gallons of petrol than she can procure, so the reserves are lower than at this period last year. Moreover, she has a million more motor vehicles in use to-day than she had a year ago. In this country we are paying 4s. 3½d. a gallon for No. 1 spirit, which is scarcely superior to No. 2 spirit before the war. On the other hand, in France something over 12s. a gallon is paid for petrol. The diatribes levelled against the vendors of motor fuels in this country are chiefly on the lines of accusing them of profiteering, and showing how their revealed profits have increased since the outbreak of the war, but no reference is made to increased turnover and the other branches of these firms' enterprise. Such analyses are quite unsatisfactory, because these corporations all trade in various parts of the world. I am satisfied they could prove that they would be much in pocket if they ceased selling motor fuel in this country, and disposed of all they could secure in markets overseas. Nor must it be forgotten that large carrying corporations, such as the London General Omnibus Company, are supplied with fuel on long contracts which were working out at a loss of several pence a gallon before this increase of price, so that there will be over a shilling a gallon loss now. Likewise no serious attention need be given to the declaration by the Motor Fuel Committee, in its interim report of February last, that prices charged were too high, and so forth. The motor fuel business is a most intricate affair.

What it Means to the Doctor.

Instead of being concerned with propaganda, the medical man is interested in getting the facts as they bear directly on the running of his own motor vehicle for professional purposes. The plain fact is that there is more demand for motor fuel than world production can satisfy; that America owns 80 per cent. of the world's production of motor fuel, and controls some 50 per cent. of the balance; that the British Empire does not produce more than 2 per cent. of the total world's demands for fuel; and that we do not control more than another 4 per cent. Consequently what we pay for fuel in this country is dependent on the price at which the controllers, otherwise the United States, care to fix, and on the exchange. Certainly we have not come to the worst of the motor fuel situation in this country. This is the serious thing for the medical man, for already, if his motor vehicle runs thirty-four miles to the gallon of fuel, it will cost him 1½d. a mile. This has to be taken, too, in conjunction with the high cost of tyres and repairs. The majority of doctors consider themselves lucky if their cars will run twenty-three miles to the gallon, which represents 2¼d. a mile. Those whose vehicles will do only seventeen miles to the gallon are paying 3d. a mile for their fuel. But the current prices, on which these calculations are made, will not obtain six months hence. On the contrary, as far as can be foreseen, we shall pass the 5s. mark, and even approach 6s. a gallon. But that would be a passing phase only. If British public opinion makes it too unpleasant for the petrol traders, who in this country are not masters of the situation, being themselves in the hands of the United States controllers, then the traders with establishments here will not trouble to bring the fuel to this country, but will sell it where they can get even higher profits. Fortunately the Government seems really intent on doing everything possible to develop the empire's motor fuel supplies rapidly, because it realizes already that the coal situation is such that 25 per cent. of the ships fuelled in home ports take oil. The Government estimate is that in ten years' time at least 30 per cent. of such vessels will be supplied with oil fuel. Of course we can never discuss petrol without considering the oil industry, whence it is derived; even as it is idle to inquire why we are not pushing benzol production more when we have periodical troubles with the coal industry. It may be answered that shale will give us the benzol we need; but, though we develop the production from Scottish shale, all such increase would barely suffice for all the needs of the navy. The Government has always taken the output from these sources; consequently, as far as the public is concerned, if benzol is to be had at all, it must continue to come from coal. Benzol, therefore, is only a less practicable form of relief at the moment than is power alcohol, which is at present in the purely experimental stage, and will take longer to develop to a commercial scale than will the oil resources of the British Empire. Vast sums of money are being employed in exploiting possible oil supplies; there is no limit to them. All that is necessary is for other departments of the Government to assist the work of the Minister for Petroleum Affairs by rendering the thing profitable for those who are successful, and not to kill enterprise either by limiting or taking too much of the profits. This problem is closely bound up with human nature. No one likes paying exorbitant petrol bills. Probably most people consider themselves foolish not to have put their savings into the oil industry. Be that as it may, when it comes to motor fuel the only thing to do is, not to complain vainly—that will work no cure—but to weigh up the facts in their various bearings.

Causes and Remedies.

We are going through a very bad time, not only in this country, but throughout the world. The petrol demand will be greater than ever, because, despite something in the nature of a slump in the demand for motor vehicles, particularly of the utility sort, it must be borne in mind that quantities of parts have been manufactured, but are not yet assembled, consequently there is a bigger output to be absorbed by the buying public from the world's motor factories in general than they have yet actually delivered for sale. Moreover, works can dismiss hands wholesale, as is obtaining on the Continent as well as in America; still the output from the factories will not fall off, but will increase for several months to come, by reason of the fact that the greater part of the [illegible] of vehicles are made already. When hands are turned off they are taken from those operations which are the preliminaries of manufacturing. Hands concerned with the final stages of building—assembly—are kept on. In addition, there are all the war vehicles to absorb. Then we have the practical steps taken by the London General Omnibus Company to tackle the problem of reducing vehicle weight per passenger carried. It is now known that the new style, K type, omnibus has proved itself and is coming on to the streets of London frequently. But it is not so generally known that for every new style bus so placed on the streets an old "Red General" B type is available, thoroughly overhauled, has been completely fitted with body to hold thirty-four, at £850 for the chassis. These vehicles will be eagerly sought after, and will make yet a further demand for petrol. Therefore let nobody suppose that the arrival of the inevitable slump in motor vehicle building will mean that less motoring will be done and therefore that the fuel situation will be eased. It will not. Slump or no slump there will be more motor vehicles in use every year for the next ten, at least. Nor may we overlook agricultural motoring. Fortunately, however, that is tending gradually to develop a demand for the secondary products of treating crude oil, because more and more of these machines are being made to run on paraffin.

The [illegible] Hope.

What we are really waiting is for the tremendous impetus that is being given to the opening up of the oil resources of the world to begin to bear fruit. Probably we shall not see for four years to the point when fuel prices will fall. But it is [illegible] that the motor [illegible] and the medical man in particular, must be [illegible] up on that account. All that it can mean is that something in the nature of a slump in car production will occur more quickly than otherwise would be the case, because the situation is grossly aggravated by the high prices of cars, and the high running cost of motor vehicles according to the systems on which we build them—which leads at once to a remedy. Hitherto we have concerned ourselves with studying carburation; but that is only one way to achieve fuel economy. Much more has been done in that direction in this country than in America. But the typical British engine, with which fuel economy is achieved to a very high degree, is much more difficult to start than a typical American machine, wherein the carburetter has a pool of petrol always available. Consequently the latter will start at about fifty crank-shaft revolutions a minute against anything from 75 to 150 on a typical economical or high efficiency British or French engine. Why, however, be content with engine and carburation development, as we have been doing? Admittedly, with so-called light cars it is possible to run thirty to forty miles to the gallon on the average road; though that is not general in a doctor's service, because the car is apt to get cold in the long waits between relatively short runs, so that it rarely gets warmed up sufficiently. As a fact, it is agreed that sometimes a little more than half the fuel consumption in question is obtained in ordinary service. In this connexion there is no need to raise the old controversy as to the wisdom of using a mixture of the same richness whether the engine is running under a light or a heavy load. It is an incontrovertible fact that 1 lb. of air will burn completely 0.065 lb. of petrol. It cannot burn more. If more is fed, some will pass through the engine unburnt, or, at least, only partly burnt. If not enough heat is supplied under certain conditions of operation to vaporize the heavier constituents of the fuel, then a carburettor giving a richer mixture for that condition of operation may be of advantage from the standpoint of power. As regards economy, however, the proper remedy is to supply enough heat to vaporize all the fuel, and not to feed an excess of petrol. The two chief reasons for lack of economy in the use of motor fuel at present are that the engine is usually operated under a relatively light load, and that light load operation with the four-cycle, throttle-controlled engine corresponds to operation at low compression, which is an uneconomical condition. Again, the heavier constituents in the fuel are not reduced to the gaseous state before the explosion occurs; therefore they pass through the engine unconsumed. But we may leave it safely to our automobile engineers to continue making a reasonable amount of progress here, in spite of the fact that the falling quality of fuel tends to be less favourable to economical operation.

The Root of the Trouble.

The central fact—which also gives the likeliest hope of early relief—is that not one third of the power generated by the engine is delivered in the form of propulsive effort where the tyres make contact with the road. In short, the whole transmission mechanism of a motor vehicle is extremely wasteful. Add to this the fact that there is not a motor car on the market which weighs less than 4½ cwt. for each passenger it is designed to carry, and it will be appreciated that there is here a vast opportunity to cut fuel consumption down to less than half. Halve the fuel bill, and 4s. 7d. aviation spirit becomes 2s. 3½d. a gallon, which is bad enough, but certainly a notable relief to present cost.

It is scarcely possible to conceive more adverse circumstances than those that obtain in regard to motoring at the moment and those which are in close prospect. But their synchronization gives a ray of hope. The situation is so bad that every form of enterprise concerned must perforce apply itself to remedies. On the one hand, the oil resources of the world are being exploited to an extent that has never obtained before; on the other, we see that, if the manufacturers are to have a chance of continued trade, they must seriously tackle the problem of reducing vehicle weight per passenger carried, also of economizing power in transmission. There must be more motoring for less fuel expenditure. In measure, too, as this effort is related to the task of reducing vehicle weight, it means, of course, less tyre expenditure. Meantime, there is nothing for the British medical man but to grin and bear it, and above all, to keep very careful note of his expenses under these heads, claiming them when making his income tax return.

British Medical Journal.

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THE MEDICAL PROBLEMS OF FLYING.

THE development of our flying service during the war raised problems which called urgently for experimental physiological work: the maintenance of mental and physical efficiency at high altitudes, the detection of the signs of flying fatigue and strain, and the working out of methods for selecting candidates for commissions, all demanded investigation. In March, 1918, the Air Medical Investigation Committee took up the work of previous committees, and in *The Medical Problems of Flying*[1] the Committee presents the results of "team work" in which the physiologist, the physician, the neurologist, and the psychologist each took his share, whilst in the background was the squadron commander ready to check their observations by his own.

The first subject for consideration was the use of oxygen. Before the war Martin Flack and Leonard Hill had shown the advantages of its administration before, during, and after a period of exertion, and its use at great altitudes was an obvious necessity. Those airmen who at first scoffed at it became its keen advocates after practical experience, and as time passed oxygen was used in increasing amount, the administration being continuous by a specially devised apparatus. Dyspnoea, muscular weakness, and syncope were to be expected at great altitudes; but Dr. J. L. Birley describes a transitory impairment of judgement and perception as a more serious and subtle danger, since in many cases the pilot cannot be convinced of its occurrence. In order to study these conditions of oxygen-want, Professor Dreyer devised a breathing apparatus in which, by diluting the air supply with nitrogen, not only the cardio-vascular and respiratory changes, but even the sensations and symptoms experienced under actual flying conditions, were so closely reproduced that skilled pilots could estimate accurately the artificial altitude to which they were being exposed. Using this apparatus Dr. H. C. Bazett and the late Dr. C. D. H. Corbett were able to classify pilots and observers in regard to their fitness for different altitudes. Working towards the same end, Lieut.-Colonel Martin Flack demonstrates how the observations of experienced officers on the fitness of individuals are confirmed by physiological investigations directed to their vital capacity, expiratory force, time of holding breath, and of sustaining 40 mm. of mercury by blowing in one limb of a U tube, as well as to their cardio-vascular responses and neuro-muscular stability. This applies both to candidates for commissions and to the subjects of flying fatigue and stress. As would be expected, reaction-time tests showed a similar correlation between laboratory results and actual experience.

Dr. Henry Head, in his contribution on "The Sense of Stability and Balance in the Air," takes us to the borderland of the mental and the physical. He rejects the current explanation of such evidence as tremor of the hands, inability to balance a rod on a flat board with eyes open or shut, or to stand on one foot with eyes closed, which had hitherto been regarded as indicating "nervous instability," "vestibular instability," or "want of muscle sense," and regards them, in the men under consideration, as revealing simply the condition of physiological or psychical control. Such control, he says, may be defective from various causes; some of the most potent are fatigue, physical or mental stress, anxiety and fear. This offer of alternatives—the physical and the mental—indicates the general trend of Dr. Head's observations, and he points out not only how identical stimuli produce more powerful reactions in some people than in others, but that in the same individual the effects of the stimuli vary greatly with his mental state. He gives an example of purely mental lack of control in a man who, when rotated five times in a chair (ten rotations being the usual test), became so giddy that he "sat coiled up clinging to the arms of the chair, unable to move"; in this case the profound reaction to change of posture was one aspect only of a congenital want of nervous control in a man of unusual physical strength and athletic ability. An unexpected distinction is found between "fainting in the air" and giddiness with nausea and vomiting. Fainting is associated with a natural resistance to vertigo, and may be produced by excessive rotatory stimuli, but it may arise during normal flight at low altitudes, when it is evidence of diminished general resistance. Giddiness and nausea, on the other hand, occur in pupils on their first flight, and may disappear as facility in the air is acquired; but when central control is diminished regression takes place and the symptoms reappear. This regression to some previous habit or less efficient form of mental activity, when control by a higher centre over a lower is lost, is a well known physiological law. In such regressions Dr. Head would seek the explanation of certain apparently incomprehensible accidents in the air.

Dr. Birley's study of "Temperament and Service Flying" is intermediate between the physiological aspect, as examined by Colonel Flack, and the more psychological views of Dr. Head. That the point of view affects the conclusions of the observer is shown in Colonel Flack's tentative hypothesis—that the first stage in the onset of flying fatigue is due in many cases to an altered tone of the respiratory centre, which, by a lessened oxygenation of the body, reacts upon the circulatory and nervous systems; Dr. Birley, on the other hand, taking for granted that emotional disturbances are readily reflected in the circulatory apparatus, concludes that "a study of the pulse rate and blood pressure, together with the manometer tests, affords valuable information in assessing temperament and an individual's susceptibility and reaction to mental trauma." In an appendix on "Wind-up," by Dr. W. H. R. Rivers, is discussed the purely psychological aspect of unfitness arising from mental causes. Other contributors have dealt with the physiological accompaniments of fear; here the fear itself is studied, and the medical officer is given advice on the handling of the early stages of the anxiety-neurosis in warfare. Dr. Rivers gives the assurance that there is no other department of medicine in which a medical officer can gain results so definite.

The report is a valuable summary of experiment and opinion which will find application in other spheres where the personal element is of first-rate importance. The enlargement of the research to include the wider field of war service generally would have had a double advantage; the final number of cases of nervous breakdown—shell shock, hysteria, or neurasthenia—could have been diminished by combined physical and psychical examination along the lines here laid down; in addition, the investigators themselves would have escaped a possible fallacy. Colonel Flack describes symptoms and signs as directly due to prolonged air work at various altitudes; he puts them in three overlapping groups—the cardio-respiratory, the nervous, and the muscular. The first seems identical with that known in the army as "disordered action of the heart" (a phrase the Committee has rightly avoided); the second corresponds with the army group of "neurasthenia"; and the third may be represented by some of the numerous hospital admissions under the heading of "myalgia." If, as appears probable, the army cases and those of the Air Force present an identical symptomatology, then to ascribe the latter to prolonged air work unduly narrows the value of some of the investigations. Since two of the members of the Air Committee are on the newly formed Departmental Committee on Shell Shock, we may expect that the experience already gained will find further application.

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[1] Medical Research Council: Special Report Series, No. 53.

AN AMERICAN VIEW OF THE NATIONAL INSURANCE SCHEME.

THE degree to which the State should interfere with the freedom of the individual to act in his own way, so long as he does not violate the common law obligation that he shall not be a nuisance to his neighbour, is a question of public policy on which there are two schools of thought. One, dominant, or at least most vocal in this country to-day, favours increased centralized control. To those of a different opinion, as most Englishmen were, and perhaps still are, the active propaganda for State control in many directions marks a decline of those qualities that made the country great. Sound criticism of any scheme of State control is therefore sure of an audience in this country.

Mr. Frederick L. Hoffman, LL.D., statistician to the Prudential Insurance Company of America, in a Preliminary Report on the Methods and Results of National Health Insurance in Great Britain,[1] has missed his mark. His report shows that the result of his visit to England last year to study the insurance scheme has been to give him a very poor opinion of it. The Insurance Act was an experiment in State socialism, and it is not surprising to find an American condemning it, for socialism in any form is repugnant to the principles on which the Great Republic was founded. At the same time it ought to be possible to differ, even about State socialism, without losing one's temper and imputing motives. Those who look on the Insurance Act as a retrograde measure are yet ready to recognize that Mr. Lloyd George quite sincerely believed it would do good, and to admit that in forcing it through Parliament he rather endangered than consolidated his own political position. Nor is it reasonable to say that Germany, like the tailless fox in the fable, having found its insurance system a burden and a failure, set to work to induce other countries to handicap themselves in the same way. Moreover, it is not true that Mr. Lloyd George made no independent inquiry into the German system. Such an inquiry was made and some of the objectionable features of the German system were avoided. On the other hand, it is to be admitted that Dr. Hoffman is right in saying that the cost of the insurance scheme is a burden on industry. It would be difficult, if not impossible, to devise a tax that was not. This, in its greater part, is a direct tax, and therefore the less likely to be popular. Dr. Hoffman has justification for his contention that it would have been a wiser policy to attempt to remove one conspicuous cause of ill health by instituting ten years ago the housing policy which is now being pressed. In this matter the conscience of the medical profession is clear; it did all that was possible to make the facts known to the country, and succeeded in inducing Parliament to legislate, but in a hesitating, half-hearted way.

We are prepared, then, to grant Dr. Hoffman a good deal, but he overstates his case and makes himself slightly ridiculous when he says: "Viewed from the social, the medical, or the economic viewpoint, social insurance must needs undermine the foundations of government, and lead ultimately to the disintegration and bankruptcy of a State."

At the time of its introduction the majority of the medical profession was opposed to the insurance scheme, believing that things would be better without it; but when it became law those who accepted service under it acted in accordance with the tradition of the profession to do the best possible for the individual patient. Dr. Hoffman, however, is so anxious to condemn compulsory State insurance that he does not hesitate to make odious charges, not only against its authors, but against everyone concerned in its administration. In particular he attacks the panel practitioners in a way that is wholly unjustifiable. He says: "A vast amount of false certification or wrongful certification prevails, as disclosed in countless cases by investigations made by medical referees, who often find that a large proportion, *rarely less than one-half of the persons seen*, are fully able to return to work." Mistaken certification is inevitable under any system, but such a reckless exaggeration as that contained in the words in italics suggests a serious doubt as to the author's reliability and fitness for the task he undertook. Elsewhere he speaks of the "lightning diagnosis" of the panel doctors which makes proper treatment out of the question, and as evidence of their degeneracy quotes the inquiries held into alleged violations of rules and regulations, neglect of patients, and so on. Such cases, he says, have been numerous, but as a matter of fact, considering the enormous work of over 14,000 doctors, the number has been small, proving, if proof were necessary, that the vast majority of doctors on the panel do that work conscientiously and well.

Much is made of the inadequacy of the benefits under the Acts—medical, sanatorium, maternity, sickness, and disablement—and nobody would venture to deny this; but Dr. Hoffman professes to be troubled to distinguish between these benefits and Poor Law relief. The Insurance Acts have at any rate the merit of compelling the unthrifty to contribute. Much of the insurance scheme was experimental, but would not a State medical service be experimental? The author's own scheme is: "All incapacity for work, whether because of economical or medical conditions or on moral grounds, should be provided for under the direction of the State on the basic principle of continuance of part time wages for a stated period of time." Such a scheme could hardly reach the stage of experiment, and the suggestion makes it difficult to understand what the author's economic opinions really are.

Of sanatorium benefit Dr. Hoffman says that the allowance is to an increasing extent turned over in its entirety to the local board of health, and administered jointly on behalf of the insured and uninsured population; he thinks it unjust that the insured should receive only the same kind of treatment as the uninsured who have paid nothing towards their treatment. He knows that the insured are entitled to free domiciliary treatment, but dismisses it with the remark that it is "practically outdoor relief in the guise of health insurance." He asserts that if an insured person's means are ascertained to be sufficient his application for treatment in a sanatorium is refused. We doubt the truth of this assertion; the chairman of a sanatorium benefit committee in an industrial area tells us that he has never known or heard of such a case; that local health committees having contracts with Insurance Committees give preference to insured persons on the waiting list for admission to a sanatorium, so far as is compatible with the physical condition of the patients; and that it is quite common for a health committee to be treating in its sanatorium a greater number of insured persons than the Insurance Committee pays for. "Sanatorium benefit" was a bad term, but the insured can claim sanatorium treatment free, with the common-sense proviso that the medical adviser of the committee considers the applicant's disease to be in a stage suitable for such treatment. The element of truth in the author's strictures is that sanatorium accommodation throughout the country is insufficient, and the more progressive health authorities have been supported and the more backward authorities stimulated by the insistent demands of the Insurance Committees for more sanatorium accommodation. We are, of course, not now discussing the difficult problem whether the conception of the treatment of pulmonary consumption in sanatoriums is sound or not; it has without question disappointed many hopes; we are concerned only to show that, for what it may be worth, it is available to insured persons.

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[1] [illegible] the Methods and Results of National Health Insurance in Great Britain. Preliminary Report. By Frederick L. Hoffman, LL.D., Third Vice-President and Statistician, the Prudential

Dr. Hoffman has been industrious in collecting opinions and facts. But the opinions appear to have been all of one colour, and his facts are in some instances incomplete and in some others misinterpreted. This is unfortunate, for the insurance scheme is far from perfect, and impartial criticism founded on a careful examination of all the facts would have been valuable.

OCCUPATIONAL THERAPY.

THE paper by Dr. T. L. Llewellyn published at p. 434, though primarily addressed to employers and workmen, relates an experiment the success of which is of great interest to medicine. In all industries accidents occur and conditions prevail which frequently produce disability, but in any one place at any one time they are relatively few. In the aggregate, however, the number of persons so disabled probably to-day equals, if it does not exceed, the number disabled in the great war. The war has taught us a great deal about the treatment of the results, physical and mental, of injuries; it produced a large number of disabilities in a short time, and the disabled were congregated eventually in special hospitals, so that opportunities were afforded for intensive study. A great deal was learnt from the orthopaedic surgeons with regard to the surgical treatment of injuries of bones and joints by operation or manipulation, but it was also seen to be of great importance to stimulate the patient's mind to take interest in his own recovery. To teach a disabled man a trade, or to encourage him to work at his own, was proved to be not only good for his mind, but directly curative of physical defects.

Dr. Llewellyn describes the working of an orthopaedic or massage centre established and maintained by the employers of the coal and iron industries of North Staffordshire for the free treatment of injured workmen in receipt of compensation. The equipment was simple and the staff small, but 491 cases were treated during the first year, and satisfactory evidence that the scheme was approved by the men is afforded by the fact that the number of patients increased from 181 in the first six months to 310 in the second six months. Massage, electricity, and apparatus for exercises were supplied as part of the equipment, but the importance of obtaining the intelligent co-operation of the patient was fully recognized. The object of the treatment was explained to him, and on his first visit successful cases were brought to his notice. He was also taught exercises which he could repeat at home. The general result was very good: out of 446 completed cases, 425 returned to work, but not always the same work as they had been doing before their accident.

Rules and regulations often make it difficult for a man unable to return to his old trade to obtain a job better adapted to his altered and diminished efficiency; often also they stand in the way of the therapeutic use of work. Professor E. L. Collis of Cardiff, in a paper on the psychology of industrial convalescence, read at the recent meeting of the British Association in Cardiff, pointed out that experience with convalescing disabled soldiers had proved that few disabilities rendered a man completely incapable of doing work of some sort. The same experience made it clear that treatment suitable for such men must have an occupational objective, because occupational therapy has not only a direct effect, but a powerful psychological influence. Similarly the lessons learnt in the treatment of war neurasthenia can be applied to industrial neurasthenia, which plays, as Professor Collis says, an important part in every illness that befalls a worker, whether due to accident or disease. Professor Collis argued that the convalescence of a worker would be helped by his readmission to work for part time under medical supervision. The injured or sick man has to regain his confidence in himself and in the future, and a moral obligation rests upon an industry to provide all the necessary facilities for his proper treatment, the cost being met by the employers, and the workmen agreeing to give opportunity for occupational therapy. The effort in this direction made by the employers in Staffordshire is a move in the right direction, and is, Dr. Llewellyn says, much appreciated by the workmen; but from what has been said above it will be understood that such a centre alone will not do all that is possible, and that intelligent co-operation along the lines suggested by Professor Collis is also necessary.

THE COAL FIRE.

IN the report of Lord Newton's Departmental Committee[1] comment was made on the absence of full and scientific knowledge of domestic heating. The committee suggested that "the whole subject of hygienic and scientific heating deserves a very much greater measure of public attention than it has hitherto received." The Fuel Research Board has now published, under the title of *The Coal Fire*,[2] a special report of an investigation which has in this connexion a very considerable value. It was made by Dr. Margaret White Fishenden under the auspices of the Manchester Air Pollution Advisory Board, and was aided by grants from the Department of Scientific and Industrial Research. Dr. Fishenden's work was first directed to an estimate of the comparative heating efficiency of various types of coal grates, the older types of which, it had often been suggested, were more wasteful than others. It was found, however, that the total amount of radiant energy thrown into a room from coal or coke fires burning in open grates varied very little with the type of grate employed. The radiant efficiency, or the percentage of the total energy of combustion of the fuel consumed, which enters the room as radiation varied in different grates from 19½ to 24 per cent., and the figures referring to old-fashioned grates with bars in front were, indeed, slightly higher than those obtained from modern barless grates. By crushing the coal into slack its radiant efficiency was diminished by about one-sixth. Both Welsh anthracite coal and dried gas coke were found, weight for weight, to give some 4 or 5 per cent. more radiation than was furnished by coal. Low-temperature carbonization cokes were remarkably efficient as radiant sources, having 31 to 34 per cent. radiant efficiency compared with 24 per cent. for coal in the same grate; the fires from these fuels were easily lit and free, in combustion, from both smoke and smell. The reason for the high relative efficiency of this fuel is obscure—it may perhaps be found in its peculiar porous structure, with a relatively large area of exposed surface. Whatever be the explanation, support is afforded to those "smoke reformers" who have advocated that a fuel of this nature should be put on the market at a reasonable price. Several preparations widely advertised as doubling the value of a ton of coal were examined; these consisted generally of common salt with a small proportion of other chemicals, and in no instance had they any effect on the quantity of heat yielded by a given weight of coal. Dr. Fishenden devoted much attention to the effect of variations in draught, and a further study of the whole question of draught in connexion with coal fires is contemplated. As draught was reduced a smaller portion of the heat was found to be wasted in gas leaving the chimney; the amount so saved is absorbed by the walls and is given out into adjacent rooms or possibly to the outer walls (hence a fireplace should never be placed on an outside wall). Excessive draught is wasteful on account both of the heat which is lost up the chimney and of the greater heat required to keep an occupant of the room warm in the presence of a strong current of air. Every coal fire, it is concluded, should be fitted with an easily adjustable register, by which, when combustion is well established, the draught may be cut down so far as is consistent with satisfactory hygienic conditions. Dr. Fishenden points out that while the aggregate efficiency (by radiation and otherwise) of the coal fire in heating a room is generally at least 30 per cent. of calorific value, that of the best modern gas fires is known to be in the neighbourhood of 60 per cent., while that of electric fires in which there is no flue outlet may be taken as 100 per cent. With coal at £3 a ton, gas at 3s. 6d. a thousand cubic feet, and electric power at 1d. a unit, the cost of a coal fire for continuous heating is not quite one-half that of a gas fire and not quite one-quarter that of an electric fire of similar heating capacity. Gas and electric heating have, of course, great advantages in their superior cleanliness and convenience and in their special suitability for heating rooms which are used for short periods only; considerations of economy, however, will in most cases lead to the continued use of coal fires until they are forbidden by legislation or until the prices of gas and electricity are substantially reduced.

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[1] BRITISH MEDICAL JOURNAL, August 7th, 1920, p. 220.

[2] *The Coal Fire*. A Research by Margaret White Fishenden, D.Sc., for the Manchester Corporation Air Pollution Advisory Board. Fuel Research Board Special Report, No. 3. London: H.M. Stationery Office. 4s. net.

THE WORK OF THE ROCKEFELLER FOUNDATION

A review by the president of the work of the Rockefeller Foundation during 1919 shows that what we take to be the main note of its policy has been maintained. This policy, as shown in the method of dealing with the prevention of yellow fever, ankylostomiasis, and malaria, is to use the funds and officers of the Foundation to start a campaign, and after it has been set going and its purpose is thoroughly understood by the local authority, to leave its continuance to that authority. In this way the work of the Foundation can be extended to one country after another without an undue call upon its resources, and the people and government of the country helped to rely on themselves for the future. Another part of the policy of the Foundation which appears very commendable is that it does not create inflexible fellowship systems, but embarks on temporary schemes of fellowships to meet special needs, as in the case of China. Fellowships and scholarships have been granted to the Chinese to enable them to study medicine in the United States, but when the college in Peking is fully under way the need for these fellowships will, it is held, largely disappear. In seeking to promote modern medical education in China the Foundation has recognized the need for preliminary education in physics, chemistry, and biology. With this object it has assisted certain existing institutions where instruction in these subjects is given; it has also arranged that instruction in these subjects shall be given at the Peking Union Medical College. Though the buildings of this college are not yet complete, it has begun work; 61 students were registered in the autumn of 1919; of these 32 entered the pre-medical school; 7 were in the first year of the undergraduate medical course, and 22 were graduate students and internes. The proportion of Chinese members of the teaching staff will be steadily increased as trained persons become available. Eventually the buildings of the school will include laboratories for anatomy, physiology and chemistry, a pathological building, a hospital with 250 beds, with provision for about thirty private rooms, an out-patient department, an administrative block with quarters for resident physicians and internes, a nurses' home, an animal house, and installations for supplying water, heat, electric light and power, and fuel gas. The staff that went to Guayaquil to mobilize the campaign against yellow fever included Dr. Noguchi, whose researches, resulting in the identification of the *Leptospira icteroides*, have been related from time to time in our columns. As the water supply of Guayaquil is intermittent, the water is stored either in tanks or in barrels, cans, or other containers which afford a suitable breeding ground for the stegomyia. The importance of screening these receptacles was pointed out, and, after several unsuccessful trials, a fish was found which survived in barrels and devoured larvae greedily. In dealing with malaria in Mississippi, minnows, which consumed the eggs of the anopheles, were found a cheap and effective measure, especially in the case of ponds used for watering cattle and horses, which could not be drained or covered with a film of oil. The tuberculosis work in France seems to have made good progress, and is being taken up by the local authorities. The appeal to popular sentiment is varied and adapted to all ages, one of the methods used being a hygienic punch and judy show, with a specially written piece.

PREVENTION OF EXPLOSIONS IN COAL MINES.

The experiments initiated by the Committee of the Mining Association of Great Britain, and carried forward by the Explosions in Coal Mines Committee, showed that the addition of a certain proportion of inert dust renders coal dust (the inflammable agent in all great colliery explosions) non-inflammable. Statutory rules and orders[1] which have been issued under the Coal Mines Act, 1911, deal, amongst other matters, with precautions against coal dust and against the spontaneous combustion of coal, and with rescue work in coal mines. In all mines in which coal other than anthracite is worked—those mines being excepted in which the floor, roof, and sides of the roads are naturally wet throughout—it is laid down that the walls of the roads shall be treated (1) with incombustible dust, in such manner and at such intervals that the resultant dust mixture shall contain not more than 50 per cent. of combustible matter, or (2) with water, so as to ensure that the dust is combined with 30 per cent. of water in intimate mixture, or (3) in such other manner as the Secretary of State may approve. The management of the mines must cause the results of tests made not less than once a month to be posted at the pithead. No injurious dust is to be introduced; the use of gritty dusts or those containing a large proportion of free crystalline silica, both of which were reported by Dr. Haldane[1] to be injurious to health, appears to be precluded by the regulation which specifies that at least 50 per cent. of the added dust must be capable of passing through a sieve with 200 meshes to the lineal inch. Subject to a provision that the Divisional Inspector of Mines may allow an extension where the necessary provision of plant has been difficult, the foregoing regulations come into force on January 1st, 1921. In mines in which safety lamps are required, and in such other mines as the Secretary of State may direct, on the appearance of smoke or other sign indicating that a fire may have broken out below ground, workmen must be withdrawn from the districts affected; before their readmission the manager or under-manager, accompanied by the fireman, examiner, or deputy, and by two persons selected by the workmen, is required to examine the region affected or suspected, and to make a full and accurate report of the findings, which must be posted up at the pithead on the same day. If the existence of a fire has been ascertained workmen must not be readmitted, except under certain certified conditions; approved means must be taken to render harmless the coal dust in those of the contiguous parts of the mine which are accessible. For rescue work the breathing apparatus provided must be of an approved type; where there is a uniform oxygen delivery the reducing valve must be adjusted to supply not less than two litres of oxygen a minute. Before its use in a breathing apparatus, the oxygen must be proved to contain not more than 2 per cent. of impurities. Every breathing apparatus is to be tested at least once a month, and again before being used below ground. No person may be employed in a rescue corps or brigade unless he has passed the prescribed medical and physical test; every rescue corps, after being trained, must undergo at least six annual and one quarterly practice with breathing apparatus. A code of signals to be used in rescue operations is specified, and the rules for the conduct and guidance of persons employed in rescue work are set forth in a schedule which provides, *inter alia*, that a qualified medical man shall be in attendance at a mine whenever rescue parties are at work (unless in the opinion of the manager and inspector of mines and miners' representative that course is unnecessary); the doctor, when present, shall examine every man engaged in rescue work before permitting him to go underground for a second spell. At every mine to which the regulations apply a room must be provided and maintained exclusively for rescue and aid purposes; this room, distinguished by a large red cross on the door, must have a floor space of not less than 100 square feet, and must be supplied with adequate natural and artificial lighting, with satisfactory heating, and with a plentiful water supply; it is to be placed in charge of a person holding a certificate of proficiency in first aid from an approved society. The regulation that in any mine in which safety lamps are required to be used such a lamp is not to be unlocked or opened will not come into force until such date as may be determined by the Secretary of State after the receipt of the report of the Miners' Safety Lamps Committee.

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[1] Statutory Rules and Orders, 1920, No. 1123. London: H.M. Stationery Office. 4d. net.

TYPHUS IN POLAND.

IN our note last week commenting on Mr. Balfour's appeal, on behalf of the League of Nations, for funds to combat typhus fever in Poland and Galicia, we pointed out that, although the plan of operation is complete, the organization ready, and the methods to be employed are successful and well understood, the response to the appeal issued last May has met with scant success. This, we understand, has been due to the lack of adequate organization in pressing home the appeal and garnering its fruits. The body commissioned by the League of Nations with the conduct of the typhus campaign on the Russo-Polish frontier is the League of Red Cross Societies, whose head quarters are at Geneva, and the organization accredited by the League for the purpose of enlisting voluntary help within the British Empire is the Imperial War Relief Fund (Fishmongers' Hall, E.C.4), which is under the patronage of His Majesty the King and in close touch with the Overseas Governments. In Canada, Australia, and New Zealand the Governors-General have published their appeal on behalf of the Imperial War Relief Fund, and a vigorous campaign is in progress. In Australia, for instance, Sir Denison Miller, Governor of the Commonwealth Bank, is acting as treasurer of the Fund, and the appeal has been given prominence throughout the press. Effective measures have also been taken in the Crown Colonies and Dependencies. The Fund, which is in close touch with the British Red Cross, will hold a flag day in London on Saturday, October 2nd, under the auspices of the Lord Mayor, the Mayors of the Metropolitan Boroughs, and the Chairman of the London County Council. Ladies willing to help are requested to communicate with the Secretary at Fishmongers' Hall. In the meantime conditions conducive to the spread of the epidemic are reported from many areas in Central Europe. In certain districts in Prussia, for example, according to authentic information just to hand, these conditions are grave. In Breslau—to name one district only—of 22,544 adults who applied to an officially recognized relief agency, 10,300 had no body linen and 3,204 had but one chemise. Overcrowding by night and by day was rampant. Children in particular were suffering severely. Of 20,000 who applied, over 15,000 had no underclothing, more than 5,000 slept on rags, and 4,132 had no coverlet but their frocks. Eighty-six per cent. were undernourished, 41 per cent. were scrofulous, 48 per cent. tuberculous, and 72 per cent. suffered from bronchitis. Such conditions are, of course, highly favourable to the spread of the epidemic, and it is for funds to remedy them, as well as to provide medical assistance and supplies, that the Imperial War Relief Fund exists.

ISLAND LEPROSY.

AN interesting report on the history of leprosy in Rodrigues, a solitary island in the Indian Ocean far to the east of Mauritius, has been made by the Government medical officer. The report reaches us through the Director of the Medical and Health Department of Mauritius, of which Rodrigues is a dependency. The report states that the information gathered from the oldest inhabitants and by personal investigation leaves no doubt that leprosy was introduced into Rodrigues by a man known as "Diango," who came from Mauritius about forty or fifty years ago. This man evidently married a native of Rodrigues; he was employed as a fisherman by a family residing at Oyster Bay, a small coast settlement. Four or five years afterwards he developed leprosy. Owing to his condition he left Oyster Bay, and went to reside up the mountain about four miles away. A year or so after his departure one of the sons of his employer, who used to fish with him in the same boat, became affected with the disease, which afterwards gradually made its appearance in other families, all residents of Oyster Bay. It is believed that there are at present twenty-three cases of leprosy on the island; sixteen of the patients are descendants "direct or through marriage" of the first family affected with the disease, and at one time or other were residents of Oyster Bay. The other seven patients scattered over the island are descendants of "Diango." During the last seven years five deaths due to leprosy have been registered and nine new cases have come to light.

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[1] Cd. 8122. H.M. Stationery Office.

MONEY LENDERS AND MEDICAL AGENTS.

IN a communication recently received, the head of a medical agency in London informs us that from inquiries he receives from time to time it would seem that some medical men are under the impression that he is in touch with a person who would advance money for the purpose of purchasing a practice or a partnership. Our correspondent expresses the opinion that it would be disgraceful for a medical agency to be in touch with a money lender or money lenders. That at least one money lender is anxious to get into relation with a medical agency is evident from further information we have received. We are confident that medical agents as a body would agree that an arrangement by which a medical agency received a commission for introducing a possible purchaser of a practice to a money lender is improper, and must in the long run have a very injurious effect upon the business of medical agencies. A young man who tries to make a start in life with the aid of a money lender must, as a rule, prepare himself for an unhappy career.

WITH deep regret we announce the death of Lieut.-General Sir William Babtie, V.C., K.C.B., K.C.M.G., which took place very suddenly on September 11th whilst he was spending a holiday on the Belgian coast. A memoir will appear in an early issue.

THE Council of Epsom College will shortly award several France pensionerships of £30 a year to aged medical men in reduced circumstances; also a Home Scholarship of £30 a year to the necessitous orphan daughter of a medical man who was for not less than five years in independent practice in England or Wales. Particulars can be obtained from the Secretary of the College, 49, Bedford Square, W.C.1.

COLONIAL MEDICAL SERVICES.

REPORT OF THE DEPARTMENTAL COMMITTEE.

ON February 23rd evidence was given by the British Medical Association before the Colonial Medical Services Committee, appointed last autumn by the Secretary of State for the Colonies. The memorandum of evidence appeared as an appendix to the Report of Council, printed in the SUPPLEMENT of April 24th, 1920. In a Current Note in the SUPPLEMENT of August 14th we urged that the Departmental Committee's report should be presented to Parliament and published without delay. The report has now appeared as a White Paper,* and to it is appended a letter from the Colonial Office to the Chairman of the Committee, Sir Walter Egerton. The other members were Sir Harry Verney, Sir Humphry Rolleston, Sir William Leishman, Sir James Kingston Fowler, Dr. T. Hood, and Mr. A. Fiddian.

The terms of reference of the Committee were:

1. To consider the possibility and [illegible] of the Medical Service of the several Colonies and Dependencies for which the personnel is [illegible] by the Secretary of State, with a [illegible]

2. To consider whether the principle of [illegible]

The Committee [illegible] to hear evidence from [illegible] the medical staff of the various groups of Colonies to which appointments are made by the Secretary of State, and also from [illegible] of the Colonial Medical [illegible] the British Medical Association was informed that the Committee would be glad to receive its views, [illegible], and the Committee expresses its thanks to the Association for the assistance afforded by the memorandum received in reply to this communication, and also for the evidence given in support thereof by the witnesses nominated by the Council. The Committee held twenty meetings for the examination of witnesses and the consideration of its report.

A Unified Colonial Medical Service.

The ideal is declared to be a unified service, its personnel recruited from men recently qualified to practise, and liable for service in any of the various Colonies to which appointments are made by the Secretary of State. The Committee realizes, however, that the full attainment of this ideal is not possible at present; in the recommendations made in the report this fact has been kept constantly in view, and the Committee confines itself to "such measures as are practicable, and would yet go far to meet the legitimate desires and grievances of the various Services."

The report sets out briefly under eight heads the difficulties which appear to stand in the way of recommending the creation under present conditions of a unified service, such as the R.A.M.C., under a Director who, subject to the approval of the Secretary of State, would have the power of appointment to and transfer from each and every colony, the officers of the Service being freely interchangeable between the various administrations. But, should its recommendations be carried into effect, the Committee advises that after, say, five years the experience gained should be reviewed by another committee, in order that, if justified, further steps may be taken towards forming a still more unified service.

Hitherto a candidate has applied for a medical appointment in a special colony, or group of colonies. The Committee recommends that in future the application should be made for admission to "The Colonial Medical Service." The following advantages are foreseen as likely to attend the creation of a unified service:

> It would be recognized as a distinct branch of the public medical service of the Empire and its status would be enhanced; this would tend to encourage recruiting—an urgent matter at the present time. Moreover, the questions at issue affecting the interests of a unit of the Colonial Medical Service—for instance, the West African Medical Staff—would probably be settled with much less display of feeling if those concerned knew that they had been submitted to a man of standing in their own profession, even should the decision of the Secretary of State go against them. Possibly the most important and obvious advantage would be that throughout the service, and particularly by the West African Medical Staff, it would be regarded as an attempt to provide them "with an adequate channel through which to express any feelings of discontent that may arise at any time."

The Director General.

The Committee advises that an officer of standing in the medical profession, whose opinion would have weight with the Secretary of State, and whose name would create confidence in the profession, should be appointed a member of the Colonial Office staff, with a title commensurate with the importance of his position; the majority of the Committee recommends that the title should be "Director General of the Colonial Medical Service." His duties are set out as follows:

> (a) Generally he should advise the Secretary of State and the permanent staff of the Colonial Office on all questions relating to the personnel of the Colonial Medical Service as distinct from questions of medical and sanitary theory and practice.
>
> (b) He should be accessible to all officers of the Colonial Medical Service who might wish to see him when they are at home on leave.
>
> (c) He should advise on all changes in the regulation and conditions of employment of medical officers.
>
> (d) He should assist in the interviewing of candidates and of possible candidates for appointment in the Colonial Medical Service.
>
> (e) He should be a member of the committee on colonial medical appointments if the present method of entering the service is continued. If it is not, he should be a member of whatever committee may be appointed to interview candidates for medical appointments before their admission to any examination it may be decided to hold.
>
> (f) He should keep in touch with the medical schools in the United Kingdom.
>
> (g) He should be a member of the Advisory Medical and Sanitary Committee for Tropical Africa when questions of promotion [illegible] of the Tropical and [illegible] of the Colonial Office in connexion with the [illegible] of the Colonial Medical Service [illegible] the Colonial Medical Service.
>
> (h) He [illegible] with the feeling of the [illegible] causes of discontent to the notice of [illegible]
>
> (i) He [illegible] in the preparation of an annual review of the Colonial Medical Service [illegible]
>
> [illegible]

In defining the Director's administrative functions, the Committee disclaims any intention of suggesting that he should be debarred from taking interest in or expressing opinions on medical and sanitary questions. Copies of despatches, memoranda, reports and so on, sent to or from the various colonies and protectorates on medical and sanitary matters would be passed to him for his information, and he would be free to bring to the notice of the Department points which he judged important. The Committee, having outlined the duties of this officer, holds it equally important to state in explicit terms the functions that should lie outside his sphere of action:

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* [illegible] H.M. Stationery Office. [illegible] net.

> The regulation of the discipline of individual members of the service whilst serving under Colonial Governments would remain with the Governor and principal medical officer of the colony concerned. He would have no control over officers whilst actually serving in any colony; such matters as appointments to stations, leave, discipline (except when the action of the Secretary of State might be necessary), etc., would remain under the control, as at present, of the Governor and principal medical officer of the colony. His correspondence would, of course, be subject to the general rules of the Colonial Office. He would not be expected to visit the colonies.

Personnel of the Service.

The Committee thinks it most desirable that candidates should be attracted from among the best type of young men fresh from medical schools. The importance is urged, both in the interests of the individual and of the Service, of seconding recently qualified men for a resident appointment, preferably at the hospital where they were trained in the practical subjects of their profession:

> "It is scarcely possible to overstate the importance to a young medical man of holding such an appointment at the most receptive age under teachers of acknowledged position. Officers who have been seconded at the termination of their appointment, and all others not so seconded, should attend a course at a school of tropical medicine before proceeding abroad. Seniority and pension rights should be carefully safeguarded in order that officers so seconded may not be placed at any disadvantage."

The Committee recommends that admission to the Service should in future be by competitive or qualifying examination, in place of the present method of classification, while on several minor points the Service might be made more attractive:

> The chief and only really important cause of the difficulty in adequately filling vacancies, apart from the scarcity of medical men during the war, is that the improvements in salary and pension prospects in the different colonies have not kept pace with increased rates of emoluments in other classes of medical employment and in private practice, or with the increased cost of living.

The Committee thinks it might be an advantage were a single entrance examination held for all the public medical services, and if so, the Colonial Medical Service should fall into line with the other departments concerned—that is, the Navy, the Army, India, and the Royal Air Force. It is added, however, that candidates ought to be approved at a preliminary interview by the department prior to sitting for this examination. Assuming that the principle of admission to the Service by examination is accepted, the Committee holds it necessary for the Secretary of State to reserve the right of appointment by selection to certain posts, and this would apply also to admission to certain new departments of the Service.

Organization of the Service.

Since a completely unified service is not at present thought possible, candidates would have to offer themselves for service in those colonies for which they are eligible according to the regulations in force. The Colonial Office is at present organized in geographical departments, each dealing with the affairs of one or more colonies or groups of colonies. It is recommended that the Colonial Medical Service should be organized in the same manner, and that candidates should apply for admission to the Service in one or more of those departments.

The Committee next considers the possibility of forming into separate units the medical services of neighbouring colonies. Having regard to the conditions prevailing in the different groups of tropical colonies, the conclusion is reached that, beyond the existing West African Medical Staff, the following are the only other medical services that can with advantage be assimilated:

> (i) The medical services of the Straits Settlements and the Federated and Unfederated Malay States.
>
> (ii) The medical services of the East African Protectorates (Somaliland, Uganda, Nyasaland, Zanzibar, and the East Africa Protectorate) and the Tanganyika Territory.

The Committee recommends that in future one Malayan Medical Service should be recognized on first appointment, and that there should be one roster for promotion, officers being transferred and posted to and from the various administrations in this group. In view of the conspicuous success attending the assimilation of the medical staffs of the four West African Colonies, the Committee strongly recommends that a like staff be formed for the East African administrations, with conditions of service, pay, pension, and gratuity parallel to those in the West African Medical Staff, so as to facilitate the ultimate combination of the two services into one medical staff for British Tropical Africa.

The Committee regards as a matter of urgency the appointment of senior officers for West and East Africa to make frequent and regular inspections of the individual stations and of the Colonial Medical Service generally; these might be styled "Inspectors of Medical Services," provided that "medical" is understood to include the duties now classed as "sanitary."

Pay, Leave, Promotion, &c.

The need for increased pay is fully recognized by the Committee; it declares that the Colonial Office, if it is to attract young men of the right type, should offer an initial salary of at least £600 per annum for whole-time appointments, and that substantial additions must be made to the salaries now offered in the various units.

Understanding that the question of the age of voluntary retirement and rates of pension is under consideration, the Committee refrains from making specific recommendations, but hopes the claims of medical officers will be considered in a generous spirit. It recommends that the gratuity now given to officers in the W.A.M.S. who desire to retire after nine years' service should be continued and increased to £1,500; that the gratuity after twelve years should be increased to £1,875; that similar gratuities should be instituted in the E.A.M.S., or even made general throughout the Colonial Medical Service. Here the Committee stigmatizes as narrow and false the view that the medical service of a colony is not a "productive" service—that is, that the value of its work cannot be stated in terms of £ s. d. This view, it says, should be combated whenever put forward as a reason for postponing or refusing funds.

In the matter of leave it is argued that the Colony in which the officer has been serving should be responsible for his pay whilst on leave, and that the period of leave earned should be on full pay. The grant to an officer returning home on leave of the free passage both ways for himself and his wife, and children to the number of two, is considered equitable and deserving of adoption. Hope is expressed that provision for the widows and orphans of officers may be developed. Recommendations are made to facilitate study leave on full pay, the fees being paid by the Government. As to specialist appointments, the Committee is strongly impressed with the desirability of introducing into the Colonial Medical Service the principle that an officer may attain to the highest rank and pay whilst continuing to practise the branch of the profession to which he has devoted his life. It accordingly recommends that specialist appointments should be created and given to officers of the Service who have shown capacity in some recognized branch of medical science or practice and who desire to continue their particular work. Regarding promotion, the Committee is not disposed to adopt the view that the increase of pay by annual increment is an evil tending to remove any incentive to effort. A uniform nomenclature for administrative officers is recommended; thus the head of the medical department in each colony should be called "the Director of Medical Services" (D.M.S.), and so on. Interchange of medical officers between colonies should be facilitated, but when a move or transfer is effected an officer should not suffer loss, but be allowed all reasonable expenses entailed by the change; nor should transfers be allowed to injure the ultimate pensions of the officers transferred.

Further recommendations deal with defective quarters, confidential reports, posting to stations, the desirability of setting up medical reference libraries in each colony, auxiliary medical services, the encouragement of research work and the establishment of medical research institutes, and the question of precedence and honours. Lastly, it is advised that a Colonial Medical Service List should be kept, giving full information as to conditions of service under the Colonial Governments, and the names, qualifications, and services of the officers in each unit of the Service, and of locally appointed officers. In conclusion, the Committee expresses the belief that:

> "By the adoption of the above measures the causes of discontent which have existed in the Service in the past will be removed, and that the Colonial Medical Service will attain to a very high, possibly even to the highest, status amongst the public medical services of the Empire."

In the letter of the Colonial Office to the Chairman, dated August 28th, it is stated that Lord Milner will not be able to deal fully with the Committee's recommendations until he has consulted the administrations of the various colonies and protectorates. "There is, however, no question connected with Colonial Administrations to which he attaches more importance, and he is glad to state that considerable progress has been made in the direction desired by the Committee." Three instances are given: (1) Unification of the East African Medical Service is said already to have been accomplished in everything but name; (2) the pay of the West African Medical Staff has been completely revised, with an initial salary in excess of £600 a year; (3) considerable progress is being made in the improvement of facilities for research in the Colonies.

THE DISCUSSION AT CAMBRIDGE ON THE FUTURE OF MEDICAL PRACTICE.

BY

PETER MACDONALD, M.A., M.D.

No more interesting or more valuable discussion has ever taken place under the auspices of any medical body than that held at the meeting of the Section of Medical Sociology at the annual meeting of the British Medical Association at Cambridge on July 2nd. It ought to receive the closest attention of every medical practitioner, as it hinted at changes which may prove revolutionary, and will affect every member of the profession, whether general practitioner, consultant, laboratory worker, or State or municipal servant.

The opener, Sir George Newman, was not very definite as regards proposals, except for his quite definite statement that he would do nothing to discourage that individualism which most medical men will agree is of peculiar value to medicine; but it was evident that both he and those who followed him were pleading for an assumption by the State of more or less responsibility for the health of the nation. With this I am in entire sympathy. The fact that I myself, in a report which I drafted for the York Panel Committee, was, I think, the first, or one of the first, to adumbrate in print most of the proposals which seem to have found favour with the openers of the discussion and also of the Advisory Committee to the Health Ministry, will show that I am enthusiastic as to this assumption by the State of full responsibility for the medical services needed by the community, so long as the individualism of the profession, which I regard as of first importance to the profession and the community, is reasonably safeguarded. It is a cause for legitimate pride that it is from our own profession that the impulse has come which may help towards a solution of a difficult problem.

My object, however, in writing now is to utter a word of warning. Desirable as it is that the State should take full responsibility for the health of its citizens, it should do so only on conditions which will allow of its doing the thing efficiently; and it were better that the Medicine of this country should not be interfered with further at all by the State unless this interference is to lead to a better state of things. We, too, as a profession must not advocate change, but reform; for change without reform may lead, indeed, is likely to lead, to disaster.

To my mind it is clear that there are three essentials to the establishment by the State of a satisfactory medical service:

1. That this service should be complete. All sections of the necessary medical services need not be established complete at once, but any section dealt with by the State should be dealt with completely. It might, for instance, be possible to set up an adequate hospital service by itself to begin with, and this is at present the most urgent of medical problems. But sooner or later the co-ordination of all types of service under the aegis of the State would certainly be found necessary.

2. That the medical profession should have the largest possible share in the management and control of the service, and that bureaucratic interference with the profession should be the least possible.

3. That provision for the services should be adequate. On this last point it is of urgent importance that the profession should have clear and decided views, and it was hardly raised at the discussion at Cambridge.

The Cost of a Satisfactory Service.

Unless ample financial provision is to be made to allow the medical service supplied to be of the very best, then any further invasion by the State into the practice of medicine is undesirable, and, so far from being welcomed by the medical profession, should be strenuously resisted.

I have endeavoured to work out the cost of a complete and fully satisfactory medical service for my own city of York, and from this a rule of proportion will give an estimate of the cost of a complete service to the State as a whole.

For the moment I do not wish to raise the question as to whether the establishment of a complete service is desirable or not; there are those who think it is to be set up, whether partly by extension of the panel service or otherwise; but the proposals put forward, that the National Health Insurance Acts have meant a very large assumption by the State of responsibility for part of the country's medical services, that force of circumstances will compel the State to undertake to a greater or lesser extent the burden of hospitals; and that there is at least a possibility of the State being compelled to undertake responsibility for all the medical services of all but the comparatively well-to-do.

I take as a basis to form my estimate the cost of present medical services, so far as they are given and can be ascertained.

(a) General Practitioners' Service.

The cost of private practice and of club practice cannot be ascertained, but the cost of the present panel service for this year for the city of York will be about £19,100. To make this a complete service means to extend it to dependants—that is, to the bulk of the rest of the community. York seems to be peculiar in that the insured population bears a higher ratio to the total population than that of the kingdom generally. The total population, taking the figures of the medical officer of health, is 77,639, and the figures of the Ministry of Health for the insured population is 35,000. This latter figure will probably be found to be too high, as it includes "inflation of lists." This inflation will certainly be less than in former years, but no great error will be made by assuming the correct number to be 30,000. To extend the medical benefit of the Insurance Acts to the rest of the community of similar economic circumstances would mean to increase the cost in the proportion of about 72,000 to 30,000; or, in other words, the cost would become approximately £46,000. This is on the basis of the present capitation fee, and there is a strong case for thinking that a satisfactory service for women and children should bear a higher fee; and no satisfactory service, whether on the plan of a panel service or otherwise, can be given at a less cost. I of course admit that service of a kind might be given at a less cost, but only, in that case, one that would degrade medicine and degrade the medical profession.

(b) Hospital Service.

I would like to "cross the t's and dot the i's" of what Mr. Morris of the London Hospital said at the discussion—that "the day of staffing voluntary hospitals by honorary officers is past"; but I think that this needs restating more strongly, and I should have been glad if he had said that the day of voluntary hospitals is past, or, at least, passing, whether we like it or no. Incidentally, I would like to resist strenuously the method favoured by Mr. Morris of easing the finances of voluntary hospitals by charging each patient a part of his cost to the hospital. At the London Hospital they charge, or propose to charge, the patient one guinea a week, the cost to the hospital being about four guineas. This I regard as a most dangerous precedent. It may be necessary to continue hospital services as a charity, or it may be better to make them a right of every citizen; but to supply them as a charity and to delude the recipients of the charity into the belief that they are not receiving charity, as making them pay part of their cost would certainly do, will, I am certain, be bad policy for all concerned. The expenditure of the York Hospital for 1919 was about £20,000; but this relates not to York but to a larger area, and I estimate the cost as applying to the city of York as two-thirds of this, equal to £13,333 13s. 4d.

Now, I am satisfied that the needs of the community demand an increase of the number of hospital beds, and that this should be multiplied by three. Mr. Jenkins, who spoke for the Labour party by invitation at the Cambridge Conference, said six, but probably three would be enough, and I feel confident that I could make out a good case for at least three. These need not be under the same roof, and many of them should be convalescent beds; and though this might reduce the cost per bed on the one hand, yet on the other, the fact of having separate establishments would tend to increase the costs, so that the cost per bed would have to be multiplied by three, making £40,000. Some of these, however, might be "paying" beds, which might reduce the cost to say £32,000.

These figures for hospitals, however, are based on gratuitous medical services, which could not continue under State or local authority provision; and I take as the cost of medical service, for purposes of argument only, the very low figure of £8,000. I think it likely that this figure is too low, but at present my object is only to give minimum figures. The hospital costs would accordingly be raised from £13,333 to £40,000, and the figure will be higher if nurses are to be reasonably paid.

(c) Present State Service.

Examples: Department of M.O.H., tuberculosis, school, Poor Law, port doctor, pensions, some military work, venereal department, fever hospitals, city asylum, etc. The cost of that part of these services supplied by the Corporation of the City of York in 1919 was £[illegible]. The cost of the remainder I was not able to ascertain, but it is small, and for the purposes of this article negligible. Some of these services would be merged, and therefore included, in the costs of the above general practitioner and hospital services, so that the cost of these would be in that respect lowered. On the other hand, the State medical officers are underpaid, so that the reduction in costs would not be great. And it must be remembered that it is the tendency of the time to increase public health services. Let us assume that the cost would be lowered to £[illegible].

(d) Present Poor Law Infirmary.

This has [illegible] beds. No separate accounts are kept for the workhouse and the workhouse infirmary, so the cost of the infirmary must be an estimate. I have worked it out at about £13,000, and the cost of this, referable to the city of York, is five-sixths—namely, about £11,200, for the year 1919. This city infirmary is, unlike many workhouse infirmaries of the country, far from empty; and it is usually more than two-thirds occupied. Some of these beds may become unnecessary in view of the increase above indicated of hospital beds; but the decrease will not be great; 124 of these beds are for imbeciles, and about 50 for senile infirm people; and many of the remainder are used for chronic invalids and incurables not suitable to be hospital cases. But if we assume that the number of beds might be somewhat lessened, and take the estimated remaining cost as £10,000, we shall not be far wrong.

(*e*) *Additional Services.*

The above make practically no provision for a very big, indeed, a gigantic, problem—that of dental service; and it is certain that there will be other increases in specialists' services, such as pathological, laryngological, dermatological, etc., certainly associated with the hospitals but not provided for in my figures above. Any figure to supply these must be a guess, but it will not be less than £5,000, probably nearer £10,000 to supply them efficiently; let us take the figure of £7,500.

Summary.

These figures are summarized in the following table:

A Rough Estimate of the Cost of a Complete Medical Service for the City of York.

	Cost of Present Service.	Cost of Present Services to State or Local Authority.	Cost to State or L. A. of Complete Service.	Increased Cost to Community of Complete Service.	Increase or Decrease of Cost to State or L. A. of Complete Service.
	£	£	£		£
General practitioner service (present panel) ...	19,100	19,100	46,000	Probably none.	26,900
Hospital service (other than fever hospitals, etc.)	13,333	*Nil*	40,000	?	40,000
Present State service (M.O.H., Poor Law, etc.) ...	24,217	24,217	21,638	Probable decrease, £2,579	Decrease, £2,579
Pauper lunatics in City Asylum	12,362	12,362	12,362	None	None
	36,579	36,579	34,000		
Poor Law Infirmary	11,200	11,200	10,000	Decrease, £1,200	Decrease, £1,200
New special services	*Nil*	*Nil*	7,500	?	7,500
Total	£80,212	£66,879	£137,500		£70,621
Cost per head of population	Over 20s.	17s. (approx.)	Over 35s.		About 19s..

NOTE.—The increase of cost to the State or Local Authority of the Hospital Service is the total cost. None, or practically none, of this is now borne by the State.

From this table it is seen that the cost per head of population of present services is about 20s.; that the State or local authority pay about 17s. of this; that the cost of a complete State service (the word is here used without implying whole-time or salaried service) would be about 35s., and the increased cost borne by the State about 19s. per head of the population.

Now, the city of York is fairly representative of the country. It is urban, yet semi-rural; it is partly a manufacturing, partly a residential city; figures based on its figures, or an estimate of figures for it, will give a fair indication of figures applicable to the whole country.

The figures given above mean that a complete medical service would cost the State between 70 and 80 million pounds annually, meaning an increase of cost to the State of not less than 40 millions on what it is at present spending, and this without taking into consideration anything to represent interest and sinking fund on capital costs. And it must also be remembered that the estimate I have given is a low one, probably too low to allow of that efficiency which is the first essential of our requirements; that it is based mostly on figures for 1919, and that costs have gone up since then and the value of money has gone down; that the demands of labour are likely to increase costs further. However this may be, my argument depends, not on the complete accuracy of my figures, but upon the fact, which I claim I have demonstrated, that the increase of the cost to the State of a satisfactory medical service will be a large one.

Now comes the question: How are we going to get this kind of thing for the medical needs of the community, postulating for the moment that it is desirable? Shall we get it from the politician? Shall we get it from the sort of persons now running the Ministry of Health? I had a little experience of the Ministry of Health in the endeavour to get for the panel service terms which would allow of its being made an efficient service. This experience did not make me feel inclined to swell with pride from the knowledge that the medical needs of my country were in the hands of people with a real grasp of what these needs were. I did not feel that the Ministry of Health was free from the influence of opportunism; it was not very clear that a change of name from Local Government Board to Ministry of Health indicated any change of heart. (I would like to interpolate that nothing of this applies to the late Sir Robert Morant.)

Any satisfactory solution of the medical problem is impossible so long as the management of the country is on its present lines; and if this is so, are we, as medical sociologists, to plead for what we know under present conditions to be impossible? Or are we rather to strive for a better state of affairs; to remember that medical sociology is part of a general sociology; to help to rescue the country from the politician, and to replace the politician by the sociologist, or convert the politician into a sociologist; particularly to remember that the future of this country and of the world is not with the politician, but with the scientist; and that if the scientist were set free to solve the problem of production, all the millions and hundreds of millions needed for the medical problem, the housing problem, the National Debt, would be a mere flea-bite in comparison with the possibilities of wealth the scientist might make for us. One of the valuable contributions to sociology of the great American sociologist, Lester Ward, was the thought that the path to progress is indirect. To my mind this problem in medical sociology does not and cannot stand by itself; it is part of the whole problem of the country's future, and I believe that the most fruitful thing we, as medical sociologists, can do at present is (first) to help to promote a public opinion which will bring peace to the world, and (second) to influence the politician, so long as it is he who controls the country, to give that endowment to science which is the only thing which will allow of that increase of production, and which will in turn allow all these medical needs, as well as other desirable things, to be added unto us.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on August 10th, twenty-two cases were considered and £244 11s. voted to twenty of the applicants. The following is a summary of some of the cases relieved:

L.S.A.Lond., aged 63, married, who for some years has acted as locumtenent. Has recently completely broken down in health, and is in hospital suffering from tabes dorsalis. Last year only earned £121. Rent £32 10s., and wife lets an unfurnished room at £11 4s. Friends have given £10. No prospect of applicant being able to work again, and they are practically destitute. Voted £26 in twelve instalments.

Daughter, aged 62, of M.R C.S.Eng. who died in 1903. Owing to nervous breakdown applicant has been for some time in a nursing home. Is now staying with friends, who will be unable to keep her. Income £50 from investments. Desirous of getting into a home. Voted £12 in twelve instalments.

Wife, aged 46, of F.R.C.S.Irel. Owing to overwork and financial worry applicant's husband is completely incapacitated, and it is not expected that he will be able to work again. Three children, aged 23, 20, and 10. The eldest, a daughter, earns £3 a week. The son, aged 20, is going to Australia. Rent £115 for an eleven-roomed house, the lease of which runs out in September, when £300 will be required for dilapidations. A friend has lent the money to pay the rent up to September. Desirous of getting a house and letting rooms, and asks for help to make a start and towards the youngest son's education. Voted £10.

[illegible] of M.R.C.S.Eng. who died in 1894. Suffers from ill-health and is unable to earn anything. Shares everything with her two sisters, one of whom has help from the Fund. Relieved ten times, [illegible]. Voted £12 in twelve instalments.

[illegible] of M.R.C.S.Eng. who died in 1891. Until recently has earned as school matron at £50 a year, but is at present out of employment and owing to her age finds it difficult to obtain another post; is at present living with friends. Has no income but that [illegible] earnings. Relieved twice, £10. Voted [illegible]

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

Scotland.

EDINBURGH ROYAL INFIRMARY.

AT the meeting of the board of managers of the Edinburgh Royal Infirmary held on September 7th it was reported that the contributions for the past five weeks amounted to £6,361. In addition to this a sum of £15,000 was received from the British Red Cross Society, Scottish Branch, City of Edinburgh Committee, to be applied in or towards the provision of a new electrical department, including radiography, to be permanently associated with the name of the society.

The retirement is announced of Dr. W. G. Sym, F.R.C.S.Edin., ophthalmic surgeon, Edinburgh Royal Infirmary. Dr. Sym acted as assistant ophthalmic surgeon from 1890 to 1905, and for the past fifteen years as ophthalmic surgeon in charge of Wards 41 and 42 and the associated out-patient department. In consequence of Dr. Sym's retirement Dr. A. H. H. Sinclair has been promoted ophthalmic surgeon with charge of the wards.

SMALL-POX IN GLASGOW.

On September 4th and 5th three cases of small-pox were admitted to hospital in Glasgow; on the 6th four, on the 7th three, on the 8th three, on the 9th four, and on the 10th three. The total number under treatment, which at the beginning of the week was 89, had risen to 97 at the end. There were three deaths.

EDINBURGH UNIVERSITY LORD RECTORSHIP.

The Edinburgh newspapers announce that Mr. Lloyd George has consented to stand as Coalition candidate for the office of Lord Rector of Edinburgh University. The election takes place in October, and the Prime Minister's willingness to stand is expressed in a letter addressed to [illegible] president of the Edinburgh University [illegible].

Correspondence.

PUERPERAL SEPSIS.

SIR,—[illegible]

[illegible] lessen the responsibility of the practitioner to use every device known to antiseptic and aseptic surgery to protect his patient. The more rigidly he observes this ritual the fewer will be his cases of infection.

The statement of a correspondent in the JOURNAL of September 11th, p. 412, that "In these days puerperal sepsis is in every case an autoinfection, and its incidence has no relation whatever to manipulations during labour," is disproved day by day in the receiving room of every general hospital in London.—I am, etc.,

London, W., Sept. 11th. HERBERT WILLIAMSON.

THE WAR PHYSICAL CENSUS.

SIR,—I do not know whether Sir James Galloway's thought-provoking address, printed in the JOURNAL of September 11th, was followed by any adequate discussion when it was delivered at Aylesbury, but I am sure that many would be glad if you could afford the space, and Sir James Galloway the time, to elucidate further some of the questions to which it gives rise. Their national, as well as their professional, importance affords sufficient excuse for me to put some of them for your consideration.

Sir James Galloway admits that "there are certain errors underlying these great masses of figures"; but believes that it may be safely concluded that the fact, for instance, that "a large number of the fit young men had volunteered or been called up for service before the last year of the war" (to which year alone his figures apply), is counterbalanced by "the fact that in many places the examinations were carried out for the first time on fit men who had been retained during the earlier years of the war on reserved occupations, and the young men presenting themselves for service on reaching the age of 18 in the year under review." Surely this is a very inadequate counterbalancing. These examinations tabulated included those of all the older men up to 50, and in some cases 55, years of age, and those resulting from a second "comb-out" of reserved occupations. Clearly the bulk of the best men physically had been included in previous examinations, and is it not a fact that a considerable proportion of the youths of 18 years were immature? Can it be doubted that for war purposes the standard of men between, say, 22 and 30 years was better than that of the youths between 18 and 22? In the only instance given by Sir James Galloway, "of 200 youths of 18 to 20 years of age examined and rejected in the north-western region of England, no fewer than 85 were rejected on account of poor physique." Differing from Sir James Galloway in his belief, I can scarcely doubt, on the evidence given, that, as regards statistics, a review of the whole male population between 18 and 50 years of age would, in normal conditions, give a better result than the figures he gives for the last year of the war.

Again, in any case the figures refer, of course, only to adult males. Sir James Galloway naturally says this in giving the statistics, but in suggesting the lessons of the figures he slips very easily into speaking of the physical condition of "our people," of "our adult population," of "the nation." Are we justified in thus ignoring the women? Is it not likely that an examination of all adult females, from youth to middle age, with a view to discovering their physical fitness for performing their normal social functions, would give better results? And is not the importance of the women on the rising generation and the national physique even greater than that of the man?

This brings me to a further consideration of the utmost importance. It is seen quite clearly in the case of women, but it is equally genuine in the case of men. Here was an examination to discover the degree of physical fitness for what? For employment in the forces during war. But men were not born to be cannon fodder, nor even to be hard working [illegible] thereto. The standard of efficiency for the best purposes or for the ordinary purposes of life is not that of physical fitness for active employment in war. Such meagre information as we have seems to suggest that Shakespeare was a physically healthy man, but who knows? And might it not have been better for the nation and for humanity if, say, Rupert Brooke had been found physically unsuitable for military service? Even the agricultural labourers, to whom Sir James Galloway specifically draws attention, seem as a class to be reasonably effective, beyond the average span of years, for the purposes of agricultural labour. We should be quite wrong, as it seems to me, to draw sweeping conclusions as to our national fitness and efficiency from the figures which Sir James Galloway uses as the text of his address.

Even if, after discussion, the questions which I have here raised are answered in the way that I think they must be, I should be the last to belittle the importance of an increased attention being paid by the community and the profession to our national physique. I have for years been preaching (and, as an administrator, acting accordingly) that mother-craft and house craft are not, as a rule, inborn accomplishments, but require to be taught effectively in all our schools and afterwards; that knowledge of a body of facts concerning personal health and an experience of the general practice of hygiene are as necessary for our children and adolescents as a mere course of school games and drill; that manual work, even under healthy conditions, is no substitute for proper physical culture, which is usually necessary to counteract the irregular development and muscle-saving devices which such work, if effective, generally entails. Though Sir James Galloway's statistics do not, as I think, necessitate a pessimistic outlook as to our national fitness, I hope his address will arouse or renew our professional zeal in the directions I have indicated as well as in those matters which more obviously enter into our daily routine in the treatment of disease.—I am, etc.,

London, N., Sept. 11th. H. B. BRACKENBURY.

THE TREATMENT OF FRACTURES.

SIR,—In connexion with the correspondence on the above subject it is pertinent to emphasize again what appears to be the real claim in the letter of Sir John Lynn-Thomas—namely, that before the war and during the war the treatment of fractures in general, in the hands of the Liverpool School of Orthopaedic Surgery and its disciples, was always adequate. In dealing with lower limb fractures this implied simply the correct use of the Thomas splint. The so-called modern methods of the war, when efficient, were founded on technical modifications of fully worked out principles derived from the ripe experience of the exponents of the Liverpool school.

The difficulties encountered in the treatment of the war fractures were those dependent on the presence of infected tissues, both soft parts and bone. Such conditions are, happily, not often reproduced in civil life.

The period of fixation necessary in simple fractures is short, and the chances of subsequent interference with joint mobility exceedingly slight.

For widespread use simple apparatus is desirable; in lower limb fractures, excepting those in the immediate neighbourhood of the hip and ankle joints, the Thomas splint in its pristine simplicity cannot be surpassed. Students, both undergraduate and post-graduate, should be taught the correct use of this splint, and the fracture equipment of the country hospital should include the Thomas above all others.—I am, etc.,

Manchester, Aug. 25th. HARRY PLATT.

ANTIMONY IN KALA-AZAR.

SIR,—Dr. Christopherson's letter in your issue of August 14th, page 256, undoubtedly appeals to all practitioners who are working to stamp out those dread diseases bilharzia and kala-azar. Having treated kala-azar cases by intravenous injections of antimony for the past three and a half years, the following remarks may prove of interest.

At first I employed the potassium salt of antimony tartrate and used a 2 per cent. solution in normal saline. The initial dose was usually 2 c.cm. given every second day and cautiously increased by ½ c.cm. until the patient was receiving 7 c.cm., this being regarded as a maximum dose, and practically represented 2½ grains of tartar emetic. Although there were fortunately no regrettable accidents, I speedily came to the conclusion that this solution was far too toxic, as evidenced by coughing, nausea, and retching which often lasted for ten minutes after the injection, and in a few cases by a collapsed condition which was but slowly recovered from. On the suggestion of my friend Sir Leonard Rogers, the sodium salt of antimony tartrate was substituted as being just as efficacious and far less toxic, and for the past three years this salt has been regularly employed with most excellent results, nausea followed by retching being very rarely met with, and no cases of collapse have occurred.

Having personally given considerably more than 3,000 intravenous injections, and having watched the effects of double that number given by my assistants when officiating as civil surgeon of the Nowgong district of Assam, I am convinced that in the sodium salt of antimony tartrate we possess the means of curing the vast majority of cases of kala-azar that come up for treatment, and, provided that the cases are secured in the early stages of the disease, the course is by no means a prolonged one.

A young tea-planter who contracted the disease at the end of last September (diagnosis confirmed by Sir Leonard Rogers) was perfectly fit again before Christmas Day, having received twenty-one injections, which represented a total of 25 grains of the sodium salt. He was free from fever after the third injection. He was in excellent health when heard from a few days ago. Beyond an occasional saline purge, no other treatment whatever was adopted. In another case of kala-azar in a European (diagnosis confirmed by Major Knowles, I.M.S., pathologist to the Government of Bengal, who treated him in Calcutta), the patient lost his fever after three injections, though he had been ill for some weeks. In order to secure a passage to England he left before the cure was completed, and though he put on two stone in weight on the voyage home, he relapsed soon after his arrival early in July. He was having persistent and moderately high fever when he came to London on July 28th to be under my care. After the seventh injection of the sodium salt of antimony he lost his fever and has remained quite free. Between August 1st and August 5th the temperature ranged between 101° and 104°, and the patient was very ill and depressed. He has now had thirteen injections, and is getting 1½ grains of the sodium salt in 10 c.cm. of normal saline at each dose. It is my intention to continue treatment for at least another month, giving the injections at longer intervals and in gradually decreasing doses. The injections were given every other day between July 28th and August 12th, as it appeared essential to sterilize the patient as rapidly as possible compatible with safety. The initial dose was 4 c.cm. and increased by 1 c.cm. at each injection, the strength of the solution being the same—namely, 1½ grains dissolved in 10 c.cm. of normal saline, so that the initial dose represented three-fifths of a grain. My point in referring to these two cases is to show that with the sodium salt the fever in kala-azar, even where the case is not of recent origin, is often lost quite as speedily as in the case successfully treated by acetyl-p-aminophenyl stibiate of soda referred to by Dr. Manson-Bahr in your issue of August 14th, p. 235.

Referring to Dr. Christopherson's letter, I would like to say that no difficulty whatever has been found in procuring regular supplies of the sodium salt in Assam; that I invariably prepare my own solutions, using normal saline in which to dissolve the drug, and then sterilizing by placing the bottle containing the solution in a saucepan, the water in which is brought to the boil and kept at boiling point for ten minutes. The solution can be repeatedly boiled without destroying its efficacy. As most of these injections were given in a poorly equipped tea estate coolie hospital, the conditions were not ideal. The median basilic vein was usually selected and the skin over the vein painted with iodine. The injections were always given when the patient's stomach was empty, and he was made to lie down for half an hour afterwards. If there was the slightest tendency to coughing after an injection, the assistant noted the patient's name, and the dose for that patient was reduced at the next injection by ½ c.cm. With the sodium salt that was rarely necessary, whereas with the potassium salt coughing often ensued immediately the needle was removed from the lumen of the vein. The majority of cases were cured after a course of 30 grains—1½ grains in 10 c.cm. of normal saline being regarded as the full dose, and the initial dose usually being 4 c.cm. of this amount. A patient was considered cured provided that in addition to freedom from fever for a considerable period there was marked diminution in the size of the spleen, and that no reaction followed an injection of antimony. It is not always desirable to puncture the spleen repeatedly, but where Leishman-Donovan bodies are still present there is usually a rise of temperature shortly after an injection;

and though this reaction is often very slight and transient, its presence denotes that treatment must not be discontinued. In conclusion, injections of the sodium salts of antimony are, in my opinion, a perfectly safe form of medication even in advanced stages of kala azar, provided due care is taken at the time of injection to note the effect of each dose.—I am, etc.,

J. DODDS PRICE.

Harrow, Aug. 27th.

MORTALITY OF VENEREAL DISEASE.

SIR,—The correspondence on this subject has been of great interest and value as establishing beyond "all possible probable shadow of doubt" the unreliability of the Registrar-General's death rate returns in regard to syphilis or the effects of syphilis, the terrible toll taken by what Sir James Crichton-Browne so aptly calls the "hidden hand of pathology," and the inaccuracy of statement and futility of argument advanced by Mr. Charles Russ in his endeavours to camouflage his indefensible position from the heavy artillery brought against him.

Syphilis produces its degenerative effects owing to the proliferative endarteritis and perivascular infiltration with plasma cells and lymphocytes, which interfere with the nutrition of the parts supplied by the affected blood vessels. Every tissue and organ is therefore liable to suffer, and it is doubtful if there is any other chronic infectious disease with so wide and harmful a field for its attacks. To demand pathological proof by the demonstration of the *Spirochaeta pallida* in all such lesions is unreasonable, and as logical as to demand proof of the presence of alcohol in the liver of a case of alcoholic cirrhosis of the liver. Yet this proof is what Mr. Charles Russ asks for in your issue of August 21st.

Mr. Charles Russ should collaborate with Lord Astor, who advanced as serious evidence against the increase of venereal disease since the outbreak of the late war the fact that the death rate from general paralysis had not increased—the average date for the onset of which is, I believe, about ten years after infection! Those who wish to try to prove that venereal disease is a bogey to frighten amorous adolescents with should really be more careful of their "facts" and arguments.—I am, etc.,

H. WANSEY BAYLY.

London, W., Aug. 30th.

CORONERS' INQUESTS.

SIR,—I think it is high time that the Association should take up the question of the payment of fees for attending inquests, and the giving of evidence by honorary medical officers of hospitals. I have recently had to attend two in one week—one being a lengthy inquiry. In both cases I had attended the patients in my capacity as medical officer to our local hospital. One—a case of very severe burns in an elderly man—I had attended at the patient's house (he was a patient of mine) and ordered his removal to hospital, where I attended him until his death. The other was a case of drowning which happened to be admitted whilst I was on my visiting round at the hospital. The coroner said he was very sorry that he could take up my valuable time without any fee, but he had no power to give one. He added, "It is a matter that your Association should take up with the authorities." I heartily concur with him.

The time that honorary medical officers give to attend poor patients in hospitals free, if calculated in £ s. d., would amount to a heavy item in twelve months. To expect us, in addition, to attend courts without recompense is a flagrant instance of abuse which no other profession would tolerate.—I am, etc.,

J. H. MORRIS JONES.

[illegible]

*** The British Medical Association long ago anticipated Dr. Morris Jones's wishes. Since 1900 the Council has been trying to induce the Government to alter the law as to death registration and coroners, but the Government has never been able to find time for it. The particular grievance to which Dr. Morris Jones alludes has been considered by two departmental committees and was again brought to the notice of the Minister of Health and the Home Secretary by the deputation from the Association which was reported in the SUPPLEMENT of August 14th, 1920.

TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

SIR,—In the discussion on the treatment of calculi impacted in the pelvic portion of the ureter, opened by Mr. Frank Kidd at the annual meeting of the British Medical Association at Cambridge, and continued in the letter appearing in the JOURNAL of August 28th, it is strange that no mention has been made of the danger of paralysing the ureteric sphincter by cutting it with scissors, burning it with the diathermic electrode, or leaving a tent for twenty-four hours within the bladder portion of the ureter.

Transplantation of the ureter without its vesical sphincter into another portion of the bladder, or into the rectum or skin, is commonly followed by an attack of acute pyelonephritis. Therefore any injury to the sphincter, be it only temporary, may occasion an ascending infection and subsequent attack of acute pyelonephritis.

The more modern methods of dealing with stone in the pelvic portion of the ureter are only successful when due regard is given to the delicacy of the operation and the importance of preserving intact the ureteric sphincter.—I am, etc.,

CLIFFORD MORSON, O.B.E., F.R.C.S.

London, W., Sept. 1st.

TREATMENT OF GONORRHOEA IN WOMEN.

SIR,—I crave a little space to reply to Dr. Samuels (September 11th, p. 413). As one must not indulge in unnecessary verbiage, I endeavoured to be terse and concise, but unfortunately have evidently obscured my meaning in dealing with the above subject (August 21st, p. 295). I will try to be more explicit and lucid. The point at issue was whether gonorrhoea in the female is more difficult to cure than in the male. I demurred from "that widely accepted conclusion," and still do so. Dr. Samuels will surely admit that because a fact is "widely accepted" it is not therefore free from contradiction. I need not labour that point. In my opinion the error arose from a fallacious contrast and comparison between *acute* gonorrhoea in the male and *chronic* gonorrhoea in the female. Venereologists are aware of the intractability of a good many cases in the male, and no doubt some of your readers will recall being associated with me in the treatment of patients who have had the disease for many years. The cause of the chronicity is always due to an undiagnosed and untreated focus of disease, whether in the prostate, vesicles, verumontanum, Cowper's glands, lacunae, or urethra. The moment this focus is destroyed cure takes place. A similar state of affairs exists in the female.

If your correspondent will kindly refer to my letter again, he will see that I did not "wisely abstain from giving my successful treatment" in chronic gonorrhoea; I stated "that, excluding repeated reinfections, the chronic form is due to an undiagnosed source of infection, which focus must be searched for and destroyed." Whether this is a pyosalpinx, an oöphoritis, endometritis, cervicitis, cervical erosion, bartholinitis, inflamed Skene's tubules, warts, or urethritis, it requires the proper treatment. The pyosalpinx must be removed, endometritis or cervicitis curetted, Bartholin's glands cauterized or excised, Skene's tubules obliterated, warts soaked in lactic acid as recommended by Watson, and so on. The ideal treatment, however, is prevention, and that is obtained by treating the acute condition in the manner I outlined. I quite agree with Dr. Samuels that the cervix is involved in the majority of acute cases, and I should have mentioned that after swabbing the vagina I expose the cervix through a Fergusson's speculum and swab with a cotton wool tipped probe dipped in a strong acriflavine solution, taking care not to go beyond the internal os. In old standing cervicitis the curette is the best remedy. The vaginal epithelium is at first resistant to the gonococcus, but after a time this resistance is lost, small erosions occur, and the germ penetrates the tissues. Packing prevents the vagina acting as a cesspool and drains the cervix by capillary action.

I might add that by combining acriflavine with normal horse serum in equal parts, a solution as strong as 1 in 100 can be used without deleterious effect. I have used this combination in the abortive treatment of acute gonorrhoea in the male, without producing pain, dysuria, or retention. As regards the differential diagnosis of the chronic form in the female, I stated "to treat gonorrhoea successfully in women, the venereologist must have a sound knowledge of gynaecology"; that knowledge will enable him to diagnose, say, a pyosalpinx from a urethral caruncle. Dr. Samuels surely does not wish me to discuss the differential diagnosis of each condition I have mentioned; if he did, and I acquiesced, I am certain your readers would weary. —I am, etc.,

Manchester, Sept. 13th. M. W. BROWDY, M.B.

PLEURAL REFLEX SYNCOPE.

SIR,—Perhaps the following notes may be of interest in this connexion. I am writing from memory, but the case was so unusual that one does not forget it.

A good many years ago, when I was an assistant in private practice, a boy aged 5 years suffered from right lobar pneumonia followed by empyema, which was treated at home by the principal and myself. Thoracotomy in the posterior axillary line was done under chloroform, allowing of the exit of a fair quantity of pus. The boy got over the operation well enough; the wound discharged a good deal daily. About the fifth day after the operation it was decided to try the effects of syringing with an antiseptic lotion in the hope of lessening the discharge. The syringe used was the ordinary wound syringe, and the lotion warm boracic. The boy was progressing, eating and sleeping well; there was no other complicating factor. The dressings were removed in the usual way, but on this occasion the syringing was to be done. However, no sooner had a small quantity of the lotion been injected than the boy rolled over on his back dead.

What was the cause of this instantaneous death? Here there was no anaesthetic, nor sudden alteration in the position of the heart, nor other factor which one usually associates with sudden death in empyema. Apart from the fact that washing out the pleural cavity is often done, but always under low pressure and with a good exit, possibly the two factors concerned in this case were (1) the syringe, and (2) an inflamed or congested *visceral* pleura. The sudden impact of the lotion from the syringe upon a *small* area of congested visceral pleura possibly overstimulated the inhibitory action of the vagus, thereby causing sudden death.—I am, etc.,

Montrose, Aug. 23rd. A. R. JOHNSTON, M.A., M.B.Edin.

CAN ONE WORK WITH INTRACAPSULAR FRACTURE OF THE FEMUR?

SIR,—In 1881 or 1882 an elderly, tall and rather slight man, following the occupation of messenger at the Houses of Parliament, came to the casualty department of King's College Hospital. He had come down heavily from one step to the next below upon one of his feet, and felt pain and diminished power in the hip of the same side. He walked with the aid of his stick from Westminster to the hospital, then situated in Portugal Street, Lincoln's Inn, a distance of at least a mile. The resident surgeon on duty, after consulting with some of his colleagues—the case being somewhat obscure—decided to admit the patient. He died in a few days. The *post-mortem* examination revealed the existence of a complete fracture through middle of neck of femur, not impacted.—I am, etc.,

Farningham, Sept. 11th. T. F. HUGH SMITH.

ANAESTHESIA IN TONSIL AND ADENOID OPERATIONS.

SIR,—I was much interested in Mr. Courtenay Yorke's notes on anaesthesia in tonsil and adenoid operations (BRITISH MEDICAL JOURNAL, August 28th, 1920). Personally, I used to give nitrous oxide gas to children over 12 rather than under 14, and open ether to the younger ones, but after the correspondence in the BRITISH MEDICAL JOURNAL last autumn I began to use ethyl chloride, and have used it entirely in the out-patient department this year. Having now given nearly 300 administrations, I think I may say how satisfactory it has been; I have had little cause for anxiety and have had no bad results. It certainly has been a time-saver in the out-patient department, and in my opinion the duration of the anaesthesia has been longer than with gas and has been more constant, as with gas some patients came out sooner than others.—I am, etc.,

Chester, Sept. 13th. CHARLES JEPHCOTT.

Obituary.

ROBERT CAMPBELL, B.A., M.B., F.R.C.S.ENG.,

Surgeon to the Royal Victoria Hospital, Belfast.

IT is with deep regret that we record the death of Mr. Robert Campbell, M.B., F.R.C.S.Eng., in his 55th year, at his residence, 22, College Gardens, Belfast, on September 6th. Some years ago Mr. Campbell had a severe motor accident when returning one night from an operation in the country; help was not at hand, and he was severely chilled, and did not recover consciousness for some days; this may have laid the seeds of his Bright's disease, or intensified it; however, he recovered, and undertook full duty in all his appointments. In March of this year he suddenly developed a uraemic condition, and was ill for some months, but although he was weakened he resumed work. A fortnight before his death another attack supervened, and he gradually sank.

Robert Campbell was the second son of the late Rev. Robert Campbell, of Templepatrick, County Antrim, and his family can trace connexion with this district back to the days of the Ulster Plantation. He had a most distinguished college and university career, both in arts and medicine; he was an excellent classical scholar, and the foundation of this acquirement was no doubt laid by his father's aid and influence; he took prizes, scholarships, and exhibitions from year to year, both in arts and in medicine; in the final examination for the M.B. degree he obtained first place and an exhibition. He was appointed demonstrator of anatomy in the Queen's College, Belfast, and subsequently resident to the Chester Infirmary; in 1896 he obtained the F.R.C.S.Eng., and settled in Belfast as a surgeon. After filling the junior posts, he became full surgeon to the Royal Victoria Hospital, Belfast, and to the Queen Street Hospital for Sick Children, and his work in both institutions was distinguished by great skill, meticulous care, originality, and by what might be termed a restrained and discriminating boldness. He was among the first to use india-rubber gloves, and early introduced them into the Belfast school. As early as 1898 he operated for perforating typhoid ulcer. In 1910 he distinguished clearly between acute appendicitis and acute appendicular obstruction, and put his proofs so vividly before the profession that he was undoubtedly the first to insist on the difference in the pathology, symptoms, course, and dangers. His operations for congenital hernia in infants were numbered by the hundred, and while high surgical authority was laying down rules as to age and other limitations, he was performing them in a steady stream, regardless of such restrictions and with convincing success. His work and operations on thyroidectomy were also characterized by the same fullness, completeness, and success. Mr. Campbell was also surgeon to the Ulster Volunteer Force Hospital, and gave his skill and experience ungrudgingly to the wounded soldiers and pensioners. He was an ex-president of the Ulster Medical Society in 1916–17, and of the Ulster Branch of the British Medical Association in 1918–19, and his opening address on both occasions was marked by wide experience, a penetrating and scientific intellect, and philosophic breadth. During the latter years the strain of a large consultant and operative practice, and perhaps the insidious development of his disease, kept him from publishing his views and results with the fullness that their importance demanded. In his younger days, also, his teaching of surgery was described as perfect; latterly he evidently felt the necessity to economize his strength, but still at times spoke with that clearness, brevity, and discernment that said what was necessary and omitted what was unnecessary. At times he was the most silent of men, but to the last his personal friends enjoyed the keen perception, the silent humour, the straightforwardness, and yet the broad charity of his conversation.

Mr. Campbell was a leader among the band of surgeons, trained in anatomy under the late Professor Redfern, that revolutionized surgery in the Belfast school. He had the rare combination of a large brain, practical common sense, unerring instinct, and well trained hands. His friends will miss his true devotion, and the profession and public, for whom he worked as long as strength lasted, a most trustworthy, skilled, and high-principled servant. He married Miss McTaggart, who was matron of the Queen Street Children's Hospital, whose devotion to her husband was measureless, and with whom the deepest sympathy is felt. He is survived by his elder brother, Dr. John Campbell, F.R.C.S.Eng., operating gynaecologist, of Belfast, and two sisters.

DR. RUTHERFORD HARRIS, who died on September 1st after a long illness, was born in 1856, the son of a judge of the Supreme Court of Madras. He received his medical education in Edinburgh, and after taking the diploma of L.R.C.S. there he was induced by the state of his health to go to South Africa. At Kimberley, where he practised, he became intimately associated with Cecil Rhodes and Jameson; he accompanied the latter on his mission to Lobengula at Bulawayo in 1888, and on the formation of the British South Africa Company became its secretary in South Africa. He took a considerable part in organizing the Jameson raid in 1895, with the result that his connexion with the British South Africa Company ceased. He had been elected to the Cape Parliament as one of the representatives of Kimberley, and was a whip of the Progressive Party in Rhodes's administration. He came to this country in 1900, and after one abortive attempt entered the House of Commons as M.P. for Dulwich in 1903. He retired in 1906, and had since lived very quietly at Llangiby Castle, Usk, Monmouthshire.

Universities and Colleges.

UNIVERSITY OF LONDON.

Advanced Lectures in Physiology.

THE following courses are announced for 1920-21:

Dr. C. Da Fano: Histology of the nervous system: eight lectures, [illegible] demonstrations of specimens, at 4.30 p.m. on Wednesdays, beginning October 13th, King's College. Professor A. D. Waller [illegible] with Mr. [illegible] Waller, M.A.: Eight lectures on [illegible] vegetable physiology and vegetable chemistry [illegible] October [illegible] (University buildings). [illegible] the [illegible] Hospital, [illegible] lectures on [illegible] Hospital. [illegible] During [illegible] lectures will be [illegible] at St. Bartholomew's Hospital.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At the monthly meeting of the Faculty, held on September 6th, Dr. John Brownlee, Director of Statistics, Medical Research Council, was admitted an honorary Fellow, and Dr. B. W. H. [illegible] was admitted after examination a Fellow.

The Services.

HONOURS.

Victoria Cross.

IN a Supplement to the *London Gazette* dated September 7th, 1920, it is announced that His Majesty the King has been graciously pleased to approve of the following award of the Victoria Cross:

The late Temporary Captain HENRY JOHN ANDREWS, M.B.E., Indian Medical Service.

For most conspicuous bravery and devotion to duty on the 22nd October, 1919, when as Senior Medical Officer in charge of the Khajuri Post, Waziristan, he heard that a convoy had been attacked in the vicinity of the post and that men had been wounded. He at once took out an Aid Post to the scene of action and, approaching under heavy fire, established an Aid Post under conditions which afforded some protection to the wounded but not to himself.

Subsequently he was compelled to move his Aid Post to another position, and continued most devotedly to attend to the wounded.

Finally, when a Ford van was available to remove the wounded, he showed the utmost disregard of danger in collecting the wounded under fire and in placing them in the van, and was eventually killed whilst himself stepping into the van on the completion of his task.

DEATHS IN THE SERVICES.

Deputy Surgeon-General Charles Thomas Paske, Bengal Medical Service (retired), died on April 10th, 1920, aged exactly 90 years. He was born on April 10th, 1830, and educated at the Middlesex Hospital, taking the M.R.C.S. in 1852, nearly seventy years ago. He entered the I.M.S. as assistant surgeon on August 26th of the same year, became surgeon in 1864, and surgeon major in 1872, and retired with the honorary rank of D.S.G. on January 1st, 1879. He served in the second Burma war of 1853 (medal); in the Indian Mutiny in 1857-58, including the actions at Ghaga, Kudwa, and Chauda (medal); and on the north-east frontier in the Bhutan campaign of 1865-66 (clasp). He was the author of *Myamma, Life and Travel in Lower Burma*, 1892, and (with F. G. Aflalo) of *The Sea and the Rod: a Handbook to British and other Seafishing*, 1892. Since the death of Surgeon-General Sir Alexander Christison, nearly two years ago, he had been the senior member of the I.M.S. on the retired list, and his death leaves only one survivor of the Mutiny still living of the I.M.S., Deputy Surgeon-General P. W. Sutherland.

Captain Charles A. Skelly, R.A.M.C., died in Dublin on June 28th. He was educated in the medical school of the Royal College of Surgeons in Ireland in Dublin, took the L.R.C.P. and S.I. in 1894, and, after serving as resident midwifery assistant at the Coombe Hospital, Dublin, went into practice at Oldcastle, County Meath, where he was medical officer to the workhouse and to the Royal Irish Constabulary. He took a temporary commission as lieutenant in the R.A.M.C. on August 8th, 1917, and became captain a year later.

Major Joseph Lee, I.M.D., died at the British Station Hospital, Murree, on August 6th, aged 50. He was born on March 10th, 1870, entered the I.M.D. as a warrant officer in February, 1889, got his commission on June 26th, 1908, having gained nine years by a special promotion for field service, and became captain in 1912, major in 1917. He had served on the North-West Frontier of India in 1908, and also in the recent war.

Medico-Legal.

A BOGUS DOCTOR.

AT the York police-court on September 6th a man named Mellor, described as a clerk of no fixed abode, was charged with being a suspected person and frequenting Duncombe Place with intent to commit a felony. According to the report in the *Yorkshire Herald*, the Chief Constable said the prisoner had been going round York visiting nursing homes, and purporting to be a doctor. A house surgeon of the County Hospital gave evidence to the effect that the prisoner called at the hospital representing himself as a house surgeon from Nottingham, and at his own request was shown round the hospital, after which he left the premises, but called again later in the evening and also next day. The matron of a nursing home stated that the prisoner called there one evening and asked for ether, representing himself as acting for a doctor in York, and later as a student of Guy's Hospital. Two days later he called again in the evening and made some inquiries about a "twilight sleep" home, saying that he was acting in the matter for Dr. Gostling, but the witness on telephoning to Dr. Gostling found this was not correct. The matron of the Duncombe Place Dispensary said the prisoner called there representing himself as a doctor and asked permission to look at the telephone directory. He called again next day, and on the day after he entered the dispensary without permission, and, in reply to the witness's question, said "I am a doctor." The police were telephoned for, and arrested Mellor as he was leaving the premises. A detective-sergeant said that when taken into custody the prisoner had in his possession a case of surgical instruments. Witness handed in a list of nine previous convictions for fraud, false pretences, and theft in various towns. Mellor was sentenced to three months' hard labour.

Medical News.

ON the invitation of the Neurological Section of the Royal Society of Medicine, Dr. Henry Head, F.R.S., will deliver the Hughlings Jackson Lecture at 1, Wimpole Street, on October 7th, at 8.15 p.m. The subject of the lecture will be "A new conception of aphasia."

THE Ministry of Health and the Scottish Board of Health are prepared to receive applications from voluntary hospitals for grants in respect of payment of duty involved by the use of duty-paid spirit or drugs containing duty-paid spirit for medical and scientific purposes in these hospitals during 1919. Forms of application have been sent to those hospitals to which a grant was paid last year. Any other hospital desiring to apply should communicate immediately with the Secretary to the Ministry of Health, Whitehall, S.W.1, or to the Secretary to the Scottish Board of Health, Edinburgh, as the case may be.

A POST-GRADUATE course in neurology will be given from October 4th to December 10th, at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C. Lectures, demonstrations, and out-patient clinics will be given on the afternoon of each week-day. The fee is seven guineas; a special fee is payable by those wishing to undertake practical pathology.

WITH the approval of the Minister of Public Health, and in order to initiate research into the etiology of goitre, New Zealand practitioners have been asked to furnish voluntary notifications (for which payment is made) of cases of this disease.

THE National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, of which Dr. G. F. Still is chairman, has arranged a course of lectures on infant care for health visitors, nurses, midwives, infant welfare workers, etc., to be held at University College, Nottingham, from September 20th to 24th inclusive. A course of elementary lectures on infant care will be given at Morley Hall, George Street, Hanover Square, W., on Mondays, at 6 p.m., from September 27th to December 13th. In conjunction with the National Society of Day Nurseries, a course of lectures on infant care will be held at the Essex Hall, Essex Street, Strand, W.C., on Thursdays, at 7.30 p.m., from September 30th to December 16th. Information regarding these courses may be obtained from the Secretary, Miss Halford, 4 and 5, Tavistock Square, London, W.C.1.

THE first year's work of the Association of Certified Blind Masseurs was completed on July 22nd. The membership of the association comprises soldiers blinded in the war and trained at St. Dunstan's, as well as civilian masseurs and masseuses trained at the National Institute of the Blind or under its auspices.

THE new orthopaedic hospital at Newcastle-on-Tyne, forming an extension of the Royal Victoria Infirmary, was opened on September 9th by the Duke of Northumberland. The new buildings, which contain 540 beds, occupy an area of some fifteen acres, and have been erected at a cost of £160,000, towards which some £148,000 have been subscribed. The hospital has been in occupation for the past year under the Ministry of Pensions.

IN the fifty-fourth annual report of Dr. Barnardo's Homes (National Incorporated Association) a deficiency of £22,337 10s. 6d. is reported for 1919. In memory of the founder, an effort is being made to raise 300,000 half-crowns for the children's food bill fund. Subscriptions may be sent to the honorary director at 18, Stepney Causeway, E.1.

DR. ÉTIENNE LOMBARD, the well known Paris oto rhino-laryngologist, and for fifteen years editor of the *Annales des maladies de l'oreille et du larynx*, has recently died at the age of 51.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"PARENT" inquires how the climate of Kandy, Ceylon, is likely to suit a well-compensated case of mitral regurgitation in a woman of 30, a teacher who plays tennis, hockey, and other games, but who is rather subject to insomnia; also if there is malaria in Kandy.

DR. E. J. BOYD (Pudsey) asks whether any reader can tell him of a bedpan, with straight sides for easy cleansing, and fitted at the top with a pneumatic rubber cushion which can be easily taken off when deflated.

INCOME TAX.

"A. B." is a retired Government medical officer drawing income from pension and investments at home and abroad, which are taxed at the source, and doing some consulting work. What deductions is he entitled to?

⁂ The only advice that we can give is that he is entitled to deduct such expenses as are reasonably incurred in earning the year's income—for example, the running cost of his motor car can be deducted so far as it is incurred on professional journeys, but not the initial outlay; similarly with the household expenses, if the professional portion necessitates the keeping of an additional maid, the cost of her wages and keep can be deducted. So far as the income from investments is concerned, if "A. B." states clearly on his declaration of income that it is subjected to British income tax before it reaches him, there is not much likelihood of its being again charged.

"DERBIENSIS" inquires as to his right to deduct as professional expenses (1) the cost of purchasing and installing a complete *x*-ray apparatus, and (2) the expense of altering and repainting a room to enable the apparatus to be installed.

⁂ The expenditure on (1) represents an outlay of capital, not an expense of the year's working, and is not admissible as a deduction. So far as (2) is concerned the same rule applies, except that to the extent to which the adaptations in question rendered unnecessary the expenditure of repairing or replacing the existing furniture or decorations some claim might be made out to an allowance on that ground. We advise our client to watch for any change in the present restriction of the depreciation allowance; if the recommendations of the Royal Commission on Income Tax are to be put into force, our correspondent will be entitled then to an allowance for the annual depreciation of the apparatus as measured by its present cost and probable life.

"W. A." has been asked by the inspector of taxes to give a written undertaking "to pay over to the Revenue any income tax that may be due by reason of any increase in the value of book debts which has not previously been brought into account for income tax purposes and on which tax has not been paid." What is "W. A.'s" best course of procedure?

⁂ The basis and implication of the request for this undertaking is that at present "W. A." is, or is likely to be, insufficiently assessed to income tax. The only circumstances which would justify it are, we conceive, that he is commencing in his present practice and is making his declaration on the basis of his cash receipts; in the first three or four years of a new practice the cash receipts do not furnish a true index to the real earnings, and the ordinary practice of inspectors is, we believe, to claim to put the receipts on the value of the total bookings rather than on the actual cash receipts until the process of time has brought the cash takings up to a normal level—a period of from three to five years, according to the circumstances of the practice. Difficult as is the valuation of a practitioner's bookings, this method seems to us preferable to calling for an undertaking to put the matter right by an adjustment to be made at some indefinite future date. If our correspondent has been in his present practice for some years, we see no justification for the request at all. In that case the unpaid bookings of any particular year may be presumed to be counterbalanced by the payment in that year of debts incurred by patients in previous years, and the cash basis is a true index of the total earnings of the practice. We suggest that our correspondent might ask the inspector for the grounds on which it is assumed that his present assessments are insufficient.

PERSISTENT GINGIVITIS AND LINGUAL NEURALGIA.

"T. D. H." asks for suggestions in the following case of chronic neuralgia of the tongue (six years' duration) with persistent gingivitis: The affection began in November, 1914, following an abscess in connexion with a wisdom tooth. One morning the patient, aged 50, woke up with severe pain in the tongue; this continued for a few days, stopped for a fortnight, and since then has been continually present in the daytime. There are no tender points; the patient can sleep, but as soon as he uses the tongue the pain recurs and makes life a burden to him. The tongue is normal in appearance; common sensation and sense of taste are normal. There is no specific history, and the Wassermann reaction is negative; the knee-jerks and other reflexes are normal. The general health is good. The following treatments have been tried: strychnine and other tonics; codeia, potassium iodide, bromides and arsenic; butyl chloral, pyramidon, aspirin, and salicylates; insufflations of morphine, cocaine, etc. Twelve months ago injection of the lingual nerves with a[illegible] was undertaken; this was without benefit, but there [illegible] whether it was efficiently done. More recently the patient came under the writer's care. As some of his teeth appeared septic they were extracted, and a vaccine (of [illegible]) was prepared from the sockets. This gave some relief, and the rest of his teeth have since been extracted with further advantage. The neuralgia, though much less severe, still persists, and would seem to depend on persistent inflammation of the lower gums; the upper ones are normal. The patient does not use his false teeth, and eats minced food only. Our correspondent asks for any suggestion for treatment of this persistent gingivitis or any record of the experience of a similar case of neuralgia of the tongue. The patient cannot tolerate peroxide of hydrogen or any of the commonly used lotions, which irritate the gums and increase the neuralgia.

LETTERS, NOTES, ETC.

HABITUAL DRUNKENNESS AND THE PUBLIC HEALTH AUTHORITY.

MAJOR GENERAL SIR GEORGE EVATT, K.C.B., M.D., A.M.S. (ret.), writes: Nothing is more common than to see inebriates brought up time after time before the magistrates' court and fined and discharged. The fine may not act in any way as a check. I suggest the following procedure: When the magistrate inflicts a fine for drunkenness a copy of the magistrate's decision should be sent *officially* to the public health authorities where the fined person resides. The medical officer of health on receipt of the document should detail a male or special female health visitor to visit the home of the convicted person, caution them as to the danger of drunkenness, and, if the family be poor or in poverty-stricken conditions, the responsible parent should be taken before the magistrate for such action as he thinks fit. All this would tend to waken up the drunkard and perhaps check intemperance.

ROYAL EARLSWOOD INSTITUTION.

DR. C. CALDECOTT, medical superintendent of the Royal Earlswood Institution, in writing to offer the best thanks of himself and his Board of Management for our article in last week's [illegible] (p. [illegible]), asks us to state that the legacy from the late Mr. Ray has not crystallized. Owing to a flaw in the [illegible] there has been, and still is, great delay, and it may even happen that the legacy will not in the end be forthcoming. All this, Dr. Caldecott adds, is very harassing, especially since the proceeds of the bequest are so [illegible] as to maintain its usefulness as in the past.

MEDICAL POLICE FEES.

DR. A. WHITBY GREEN (London, W.) writes: Since I sent you my letter printed last week, an order has come [illegible] signed by Sir Charles Balance, the chief surgeon, revising charges for attendance. The 3s. 6d. fee is obliterated. A 5s. fee is [illegible] for one visit, [illegible] fee is granted for night visits. Will you kindly insert this in your next issue to make it known all over the kingdom?

[illegible]

[illegible] copy of the *Bradford* [illegible] Bradford Panel Committee for [illegible] attention to [illegible]

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible] 2 drachms [illegible]

[illegible] quite clear

after standing for some days. The moral, therefore, is that at least double the amount of citric acid given in the prescription should be used, and a little more will ensure a clear solution.

THE PRODUCTION OF CLEAN MILK.

THE investigations made by the Research Institute in Dairying, University College, Reading (BRITISH MEDICAL JOURNAL, November 8th, 1919, p. 608; June 26th, 1920, p. 876), have shown that the main cause of uncleanliness of milk is contamination on the farm; the harm which is done there cannot be undone by subsequent cooling or other manipulation. Dr. Thomas Orr, medical officer of health to the borough of Ealing, in the *Journal of the Royal Agricultural Society of England*, has entered a plea for more extensive support of research in dairying, and has analysed in terms comprehensible to the agriculturalist the factors which make for uncleanliness of milk. He shows that the milk supply is susceptible of great improvement (without extra expenditure of labour) by the employment of improved methods and the exercise of care. Public health officers, he thinks, have devoted too much attention to the character of the farm buildings and too little to the treatment of the milk itself. Dr. Orr says that little attempt is made, as a rule, to avoid contamination of the exterior of the udder and the neighbouring parts; an investigation is recorded in which cows whose udders had or had not been washed gave milk with bacterial contents of 900 and 17,600 bacteria respectively per cubic centimetre. If the udders are dry brushed before milking some improvement results, but a still greater degree of cleanliness may be obtained by washing with a wet cloth. A preventive measure which is of the utmost practical importance is the restriction of the length of the stall, so that manure falls into the gutter and not on the stall; faecal contamination of the udder when the cow lies down is thus greatly diminished. The use of the covered milking pail and the provision and utilization of an abundant supply of boiling water or steam are regarded by the writer as of greater importance than those improvements in cowhouse construction which have so often been regarded as the essential preliminary to a better milk supply. Dr. Orr has found milk produced by mechanical milkers—the cleansing of which presents great difficulty—to contain as many as 1,392,000 bacteria per cubic centimetre.

TREATMENT OF TYPHUS.

DR. M. ILES (Kamaran) writes: It may perhaps be of interest to state now that, during the typhus epidemic in Serbia, 1914-15, one doctor, who had studied in Paris, reported encouraging results from treatment with arrhenal (monomethylarsenate of soda), but said his cases were too few for certainty. I have forgotten his name, and his records were, of course, destroyed with the other hospital papers before the enemy advance in 1915.

AIR MAILS.

WE abstract the following from the *Handley Page Bulletin*: Any post office will accept letters, postcards, and papers, whether registered or unregistered, for transmission by air; unregistered packets may also be posted in a public letter-box. The post office charges the ordinary foreign postage in addition to an air fee of 2d. per ounce for Paris and Brussels, and 3d. per ounce for Amsterdam. If the special blue label supplied free at any post office is not available, the cover should be marked "By air mail" in the top left hand corner. For express delivery an extra fee of 6d. per packet is required; the word "Express" should appear below the words "By air mail." Correspondence posted in London in the morning is delivered in Paris or Brussels in the afternoon. The air mails save twenty-four hours in the delivery of correspondence to Switzerland, Italy, Spain, Portugal (via Paris), and Germany, Austria, Hungary, Sweden, and Denmark (via Brussels).

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages [illegible], 34, 37, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 35, 36, and 37.

THE following appointments of certifying factory surgeons are vacant: Carnwath (Lanark), Heckington (Lincoln), Staines (Middlesex).

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An Address

ON

THE RELATION OF PHYSIOLOGY TO MEDICINE.

BY

THOMAS LEWIS, M.D., F.R.S.,

PHYSICIAN ON THE STAFF OF THE MEDICAL RESEARCH COUNCIL;
PHYSICIAN, UNIVERSITY COLLEGE HOSPITAL, ETC

THE relations between the science of physiology, which studies the normal functions of the animal body, and medicine, which studies and treats the human body in disease, are so intimate and manifold that the subject before us may be approached from many different points of view. When you, Mr. President, asked me if I would open this discussion, I felt some hesitation in accepting, knowing that I should speak from the standpoint of the physician. Although I have from time to time strayed into the proper realm of physiology, nevertheless I would ask you to remember while I address you that I am primarily a physician. It is for that reason that this paper emphasizes, not the standpoint of physiology, but the standpoint of medicine, for it is the welfare of medicine which I have firstly at heart.

Because the dependence, now, in the past, and in the future, of medicine upon physiology is not dwelt upon; because I do not speak, as I could speak, of the great and lasting benefits which physiology has conferred, and continues to confer, upon medicine as a science, and upon medicine as a healing art, it is to be hoped you will not think on this account that I am insufficiently alive to this relation of the two subjects. It could serve no useful purpose to come to physiologists and tell you what you all know, what is to every thinking man apparent—namely, that any knowledge which has reference to the normal functions of the animal body, however remote from practice that knowledge may seem at the time of its discovery, is sooner or later reflected or incorporated in medical thought and medical practice. Physiology, originally the offspring of medicine, has become to medicine in its old age a chief pillar of support. But, while this filial and noble aim of physiology has fulfilled, and continues to fulfil, its great purpose in nourishing and supporting its sire, it is fully recognized that physiology has other and equally noble aspirations. It seeks knowledge for its own sake, for the enlightenment of thought in other spheres. To take the view that physiology exists as the servant of medicine were as narrow as to countenance and encourage a complete servitude of human offspring to their parents. Each of these offspring may rightly claim a large measure of liberty. But as my own life interest is in medicine, so I may be forgiven if I rank myself with those who place the filial function first; I may be forgiven if, in recognizing that the two sciences, physiology and medicine, have mutual obligations to each other, I place, by reason of the same prejudice, the obligations of physiology well to the fore.

The obligations of physiology to medicine are twofold: to teach the student bent on the practice of medicine the normal functions of the human body, and in doing so to train him as an accurate observer and thinker; and to lay the foundation upon which the house of medical science shall erect itself. If you will, you may weld the two together and say that in its relation to medicine the function of physiology is to gather, classify, and spread knowledge and methods of studying the normal functions of the animal body. The first statement suits my purpose best, for it allows me to divide my thoughts into two chief channels, the teaching of medical students and the direction of physiological research—two channels, however, which should not diverge too far from one another. From both points of view the very closest association of physiology and medicine is necessary. The underlying thought has been to try and find means by which these sciences might be brought to closer and closer union.

Let us come at once to the pith of what I wish to say in regard to the teaching of physiology to medical students. In many respects it is essentially a controversial subject, and all the more suited therefore for discussion. The views expressed are personal views. It is my personal conviction that the pivot around which physiological teaching should play is human physiology; that human as opposed to animal physiology should form the central point of physiological teaching to medical men. That the physiological lessons are to confine themselves to the human body is not by any means what is advocated; such a course is clearly impossible, while by far the largest part of our knowledge of the functions of the human body is still derived analogically from observations upon the lower animals. The standpoint is that knowledge which has been obtained or is now obtainable by observation upon man himself should be constantly stressed, and that animal physiology should be taught where it supplements knowledge which is so obtained. It is of considerably greater consequence to the student of medicine that he should witness a given and normal phenomenon, or gather a given principle, by observation upon the human rather than upon the animal body; when, therefore, a phenomenon can be displayed to him both in the man and in the beast with equal accuracy, it should be displayed to him as it occurs in the former. When it cannot be displayed in man, or when it cannot be displayed with the same fine degree of certainty, then animal physiology should be called in. I would go further, and say that when a phenomenon can be displayed in man, even though it can be displayed less accurately than it can on the animal body, it should be demonstrated and stressed, not to the exclusion of the more precise demonstration on the lower vertebrate, but alongside of it, so that the two demonstrations may be evaluated and the two compared. There are several vital reasons why this should be the trend of modern physiological teaching to medical students. First and foremost is this reason: *that students in their most impressionable period would thus learn how to investigate the human body.* Not infrequently it is discovered in talking with physiologists that they but dimly realize the difficulties of this task, fail fully to appreciate how enormous is that barrier between physicians and the working organs—namely, the unbroken skin. Yet that barrier must and can be passed; the passage is vital to the present and future success of medical science and practice. The problem of what is happening in the human body is infinitely harder to solve than that which asks what is happening in the animal body, for in the former case our methods of examining and of observing are usually far more indirect. The student is taught to stimulate the vagus nerve in the frog and to note the effects; at the same time he should be taught to press upon the vagus in the carotid sheath of his fellow student, and to observe the consequent slowing of the heart beat. Physiologists have to face the fact that the large majority of the students who pass through their hands will encounter in their daily work problems far harder to solve than those with which they themselves deal in their laboratories. I speak from experience in saying that medical students, when they come to us in the teaching hospitals from the physiological laboratories, come to us insufficiently equipped in this respect. They have not yet learnt to handle a man; their senses of hearing, and especially those of touch, are not sufficiently developed; yet they are to handle men for the rest of their days; and my plea is that, with very few exceptions, they never will learn efficiently if they do not begin to learn while they work under your direction. They come to us in the hospitals after practising for two or more years relatively direct and conclusive methods; they come, many of them, with a rich knowledge of the functions of the body, with clear ideas of how problems of the animal body are approached and solved; they soon find by experience—often bitter experience—that most of these relatively exact methods which you employ are inapplicable to the study of living men; that many which are applicable are by their specialization soon beyond their reach; that far less direct, far cruder tests are of necessity used; that inferences are based upon premisses of a totally different quality. At the same time they are brought face to face with a mass of detailed knowledge of a new kind, they are asked to accept a new series of conclusions; upon many of these conclusions, it is true, their past teaching will bear; with many more their physiological teaching will not directly connect. The arduous work of the medical student in his final years is known to you; no one can pass through this last course, sifting and weighing a fraction

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[*] Delivered in opening a discussion at the Physiological Section of the British Association at Cardiff, August 26th, 1920. (President, Joseph Barcroft, M.A., F.R.S.)

of what is taught him. The great bulk of what he hears in his hospital years must be taken on trust. It is by the force of these circumstances that the medical student invariably becomes empirical; and the measure of his empiricism is the measure in which he forgets his physiological teaching; this teaching becomes buried more or less in a mass of new experiences and methods. My contention is that his physiological training would not be lost to him in the large measure in which it indubitably is lost were the shock of change less, were his old experiences more in harmony with the new. It has been an intense interest of my own to watch for not a few years this stage of the medical student's career: it is his most critical time. I have closely watched a goodly number of men unusually well trained in physiology—I refer to men who have spent more time in physiology than the curriculum dictates—and have yet to see an example in which the deadening influence of this transition has not been conspicuously displayed upon the faculties of criticism and inference. It is an influence that I am conscious, from personal experience, that I have not escaped; it takes years to outlive it. You train a man to weigh with a nicely adjusted chemical balance; when you start him on his life's work a crude scale is alone available to him, and from the moment it comes into his hands he is set to weigh hard. He weighs and he forgets the old balance; in general he never fully appreciates the defects and limitations of the new; in time he acquires a mistaken confidence. These limitations, these defects, he should surely know beforehand; familiarity with those tools which are to be his as a workman, exact knowledge of their capacity to help him or to lead him astray, should be his from the very start. To train a man fully in the use of delicate instruments, to bring him then to his first real workshop and to set him to his bench of coarse and unknown tools, is to inflict upon him a thing which to many brings apathy, to some revulsion. Let him see and use his delicate instruments by all means, but let him clearly understand that these are in his hands, not only for the knowledge they bring, but also for comparison with those more simple devices which are also there for him to see and use, and which are to be eventually the weapons with which he will fight disease. In that way, and in that way only, so it seems to me, will he lastingly appreciate the limitations which circumstance and method impose upon him, and in that way will he assess the true values of his method. Such is, largely in metaphorical language, what I have in mind in pleading for human physiology. It will be said, perhaps, that the fault lies in medical teaching; in great part that is unquestionably true, but it is not to be forgotten that medical science labours before unusual obstacles; neither is it to be forgotten that teachers of medicine have themselves all passed through this same ordeal, an ordeal which leaves none unscathed; medical practice, driven by necessity, seizes those weapons which are alone at hand; the old trapper has a too easy going confidence in the gun which has long been his only available companion. The confidence displayed by medical men in their methods is a chief fault in medical practice to-day; it is a personal opinion that that confidence can be modified, most materially and most quickly, in the physiological laboratory, by training students how to examine the human body and teaching them what physiological conclusions they may legitimately draw from such investigations; to show them side by side with such methods of investigation what can be done when, as with the lower animals, greater facilities are presented to them to supplement conclusions drawn from experiment on other animals. An arrangement seems desirable whereby clinical material, illustrative clean experiments of disease which throw light on normal functions, should be brought into the hands of physiologists and their students. Such co-operation would form a valuable connecting link between physiology and clinical medicine, stimulating research and urging teaching in the direction which it should take—physiological teaching becoming more human, and medical teaching more in consonance with physiological thought. Such cases would illustrate instances of simple lesions of the nervous or cardio-vascular system or special senses. I have in mind clean transections or ablations and their effects which, when shown side by side with corresponding evidence from animal physiology, would form most impressive demonstrations. Demonstrations upon the human subjects are always impressive. Few physiological students who have heard the story, forget Alexis St. Martin. None would forget if they saw him in life. Salivary, gastric, or biliary fistulae are not so uncommon that they might not from time to time be shown to physiological students. Many of the patients who visit our hospitals because they present anomalies of the ductless glands might also enter your laboratories. I look forward to a time when all physiological laboratories which train medical students may be equipped with those instruments of examination which are to be found in teaching hospitals, for there are very few of these instruments which will not display in some measure the normal functions of organs of the human body. As an example I may cite the movements of the alimentary canal as these are shown by the *x*-ray tube.

But in regard to such instruments and devices I have some particular remarks to make.

There is, if I mistake not, a prevalent opinion that the medical man of the future is to be equipped as a physicist, as a chemist; that he is to have behind him an array of delicate apparatus and reagents with which exact measurement is to be made possible to him; and that in these directions the salvation of medicine is to be sought. If I am correct in my belief that such is a current view, then I would state emphatically that I believe it to be a profoundly erroneous view. It confuses two issues—the daily routine of the practitioner and the work of the special investigator. These stand apart: they always will stand apart. You cannot deal with masses of patients by using refined methods; repeatedly it has been tried; it always breaks down. The chief weapons of the general practitioner are to-day, and will remain, his own unaided senses; these are supplemented by a few simple devices. The healthiest trend of modern medicine—and let it be said at once that it is a trend which is anything but universal—is to dispense as far as possible with special methods of investigation in dealing with the everyday patient. The special method is for the investigator into pathological processes; it is not for the pure clinician. The use of special devices, of special tests, almost always leads one way: the devices and tests are employed by men who cannot have the training, cannot afford the time fully to understand, and a method imperfectly understood is, generally speaking, worse than useless. Take the method of electrocardiography; you will agree with me that it has added a very great deal to our knowledge of both the normal and perverted functions of the heart during recent years. I take this example because it is one with which no one in this country is more familiar than myself; and I say without hesitation in regard to it that so far as its employment as a direct aid to diagnosis, prognosis and treatment in individual patients is concerned, it has done far more harm than good. That is so because many of those who employ this instrument in clinical routine rely upon it to an extent far above its merits, and because it uses up time which would be spent more profitably in other ways: it fails especially because it attracts attention from other and far more important issues. The greater the number of such devices employed, the more the outstanding question recedes into the background. Is this man, as a whole, healthy or unhealthy? Be careful not to misinterpret me; I do not say that electrocardiography as a branch of medical science has harmed medicine more than it has served it: the reverse is decidedly true: my meaning is that in its application to the individual its effect is in general harmful, and will remain so. I have taken the galvanometer as my example. I have done so because it frees me from any possible suspicion of prejudice. The polygraph might have been used as an equally apposite illustration, and the same statements might truthfully have been made in regard to it. In my own clinical routine I gave up the use of both these instruments when, by their use, sufficient experience had been accumulated to identify the disorders of the heart which they display, by means of sight and touch. For that we ought constantly to strive. Let the knowledge of disease be built up by means of such instruments, let us sift from this knowledge what is of immediate and unquestionable service to the practice of medicine, let us then find how the special test may be supplanted, by methods perhaps not quite so accurate, but methods which can be at once and universally employed. Believe me, you will never see the day when the medical practitioner will rightly interpret delicate records of the heart beat; but you will see the day when he will know the chief things which those records have taught us, and how he may utilize that knowledge in his daily work. A medical practitioner cannot hold a working knowledge of these refined methods; each has its growing complexity, each formulates innumerable rules and reservations; each is to him an abstruse method, applicable to but a small fraction of his patients. The plea for him is simplicity, not bewildering complexity. Treat polygraphy, treat electrocardiography as sources of knowledge and of generalization, and you may say that these methods have potentially fulfilled their great purpose; they have greatly simplified the diagnosis and treatment of heart disease; but treat them as parts of the medical man's equipment and you will load further what is already overloaded. It is eight years since, in the preface to my small book on *Clinical Disorders of the Heart*—a book describing how varieties of disordered heart action may be recognized by simple tests—I first expressed these ideas; they have since grown towards convictions, and, as you are aware, have found a powerful advocate in Sir James Mackenzie. Medical practice will grow more scientific as it becomes more and more simple—as the practitioner grasps great and fundamental truths in their relation to common diseases; it will not grow scientific in proportion to the mass of detail—impressive enough, maybe—which he is able to pack into the compass of his brains. The place of these refined methods is the laboratory and the teaching hospital. In the teaching hospital they are there so that the student may learn how knowledge is acquired. I have never, as a teacher of medicine, taught these methods to undergraduate students; neither will I do so. It is for them to use their fingers and their sight, but the instruments are there to check such observations, to show what can, and equally what cannot be done; they are there so that the student may see how the knowledge which he is to use is won. We have to teach our students not only how to handle disease, but also upon what the knowledge we impart is founded.

The second reason which is urged for a greater concentration upon human physiology in teaching is of a different, though hardly less important, character. Medical men are insufficiently conversant with what constitutes normality, or the range of normality, in the human being. They regard as pathological many phenomena which are in reality not only compatible with health, but are actually physiological. It is of much consequence that this argument should be brought home, and it may be done by means of a few notable examples. I take these from that sphere with which I am most fully acquainted by personal experience—the sphere which studies the circulation. They could be multiplied, and many others of the same kind could be cited from other branches of study, but these will suffice. Take a very simple case: Stroke the back of a normal healthy young subject and watch the vascular reaction in the skin; the line pressed and the surrounding skin displays after a while a red line; maybe it soon becomes surrounded by an area of blanching, maybe a line of blanching alone appears. These reactions, perfectly healthy reactions as they are, have been used, are still used, and will be used for many years to come, as important signs of particular and serious disease. Take the effect of respiration upon the human pulse. If the pulse falls away in strength in inspiration—*a fortiori*, if it disappears—it is held to be a sign of serious mischief in the pericardium, or of some other grave disorder; actually both signs are compatible with—nay, are common in—perfect health; the normal waxing and waning of the pulse rate in natural breathing has been responsible, and is still responsible, for the enforced invalidism of hundreds of young children. Normal variations in the amplitude of heart sounds, the presence of those murmurs which almost always accompany an accelerated action of the healthy young man's heart, send hundreds to their beds or couches annually; the same normal phenomena kept very many hundreds of strong, able bodied men from their proper stations in the time of the great war. These and similar variations in normality are insufficiently taught in our physiological schools, where they can be most convincingly taught. Any departures from a single physiological standard come inevitably to be regarded as abnormal; busy medical men have no time to seek for and to study controls; for the most part they leave the physiological study of man when they leave the physiological laboratory and lecture theatre. The result is that the knowledge of normality in man is often far more elementary than it has business to be.

Take the physiology of exercise, the measured amount of work which healthy men of different ages and of different training can do in a given time, or the reactions of pulse and respiration which a simple test exercise should call forth in his body. That simple physiological knowledge is vital to proper medical practice, yet I have no hesitation in saying that only a few medical men have this requisite knowledge to-day. That surely is a reflection on the method, if not of physiological then of our combined teaching. It is sad to think that medical men should fail to recognize a sick man, or should call a healthy man sick, because they lack full knowledge of healthy reactions; yet these are common daily blunders. When I look back over the work upon which I have been engaged in the last eighteen years since I left the physiological laboratory I discover that a large fraction of my time and energy has gone in discovering phenomena of health which hitherto I had learned to regard as manifestations of disease. To teach the principles of their science, to teach men to observe accurately and to think critically are wise aspirations of physiologists. A man may be given a scientific training in chemistry, but if practical chemistry is to occupy little or no part of his active life, much of the virtue of the training goes out of it. The argument—it is no new argument—is that physiology as it is now taught to medical students is not sufficiently correlated to medical practice: it is not human enough. If, in illustrating a principle or in impressing accuracy of observation, there is a choice of subject—and selection has become imperative with the rapid expansion of your science—it is better to choose an illustration which may be followed by a corresponding demonstration upon man. Do medical men show unusual discrimination when they come to weigh the pros and cons of a new problem? Are their explanations weighed in the critical spirit which their physiological teachers have tried to instil into them? Are they unusually acute in assessing the value of evidence? I do not answer these questions negatively, but lack the assurance to answer them affirmatively. If they are to be answered negatively, does it not mean that there is some weakness in physiological teaching, for physiology is the chief philosophical subject which they study? And may not this defect, if it exists, in part at least result because they learn to philosophize upon questions which are soon forgotten in the daily routine of practice? It matters little to a practitioner whether Ludwig or Heidenhain was in the right; he does not base his treatment on one or other view. An account of many such controversies, and especially those which have led as yet to no final conclusion, might well be replaced by a historical account of those problems which are more vital to the daily needs of medicine, and these problems might equally illustrate processes of argument and thought. With purely physiological hypotheses, we, as pathological investigators, have little or no business. I use the term hypothesis in its true meaning—an assumption intended as a temporary explanation of observations, and put forward in the hope that with extended investigation such hypothesis may harden into conclusion. A published hypothesis is usually in essence a redoubt built by its conceiver; he and his party labour to strengthen it; but its very nature invites, and sooner or later provokes, an attack, and, as with redoubts, it is but rarely impregnable. The attack and counterattack may be and often are prolific of discovery, whether the redoubt holds or falls. It is at once conceded that physiological hypothesis is essential to the physiologist; it has not the same value to medicine, it is often dangerous when introduced to medicine. The observations and conclusions of physiology are indispensable to us; but too often, from the inability to weigh evidence, hypothesis and conclusions are confused, and the former becomes the basis of pathological speculation. This is a widespread and regrettable habit amongst pathologists and clinicians. Who builds a house upon an exposed and threatened redoubt builds unwisely. The pathologist or clinician who founds his own assumptions on the assumptions of physiology, builds to see the complete collapse of his edifice. He who founds his assumptions on the observations and conclusions of physiology may still see his house totter, but the foundation will remain secure, and, happily, some parts of the superstructure may remain intact if solidly laid.

In turning more particularly to questions of original research, I again stress the need of more closely uniting physiological and pathological thought; in that way only will the student of medical science remain conversant with physiological conclusion, and be in a position to divide it sharply from hypothesis. While it would be good to see our anatomists in our *post mortem* rooms, it would equally be good to see our physiologists more often in our wards. It is scarcely to be doubted that such visits would lead to very fruitful investigations, would correct misconceptions on both sides. That is but one way in which constant touch might be attained. In the "Physiological Society" we have possessed in the past a connecting link, though it be but an occasional link; to this society the leaders of pathological research, many leaders of clinical research, have belonged; in times past they have provoked some of your most interesting and fruitful discussions, stimulated or produced many important physiological researches. But as physiology becomes ever purer (more physical and more chemical) it becomes more and more difficult for men engaged in clinical investigation to feel at home at these meetings. It is no answer to say that medicine should follow the same lines, go back to the simple physical and chemical basis; it cannot do so at the same rate; medicine is inevitably preoccupied with end problems, and cannot escape from the expedients and opportunisms which its constant association with very sick people forces upon it. Here arises a tendency for the pure physiologist and purely clinical investigator to drift apart. They must be kept together, not only for the sake of medicine, but also for that of physiology. The breach has been partly closed by contact at the meetings of the admirable society to which I have referred; it has also been closed in part by a group of men who have devoted much of their energy to this task. I refer to those investigators who have devoted themselves to what is now often termed "experimental medicine." Taking for their field of study diseases of particular organs or systems of organs, they have sought to bring the physiological and pathological side of their subject into harmony. Horsley, Ferrier, Head, Garrod, Mackenzie, and many others have been recently or are still amongst this group of active workers. The group of men has been formed from those practising medicine or surgery, notably from the ranks of neurologists; students of applied physiology have been drawn too exclusively from the ranks of those who are primarily clinicians, and insufficiently, as I think, from the ranks of trained physiologists. A chief reason why this has been so in the past is that "experimental medicine," as it is often called, has offered no immediate chance of livelihood. My view is that the number of physiologists who by contact with clinical problems are inspired to work upon problems of applied physiology is still insufficient; the war period, during which many physiologists were so engaged, showed the fruitfulness of such contact. Medical research is now [illegible] in this country, and it looks as if the [illegible] "experimental medicine" may, when it is [illegible] the Medical Research Council, go far to [illegible] what I still [illegible] namely, the closer co-operation of [illegible] in the clinical and pathological [illegible] physiological thought.

In the [illegible] that followed, Professor H. E. Roaf [illegible] of physiology was [illegible] and more fundamental principles [illegible] possible should [illegible] there were [illegible] physiology. The clinical [illegible] the clinical units and [illegible] Professor Swale Vincent [illegible] very generally in agreement with [illegible] had pointed out certain [illegible] of teaching physiology to medical students. [illegible] the teaching of human physiology [illegible] confined to the frog.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

Sir GEORGE H. MAKINS, G.C.M.G., C.B., P.R.C.S.,
President.

DISCUSSION ON THE END-RESULTS OF INJURIES TO THE PERIPHERAL NERVES TREATED BY OPERATION.

OPENING PAPERS.

Sir WILLIAM THORBURN, K.B.E., C.B., C.M.G., F.R.C.S.,
Professor of Clinical Surgery, Manchester University.

I PROPOSE to place before you some general considerations and to endeavour, as far as I can, to give you a summary of recent work upon the subject with which we are concerned. I do not intend to trouble you with personal experiences, first, because I do not regard this as the proper function of the introducer of such a discussion; and, secondly, because I have been abroad throughout the greater part of the war, and thus I have not had so large a number of personal operation cases as those who have been working in base hospitals in this country.

In civil life injuries to the peripheral nerves, although by no means rare, do not occur in sufficient numbers to allow of the collective investigation which they receive in war. Hence much of our earlier clinical knowledge was founded upon the work of Weir Mitchell during the American Civil War, and since that time research has been conducted mainly either on experimental or pathological lines or on the limited clinical opportunities of a few observers. The European war has again supplied us with a large amount of material, which has been thoroughly studied, and which has been treated under the most modern surgical conditions. Great numbers of these cases have been submitted to the operation of secondary suture, and not a few to that of grafting, so that we may hope that it will be possible ultimately to express almost in a statistical form the end-results which have thus been obtained. This day has, however, not yet arrived, and a long period of time and a careful series of observations by neurologists and anatomists will be required for full investigation. We are thus not yet able to give a perfect picture of end results; all that can be done is to collate some of the more complete records and to formulate what may perhaps be regarded as an interim report.

Before doing so, however, I would like to refer briefly to a few preliminary considerations which are of importance in directing our treatment, and which indicate the type of end result which we may legitimately hope to obtain. It may now be agreed that the regeneration of a peripheral nerve is in all cases accomplished by the downgrowth of axons from the proximal end into channels or sheaths awaiting them at the peripheral end. The proximal axon is connected with a sensory or motor neurone, while the peripheral sheath leads to or is connected with a terminal organ, either motor or sensory. It must therefore be recognized that, apart altogether from *anatomical* continuity, repair which may lead to a good *functional* result requires that a sufficient number of axons shall enter into a sufficient number of peripheral sheaths which are capable of leading them in the right direction. Thus, for example, motor axons entering channels connected with sensory terminals are probably lost for ever, and so with afferent axons which become connected with muscle endings. So far as I know, the union of a purely motor with a purely sensory nerve is not followed by any physiological connexion whatever.

It is clear, therefore, that motor axons must enter motor channels, and afferent axons sensory channels. Not only is this the case, but it is important that as far as possible the down-growing axons should enter the identical channels for which they were originally intended. Thus, if the spinal motor cells for, let us say, the extensor longus pollicis become connected with the peripheral channels for the brachialis anticus which lie in the same nerve, physiological confusion will result, and the spinal cord will not be able to produce the movements which the brain demands. Similarly, irregular connexion of afferent nerves with terminal organs in the skin or elsewhere for which they were not intended will necessarily lead to more or less of chaos in the interpretation of afferent impulses. No doubt errors of this type can be to some extent corrected by means of education, but such *re-education* will be necessary in the great majority of cases of nerve suture, and it is especially necessary in connexion with suture after the excision of large cicatrices from complicated junctions such as the brachial plexus.

We are thus brought face to face with the question of shunting, or, as the French call it, "aiguillage," of axons into peripheral channels. Shunting may be gross or macroscopic, as when the proximal end of the hypoglossal or spinal accessory nerve is attached to the distal end of the facial, in which case a limited physiological result may be obtained. Motor axons here enter channels for which they were not intended, and the resulting movements are confused and imperfect, but they can and do occur. The gross shunting of a purely sensory on to a purely motor nerve or vice versa can produce no result at all. The operation which has been adopted in the past of implanting the two ends of a cut nerve into an intact adjacent nerve ignores altogether the essential linking up of original channels, and has in practice entirely failed. In this connexion I would urge that the word anastomosis, which is founded on a false analogy between nerves and hollow channels such as blood vessels, should be entirely abandoned. Anastomosis in the real sense of the term never occurs, and the use of the word is apt to lead to confusion of thought.

Apart, however, from gross or macroscopic shunting, histological shunting probably occurs in the vast majority of operations. In the case of end-to-end suture every endeavour is made to avoid errors in shunting by preventing rotation of the approximated ends, but even with this precaution some error probably always occurs, owing to the nerve fibres running in a spiral course, so that, however perfect the anatomical adjustment, the minute apposition is not likely completely to restore the axons to their original channels. To a much greater extent this difficulty arises when a graft has been interpolated. In such cases the axons of the proximal end are expected to enter the neutral channels of the graft, to pass through them, and then, so far as possible, to re-enter their proper channels at the other end of the graft. It is clear that under such conditions the prospects of correct shunting will be at least very greatly diminished, and that, even if good anatomical results can be obtained, the physiological results are likely to be most imperfect.

Before proceeding to our analysis, we have one other consideration of importance in judging of an end-result. Such a result can be anatomically good in the sense that nerve continuity is restored; it may be physiologically or neurologically satisfactory to the extent that on stimulating the nerve every muscle with which it is connected may be made to contract, and the whole of its cutaneous distribution may present at least some sensation, but we have also to consider what I may call the *economic* value of the end-result. A result which is neurologically good may be economically poor, in the sense that the patient is unable to use the affected part as he ought to do. Such defect may be due to psychical conditions, to the secondary changes of muscular atrophy or of arthritis, or possibly to a form of ataxia in which, while all muscles are capable of action, they can only be properly used while their action is under visual control. This local ataxia, which may render economically imperfect an otherwise excellent limb, is probably due to want of restoration of the deep afferent fibres by which are judged and controlled perfect muscular action.

Alternatively and more fortunately, the economic result may be better than the physiological result. Thus in cases of injury to the ulnar nerve with well defined symptoms, those who do not require the finer movements of the hand may find little practical inconvenience, and even a complete lesion of this nerve may exist without recognition by the patient. Again, vicarious movements may admirably replace those of lost muscles. How varied such vicarious movements may be, and to what a degree patients may conceal paralysis which actually exists, is well illustrated in a recent paper by Forrester-Brown.[1] Vicarious movements and substituted movements of this type have an enormous economic value, but they constitute a veritable pitfall, in the estimation of neurological results, for those who are not constantly upon their guard or not thoroughly familiar with the possibilities of misreading end-results. The importance of their consideration is illustrated by the fact that I have personal knowledge of cases reported by good observers as "cured" in which there is no neurological evidence whatever of regeneration; and it is never possible to rely upon the statements of patients as evidence that recovery has occurred after operation.

With these unduly long introductory remarks, we will now turn to some of the more extensive series of reported results.

Of 108 personal cases of suture or grafting analysed by Tinel,[2] 14 were complete failures, 22, or say 20 per cent., showed practically complete recovery, and the remainder were regarded as improved.

Daw[3] says that 40 per cent. of his cases showed signs of returning motor power after seven months.

Sherren[4] found that of 21 cases of secondary suture, some return of motor power took place in all, but that it was never complete.

Kennedy,[5] examining after a long period cases occurring in civil life, claims that 73 per cent. of all sutures were completely successful.

Dumas[6] investigated 115 personal cases of operation for war wounds of one nerve only, the musculo-spiral; but it must not be forgotten that for several reasons this yields better results than any other nerve. He claims evidence of recovery in 42 per cent. of his cases, and of some regeneration in 65.2 per cent., the remaining 35 per cent. being presumably entire failures.

Joyce[7] found in 36 cases of secondary suture 8 recoveries, 6 with considerable improvement, 8 with some improvement, and no result in 14.

Souttar and Twining[8] found that of 61 cases of suture 7 recovered, 32 were recovering at the time of report, 7 were doubtful, 2 were failures, and 13 were not traced; but their results, like those of Joyce, would probably be improved by a later report, as in many cases the time elapsed had not been sufficiently long.

Adson[9] reports the results of operation on 41 cases, four-fifths of which were end-to-end suture and the remainder plastic operations. Of 30 cases traced "the average amount of improvement obtained was 58 per cent. return of the sensory, 62 per cent. return of the motor, and 67 per cent. return of the trophic function"; 73.1 per cent. showed improvement.

These figures, which are by no means easy to compare, leave upon my mind the impression that secondary nerve suture gives very good results in somewhere between one-third and two-thirds of all cases, but the most careful study of original articles, as well as my personal experience, leads me to believe that a perfect neurological recovery is rarely if ever obtained. Permanent disability may be masked in various ways, but is almost invariably to be detected if carefully searched for. Complete failures are by no means uncommon, and must be looked for in a very definite percentage of even the best operations. Such appear to be the general results in the case of secondary suture.

In the case of grafting, as we have already seen, much less is to be hoped for. Certain isolated cases are reported in which brilliant results are claimed, and it is, of course, possible that the anatomico-pathological difficulties to which we have referred may occasionally be overcome, but there is certainly as yet no large number of good results obtained from grafting. Personally I have no experience at all of this operation, and it will, I think, be found that the greater the experience of end-to-end suture, the less often the need for grafting will be found to arise. So much can be done by bold operating, by extensive exposures, by thorough stretching of nerve trunks, by alteration of their anatomical course into a shorter bed, and by the operation of stretching in two stages, that grafting will always be, and should always be, a last resort. I have yet to see personally any cases in which it has been a success. I have seen cases in which it has been reported as successful, but which to my mind did not carry conviction. I hope, however, that there are those present who will be able to establish a claim to have obtained results more fortunate than I have met with.

Coming now to a few details, I should like to call your attention to a number of facts now well established which materially influence our prognosis in the case of different nerves and different levels of these nerves. Nerves which supply large muscles, and especially muscles of homogeneous type, such as the musculo-spiral, give much better results than those whose muscular distribution is small and complicated, such as the median and ulnar. Nerves also which are mainly motor or mainly sensory are more amenable to treatment than those whose function is more complicated. In both these cases no doubt the ill effects of bad shunting bear more heavily upon the more complicated trunks. Dual lesions are more serious than single ones, so that a combined injury of the median and ulnar nerves is susceptible of very little improvement indeed.

The time required for recovery is very great. On the basis of what is known as Tinel's sign the downgrowth of axons occurs at the rate of about 1 mm. per diem, which would require, say, 200 days for a fibre to grow from the wrist to the tip of the index finger, or two years from the middle of the thigh to the foot. The slow return of epicritic sensation, even after a perfect primary suture, is admirably indicated by Sherren's operation upon Head. An ophthalmic surgeon under my care some years ago divided the digital branches of his left, middle, and ring fingers near the web by a cut from a piece of glass, and did not obtain perfect tactile sense for eighteen months or two years. On the other hand, the rate of recovery is not in such direct proportion to the length of nerve to be traversed as was formerly believed, and probably a large share of the time actually occupied is required for the linking up of axons with end organs, and for re-education. In this connexion Stopford[10] has some most interesting figures; analysing 58 cases of suture of the musculo-spiral nerve in the lower, middle, and upper thirds of the arm, he finds that the supinator longus begins to recover after about four, five, and seven months respectively, other muscles showing similar differences; so that it takes only about three months longer for recovery in a section close to the axilla than in the case of a section quite near to the origin of the branch for the supinator longus.

It would also appear from the work of Stopford, who has most carefully tested 271 cases of nerve suture, that recovery is more perfect the nearer the suture is to the spinal cord, which may be due to its closer connexion with its trophic centre, or to the greater ease of surgical operation upon thicker trunks.

Before concluding, I should like to refer to the so far unpublished results obtained at the Grangethorpe Military Hospital in Manchester, staffed by old students of my own with whose work I am thoroughly familiar. Most of the operating work here has been performed by H. Platt, and the results have been checked by Professor Stopford from a purely anatomical and neurological point of view. In a recent communication to the Royal Society of Medicine Stopford states that:

> In no case of secondary suture can the result be described as perfect. After total section there has been a perceptible difference in power when comparing the two sides, and at least an incom[illegible] [illegible], even three and a half years after the date of the suture. The recovery of sensation has [illegible] disappointing.

Of sutures in the upper arm, failures amounted to [illegible] per cent, and in the forearm to [illegible] per cent. At both levels the recovery of voluntary power has been much less even in muscles supplied by the nerve in the distal than in the proximal part of the limb. On the whole it may be concluded that a good functional result is to be expected after secondary suture of the musculo-spiral nerve. The extensors of the wrist usually regain full power, the extensor communis digitorum recovers satisfactorily, but the extensors of the index finger and thumb are much less perfect. As regards the median nerve in quite a large proportion only incomplete recovery of protopathic sensibility has occurred and voluntary power in the abductor brevis pollicis has only been found in [illegible] per cent. The ulnar nerve is particularly disappointing, and the recovery of voluntary power in the small intrinsic muscles of the hand was exceedingly poor. On the other hand, from the economic point of view it is interesting to note that many of these injuries to the median and ulnar nerves did not prevent the patients from obtaining employment. I do not propose to weary you with details in reference to the nerves of the lower limbs.

These remarks apply to cases which date back for a period of three years; still further lapse of time may improve them, but will also tend to confuse the issue by permitting of improved vicarious function. As they stand they are, I believe, a perfectly fair expression of the best efforts of the surgery of to-day.

As to the dates at which recovery, if any, can be expected after the operation of nerve grafting we have no reliable statistics, and the comparatively few records of such recovery which will even bear investigation are not numerous enough for generalization.

I should like to conclude with a word upon the results of treatment of compression of nerves. Here my own experience has been very considerable, and almost, if not quite, uniformly successful. I have in the past had many examples of operation for compression of nerves, and I do not think that, however grave the symptoms, I have ever failed to obtain recovery which was at least economically complete; I have not the details to show how far they were neurologically perfect. My personal experience thus differs sharply from that of Kennedy, who found that neurolysis yielded slightly less good results than nerve section and suture. I have only one reservation to make: after the removal of pressure by cervical ribs it is most rare for atrophy of muscles to be entirely repaired; this I am inclined to attribute to the fact that a chronic neuritis has followed the original pressure lesion, and that such neuritis leaves indelible changes which are rarely found in traumatic cases of pure compression.

You may think that I have not painted the picture in sufficiently rosy colours; but you will generally find that the greatest optimism is that of the man who records a few remarkable cases—often a single case. After many years, I can only say that if a surgeon obtains 50 per cent. of really good economic recoveries after secondary nerve suture he is doing well; if he obtains 75 per cent. of such recoveries which will bear investigation, his work is both brilliant and fortunate. I trust that the majority of those present are in this class. On the other hand, you will notice that of death rates and of operation risks or disasters I have not said one word, because under modern conditions such things are and should be for all practical purposes unknown.

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Nerves implicated in war wounds rarely present the comparatively simple problems of recovery raised by the experimental division of a nerve, or even by the common "cut wrist" accident where a nerve is cleanly divided by a fragment of glass. In war wounds nerves are bruised and lacerated, the damage caused by a missile of high velocity is not limited to the immediate neighbourhood of the injury; surrounding structures are often extensively damaged, a main artery may be obliterated. Septic infection, often severe and prolonged, delays operative repair of the nerve, prejudices its chances of regeneration, and often prevents the early application of those forms of mechanical and physical treatment which are essential for preserving nutrition and preventing stiffness of joints and tendons.

When we take into consideration all these adverse conditions it is surprising, not that failures are met with, but that good results are so often obtained. There are two main groups of cases in which surgical treatment is called for—namely, those which require operative measures for the *restoration of conductivity*, and those which demand surgical interference on account of *disordered function*. In the one group the natural activities of the nerve are in abeyance; in the other phenomena of abnormal activity are displayed.

1. So far as the *repair* of injured nerves is concerned, I shall confine my remarks to the commonest class of case with which the surgeon has to deal—namely, that of the nerve so severely damaged as to require resection and suture, leaving aside those cases in which it has had merely to be liberated from a constricting scar, as well as those where partial resection with suture and other means have been employed. It is within the experience of all that function is restored both more rapidly and more completely when the interruption of conductivity is due to some cause such as compression, the recovery from which does not necessitate regeneration. Further, it is well known that when a nerve has been bruised or crushed and its sheath has remained intact, recovery is more rapid and more complete than after division and suture.

In considering the results of operative treatment for divided nerves we should, I think, confine our attention to the cases of direct end-to-end suture, for, as far as I am aware, this is the only means whereby conductivity can be restored. Fortunately the cases are extremely rare in which this cannot be accomplished. Operative procedures based upon principles which are at variance with the known facts of regeneration, such as "flap operations" and "lateral implantations," need scarcely be considered. I have had the opportunity of examining two cases in which, some six months previously, the proximal and distal ends of a divided ulnar nerve had been implanted laterally into the intact median. The proximal end showed an ordinary terminal neuroma attached to the median nerve, which fortunately had only been slightly damaged. The distal end contained no axis-cylinders.

Nerve grafting, or the bridging of a gap between the ends of a divided nerve, has no practical value. It has excited much interest, and has been the subject of a great deal of experimental work, more particularly by Nageotte. So far as I am aware, no useful result has, in the human subject, ever been secured by means of nerve grafting, although in a few cases there is some evidence to suggest that nerve fibres have succeeded in traversing a short graft.

In reviewing results we must suppose that the best technique has been employed; that no coarse fixation stitch has been passed through the substance of the nerve, and that interrupted sutures of the finest and least irritating material have been used to join the cut edges of the sheath; that the surfaces have not been crushed together, but that a millimetre gap has been left between them; that no foreign substance has been wrapped round the junction; and that the wound has healed without suppuration. One cannot but believe that the better the technique employed, and the more perfect the operative details, the better are the results to be expected. Yet one must confess to having had relative failures after what seemed to be satisfactory operations, and successes where the operations were certainly very far from perfect. Good results depend upon the happy combination of so many factors that it is not easy to explain such divergences. I believe the most important determining factor to be the degree of interstitial change which has taken place in the nerve as the result of septic infection. A second cause doubtless lies in the neutralization of axons which must result from motor fibres growing down sensory paths, and vice versa.

In speaking of results I shall not attempt to distinguish between primary and secondary suture. Whilst the great majority of cases are naturally those of secondary or late suture, a certain number of instances of early or primary suture have been observed. No evidence has been forthcoming that regeneration takes place either more rapidly or more completely in one than in the other. I take it that no one now believes in what was once known as the "primary union of nerves" with "immediate return of function"—a subject over which a good deal of ink has been spilt in the past. Once the peripheral end has undergone the normal processes of degeneration and of regeneration, it remains ready to receive new axons for an indefinite period. In the absence of sepsis it does not become fibrous. As far as regeneration of the nerve is concerned, secondary and primary unions have an equal chance. Inasmuch, however, as the wounds in which primary suture was performed had usually been treated early and radically, and had healed quickly, the handicap of prolonged suppuration and immobilization was avoided. It might therefore be expected that, other things being equal, such cases would give functionally better results. This has to some extent been borne out by the few cases which I have observed.

That a nerve which has been divided and sutured will regenerate and become capable of conducting impulses in both directions is, of course, within the experience of everyone. What we are now concerned with is to what degree of perfection such recovery may reach, and what in general are the prospects before a patient after the suture of a divided nerve.

In so far as the nerve injuries of the late war are concerned, we are not yet, I think, justified in using the term "end-results," at least on any extensive scale. It is true that the restoration of function in a good many instances after suture of the musculo-spiral and external popliteal nerves has already been so complete that in those cases it may be regarded as an end-result; but in the majority it cannot definitely be said that a stationary condition has been arrived at, even three or four years after the operation. It is very striking that many patients will, years after their operation, maintain that their limbs are continuing to improve. I should therefore at present prefer to use the term "late results" rather than "end-results."

What are the criteria by which these results are to be judged? We may, on the one hand, take as our criterion the *condition of the nerve* itself as evidenced by its ability to conduct impulses to or from the periphery. We may test the recovery of the neuro-muscular mechanism by examining the electrical reactions, or the power of voluntary contraction, in the muscles supplied by the regenerated nerve; and we may test the different forms of sensibility in its area of distribution. The application of these tests and the interpretation of the results are not simple matters to be disposed of in the course of a single examination. It is as important to make careful and repeated examinations during the period of recovery as during that probationary period which must often elapse before an operation is determined upon. Inferences from inaccurate observations are greatly to be deprecated, as tending to give false impressions of the results of nerve suture. It would be unnecessary to labour this point were it not that cases are published from time to time which grossly misrepresent the situation. Let me give an example: An account of a case appeared, in the medical press, of a gap in a median nerve having been bridged by a graft, after which, it was alleged, a certain degree of recovery had taken place. The case was advanced to support a plea for the more frequent use of nerve grafts. The evidences of alleged recovery were (1) that the patient could feel over a large area of the palm of the hand and fingers anatomically supplied by the median nerve; and (2) that he could abduct and oppose his thumb. I and several others had the opportunity of examining this patient, whose hand presented all the characteristic effects of complete division of the median nerve. There was no sign whatever even of any commencement of recovery. The area of skin over which pain and touch could be appreciated corresponded with the normal full supply of the ulnar nerve; the movements attributed to recovery of the median nerve were produced by other muscles.

Leaving aside gross errors of this kind, it is still easy to be deceived by trick movements into believing that recovery is taking place in the nerve. As a rule evidence of the commencement of motor and sensory recovery can be obtained at about the same time, though the rate of recovery in the two cases differs. If, therefore, there appears to be return of voluntary power in the absence of any sign whatever of sensory return, trick movements should be suspected.

The *second criterion* by which results may be judged is that of function. The regeneration of the nerve and the recovery of functional utility of the limb as a whole are two things which must not be confused. Unless the criteria are specified, the mere tabulation of results into good and bad, or satisfactory and unsatisfactory, serves no useful purpose, and may be very misleading. If they are grouped into good and bad according to the evidences of regeneration alone, and nothing is said about the functional utility of the limb, we may easily gain too rosy a view of them.

If, on the other hand, function alone is regarded, it is easy to be deceived into thinking that a nerve has regenerated well in a case where, in fact, it has done so very imperfectly or even not at all. When a patient sets himself to use the injured limb he concentrates his attention upon bringing about the required movement, and if he cannot attain his object by means of the muscles which normally effect that movement he will learn to employ other muscles for the purpose, developing what are perhaps rather slightingly termed "trick movements." I have seen a patient with complete and irremediable loss of an ulnar nerve whose hand would easily pass as normal when looked at superficially and when judged only by its functional utility. He was, in fact, passed by a medical board as a perfect result after operation upon the ulnar nerve.

The results of suture are well known to differ widely in different nerves. A nerve like the musculo-spiral, which subserves simple and elementary functions, is often restored so perfectly that only the closest examination can detect any departure from the normal in the parts supplied. With nerves like the median and ulnar the case is very different. These nerves subserve delicate and complex movements, the execution of which requires not only the proper motor impulses but also the integrity of a complicated sensory mechanism. One has only to contrast the size of the nerves of different muscles in order to realize how much more is required of regeneration in the case of the more complex nerves. For example, in relation with the bulk of muscle supplied, the nerves to the glutei are ludicrously small when compared with the deep branch of the ulnar. We speak of these nerves as motor without always realizing how many of their fibres are afferent, and carry those sensory impulses which must necessarily reach the brain before the muscles can be thrown into orderly and co-ordinated action.

I have never seen a case in which restoration of function after suture of the median or the ulnar nerve could be said to approach anywhere near the normal, or to attain anything like the degree of perfection so often reached in the case of the musculo-spiral. The same point is illustrated in the ulnar and median nerves themselves. Many late results show how far in advance of the small muscles of the hand is the recovery of the muscles of the forearm. The accuracy and delicacy of movement required of the hand muscles are not demanded to anything like the same degree in the great flexors of the wrist and fingers. A recent examination of a number of patients from two to three years after suture of the median or the ulnar nerve has revealed the fact that the sense of position and the sense of passive movement in the fingers are almost wholly absent even in cases which, as regards voluntary movements, electrical reactions, and some other forms of sensibility, show good evidence of recovery. As an example I may briefly relate the following case:

[illegible]

In order that useful function may be regained it is necessary that sensibility, as well as muscular power, should be restored. This is especially true of the median nerve, and unfortunately, the recovery of sensibility in the area exclusively supplied by this nerve is seldom good and rarely satisfactory. From the [illegible] standpoint the median is a more important nerve than the ulnar, [illegible] ordinary purposes of life.

Late functional results after nerve suture may be unsatisfactory from causes other than faulty regeneration. A patient with good muscles and supple joints, and with good recovery both of sensibility and of electrical reactions, may be quite incapable of making use of his limb. The importance of the psychological aspect of such cases is now too well recognized to need more than a passing notice here, and I only mention it in order to point out another disturbing factor in the estimation of results. The value of re-education can scarcely be overestimated.

In judging results by the crucial test of function, some standard of comparison must be employed. Normal hands vary so greatly in dexterity that it would be unfair to expect the same degree of excellence to be reached in all cases. Unconsciously, perhaps, we are apt to compare a hand under examination with our own, or with some ideal conception of the normal hand; nor do we always allow for the ordinary difference between right and left hands. Clearly the standard of recovery which must be set up for any individual should be based upon what he could do before the injury, and to this his previous occupation and the nimbleness of his other hand constitute a good guide. Two cases, recently re-examined, will suffice to illustrate this point.

In each the hand was in a good state of nutrition, and the joints and tendons were free from stiffness. Both patients had had the right ulnar nerve sutured some two years previously—in the one case just above the wrist and in the other just above the elbow. The former had made a good recovery so far as the hand muscles were concerned, whilst the sensory recovery was poor. The other patient had made an excellent recovery both from the motor and sensory standpoints. From the point of view of regeneration, therefore, the one represented a poor and the other a good result. Regarded from the functional point of view, however, the estimation of these two results had to be reversed. The man whose anatomical and physiological result was poor had large, clumsy hands, which seemed to differ very little from one another. With the hand of the injured limb he could do almost everything that he had been able to do before being wounded. He was a good fast bowler at cricket and now is as good as before; he can write as well as ever and he can "do [illegible]" with the hand. His [illegible] capacity as a [illegible] has scarcely, if at all, depreciated. The other patient, with a far better nerve recovery, is very differently affected. He is able to use the hand fairly well for all ordinary purposes [illegible], but not so well as before he was wounded. By profession a violinist, he is no longer able to earn his living with the violin, as he has lost [illegible] to such a degree that he has had to give up that instrument and has taken up the trombone. His value as a trombone player in the orchestra is twenty shillings a week less than it was as a violinist.

2. My second group of cases requiring operative treatment concerns those morbid conditions of an injured nerve which are evidenced by nutritional and vasomotor changes in its area of distribution, and by causalgia.

There can be little doubt that the great majority of what are sometimes loosely termed "trophic" changes are in reality the direct outcome either of neglect or of immobilization, whether imposed by splinting or by paralysis. Most of such changes can be prevented by the early application of appropriate measures, and many can be cured or at least relieved by properly directed physiotherapeutic treatment. They are apt to be encountered in any case of complete interruption of conductivity of a nerve. We must remember, too, that nutritional disturbances result from damage to the main artery of a limb.

Disordered vasomotor activity, however, is on a different footing. It is associated with partial and irritative lesions, and is of course seen at its worst in the area of distribution of those nerves which are particularly rich in vasomotor fibres—namely, the median, ulnar, and internal popliteal. The existence of disordered vasomotor activity materially affects the end result, especially if it has been present for any considerable period before operative treatment is undertaken, since joint and nutritional changes and fibrosis have occurred not only in the joints but in all the other affected structures as well. Resection of the damaged portion of the nerve, with end-to-end suture, will at once put an end to the active vasomotor changes and allow recovery to commence under physiotherapeutic treatment. The process of regeneration will be prejudiced by the [illegible] changes which will have occurred in the nerve, and the stiffness of the joints will further impair the ultimate functional result. The end results in these cases, therefore, can never reach the highest level.

Let us now turn to the end results of these cases in which disordered function is evidenced by that severe persistent and paroxysmal pain which is known as causalgia. It is well known that the pain, in the majority of these cases, tends very slowly to abate under suitable treatment, and that in the less severe cases no operative treatment is called for. On the other hand, it is unfortunately within the experience of all of us that there are certain cases for which no surgical treatment, even to the intraspinal division of all the posterior roots connected with the affected area, seems to be of any avail. Between these two classes, those spontaneously recoverable and those apparently incurable, there are a number of cases which operative treatment does benefit, and in which the ultimate results are excellent. The treatment of causalgia by operation is rather, I think, to be encouraged than otherwise. When successful it not only relieves suffering, but allows of the institution of physiotherapeutic measures which, by reason of the pain, have necessarily had to be omitted. Further, the "trophic" changes so often associated with causalgia may be arrested. These factors have a very great influence upon the ultimate recovery of function in the limb. From one point of view it is, perhaps, somewhat unfortunate that in many instances the causalgia is associated with so little paralysis or loss of sensibility in the area of distribution of the affected nerve. It is this fact which makes the surgeon hesitate before embarking upon an operation which, whilst it will probably relieve pain, will also interrupt still further the conductivity of the nerve. The injection of alcohol into the nerve well above the site of injury often affords immediate relief, but at the same time there is considerable danger of producing a lesion which may never be completely recovered from. The weaker the alcohol employed, the less will be the chance of producing so undesirable a result, but at the same time the pain cannot be so certainly relieved by the more dilute solutions. The best results are obtained when the strength of the alcohol is so adjusted as to relieve the pain sufficiently to allow of movement and massage being employed without seriously affecting either the motor or sensory functions.

RESULTS OF OPERATIONS FOR NERVE INJURY AT THE EDINBURGH WAR HOSPITAL.*

BY

MAUD F. FORRESTER-BROWN, M.S., M.D.Lond.

THE results of a nerve operation can be measured in two ways: (1) anatomically, (2) in terms of function, that is, working capacity.

These two by no means coincide; thus in certain cases the hand is very useful, even although the ulnar nerve is entirely unrecovered; in others the nerve may show recovery of every one of its functions as ordinarily tested, yet the grip may be weak, the co-ordination poor, and the patient may tell us that the hand becomes cold and useless in bad weather. Again, a sutured musculo-spiral may show persistence of the anaesthesia, yet if the muscles are recovered the hand will probably be capable alike of heavy and of delicate work; whereas after a median suture, if the thumb and index finger fail to regain the normal delicacy of touch in fullest measure, then the hand remains clumsy, and often altogether useless.

As regards anatomical recovery, it may be said at once that the cases in which it is complete within two years of the operation are in the minority. The writer has not had the opportunity of examining more than a few cases at longer intervals.

The following remarks are based on the analysis of a consecutive series of 643 cases, dating from 1916. Of these, 360 have been re-examined by the writer at periods of from six months to two years after their operations, some of them reporting at regular intervals. A few more cases have been included on whom detailed reports were received from the surgeons at other orthopaedic centres.

Nerve cases show a very variable degree of recovery of the different functions—motor, sensory and trophic—the variation not being constant for any particular nerve, time after operation, or level of lesion, as far as could be made out. In classifying results, therefore, it was considered that the only fair method was under separate headings for each function. The amount of return of each function also shows many gradations, which could not possibly be indicated in a comprehensive chart; therefore three grades only have been recognized: complete, incomplete, nil.

By "complete" motor recovery is here indicated return of voluntary power in all muscles supplied below the lesion, even where their strength is not up to normal, for the latter probably only depends on time and exercise, while the "normal" for any given individual is too difficult to estimate. "Complete" sensory return is used to include cases in which pressure, wool, and prick were felt and correctly localized over the whole distribution of the nerve while joint sense had returned. "Complete" trophic return implies the absence of muscle-wasting and of changes in the skin and its appendages. "Incomplete" includes all cases which, failing to fulfil the above conditions, yet show evidence of nerve regeneration.

In considering the results of nerve suture as measured by the patient's capacity for work, it is important to remember that some men are at work for which they do not need to use the injured limb. A series of cases of right-hand injuries, in which this error is unlikely to occur, was therefore studied, but the figures showed no great divergence on this account.

Out of 643 cases of nerve injury operated on in the Edinburgh War Hospital, 552 were able to be traced and 396 were personally examined.

The written reports from the 156 not examined were included only in the study of their capacity for work.

A. *Capacity for Work.*

Out of 237 cases of nerve suture, 12 per cent. are at ordinary work, 35 per cent. at light work.

The cases with upper limb injury show a slightly higher percentage at work than those with lower limb injury.

Even cases of musculo-spiral suture give the same percentage at ordinary work, but rise to 54 per cent. at light work.

A series of 95 cases of injury to the right upper limb show only 8 per cent. at ordinary work, but this factor does not affect the percentage at light work.

An analysis of the figures for the individual nerves shows 15 per cent. of ulnar sutures at heavy work—that is, above the average; whereas 56 per cent. medians are at light work, and in this above the average. This is interesting, as it confirms one's impression that, in regard to skilled capacity, anaesthesia of the thumb and index is more disabling than the general weakness produced by the loss of the ulnar intrinsic muscles. The contrary appears to be the case where rough use of the limb is required.

Out of 187 neurolysis cases, 8 per cent. are at ordinary work, 36 per cent. at light work. Thus they are slightly less satisfactory than the suture cases, the contrary of what might have been expected.

Out of 81 tendon transplants for various lesions of the upper limb, 23 per cent. are at ordinary work, 36 per cent. at light work. This is markedly better than the figures for nerve sutures.

B. *Degree of Recovery after Nerve Suture.*

Out of 158 suture cases, 28 per cent. showed complete motor return, 19 per cent. complete sensory, 21 per cent. complete trophic—50 per cent. incomplete of all three functions.

Total complete recovery (as defined above) was found in 5 median and 8 musculo-spiral cases. Almost complete recovery in several ulnar cases.

Absence of any recovery was found in 1 median and 6 transposed ulnars. These latter developed neuromata and were sutured again, after which some began to recover. The others could not be traced.

As regards individual nerves, the median (35 cases) showed 50 per cent. complete motor and 28 per cent. complete sensory recovery. The ulnar (53 cases) showed 17 per cent. complete motor and 13 per cent. complete sensory recovery, and 66 per cent. incomplete of both. The musculo-spiral (21 cases) showed 62 per cent. complete motor and 33 per cent. complete sensory recovery. Thus the apparently favourable nature of lesions of this nerve is due rather to the insignificance of its sensory distribution and to its relatively simple motor functions than to any speciality of the process of regeneration in it.

As regards nerve graft and flap operations, out of 14 cases, 1 showed complete motor return, 2 incomplete motor return, 4 showed sensory improvement.

Three nerve grafts were subsequently explored, and the grafts were found recognizable as nerve tissue, but they were embedded in dense scar, they remained of smaller calibre than the nerve into which they had been grafted, and they failed to respond to direct faradic stimulation.

Recovery of Neurolysis Cases.

Out of 117, 43 per cent. had full motor function and 19 per cent. full sensory. All except ½ per cent. showed some improvement, and no case was made worse by the operation. This suggests that exploration is advisable in all cases of peripheral nerve injury when steady improvement does not occur spontaneously within one to two months of the healing of the wound.

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* This communication forms part of a thesis approved for the degree of M.S. of the University of London.

It might have been thought that the figures for neurolysis would be better than those for nerve suture; but unfortunately this is not the case, for they often represent lesions with destruction of a certain number of nerve fibres, which are not restored by neurolysis, while the importance of the fibres which are intact contraindicates resection and suture. Even a detailed study of these results is inconclusive, because they involve so many variable factors, such as the nature of the lesion (compression, presence of a neuroma, degree of invasion of the sheath or nerve by scar tissue, etc.); also the judgement of the surgeon as to the suitability of the operation; also the degree of loss of function before operation, which, unfortunately, has often been only vaguely recorded, whereas the strictest accuracy alone could enable us to judge the result.

Results of Tendon Transplants.

Of 96 transplants (both upper and lower limbs) all except one gave useful restoration of the lost function, while many were excellent.

The transplants for musculo-spiral paralysis, where some nerve regeneration had later occurred, produced practically normal hands, and many were at heavy work. This suggests that there is no need to fear subsequent upsetting of the muscle balance if regeneration occurs, and therefore in cases of severe incomplete lesion of the musculo-spiral, and others where the prognosis after suture is poor, a transplant should be done without hesitation.

The functional results after transplantation were also noted to be better than those after suture; but it must be remembered that whereas a transplant is fit for light work in two to three months after operation, a suture has not the same strength till about ten months in the most favourable case, so that the working capacity of suture cases may be expected to go on improving for two years or more, while the transplant has attained its maximum in much less time. This advantage of the transplant operation is not always remembered by surgeons.

As regards order of recovery of the various functions, there is also a good deal of variation, and, unfortunately, the incompleteness of our records prevents us from giving comprehensive figures. In the cases of which frequent progress notes could be kept the following points were observed:

Tinel's sign of tingling referred to the distribution of the nerve, and elicited by tapping it at a point corresponding to the level reached by the down-growing axones, was usually the earliest sign, and was obtained about three to four weeks after operation at a point slightly below the suture level, from which it descended more or less regularly in correspondence with the return of function at the various levels. It is noteworthy that this sign has been absent in a few cases which recovered, and that it has been present in some which have so far shown no other evidence of recovery. The next sign to appear was usually tenderness to pressure of the muscles supplied immediately below the lesion.

Progress after this depended on the level of the lesion. If muscles were supplied close below it, while the skin distribution was remote, then motor return preceded sensory. It must be remembered that small degrees of sensory improvement are easier to determine than faint voluntary contractions in a muscle. Thus lesions of the median above the elbow usually gave recovery of the flexor carpi radialis as their first sign, the pronator radii teres being difficult to determine; whereas lesions at the wrist showed recovery of joint sense and deep pressure sense before any appreciable contraction of the intrinsic muscles could be made out. Epicritic sensation to wool and pricks returned in the palm and side sometimes before deep sensation was completely returned in the digits, the anaesthesia receding peripherally like the ebbing tide.

With regard to electrical reactions, a faradic response sometimes returned in the muscles before voluntary power, but usually the converse was the case. In cases of deficient recuperation, especially with the interossei muscles which are difficult to test, the faradic response came first.

The figures which the writer was able to work out proved interesting in a negative rather than a positive sense. For instance, they showed that, within the limits of such a series there was no constancy in the rate of recovery of any particular nerve, that the rate was not definitely influenced by the level of the lesion, nor absolutely by the period since operation. Tables were also worked out which showed that, in this series, the degree and rate of recovery were not influenced by

1. The length of time between the injury and operation.
2. The [illegible] of the initial injury.
3. The development of sepsis after the nerve operation which occurred in a certain number.

The observations recorded above suggest that every case of nerve lesion which has not recovered spontaneously within a reasonable time should be given a chance by operation, since regeneration of nerve fibres after suture can be counted for with confidence in the majority of cases, although progress must be expected to be slow. Whether recovery will ultimately be complete in the majority of cases it is too early yet to say, and the prognosis of any individual case is very hard to estimate.

LATE RESULTS OF OPERATION.

BY

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Reading.

I PROPOSE to confine my remarks to the late results of operations designed to bridge a gap in a nerve which cannot be repaired by end-to-end union, because about these will be found the greatest divergence of opinion, and because I am convinced that in this field any future great advances in the surgery of injured nerves will be found.

I think that sufficient emphasis has not been laid on the fact that operation is merely an episode in the treatment of a divided nerve. The most that any operation on a divided nerve can do—and this is the aim of operation—is to place the ends in the position most favourable for nature to accomplish the downgrowth of axons from the proximal into the distal segment. It is most difficult in these cases to analyse an end-result and to estimate how much of it is due to the efficiency or the inefficiency of the operation, and how much to the efficiency or inefficiency of the pre-operative and post-operative treatment by physiotherapeutic methods.

It should be remembered that the war-time cases in which a gap in a nerve cannot be repaired by an end-to-end union are, because of the severity of the wounds, just those in which pre-operative treatment by physiotherapeutic methods is likely to have been inefficient and in which the post-operative treatment is beset with difficulties.

In a personal series of 161 operations on nerves there were 22 cases which at the time I considered to be irreparable by end-to-end union. I know that some of the earlier ones I could now have treated by end-to-end suture.

These were dealt with as follows:

- 6 musculo-spiral injuries by alternative tendon transplantations;
- 6 ulnar nerve injuries were repaired by double lateral implantation into the median;
- 8 cases were dealt with by free autogenous transplants:
  - 1 great sciatic,
  - 1 posterior tibial,
  - 3 ulnar,
  - 3 median.
- 2 cases were dealt with by homologous transplants:
  - 1 musculo-spiral,
  - 1 ulnar.

Tendon transplantation for irreparable injuries of the musculo-spiral nerve gave results which left nothing to be desired, and, in my opinion, is the operation of choice.

As an indication of the bad conditions which are likely to be present in cases requiring nerve transplantations or operations of a similar nature in war-injured patients, the following facts may be noted:

In the 6 cases of double lateral implantation:

Average time between date of wound and healing of wound	99 days.
Average time between date of wound and operation	313 ,,

In the 8 cases of autogenous transplantations:

Average time between date of wound and healing of wound	188 days.
The longest time being	539 ,,
Average time between date of wound and operation	426 ,,
The longest time being	1,088 ,,

All had wounds which had suppurated severely, and all except two were associated with severe injury to bone. Extensive scarring, chronic myositis, fibrosis, and stiff joints were met with in every case.

If degeneration of nerve is, as I believe it to be, as much a vital process as regeneration, and since the best conducting path for regenerating axis-cylinders is a piece of degenerated nerve, then a strong theoretical argument against free autogenous transplantation is the fact that placed in the gap is a piece of nerve which has been separated from its blood supply and is therefore dead.

This objection is not applicable to the operation of so-called double lateral implantation. The expression "double lateral implantation" of an injured into an intact nerve has created a confusion of thought, and is partly responsible for the objections which have been raised to the operation. I have already pointed out that the so-called operation of double lateral implantation of an injured into an intact nerve is really that of a pedicled autogenous transplant of the intact into the injured nerve. Thus, a double lateral implantation of the ulnar nerve into the median should really be called a pedicled autotransplant of the median into the ulnar.

Of the six cases of so-called double lateral implantation in my series, two showed recovery of protopathic sensation over the ulnar area and faradic response in the ulnar intrinsics, without voluntary action, at the end of twenty-four months. Two cases were lost sight of at the end of five months, and two showed doubtful signs of recovery at the end of nine months.

Sir Charles Ballance has kindly allowed me to mention a case I have had under my care for two years—one of division of the median nerve in the forearm, operated upon by him in Malta in 1916. He made a double lateral implantation of the median into the ulnar, or, as I should prefer to call it, a pedicled autotransplant of the ulnar into the median. When I first saw the man he had complete wasting and paralysis of his thenar eminence, with R.D. in the opponens and abductor brevis pollicis. The opponens has now recovered with good voluntary action and faradic response, and the sensation of the hand is normal except over the proximal phalanges of the index finger and thumb. He has still wasting and loss of voluntary action in the abductor brevis pollicis. The patient, at Sir Charles Ballance's request, has come to the meeting to show himself.

In view of the severity of the injuries and of the associated lesions, the results of pedicled autotransplants of the median into the ulnar, in my experience, do not compare unfavourably with those of end-to-end union of the ulnar in the forearm. In no case has any permanent damage resulted to the median nerve, and two show as good results as the majority of end-to-end unions of the ulnar in the forearm—namely, recovery of sensation and faradic response in the intrinsics without recovery of voluntary action.

The results of free autogenous transplantations have been less favourable.

One ulnar case in the upper arm showed voluntary power and faradic response in the flexor carpi ulnaris nine months after operation, but no sign of recovery in the ulnar intrinsics.

One in the forearm showed faradic response in the adductor pollicis and first and second palmar interossei eighteen months after operation without voluntary action.

Another in the forearm showed no sign of recovery fifty-four months after operation.

One of the sciatic in the middle of the thigh showed recovery of good voluntary action and faradic response in the calf muscles of the leg thirty months after operation, with incomplete recovery of sensation and no recovery in the anterior tibial or peroneal muscles.

The three median cases showed no sign of recovery at the end of five, eight, and nine months respectively.

Both Sir William Thorburn and Mr. Sargent have in their opening remarks condemned the operation of so-called double lateral implantation, and Mr. Sargent has said that the operation of nerve transplantation has no practical value. Sir Robert Jones and Sir Berkeley Moynihan have made statements to the same effect.

When one remembers the delicacy of an axon, our relative ignorance of their minute anatomical distribution, and the difficulties which must beset their transport across a gap in a nerve, the fact that the results I have laid before you are not good is not surprising. Rather is it to be wondered at that any recovery takes place at all; but that such does occur encourages me in the belief that the operations of pedicled autogenous transplants and of free autogenous transplants are deserving of further study and research, and still have a place in the operative surgery of injured nerves.

DISCUSSION.

Mr. J. A. Copland (Leeds) mentioned three cases of median nerve grafting which appeared to be successful. He strongly advised avoidance of traction and the utmost gentleness in manipulation. Foreign membranes should not be used. A new bed of perfectly healthy tissue should be made for the nerve by the displacement of muscle or fascia flap. He suggested another view regarding "trick" movements: their object was ultimately a good economic result. If patients developed a capacity for replacing paralysed muscles, it was the surgeon's duty to encourage them to use the muscles in such a way as to make them functionally useful. The capacity for active muscular power returning to replace a damaged median should be encouraged. It meant that an improved vascular supply was the consequence. He had observed a median case in which nine months after suture in the arm recovery of every muscle in the median supply occurred; it was the most rapid in his experience. It was important to place the nerves in proper axial rotation. In many cases it was possible to see with the naked eye the arrangement of bundles, so that the appropriate bundles could be brought into apposition with one another. A very important matter in after-treatment was the maintenance of warmth of the limb; it hastened recovery.

Mr. Rowley Bristow said that in the Military Orthopaedic Hospital, Shepherd's Bush, the results agreed in the main with those quoted by the leaders in the discussion. In examining nerve suture cases he had observed that those nerves which early showed some sign of regeneration did not of necessity go on to better ultimate function than others, and he did not put any special value on early signs of recovery. His experience of grafts was that all were failures; there were six in number; of these, one only might be said to be a moderately satisfactory result. Some details of this case were narrated; the patient did not continue to make further recovery in two years, and it was probable that the apparent good result was due to two of the muscles having obtained new nerve connexion. The best he could say of grafting was that some isolated muscle gave evidence of returning function after such an operation. Tendon transplantation was advocated by him in cases of musculo-spiral injury which had recovered imperfectly. Ulnar cases, as a rule, gave a very poor muscular recovery; there was only one way to improve muscles in the ulnar supply, and that was by electrical stimulation of each individual muscle, and not by general electrical treatment of the whole group of muscles in the hand.

Mr. Naughton Dunn (Birmingham) pointed out that nerves should not be too closely sutured. In two cases sutured under great tension he obtained very rapid recoveries. His results had improved since he began to leave a very little gap between the ends of the nerve. In two cases of nerve grafting no sign of regeneration in the graft could be found when operated on again nine or ten months afterwards. He thought it was unfortunate that cases came from France with primary suture performed, for many of them were kept waiting in the belief that the sutures would hold and that further operation would not be necessary.

Dr. L. E. Shore (Cambridge) said that, after listening to the addresses of the leaders in the discussion, it was not possible to give a complete answer to many of the points raised. As a physiologist, he had to admit that the knowledge which the surgeon wanted the physiologist could not give. He would remind them that when peripheral nerves were very finely teased out it was found that the axis-cylinder divided into a large bunch of minute axis-cylinders, and these little ones seemed to hunt for the tracks downwards; successful bunches did find the path; many others failed and simply groped about in the connective tissue. To attempt an absolute anatomical end-to-end suture was perfectly hopeless. Nerve fibres in the nerve, as it was dissected down, constantly changed their position from one side of the nerve to the other, running into various groups all the time. That did not alter the fact that each particular axis-cylinder had its own proper place. As to physiological recovery, it was an important point when the patient could begin to move the group of paralysed muscles in a mass—that was to say, the whole group acting—but the patient could not till a much later stage pick out the individual muscles. It had recently been suggested that, in thinking of re-education, two classes of motor nerves had to be dealt with: one to control the whole mass of muscles as a group, and the other controlling finer muscular movements, picking out individual muscles, though he was not sure that there were sufficient grounds to support that view. In regard to economic recovery, that depended very much upon recovery of the degree of sensation, and until the patient had epicritic sensation fully recovered his limb was not of full economic use. The musculo-spiral seemed to recover much more quickly than other nerves, but he was critical of that idea, and believed that its apparent economic recovery was due to the fact that the movements of muscles supplied by the musculo-spiral were relatively unimportant, and that the reason why the median recovered so slowly was that that nerve was concerned with very fine movements. Although it was true, in regard to the ulnar nerve, that there was slow recovery of the intrinsic muscles of the hand, the patient's hand was not impaired so much as in a median defect, because the little finger was not so important as the index finger, say, for picking up objects and other similar fine movements. It was important, in regard to the economic question, to note the nature of the man's hand and his work, and what he was expected to do with it. Dr. Shore suggested that if a big gap in a nerve existed, could not the bone be shortened so as to bring the nerve end-to-end rather than resort to grafting? He narrated a case which he observed at operation, in which the electrical test produced movements of the muscles in the ulnar distribution long before there was any sensory recovery. In this instance, the nerve which was being tested was exceedingly hard and board-like, so that while it seemed able to transmit impulses resulting in muscular movements, sensory impulses were not allowed to pass.

Mr. HARRY LITTLEWOOD, Vice-President of the Section, spoke of the work on the surgery of the nerves which had been carried on at the 2nd Northern General Hospital; some of it had been already recorded in the *Medical Record*, 1919. With regard to the observations requiring to be made on a patient after operation, he thought that outside observers should be asked to make these observations and give opinions on the work of the surgeon, because the surgeon could not himself give an unbiassed opinion on his own work. There might be some kind of accountant watching the work of the surgeon. If this were done, there would be fewer errors in observation. They knew by experience that some results of the union of divided nerves were sufficiently encouraging to enable them to go on operating, and patients themselves admitted that they were, on the whole, better off than without operation. Not enough stress was laid on improvement in function. Very soon after the nerves were brought end to end there was evident improvement in function which amounted really to improvement in the vascular supply. In the treatment of causalgia he strongly advocated early operative procedures. In regard to the question of nerve grafting, he thought that the arguments of Mr. Joyce in favour of lateral transplantation were very good; even if only one or two cases in which nerve grafting was employed could be shown to have benefited, the operation could only be regarded as of doubtful value. He was very glad that they had Professor Shore present at the meeting, and he hoped in the future for a closer association of the physiologists and the surgeons and also of the physicians and the surgeons. He pointed out that Dr. Shore's suggestion as to getting a portion of bone out so as to shorten the limb and enable the ends of a severed nerve to be brought together had already been considered.

Opener's Reply.

Mr. [illegible], in replying to the discussion, said that shortening of the bone was particularly applicable in the upper arm, and, in his judgement, it was a method of operating more suitable for attaining the object of bringing the nerve ends together than the introduction of a nerve graft. The whole question of nerve suture was related to [illegible]. There was no difficulty in overcoming the gross and mechanical question of suture, but they had to do more than simple suture; they had to endeavour to help the axis-cylinders to find the right course. For axis-cylinders to find their course through the graft was a more precarious matter than for them to find their way into a distal portion of the nerve. He thoroughly approved of the appointment of some impartial tribunal to investigate these cases, and pointed out that one had actually been in existence in London for the past eighteen months or more. One result of investigation by this tribunal was, that it found itself opposed to the alleged success of cases treated by grafting. On the other hand, some of his own friends in whom he believed, did themselves believe that they had obtained successful results from nerve grafting.

Mr. PERCY SARGENT (London) remarked that a man examining his own cases could not help being prejudiced in favour of seeing good results. He wished to point out, in regard to the question of nerve grafting, that those cases which had been grafted, and which had apparently shown some sign of returning function, had usually been examined with greater minuteness after the operation than before; in some cases examination before the operation really showed that axons had been getting through, and these probably accounted for some of the successes in nerve grafting. It had been proved experimentally that the longest distance through which axons could grow was 1 cm. to 2 cm., and he thought it was impossible, therefore, for axons to grow through 2 to 3 inches of nerve graft.

SECTION OF NEUROLOGY AND PSYCHIATRY.

HENRY HEAD, M.D., F.R.S., President.

DISCUSSION ON DEMENTIA PRAECOX AND ITS RELATION TO OTHER DISORDERS.

OPENING PAPER

BY

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DEMENTIA PRAECOX constitutes without doubt one of the most important problems in public health with which modern medicine is confronted. It is a disease so widespread, so prolonged in its course, and so devastating in its effects, that it is responsible for a considerable majority of the cases to be found in the chronic wards of our asylums. Nevertheless, our knowledge of this disease is still wofully inadequate, and its nature, causation, and even its existence as a definite entity, are still subjects of constant dispute between different schools of thought. The only point upon which general agreement can be found is, unfortunately, the absolute impotence of any method of treatment. This impotence is clearly dependent upon the lack of any certain knowledge concerning the nature and causation of dementia praecox, and were these latter problems solved we might reasonably hope that much could be done for prophylaxis, even if curative treatment should still be impossible.

The preliminary problems, to which an answer must be found before the questions of prevention and therapeutics can be satisfactorily approached, may be said to be three in number: first, To what extent is dementia praecox a definite entity? secondly, What is its nature and causation? and thirdly, What are its relations to other disorders? These are the questions to which, as I conceive it, attention should be mainly directed in the discussion which is to follow. The purpose of this introductory paper will be, not to furnish an answer to these questions, but to indicate the points at issue and the views which are held by various schools of thought regarding them.

To what Extent does Dementia Praecox Constitute a Definite Entity?

Although prior to the advent of Kraepelin, a number of clinical pictures met with mainly in adolescence and early adult life had been separated out from the mass of the psychoses, notably hebephrenia, katatonia, and Clouston's "insanity of adolescence," it is to Kraepelin that we owe the first clear formulation of dementia praecox as a definite disease.

He was led to this conception in pursuance of his attempt to classify mental disorders not merely according to the prominent symptoms which they might display, but into groups characterized by a definite course and outcome, a line of investigation which has marked one of the turning points of modern psychiatry. He observed, as Clouston had done, that a

> number of adolescent cases tended to progress to a well marked terminal state of mental enfeeblement, but he noted further that, although the clinical pictures presented by these cases in their earlier stages were in many respects very different from one another, yet it was possible to discern certain common features whose recognition would enable one to predict that an ultimate dementia was likely to occur. These features were chiefly a "weakening of the emotional activities which permanently form the mainsprings of volition," and "loss of the inner unity of the activities of intellect, emotion, and volition, in themselves and among one another." He therefore concluded that the clinical pictures thus characterized, however different they might be in other respects, were due to the same essential morbid process, and that it was justifiable to regard them as manifestations of a single definite disease, to which he gave the name of dementia praecox.

Since Kraepelin's conception was first formulated there has been much controversy as to its validity and value. For some time it was disputed whether any such entity could be separated out from the general mass of the psychoses, and although it may now be said that this question has been definitely answered in the affirmative, there is still the greatest uncertainty and divergence of opinion with regard to the delimitation and relationships of the disorder. This is clearly inevitable so long as the essential morbid process, whose existence Kraepelin assumes, remains undetermined. Numerous hypotheses, both pathological and psycho-pathological, have been put forward as to the nature of this essential process, but no one of them has yet received general acceptance. The psycho-pathological theory proposed by the Freudian school is precise and clear-cut, and for those who adhere to this point of view dementia praecox is a very definite and well marked entity, although its boundaries are probably not altogether identical with those suggested by Kraepelin. Unless this theory is accepted, however, the problem of the basic change in dementia praecox must be held to be still unsolved, for no really comprehensive and satisfying theory has yet been put forward from the pathological side. For the present, then, dementia praecox must stand or fall as a clinical and not as a pathological entity.

From this standpoint it must at least be admitted that there are a vast number of cases which present the characters and course defined by Kraepelin, and that they constitute an easily recognized clinical group. It seems impossible, however, to set any clear-cut boundaries to this group. All around the central kernel of typical cases we find cases shading gradually off into disease pictures whose relationships are uncertain, and which link up with other disorders of an altogether different character. Kraepelin's own views concerning the boundaries of dementia praecox have changed considerably, and the conclusions he has reached are, in the last edition of his textbook,[1] very cautiously and tentatively expressed. He frankly admits that it is quite possible that the borders of the disease are drawn at present in many directions too narrow, in others too wide. He has himself considerably reduced the area of dementia praecox by separating from it a group of cases which he formerly included in dementia paranoides, and to which he has now given the name of paraphrenia.

We may conclude, then, that dementia praecox has established its claim to be regarded as a clinical entity in the sense that it marks off a group of cases with notable similarities in their symptomatology, course, and outcome, although the borders of this group cannot be accurately defined. To what extent it can claim to be an entity in a more exact sense must depend upon the success with which a specific morbid process can be shown to underlie it. We may pass on, therefore, to consider the various hypotheses which have been put forward with regard to this latter point.

What is the Nature of the Essential Morbid Process in Dementia Praecox?

The views which have been expressed in answer to this all-important question fall into three groups: (1) Physiogenic theories, which maintain that dementia praecox is due to changes occurring in the bodily organism, and that the psychical phenomena are purely secondary and without causal significance; (2) psychogenic theories, which maintain that the essential causes are psychical in order, and that the physical changes are secondary; (3) theories which attempt to combine both these view-points.

The physiogenic theories are based on the indubitable fact that changes in the brain and other organs have been demonstrated to occur in dementia praecox, although there is no general agreement as to their precise nature and significance. So far as the histology of the brain is concerned, various phenomena have been described by different observers, but the changes almost universally found in cases of any duration consist in degenerations of the cortical cells, with glia proliferation. Mott[2] maintains that similar degenerative changes can be demonstrated in the basal ganglia and pons. It can hardly be claimed, however, that these findings are specific, because similar phenomena can be seen in other mental and organic brain diseases. Nevertheless, they clearly constitute a formidable obstacle to the acceptance of any purely psychogenic theory of dementia praecox.

Changes in other organs of the body have been described by various investigators, but in most cases there has been no strong ground for believing them to be other than accidental. Mott,[2] however, in a recent paper brings forward some observations which may prove to be of the greatest importance:

> In an examination of the testes and vesiculae seminales of twenty-two cases of dementia praecox he found evidence of marked atrophic changes, ranging from an alteration of the biochemical reaction of the heads of the spermatozoa to a complete regressive atrophy of all the seminiferous tubules, so that "the appearance of the organ as regards capacity for function in an adolescent was less than that observed in the decrepit dement of 86. Indeed, the testis of an old dement of 80 showed more microscopic evidences of virility than any one, even of the earliest cases, of dementia praecox." Similar retrogressive changes have been found in the ovaries of female patients. Mott considers that the atrophic phenomena in the reproductive organs are an expression of the same cause, premature senility or biochemical deficiency, as is responsible for the cerebral changes, and that "dementia praecox is dependent upon a progressive degeneration of the nucleus and the nucleo-protein basophil substances of the neurones, unattended by vascular or perivascular or meningeal changes, and dependent upon or associated with a chemical alteration of the nuclear substance."

The view that dementia praecox is to be ascribed to a degeneration of the cerebral neurones due to an initial insufficiency or instability arising from hereditary factors is widely held. Other hypotheses that have been proposed are that it is the result of a bacterial toxin, that it is an autointoxication, and that it is a disorder of the internal secretions of the sexual glands. The evidence produced in support of these various suggestions is not, however, of a very convincing character.

The first noteworthy attempt to interpret the phenomena of dementia praecox on the basis of a psychogenic theory was made by Freud[3] in 1896.

> In a paper published in that year he attempted to analyse a case which he described as one of paranoia, but which from internal evidence was clearly an example of paranoid dementia praecox. He showed that the symptoms could be regarded as the result of psychological mechanisms similar in kind to those he had found to exist in hysteria and the compulsion neurosis.

This thesis was developed further by Jung[5] in his work on the psychology of dementia praecox published in 1907.

> He confirmed Freud's view that the symptoms were due to the existence of repressed systems, to which he gave the name of complexes, and held that the patient's whole mental life became more and more concentrated in these complexes, with a consequent withdrawal from reality and loss of adaptation to the environment. At that time, however, he considered it an open question whether the complexes were actually the cause of the disorder, or whether the cause really consisted in some physical agent which produced a fixation and morbid growth in complexes already existing.

In his later views Jung[6] has diverged materially from Freud's standpoint.

> He maintains that the disturbances which occur in dementia praecox cannot be described in terms of sexual libido, and has developed in place of the latter the conception of a general psychic energy of which the sexual libido is only one mode of expression. Dementia praecox arises owing to a failure of adaptation to the actual environment and circumstances, and a consequent regression of the psychic energy to more primitive modes of adaptation. These more primitive modes are not merely infantile, but archaic, and resemble those which presumably occurred in the childhood of the race. The patient, in other words, finds it impossible to adapt himself to the actual world in which he has to live, and retires into an artificial world of his own built up of phantasies, in the construction of which archaic modes of thought play an important part.

Freud's conception of the development of the libido has undergone a noteworthy amplification in recent years, largely as the result of investigations into the psychology of dementia praecox.

This consists in the interpolation, prior to the appearance of "object-libido" (the attachment of the libido to other persons, commencing with the parents), of an earlier stage in which the libido is directed towards the individual's own personality. This earlier stage is termed the "narcisstic" stage, and is held by Freud to constitute a phase in the growth of every normal child. The "object-libido" is then developed at the expense of a portion of this narcisstic libido. In dementia praecox there is a persistence of, or a regression to, the narcisstic stage of development, the libido being withdrawn from its external object attachments and directed towards the patient's own personality.

In this way Freud explains, on the one hand, the apathy and withdrawal of interest from the external world characteristic of dementia praecox, and on the other hand, the grandiose delusional symptoms common in this condition. As an interesting further development of this conception, Freud regards many of the symptoms of dementia praecox as secondary and distorted attempts on the part of the mind to re-establish points of contact with the external world—that is to say, they are not immediately connected with the essential morbid process but are, as it were, misdirected efforts at self-cure.[4]

The theories which attempt to combine both physiogenic and psychogenic points of view fall into two groups. The first regard dementia praecox as a disease of essentially physical causation, dependent upon factors in the physical organism, whether these be degenerations, developmental anomalies, or intoxications. It is admitted that psychogenic factors play a part, but this is held to consist merely in the colouring of the symptoms in particular tints—that is to say, the disease process which determines the development and outcome of the disorder is the result of purely physical factors; but the particular delusions and other symptoms displayed are fashioned by psychogenic factors, possibly complexes, conflicts, and so forth, acting according to the mechanisms described by Freud. This theory derives some support from the analogy with general paralysis—a disease whose essential causation is clearly physical, but in which the particular mental symptoms displayed can often be traced to psychogenic factors.

In the second group of combined theories an attempt is made to take account of both physical and mental factors as actual causal agents, and we may perhaps hope that in a theory of this character a really comprehensive and satisfactory explanation of dementia praecox will ultimately be found. It is clearly necessary that due weight be attached to both the pathological and psychological facts, and unless this is done a one-sided and inadequate view must inevitably result. On the one hand, the indubitable pathological findings in cases of any standing, the incidence of heredity (which Rüdin claims to have a Mendelian distribution), the progressive and deteriorating course of the disease, so unlike the course observed in disorders known to be predominantly psychogenic in origin, all make it extremely difficult to accept any purely psychogenic theory of causation. On the other hand, it is equally clear that the psychological theories put forward by Freud and Jung, however much these may differ from one another in certain details, provide a satisfactory basis into which the facts of clinical observation can be accurately fitted, and offer an explanation of the disease more comprehensive and illuminating than any of the physiogenic theories yet proposed. It would seem, therefore, that any adequate formulation of dementia praecox must combine both the physiogenic and psychogenic points of view; that the strife as to an "either—or" must necessarily be sterile, and that the final solution will be found in a "both—and." The direction in which this solution may be sought will perhaps prove to be in the conception of a biological reaction, the adaptation or attempted adaptation of an individual with a certain make-up to the environment in which he has to live, and which is capable of being expressed in both physiological and psychological terms. Clearly such a conception is in accord with the psychological theories which have been reviewed, and it is not impossible to believe that the psychological reactions are the obverse of physiological reactions in which the pathological facts so far observed will be found to fall easily into their place. Freud's theory of the developments of the libido may obviously prove to be capable of expression in chemical and physiological terms, and we may perhaps venture to hope that endocrinology will ultimately provide facts which will enable a precise statement of this correlation to be made.

In the whole sphere of the psychoses and psychoneuroses the conception of biological reaction is tending to replace the old search for disease entities. It is questionable whether in mental disorders any such disease entities do or can exist, and it is more profitable to regard the patient as a psycho-physical organism reacting in one way or another to its environment according to the presence of certain factors. The "disorders" of psychiatry would then be names indicating these various types of reaction, and it would no longer occasion surprise or disappointment when it is found that these "disorders" shade one into another, and that no sharp line of demarcation can be made between them. In such a conception dementia praecox would take its place as a type of reaction to which many patients conform precisely and completely, and many others, who are not all to be found in asylums, to a lesser degree.

Relation of Dementia Praecox to other Disorders.

The view taken of the relation of dementia praecox to other disorders must obviously be largely dependent upon the position adopted with regard to the vexed questions discussed in the last section. The acceptance of a definite theory of causation would not only define the limits of the disease, but would also constitute the only basis on which relationships to other disorders could be satisfactorily determined. From the clinical standpoint, however, it is clear that there are a number of conditions which are either akin to dementia praecox in the similarity of the morbid processes involved and the clinical pictures displayed, or which are connected to dementia praecox by a chain of cases showing a gradual transition from one to the other. The most important of these conditions are mental deficiency, including imbecility and idiocy, the psychoneuroses, including hysteria and the compulsion neurosis, manic-depressive insanity, Meynert's amentia (exhaustion psychoses, confusional psychoses), paranoia, and Kraepelin's recently constructed conception of paraphrenia. A few words only will be devoted to each of these in this introductory address, in the hope of indicating points which may be taken up in the subsequent discussion.

Mental deficiency, including imbecility and idiocy, is related to dementia praecox in that cases are not uncommonly observed in which an initial state of weakmindedness subsequently undergoes a degenerative process and passes over into a typical condition of dementia praecox. Kraepelin terms these cases "engrafted hebephrenia," and they lend some support to the view that dementia praecox is a degenerative condition due to an initial inadequacy and instability of the nervous and other systems. Kraepelin has also put forward the hypothesis that certain cases, apparently of idiocy, in which mannerisms and stereotypies occur are in reality instances of dementia praecox appearing very early in life. Whatever relationship may exist, however, it is clear that the two disorders are radically distinguished, in that mental deficiency is essentially a stable condition, whereas dementia praecox is essentially a progressive or rather regressive process.

The kinship of dementia praecox to the psychoneuroses is a subject of great interest and importance. Clinically many symptoms occur which are common to both groups, notably those which are found both in hysteria and in katatonia. The psychological investigations of Freud and Jung have shown that not only does this clinical similarity exist, but that the psychological mechanisms involved are closely allied in the two cases.

The difference for Freud lies in the fact that the psychoneuroses are "transference neuroses," dependent upon disturbances in the fixation of the object-libido, whereas in dementia praecox there is a loss of object-libido due to the development of a narcisstic reaction. The same essential difference is regarded by Jung as a tendency towards excessive introversion in place of the extroversion characterizing the hysteric. The clinical fact upon which this distinction is based is, of course, universally admitted and is described by Kraepelin as a lowering of the susceptibility of the emotional life in contrast to the heightened susceptibility of hysteria.

Jones has developed the view that in both the psychoses and psychoneuroses we have to deal with various types of reaction to a fundamentally allied group of difficulties—namely, intrapsychical conflicts of a biological nature, and that in both an introversion or turning away of interest from the external world is the most characteristic feature. He suggests that the distinction between the two lies in the degree to which this introversion takes place; that hysteria and dementia praecox "represent merely different stages and varieties of a profound introversion rather than two entirely distinct disease processes." He thinks it possible, moreover, that manic-depressive insanity and certain of the epilepsies may be regarded as representing intermediary stages in this introversion. Jones's paper on this subject was written in 1913, however, and it is not unlikely that he would now modify his views in the light of Freud's recent work on the significance of narcissism.

It is difficult to discuss the relation of dementia praecox to Janet's psychasthenia,[8] because the existence and delimitation of psychasthenia has been much disputed, and many of the cases which Janet described are regarded by the Freud school as cases of dementia praecox. This mere fact, however, is an interesting demonstration of the kinship which must exist between the psychoneuroses and dementia praecox.

The relationship between dementia praecox and manic-depressive insanity is a much disputed problem. When Kraepelin first developed the conception of dementia praecox the essence of his action was to subdivide Clouston's adolescent insanity into dementia praecox and manic-depressive insanity. His views concerning the delimitation between these two entities have varied considerably, however, and he has tended latterly to enlarge the manic-depressive group at the expense of the dementia praecox group. Clinically, although the typical examples of the two disorders are clearly very different, there are a large number of cases presenting features common to both in which a diagnosis is practically impossible. Considerable doubt has been expressed as to whether Kraepelin's distinction is really fundamental. Jones's view that manic-depressive insanity may perhaps be regarded merely as differing in degree from dementia praecox has been mentioned above.

Similar difficulties exist in the case of amentia (confusional insanity). Kraepelin considers that many of the cases ascribed to this group are in reality examples of dementia praecox, and that one can only properly differentiate the group of cases due to the toxins of infectious disease.

The distinction between paranoia and dementia praecox is another question upon which very divergent opinions have been expressed, but the tendency now is to regard the two conditions as differing in degree rather than in kind.

Kraepelin has recently separated off from dementia praecox a number of cases which he formerly regarded as paranoid forms of that disease, and has given to them the name of paraphrenia. The main distinguishing feature of this group is the slight development of the disorders of emotion and volition, in conjunction with marked intellectual disturbances.

It is clear that the delimitation of paraphrenia on the one hand from paranoia, and on the other from dementia praecox, must necessarily be a somewhat arbitrary matter, and Kraepelin's new conception would seem really to provide further evidence of an essential unity in all three conditions.

If the hypothesis proposed in the preceding section, that dementia praecox and those other disorders are types of biological reaction rather than definite pathological entities, should ultimately be established, then the problem of the relationship existing between them will clearly be regarded from a different angle. Just as the old attempts to divide mental disorders into diseases based on the clinical pictures presented were replaced by Kraepelin's division into diseases distinguished by their course and development, so will this again be replaced by the determination of the main reactions displayed by the individual case, and of the factors upon which these reactions depend. We shall no longer be disturbed by the fact that cases will not fit into pigeon-holes, because we shall expect to find mixed reactions. Dementia praecox and other names will merely indicate the predominance in a case of a particular type of reaction.

The psychological schools have already moved far in this direction, and the need of the moment would seem to be a correlation of the facts elicited by these schools with the findings of the anatomist and the chemist, in the hope that from this correlation there will ultimately be evolved a formula which will take due account of both the psychological and physical material, and which will be capable of expression in terms of biological reaction.

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DISCUSSION.

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THERE is no proof at present that the numerous and very varied cases commonly grouped together under the name of dementia praecox are due to one and the same disease process, but such a hypothesis is certainly a very plausible one. The conception of this disease entity is based on what has been noticed in regard to the course the cases run, and is therefore of great help in prognosis. It bears close analogy to that which discovered general paralysis. For some years before that disease was a generally acknowledged entity certain types of mental cases had been noticed to be commonly associated with paralysis.

In mental hospitals we are always on the look-out for cases of dementia praecox, but we do not at present place them under that name in our official records. The name most resembling it is primary dementia, and under this heading we place many of our hebephrenics and a few of our katatonics and paranoiacs. The other cases of dementia praecox of recent origin are to be found under a variety of headings, such as melancholia, mania, stupor, confusional insanity, and delusional insanity, both systematized and non-systematized. The greater number of cases of dementia praecox which have existed for any considerable time are to be found under secondary dementia.

Although the entity is a useful one to recognize, we would like to emphasize some of the objections there are to the name.

Some years ago I began in my official records to call all the hebephrencis and katatonics I could recognize primary dementia, our equivalent for dementia praecox. I soon found that I was getting a large number of recoveries among them, some being, so far as I could tell, perfect recoveries. As the name "dementia" usually denotes a permanent loss of function, it seemed absurd to write down so many cases of dementia as recovered. I therefore ceased to so classify such cases unless the mental weakness was very obvious and I thought likely to be permanent.

Again, as Professor Kraepelin points out, neither dementia nor precocity is an essential feature, and therefore the name is misleading. My own chief objection to the name is the pessimism it involves. It is a principle with most of us to cultivate optimism and try to radiate it out to our patients. But to label an acute case as one which is certain to end in childishness or mere animal existence is most discouraging to both physician and friends. Moreover, such an outlook is not fully warranted by our experience. If we could only find a name which denotes merely a disorder of personality with perhaps a tendency to destroy the brain cells, we could use it freely without committing ourselves to a necessarily hopeless prognosis.

The second question Dr. Hart raised was, What is the nature and causation of dementia praecox? Of the numerous theories indicated by Dr. Hart, I would say three of the combined theories are most in favour at the present time. They are an autointoxication theory, an insufficiency or degenerative theory, and a psychogenic theory. The first supposes an unknown toxin manufactured in the body, and possibly due in many cases to faulty action of the sexual glands. This is the theory most favoured by Kraepelin. The second theory supposes that the individual nervous system has sufficient vital force to last a short life but no longer, and therefore gives way under comparatively trivial adverse conditions. This theory has been very largely held in the past, and quite well suits the rapid cases of simple dementia. It hardly suits the acute recoverable cases.

With either of these theories the indications of dementia, such as loss of emotional and volitional activity and loss of unity and proper combination in the mind processes, are looked on as necessary or fundamental, whereas the hallucinations, delusions, excitement, stupor, feelings of compulsion, impulsiveness, mannerisms, automatic obedience, negativism, stereotypy, etc., are looked on as mostly non-essential, and dependent on the individual mental constitution and its peculiar modes of reaction.

The third theory, based on the teaching of Freud and Jung, supposes the primary cause to be some mental force analogous to that responsible for hysteria, probably a series of complexes, which set up a vicious circle of mental and bodily disorders culminating in more or less permanent loss of cerebral function. This theory also supposes a physical constitution or temperament which exists in some degree in most people, but in a marked degree in predisposed persons. This theory seems to be rather scorned by Kraepelin, on the ground that he cannot conceive how complexes can have such far-reaching results and produce alterations in structure. I think, however, that it is continually getting more adherents, and is the most likely theory to lead to fresh knowledge of the disease.

The ideas and explanations suggested by Freud and Jung which Dr. Hart has set forth are most interesting, indeed fascinating, although Kraepelin would perhaps term them fanciful. I refer especially to the ideas of archaic psychical reactions, narcisstic libido, and excessive introversion.

The third question Dr. Hart raised was, What are the relations of dementia praecox to other disorders? In this connexion it is noteworthy that before admission cases of dementia praecox have often been mistaken for hysteria, neurasthenia, or criminality, and that for some time after admission they are often mistaken for imbecility, manic-depressive disease, confusional psychoses, other delusional states, or even occasionally for epilepsy or general paralysis. Also, it is highly probable that large numbers of the vagrant and criminal class are really mild cases of dementia praecox.

In many mental hospitals there is one medical officer who devotes himself entirely, or almost entirely, to pathological investigations. I am inclined to think we ought similarly to set apart one medical officer almost entirely for psychological investigations, who could give his results to the medical officers responsible for treatment.

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Dr. Bernard Hart has so clearly set out the present position of our knowledge with regard to dementia praecox that there is only necessity to mention one or two points and state where one's personal views tend. Because of the lack of knowledge of definite etiological factors in the production of dementia praecox, the average psychiatrist has been in the unscientific position of endeavouring to define what he means by the term by giving a group of certain symptoms, and, again, when he meets these symptoms he classifies them under the heading of dementia praecox. Such circular methods of dealing with mental disorders have been too rife, and can only be satisfactory to the continent whose lack of interest is such that he has no desire to seek further for pathological causation. In the light of modern psychopathology the problems as to what extent dementia praecox constitutes a definite entity, and of its relation to other mental disorders, go very much hand in hand. Though we find what we may term typical textbook types of dementia praecox constantly, we almost as often encounter anomalous cases which border on and link up with other forms of abnormal mental reaction. In Kraepelin's last work his different types and the separation of a special paraphrenic group, though the product of wonderful observation and clinical acumen, seem to savour greatly of artificiality.

It has been almost entirely through modern psychoanalytic work that abnormal mental reactions have been traced towards their basic roots, and the more this has been done, the more have similar psychological mechanisms been found to have been operative, though varying in degree and modified by other factors. The presence or absence of an hallucination should not tend to create different disease entities, as it is only according to what is dissociated from the personal trend of thought that determines whether it becomes an hallucination or a delusion. In the former the content is an idea which the personality will not accept; in the latter it is accepted, though emanating from without the personal consciousness. The analytic study of paranoia, paraphrenia, and paranoid dementia has tended to show that they are only modifications of the same morbid processes, and it is feasible to assume that further investigation will demonstrate a more intimate connexion with other so-called functional psychoses and the psycho-neuroses. If dementia praecox and hysteria have certain common grounds, my war experience especially has convinced me that there is no hard-and-fast line to be drawn between hysteria and many epilepsies. The work done by Pierce Clark and MacCurdy amply confirms this. By many the chronic alcoholic psychoses are regarded as due to abnormal mental processes of a praecox type, but with alcoholic complications. This, again, tends to unify our psychiatric conceptions. Mental deficiency hardly comes into this category, though careless observers may fail to distinguish between it and dementia praecox, mistaking the faults of inattention, inaccessibility, and poor volition for defects in intelligence—an error which was extremely frequent during the late war. Though, then, dementia praecox may usefully be regarded as a clinical entity, pathologically it does not seem so, and in the near future we shall probably find this confirmed. It seems to me that the bulk of logical evidence at hand is in favour of its psychogenic origin, though, as Dr. Hart says, there are factors which should not allow us to lightly rule out any organic side to the question. The relations existing between mind and body have always hitherto been a bugaboo in mental medicine, but, largely through the study of endocrinology, we are seeing that there is always an integration of the two at some level, and Kempf's work on the autonomic system and the personality has linked up still closer the relations existing between the emotions and their physical correlates.

The analogy between dementia praecox and general paresis seems to give some support to the physiogenic point of view, but in the latter disease the delusional ideas do not have the same special meaning to the individual as on analysis they are found to have in dementia praecox, though of course they in some way relate to the personality. Perhaps one tends to be too sceptical as to the meaning of the morbid histological changes found by some observers, but even if they be accepted the relation of cause and effect is still highly unsatisfactory, though Kraepelin would explain many praecox symptoms on the basis of Alzheimer's findings. Dr. Hart has not brought up the important point of recovery from dementia praecox, nor has he mentioned that psychiatrists of repute report cure through analytic treatment. There seems no doubt that absolute recoveries do take place, and it is difficult to conceive that this could be so if important neuronic degeneration had been the causative agent. Some opponents of the psychogenic theory ask for proof of the functional element by means of a therapeutic test. This, perhaps, is hardly fair for the fully developed psychosis, but evidence may come about through prophylaxis. The deteriorating cause of the disease has been dwelt on as an argument in favour of a physiogenic origin, but one must bear in mind that the deterioration is so often more seeming than real, and that it may only indicate a progressive withdrawal of external interest. In so-called epileptic dementia MacCurdy has shown this to be so, and by successfully re-establishing interest he states that he has eradicated the demential symptoms. I lean, then, towards the view that the essential morbid process in dementia praecox is mainly psychological in origin, and involves through mental conflict a shutting out of reality and a regression to more primitive modes of thought and action. It is in the depth of the regression, the nature of the repression, and the type of dissociation that the various so-called functional psychoses will vary in their symptomatic picture. As Dr. Hart has said, it is probably in a wide biological conception of mental disorder that we shall find our researches most fruitful.

Dr. Bedford Pierce (York) stated that little more could be done to arrest the progress of dementia praecox than was possible when Haslam described the condition in 1807. He quoted extracts from Haslam's striking clinical picture which brings out the characteristic loss of interest in the affairs of life, the emotional episodes, the impulses, and the progress to low-grade dementia. Although modern psychology had done much to explain the mental mechanism of the disorder, it failed to explain why A regresses and B progresses; why A pulls down the blinds, closes the shutters, and cares for no one; why B opens the windows of his soul and rejoices in human intercourse. He mentioned two surprising recoveries which appeared to occur spontaneously, and said the possibility of this had to be remembered when the value of new methods of treatment was estimated. He agreed with Dr. Hart in his suggestion that there might be both physiological and psychogenic factors in the production of the disease, but he could hardly follow him in his suggestion that these might be different aspects of the same process. In the mental changes produced by thyroid insufficiency the psychogenic factors were clearly of small consequence. He could not but think that the physiologist who worked out the consequences of disordered function of the sexual and assessory sexual glands would do more to solve the problem of dementia praecox than elaborate investigation of the mental make-up of shut-in personalities by psychological methods.

Dr. H. Devine (Portsmouth) considered that dementia praecox could not be regarded as a definite entity, on the following grounds: (1) The absence of any specific bacteriological or serological tests which aid in the recognition of the disorder. (2) The absence of any definite *post-mortem* criteria peculiar to the disorder. (3) The fact that there are no definite signs or symptoms which mark off dementia praecox from closely allied forms of mental disorder, such as paranoia or paraphrenia. (4) The fact that the characteristic symptoms of dementia praecox are not necessarily significant of a deteriorating psychosis. He suggested that the substitution of the term "schizophrenia" for dementia praecox would be advantageous, as such a term would not of necessity carry with it an unfavourable prognosis. In reference to causation the view was developed that the symptoms of dementia praecox were to be regarded as a constructive effort on the part of a biologically inferior individual to make an adjustment to his internal difficulties. Analysis of cases showed that the defect of adaptation in these cases was mainly in the sexual sphere.

Dr. David Blair (Lancaster) desired to support the futility of the label "dementia praecox." Either types of mental disease were included under the title "dementia praecox" which should not, or the disease might be recovered from. He referred to a case which presented well marked katatonic signs for over five years. The patient did not respond to stimuli of pain, heat, or cold; a pin could be inserted in any part of the body or teeth pulled out without response; there were absent knee-jerks and foot-drop, with constant nervous movements of the eyeballs resembling nystagmus. The patient had to be fed for four years, for two of these by the nasal tube. All these signs cleared away, and the patient had been restored to her normal health for quite six years.

Dr. W. H. R. Rivers, F.R.S. (Cambridge), objected to different theories of origin being regarded as opposed to one another, and believed that every case of dementia praecox, as of other mental disorders, should be regarded from three points of view—the physical, the psychological, and the biological. Of these three aspects, he regarded the psychological as the most important, because it opened the possibility of prevention. It was generally acknowledged that the subjects of dementia praecox showed special mental tendencies in childhood, and it was only through psychological study that these tendencies could be understood and recognized. He hoped that the time would come when a tendency to dementia praecox would be recognized in childhood and education adjusted accordingly.

Dr. Helen Boyle (Hove) confirmed what several speakers had said, that quite a number of patients whose illness was indistinguishable from dementia praecox did recover; that an entire change of surroundings and personnel was the factor which appeared the most frequently beneficial, and this quite apart from any definite psychological treatment. Individual attention and the exciting of interest in the outside world was undoubtedly valuable. With regard to early cases, she had at present a small child of 5 in the Lady Chichester Hospital who, if she were older, would be called a dementia praecox.

Dr. David Rice (Norwich) agreed that dementia praecox was a very bad term. To him the word "dementia" implied an actual and irreparable loss of some attribute of mind, and he thought it wrong to use the same term to label very varying groups of symptoms, and that the entity had not been thoroughly established. In his view those who were working under the Mental Deficiency Act ought to be able in time to make clinical observations which would teach them something about the connexion, if any, between mental deficiency and what was now called dementia praecox, so that they might at length have a picture of the subject from birth to adolescence. With regard to Sir Frederick Mott's seeming attribution of degeneration of the sexual glands as the cause of dementia praecox, Dr. Rice did not think this went far enough back, and the question he wished to put was, What brought about those degenerative changes? Whence came the blood change which caused them? It seemed to him that we must go back to the digestive system and ascertain if there was intestinal autointoxication.

Dr. Sanders pointed out how the discussion was viewed by the inexperienced. Most speakers agreed that many patients suffering from dementia praecox recovered, which they ought not to do if the disease were due to gross degenerative changes. On the other hand, Sir Frederick Mott had satisfactorily shown that there were definite changes in neurons and testes. It must be remembered that his investigations related to very late stages of the disease, and did not preclude the possibility of recovery in cases which had not progressed to such gross lesions; and it would be useful if Dr. Bernard Hart in his reply would discuss this view in connexion with his combined physio-psychic hypothesis. There could be little doubt as to the value in the future of the school doctor, and the discussions in that Section proved that we were again, as usual, learning our duty to revert to the practice of Hippocrates and devote very careful observation of our patients from their first appearance.

Dr. W. D. Wilkins (Cheddleton, Staffs) said that it was difficult to correlate the degenerative changes found by Sir Frederick Mott with the occurrence of cases of recovery, and it would be interesting to hear whether he considered that these changes were absolutely incapable of repair. It had occurred to him that the functions of the disordered neurons might be taken over by other neurons which had not yet been affected, as occurred in cases of re-education of the brain after gross lesions. With regard to the name—which they were all agreed was a bad one—the difficulty was accentuated by the official nomenclature of the Board of Control. If pressure could be brought to bear upon the Board to alter the name "primary dementia" to a more satisfactory term it would be of great service.

Dr. W. A. Potts (Birmingham) said that it had been suggested in the discussion that dementia praecox might develop on the same lines as congenital mental defect, the two conditions simply being two manifestations of the same essential disorder. If this were so, and it was quite possible, then the cause must often be a toxic one in early fetal life. It was thought now that congenital mental defect was due to the absence of sensitizers, which stimulated development, especially development of the brain. These sensitizers came from the endocrine glands. For instance, in anencephalic fetuses an absence of the cortex of the adrenal gland had often been found. The failure of the endocrine glands was due to a toxin, such as that associated with an attack of influenza of the mother very early in pregnancy. He had been able to trace such a cause in many cases of mental defect. The importance of such infections had been established by the researches of Drs. Orr and Rows. Great differences might be postulated in the damage done by the toxins to the endocrine glands. In extreme cases it might be so great that mental defect was obvious from birth or a very early age. In the less severe there might merely be poor function of the endocrine glands, which might subsequently be aggravated by psychic trauma or conflict, or by other toxins. In dementia praecox there seemed to be both physical and psychic factors. If this idea of the origin were correct, we must look for prevention, not to the school doctor, but to the ante-natal clinic.

POISONING BY ARSINE.

BY

M. BANNISTER, M.D.LOND.,

HONORARY PHYSICIAN TO THE BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.

IN the BRITISH MEDICAL JOURNAL of June 19th, 1920, Dr. T. H. Wignall described a series of cases of non-fatal poisoning by arseniuretted hydrogen (AsH₃; arsine) occurring during the production of hydrogen gas and the reducing of certain benzene derivatives. Rambousek states that English factory inspectors reported in 1906 three cases occurring in an electrolytic process, and in 1907 two cases—one in a chemist who was separating bismuth from a solution of bismuth chloride in hydrochloric acid, and the other (fatal) in a man who had cleaned out a vitriol tank.

It may be interesting to record a further fatal case from inhalation of the same gas, produced during the manufacture of zinc chloride by treating in stone tanks or "becks," "zinc ashes" and "flux skimmings," residues in the zinc galvanizing process, with commercial hydrochloric acid. Gases are given off freely, and the men are instructed to go away from the beck as soon as the charge has been emptied into it; they are also provided with masks, but state that they do not find them of much use and rarely wear them. When the evolution of gas lessens, more material is thrown in, and towards the end of the process the becks are stirred with long iron bars until the neutralization is complete. In addition to the hydrogen, it is evident from the smell that sulphurous vapours come off, and the following case shows that arsine is also evolved in considerable quantity:

Case History.

[illegible] on the morning of May 11th, when shovelling [illegible] a large beck, complained that he did not feel [illegible]. He had been observed leaning on his spade near the beck [illegible] at once. When he went home at [illegible] complained of severe pain in the stomach and of [illegible]. Dr. T. W. Taylor saw him late that night. [illegible] of the ear, lips, hands, and feet. [illegible] of breath which seemed to [illegible] upper abdomen. The next morning the [illegible] and of a peculiar [illegible]. The eyes were prominent and [illegible] congested. He [illegible] Respiration was [illegible] right hypochondrium, was [illegible] during the day. [illegible] low delirium, with complete sup[illegible]

[illegible]

[illegible]

adrenals were apparently normal; the bladder quite empty. The kidneys were enlarged (right 8¾ oz., left 7¼ oz.), and on section dark purple-brown. The perinephritic tissues were deeply congested. The spleen weighed 7¾ oz., and was of a deep red-brown colour. The meningeal vessels were rather full, and there was a little clear fluid under the membranes.

Chemical Analysis.

I sent portions of the stomach and its contents, liver and kidney, and some hair from the head, to the Manchester University Public Health Laboratory, and Dr. Henry, who represented the Home Office, obtained and caused to be examined samples of the materials used in the manufacture of zinc chloride. The report is as follows:

> The hair contained 5,000 millimilligrams of As_2O_3 per 100 grams; the kidney, 1,000; the stomach, 500; and the liver, 800.
>
> As the liver weighed 2,246 grams, it had an As_2O_3 content of 4,537 mmg. On analysing the materials used, it was found that the commercial hydrochloric acid contained 10,000 mmg. per 100 grams; the zinc ashes, [illegible],000; and the flux skimmings, 15,000. On heating the last named with the hydrochloric acid, a mixture of hydrogen, arsine and hydrogen sulphide was evolved; two cubic inches of arsine is stated to be sufficient to cause death.

The extremely dangerous character of the gas is shown by the fact that the man apparently absorbed a fatal dose before he felt any inconvenience, at any rate not enough to make him move away. Another point of interest is that up to this illness he was stated to have had excellent health, never losing a day's work, yet the heart, liver, and kidneys were all considerably over the normal weight. On section they had the appearance of having been in a hardening fluid, and no blood could be squeezed from them. The very striking light brown colour of the skin, so different from the ordinary jaundice, is also noteworthy.

This is the first fatal case at the chemical works at which this man was employed. I wish to express my indebtedness to my colleague, Dr. Taylor, for permitting me to publish this case, and to Mr. H. Heap, of the Manchester University Public Health Laboratory, for his careful analyses of the material.

A CASE OF ERYSIPELAS TERMINATING IN ACUTE THYROIDITIS.

BY

L. M. WEEKS, M.C., M.A., M.B., B.CH.CANTAB.,

NEWCASTLE ON TYNE.

ACUTE thyroiditis is a rare condition, but is sometimes associated with infectious diseases such as erysipelas and septicaemia, as explained by McCarrison in his book on *The Thyroid Gland*, in 1917. The details of the following case may therefore be of interest:

Mrs. S., aged about 46, married, with four children, had a swelling in the right lobe of the thyroid since the last confinement, about ten years ago. It had caused no inconvenience, but she had been attending a doctor for some time with [illegible] results. On September 23rd, 1919, she suddenly developed erysipelas of the left side of face, scalp, and neck. She was seen by Dr. Dale on September [illegible]th, and was transferred to me on September 30th. At that time the patient was slightly delirious; the temperature was 105°, the pulse 120, and there was marked erysipelas of the left side of the face and scalp and a [illegible] swelling of the neck. Dr. Beattie was called into consultation on October 1st, and it was decided to continue fomentations to the neck, ichthyol ointment to the scalp and [illegible] a mixture of quinine and arsenic by the mouth. Anti-streptococcic serum was [illegible].

The [illegible] gradually subsided in six days, but immediately afterwards commenced on the right side, the temperature rising to 104°. The same treatment was carried out, and the temperature became normal on October 16th.

[illegible] afterwards small patches of erysipelas appeared on the right buttock, a hard painful, deep-seated swelling could be felt in the gluteal muscles, and the temperature rose to 103°. [illegible] was obtained, and with fomentations the swelling disappeared, to be followed two days later by the same condition in the left buttock, the temperature rising to [illegible] followed the same course, all signs disappearing by November 2nd.

On November [illegible]th she complained of pain and stiffness in the right side of the neck, and the temperature rose to 101°. The following day the swelling in the thyroid was much larger and very tender and hard; it was adherent to the sternomastoid [illegible] and overlapped the [illegible]. There was pain on [illegible] and depression of the chin on the sternum on [illegible] with marked limitation of chin elevation. On November [illegible]th the patient was [illegible], the swelling was fixed to the skin and fluctuation could be felt. Mr. Richardson was [illegible] and pus drawn off. An incision was made and a cupful of pus evacuated, which on examination proved to be a pure growth of streptococcus. The patient made a rapid recovery, but as the sinus would not close Mr. Richardson opened and scraped it, and it eventually healed on February 10th.

During this time the patient was showing increasing signs of myxoedema. The hair fell out so that a wig had to be worn, the body surface became dry, and she easily felt the cold; the pulse was slow and mental depression was present. These signs and the original swelling all disappeared when the sinus closed; marked drawing up of the scar on swallowing was noticed. There must have been a small focus left, for on July 26th she had a rise of temperature and complained of stiffness and swelling over the scar; two days after it was opened, the pus coming away still being pure streptococcus. A vaccine is now being used with the hope of increasing her resistance.

This case is clearly one which, commencing as an erysipelas, developed into a septicaemia and terminated as an acute thyroiditis. Each attack was milder than the preceeding one, showing that some immunity was developing. However, I consider in the light of what occurred that had a blood examination been made in the early stages of the illness, an injection of antistreptococcic serum might have avoided the septicaemia and acute thyroiditis.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

HEREDITARY SPASTIC PARAPLEGIA WITH ATAXIA AND MENTAL DEFECT.

THE following are some observations on a family presenting this condition.

The family consisted, in order of birth, of a daughter, M. A., a son, W., and two daughters, M. E. and E. A. There were no other children, and all four were affected. M. A. died in 1905, aged 22; W. died in 1915, aged 27. M. E. and E. A. are alive, aged 28 and 23 respectively. Both parents are alive, aged 60 years, and are unaffected. All the children were born seemingly healthy and intelligent, and went to school in due course, where they learned to read and write. The first sign of any abnormality appeared between the ages of 7 and 8 years, when they were noticed to stagger in walking. This defect progressed, and in a short time they were unable to attend school. The history is clear that in all the onset occurred in the same manner, and at approximately the same age. The two survivors, M. E. and E. A., present practically the same signs, so that one description will serve for both.

Mentality.—Expression vacant. Speech very slow, and articulation clumsy. Can answer simple questions, such as name and address, and can repeat alphabet, but cannot read. Able to form some of the letters in their names in slow, tremulous writing.

Eyes.—Double internal strabismus, lateral nystagmus; pupil reflexes normal.

Reflexes.—Greatly increased knee-jerks, ankle clonus, Achilles and triceps jerks. Babinski's extensor response in left foot of E. A.

Feet.—No marked deformity, slight tendency to pes cavus and talipes varus.

Gait.—On walking, the toes drag and the feet are spread out, but they cannot walk more than a yard without holding on. They often fall and hurt themselves, but there are no fits. With eyes open, they are unable to stand without swaying, and if the eyes are closed they tend to fall immediately.

Tremors.—Slight intentional tremors.

Menstruation.—Both commenced menstruation at 13, but after three "periods" the flow ceased completely, except in E. A., who had a slight "show" in April, 1919.

The palate in both is well formed, and there is no spinal curvature.

Although the condition itself is well known, and is believed to be allied to Friedreich's ataxia, yet its hereditary origin is difficult to elicit, and this case presents no exceptions. As stated above, both parents are alive and unaffected. On the mother's side, no abnormality can be traced. The father is the illegitimate son of a woman who was an inmate of Wigan Workhouse owing to blindness following an accident to her eyes at a mill, and of a man who was an "invalid" in the workhouse. The nature of this invalidity is not known, but it is known that he left Wigan and died in Preston Workhouse Infirmary, not long after this son was born. As this man died in 1860 or 1859, it is hardly likely that the records of either Wigan or Preston Workhouses would reveal much as to whether he suffered from a chronic degenerative disease of the central nervous system or not. What is certain is that this man suffered from some affection which made him a chronic invalid in a workhouse infirmary.

Now, the woman who gave birth to this illegitimate son—the father of the persons affected and described in this note—was herself apparently free from any transmissible defect, because before becoming blind through an accident, she gave birth to another illegitimate son by a different father, and this son is still alive, and has a healthy family of four children. This reproductive test clears the woman of transmitting the defect, and leaves it to be inferred that the only traceable origin would presumably lie with the invalid grandfather, who through the medium of his unaffected son passed it on to his grandchildren.

Although the evidence as regards heredity is not quite clear, yet it would be still more fallacious to presume either syphilis or alcoholism in the parents, of which there is no evidence at all.

Warrington. J. S. MANSON, M.D.

A CASE OF LOBAR PNEUMONIA ACCOMPANIED BY ACUTE APPENDICITIS.

THE following case shows that acute abdominal pain accompanying lobar pneumonia may sometimes be due to a simultaneous attack of acute appendicitis. The textbooks so often warn the student to distinguish carefully between the two diseases, that it is well to remember that they may in rare cases coexist:

M. S., aged 5 years, was under my care for an attack of bronchitis when on April 26th, 1920, I was called to see her owing to the onset of acute pain in the abdomen. On arrival I found her in great pain, having rigidity of both recti and being very intolerant to examination. Her temperature was 101.6° and her pulse 100; respirations were 36. Examination of the chest showed dullness on percussion at the base of the right lung, with inspiratory crepitations. Her face was symmetrically flushed and the tongue coated with a brownish fur. She had vomited once. On the following day there were unmistakable signs of a right basal lobar pneumonia, and the temperature chart for the next few days was typical of that disease. The abdominal pain gradually subsided, but a week later there were still localized pain and rigidity in the right iliac fossa. The temperature remained above normal, and became oscillating in character; the pulse varied from 90 to 100. She was removed to the Isle of Wight County Hospital for observation on May 5th. The temperature and pulse became normal, but even after all signs of consolidation of the lung had disappeared there remained still slight tenderness and resistance in the appendix region. On May 17th appendicectomy was performed by Dr. Turner, assisted by Dr. Pridmore. The appendix was found to be inflamed: the tip had sloughed off, and a concretion was found in the peritoneal cavity. Numerous adhesions in the appendicular and caecal regions made removal of the appendix difficult; no abscess existed round the concretion. The child made an uninterrupted recovery, and is now quite well.

It is remarkable that in spite of the acuteness of the appendicitis (as shown by necrosis of the tip of the organ) no abscess was found at operation. There was no history of a previous attack of abdominal pain. The question arises whether the two inflammatory processes arose simultaneously from a common septic focus, or whether one was secondary to the other. I am indebted to Dr. Turner for his courtesy in supplying me with details of the operation, and to Dr. Pridmore (in whose practice the case occurred) for his assistance and advice.

Ryde, I.W. L. FIRMAN-EDWARDS, M.B., B.Ch.

INFLAMMABLE GAS AS A PRODUCT OF FERMENTATION IN MALIGNANT DISEASE OF THE STOMACH.

As there are but few recorded cases of this nature, I think the following is worthy of being added to the list and may prove of interest to readers of the JOURNAL.

A middle-aged man had suffered for three weeks from symptoms of indigestion, and complained of foul eructations of wind, to which he was becoming very sensitive. He had not suffered from vomiting or pain, but had lost appetite and weight, and his bowels were confined. His abdomen was distended and "ballooned." I suspected the presence of tumour formation, but this was not palpable. One evening after supper when lighting his pipe he expelled a quantity of wind, which, much to his alarm, caught fire and singed his eyebrows and moustache. The eructed gas was not always inflammable, but on two occasions I was fortunate in seeing its inflammability demonstrated. The gas burned with a pale blue luminous flame and an explosive report; it was probably marsh gas. With the subsidence of fermentation under treatment a tumour of the stomach became palpable, from which he died a few months later.

Glasgow. W. H. STIRLING ARMSTRONG, M.B., Ch.B.

Reviews.

THE PROFESSIONS IN A SOCIALIST COMMONWEALTH.

MR. AND MRS. SIDNEY WEBB have published a book entitled *A Constitution for the Socialist Commonwealth of Great Britain*,[1] which is a presentation of the case for industrial socialism, its consequences being displayed in a scheme for a new constitution. The first object in view is the abolition of capitalism and its replacement by State and municipal production and distribution. The scheme proposes two parliaments—a political parliament concerned with external relations and with justice, and a social parliament to exercise national control over the nation's economic and social activities. It, and not the political parliament, would be the national financial authority, fixing prices, making taxes, if any, and controlling expenditure. It would do its work through a large number of special standing committees, with a staff for administration and another for criticism and research. Each standing committee would appoint a national board, with full power over administration in its widest sense, subject only to the control of the social parliament. These boards, it is suggested, should consist as to two-thirds of principal officers of the service and representatives of the vocations to which the bulk of the employees belong, the remaining third representing the interests of the public. But it is not suggested that industrial administration should be centralized to the extent the above statement might seem to imply. There would be district councils, nominated by the national board, and works committees. The general tendency of the scheme to magnify local government at the expense of the State will at the onset dispose many in its favour. It proposes the universal provision by local authorities of

> water, gas, and, so far as its distribution is concerned, electricity; of such local transport as tramways, omnibuses, ferries and river services; of the provision of houses of all sorts; of public baths and washhouses, and burial grounds and crematoria; of complete sanitary services, from paving, cleansing, and lighting the thoroughfares up to every kind of preventive and remedial treatment for the sick, at home and in institutions; of a complete provision for the special needs of maternity and infancy, infirmity and old age; of education of every kind and grade, from nursery schools to post-graduate courses available for students of any age; of parks and open spaces, woodlands and mountain sides, with holiday homes of all sorts.

It may be noted incidentally that it is proposed eventually to make use of the country houses for this last-named purpose. Under the capitalist system, it is said, the government of industry is vested in the hands of a relatively small fraction of the community, namely, the private owners of the instruments of production. This is the nearest approach we have found in this book to a definition of capitalism. The argument throughout rests on the assumption that capital, at any rate capital in private hands, is an unmitigated evil. In a fully socialized State, though individuals would be able to save, and even encouraged to do so, the State and local authorities would pay for everything they did out of the receipts from the nationalized and municipalized industries. Municipal borrowing is held to be an evil, and unnecessary. A man or a family would be encouraged to own a homestead and to save as much as £1,000 (at present values, presumably), but beyond that amount capital in individual hands would be expropriated gradually, partly by the local authorities taking over more and more industries, and partly by heavy direct taxation and death duties. The general result aimed at is a uniform standard of living for all workers, whether with the hand or the brain. After a period of transition the social commonwealth would find its national and local revenues accruing almost entirely from national and municipal industries, with, perhaps, something from some services. The prices at which the products of the national industries and services would pass into consumption or use would be determined by the social parliament on the recommendation of its standing finance committee.

It is recognized by the authors that there must be some independent check on the influence of the secretarial bureaucracy and its salaried technicians. This check, they hope, would be provided by independent experts in the several professions. In the case of medicine, for instance, the municipalities would provide free to everybody a complete medical service for domiciliary and institutional treatment, but both the individual and the municipality would be free to consult an independent expert, who would criticize the recommendations of the municipal expert or present alternative proposals. Exactly what the inducement to become an independent expert would be is not made clear. While it must in justice be admitted that it is extremely difficult to think out the consequences of the proposals, the absence of definition of terms used here and in other parts of the book is not so easily to be excused. The authors are impressed by the ethical standards which professions, and in particular the medical profession, have set up, and desire that the trade unions shall follow their example in this respect, and also in the voluntary organizations the professions create, such as the British Medical Association, for the purpose of promoting science and knowledge.

The aim of the authors seems to be to devise a socialized commonwealth which shall be self-sufficing; but here, again, the consequences are not adequately thought out. As the socialist commonwealth gets into full working order the yield from direct taxation in the form of income tax or death duties must rapidly diminish until the vanishing point is reached. There are passages in the book which seem to imply that foreign trade must grow smaller as the ideal of the industrial commonwealth is approached. At the same time the scheme contemplates a very large number of paid officials, through whom the nation's will is to be ascertained or carried out. Municipal councillors, for instance, would receive a salary and give their whole time, and the cost of the staffs of central and local authorities for the huge administrative scheme, with its checks and counter-checks, must tend to increase. It would seem that the scheme contemplates that the money necessary to balance the budgets of the social parliament and municipalities would in course of time be derived altogether, or very nearly altogether, from the receipts from the national and municipal industries and services. The net proceeds would depend upon the fees or prices charged to the consumers, and those prices therefore would have to be fixed at such rates as would provide a revenue for the State or the municipality. It is not easy to distinguish this from indirect taxation.

The authors would agree that in the application of their scheme many difficulties would be encountered. One that seems to go to its root is that this country does not provide food for its present population; full data on this point were worked out during the war, and the authors would have done well to refer to the calculations and conclusions published in the reports of the Royal Society's Committee. Nobody seriously supposes possible an increase of production of food in anything like the proportion that would be necessary. The authors have no doubt considered this question, but they do not give their answer. There seems to be only two alternatives—a large decrease in population or the continuance of foreign trade on much the same scale as now. It is fairly easy to conceive the State selling abroad part of the produce of the nationalized coal mines; the price would be determined, not by the social parliament, however, but by the world demand and supply. It is not so easy to imagine a municipality buying abroad cotton and leather and selling abroad cotton sheeting and boots and shoes at prices adjusted, not to supply and demand abroad but to the needs of the municipal exchequers.

Some readers may be disposed to think that too much space has been given to this book, but it is said to be having a wide circulation in labour and trade union circles, and is intrinsically instructive, since it may be supposed to show the ideal of the socialist belonging to the school dominant in this country. It would seem that the authors have formed so high an estimate of the ethical standard and intellectual alertness and altruism of the scientific professions that they have been unwilling to think out the consequences of their proposals. Were their scheme carried out the scope for the independent practitioner could not from the first be large. Everybody would be entitled to the municipal medical service, and within a generation there would be no rich. The account given of the extent to which socialized production has gone is interesting, and the reader feels that the authors are here discussing a subject with which they are well acquainted. The general implication seems to be that all productive trades should be carried on by or through the municipality, but the warm praise of the co-operative movement leaves the reader a little in doubt as to what the expectation actually is. The writers "realize the imperative need for a rapid development of science in its widest sense, alike in the discovery of new knowledge and in the universal dissemination of the scientific methods of thinking"; yet the whole tone of the book is materialistic. Man's intellectual side and his spiritual aspirations are hardly taken into the reckoning; yet they form the greater part of him and determine his conduct, since that is not, save to a small extent, determined by instinct.

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[1] *A Constitution for the Socialist Commonwealth of Great Britain.* By Sidney and Beatrice Webb. 1920. London: Longmans, Green and Co. (Demy 8vo, pp. 364. 12s. 6d. net.)

CUNNINGHAM'S ANATOMY.

CUNNINGHAM'S *Manual of Practical Anatomy*,[2] of which the seventh edition has just made its appearance, must be so well known to all medical students and medical men that anything in the nature of a detailed description would be an act of supererogation on the part of the reviewer. The work increases in size with each edition, so much so that the publishers have considered it advisable to publish the present edition in three volumes, reverting, if we are not mistaken, to the same number of volumes as that in which the first edition was issued. The resemblance, however, between the first and last editions stops largely here, for in the length of the text and in the number and character of the illustrations it would be difficult to find two editions of a book more unlike. The difference is probably to be associated with two important changes in the teaching of anatomy—the increasing difficulty in obtaining material for dissection, and the increasing claims made by the teachers of other subjects on the time of the medical student. The result is that, even if he had the opportunity, the student has not the time to devote to dissection as formerly, and is forced by stress of circumstance to acquire much of his anatomical knowledge from reading and from the study of drawings. To such students Cunningham's *Practical Anatomy* must surely supply everything they can require; in fact, along the lines on which it has evolved it seems to us as perfect a production as can well be imagined. The only criticism we can accept regarding it, is that its length is such that only a very small proportion of students can obtain in the time available a satisfactory knowledge of its contents. The capacity of the medical student has not, unfortunately, kept pace with the expansion of the book.

The present edition runs to some 500 pages to each volume of closely printed text, lightened, however, with numerous illustrations; in fact, the illustrations are becoming more and more the feature of the book. There are no less than 18 different illustrations of the anatomy of the heart, apart from figures in which the heart enters with other structures and apart from two radiographs of the pericardium. To the description of the brain 150 pages are assigned and 70 illustrations, to the description of the ear 20 illustrations. The result of this profuseness in illustrations is undoubtedly to make the study of the subject more easy and to facilitate reference and revision. The editor, Professor ROBINSON, has, in the present edition, introduced several new features and extended others, all distinct improvements; he has, for example, put the instructions for dissection in distinctive indented type, which at once arrests the student's attention; window dissections of the pleura and peritoneum are shown in such a way that the minimum disturbance of structures is made; radiographs of various parts of the alimentary canal after a bismuth meal are given, and special attention is paid to such parts as the stomach, duodenum and prostate, in view of their importance to the surgeon.

Altogether, as an exhaustive treatise on practical anatomy the book is far in advance of any other with which we are acquainted, either in English or in any foreign language.

ARTERIO-SCLEROSIS AND HYPERTENSION.

THE second edition of Dr. WARFIELD'S monograph on *Arterio-sclerosis and Hypertension*[3] appeared eight years ago, and the third edition contains much new material treated with refreshing independence and sound common sense; but though the opinions expressed are the author's, it is obvious that he has a wide knowledge of the literature of the subject. High blood pressure is always a compensatory process, and should, the author points out, be regarded in the same light as a compensated cardiac lesion. The blood-pressure picture consists of the systolic, diastolic, pulse pressure and pulse rate taken together, and not of isolated estimations of the systolic pressure. The diastolic pressure is the most important element in the picture, for a persistent high diastolic pressure means increased work for the heart and arterio-sclerosis. The full significance of the pulse pressure—namely, the difference between the systolic and diastolic readings—is explained more clearly and succinctly than we remember to have seen it stated elsewhere.

The new chapter on blood pressure in its clinical applications begins with the timely warning that blood-pressure estimation is one only of many methods of acquiring information, and that he who worships his sphygmomanometer as infallible will sooner or later come to grief. The value of a falling blood pressure in surgical operations as the earliest sign of approaching shock is pointed out, and the value of a rising pressure in pregnancy as evidence of toxaemia is emphasized. Dr. A. F. Hurst's view that the vomiting of pregnancy is hysterical appears to be supported by Dr. Warfield's dictum that although emesis gravidarum is supposed to be a sign of a toxaemia of unknown nature, the blood pressure is never raised, even in the pernicious form. The cases of high blood pressure are divided into three groups: (1) those of chronic nephritis with cardio-renal death; (2) essential hypertension, or hereditary, with little clinical evidence of kidney disease and death from cerebral haemorrhage; and (3) arterio-sclerotic with cardiac death.

Arterio-sclerosis is not regarded as a disease with a definite etiological factor, but as a degenerative process due to various causes which are considered seriatim. It is divided broadly into two—the congenital, or the result of inherited tendencies, and the acquired forms. The importance of absorption of the products of perverted intestinal metabolism in causing a high blood pressure, and so arterio-sclerosis, is recognized, but until more convincing evidence is forthcoming the view that the adrenals, thyroid, and pancreas are concerned in the production of arterio-sclerosis is not accepted. In the opinion that oarsmen show a relatively high mortality at the different decades, traceable to the raised blood pressure produced while in training, Dr. Warfield differs from the conclusions reached by the late Dr. J. E. Morgan in his work *University Oars* (1869). Probably most readers will agree that cigars are more likely than cigarettes or pipes to induce arterio-sclerosis. Prophylaxis may be summed up in the plea for a more rational mode of life, with moderation in all its duties and pleasures. In order to recognize the disease in its early stages, people over 40 years of age should get into the habit of being overhauled by the doctor twice a year, in the same way that most people pay periodic visits to the dentist. This attractively written volume ends with a chapter of epigrammatic practical suggestions which sum up the lessons already given.

NOTES ON BOOKS.

The Revels of Orsera,[4] by Sir RONALD ROSS, is a weird, fantastic book, justifying its subtitle, for it is both mediaeval and romantic. The scene is laid in the Alpine valley of Andermatt and amongst the peaks which lie around it, at the end of the fifteenth century, the chief events centring in the proposals of sundry suitors for the hand of Lelita, daughter of Count Reichenfels, the local magnate. We have here all the usual paraphernalia—tournaments, feasts, and the rest. These are well described, though with no very marked originality, and the author skilfully uses the setting—the high mountain air with its sudden weather changes—to give a special colour to the events. To draw even an outline of the plot beyond the very general one already mentioned would be difficult, as the more ordinary circumstances are affected by the semi-miraculous doings of certain dwellers in the high valleys. The manner in which these personages (mountaineers from their youth though they certainly are) go gaily up and down the mountains moves us, we confess, to admiration. The characters are all drawn with a firm hand, and to two of them special praise may be given—to Zozimo, the hunchbacked poet with his great soul in the feeble body, and to Gangogo the jester. The latter strikes us as of great merit—ardent, peevish, mischievous, philosophizing, witty, and pathetic, with just the right mixture of wisdom and folly; he holds our interest from his first appearance to his tragic death on the mountain. In recommending the book to our readers we need only add that the narrative runs in easy periods, both in description and dialogue, and that the writer knows well and pictures forcibly the grand scenery that forms the setting of his romance.

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[2] *Cunningham's Manual of Practical Anatomy.* Revised and edited by Professor A. Robinson. Seventh edition. Volumes II and III. London: Henry Frowde, and Hodder and Stoughton. 1920. (12s. 6d. each volume.)

[3] *Arterio-sclerosis and Hypertension.* By Louis M. Warfield, M.D., F.A.C.P., Chief Physician to Milwaukee County Hospital. Third revised edition. London: Henry Kimpton. 1920. (Med. 8vo, pp. 265; 60 figures. 24s. net.)

[4] *The Revels of Orsera: A Mediaeval Romance.* By Sir R. Ross. London: J. Murray. 1920. (Cr. 8vo, pp. 399. 7s. net.)

The pleasantly written pamphlet, [illegible], by the Widowed Physician, is much shorter than the same author's [illegible], but resembles it in the soundness of its advice. It is perhaps as well to mention that the advice is mainly directed to the means of judging the character of the opposite sex, and is not, as possibly might be thought, devoted to what is commonly understood as sexual relations. The behaviour and attributes of the female in the successive stages of the infant, the child, the girl, and the mature woman are passed in review, and the dangers to be borne in mind are summarized in twelve warnings. The first is: "Beware of the girls who manicure their nails [illegible]. I do not know why, but beware of them." The second has an ancient flavour, but is none the less wise for that: "Beware of girls who prefer to dress in purple or scarlet colours. There is usually something wrong with their morals." And the eleventh, [illegible]

[illegible]

[illegible]

[illegible]

APPLIANCES AND PREPARATIONS.

A Pipette for the Automatic Measurement of Constant Volumes.

CAPTAIN W. HENWOOD HARVEY, M.D., R.A.M.C.(T.), Officer in Charge, Central Military Laboratory, Cambridge, writes: The pipette here described has been designed for use in such routine work as complement-deviation tests, in which a series of equal volume measurements of different reagents may be required.[1] The construction is most readily explained by reference to diagrams.

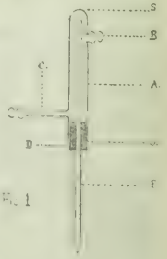

Fig. 1

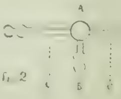

Fig. 2

In Fig. 1 the instrument is seen to consist of two tubes, one fitting over the other, united by a rubber bung. The outer tube or reservoir, A, is made from a piece of moderately heavy glass tubing, 10 cm. long and having an internal diameter of 1 cm. The upper end of this reservoir is sealed off at S, and the lower end is slightly flared at O. At a distance of 1.5 cm. from the sealed end, and at right angles to the main tube, a small tubule, B, is set off. This tubule is 1.5 cm. in length, and has its free end finished for use with a rubber teat. A second tubule, C, 4 cm. long, is set off, also from the main tube, and at right angles to it, at a distance of 2 cm. from the lower and open end, O. These two tubules are not placed vertically to each other, but form an angle of 90 degrees, as seen when the pipette is viewed from either end, as shown in Fig. 2. In this figure the relative position of these two tubules to each other is represented in full outline for a right-hand pipette and in dotted outline for a left-hand one. The inner tube or measuring chamber, E, is made from a piece of glass quill tubing, 20 cm. in length, and of small bore. Each end of this chamber is drawn off to a suitable taper for the delivery of fluids. This tube is fitted with a perforated rubber bung D, which serves to connect it with the outer tube or reservoir. It should be so adjusted that its upper end [illegible] above the level of the tubule, [illegible], when the pipette is held in an upright position.

From the above description it will be seen that the measured volumes are entirely dependent upon the capacity of the measuring chamber, and that, provided care is taken to fill completely and empty completely this chamber at every charge and discharge, the volumes will be the same. By varying the size of the inner tube a corresponding change may be made in the measured volumes. If it is desired to work with comparatively large volumes, such as 2 c.cm., it is advisable to use a pipette having the outer tube or reservoir made from a larger size of glass tubing than that specified in the foregoing description, in order to admit the large measuring chamber required for such volumes and yet ensure a sufficient holding capacity for the excess which is drawn up at each measurement.

[illegible]

[illegible]

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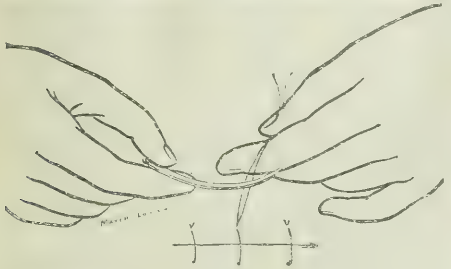
[1] [illegible]

By using two such pipettes, fitted with different sized measuring chambers, a ready and rapid means is provided for preparing a series of dilutions of any given reagent. The instrument is easy to make; it is simple, economical, and reliable in use; it is entirely independent of any time factor during usage. Whilst discharging its contents into a tube, it delivers with sufficient force to mix thoroughly the reagents present, and yet avoids splashing the sides of the tube.

I desire to acknowledge my indebtedness to my former assistant, Dr. Florence Scott Kirk, for the help she gave me throughout the many trial tests of these pipettes and in the demonstration of their use, which was given at the meeting of the Pathological Society of Great Britain and Ireland, held in Cambridge on June 30th, 1920.

A New Surgical Needle.

Mr. E. M. COWELL, D.S.O., F.R.C.S. (London, W.), writes: I have designed a needle with a knife edge for use in suturing skin, fascia, or muscle. By virtue of its knife edge it may be used to cut the suture material employed, and thereby save the time otherwise wasted by using scissors. In putting in interrupted stitches, the knots are tied with the left hand, and the right is used to cut the stitch, as shown in the figure. The needles are made straight or curved. It is easy to keep the knife edge keen by rubbing it on an oil-stone. The instrument is made for me by Messrs. Mayer and Phelps, of 61, New Cavendish Street, W.1.



THE INFLUENZA EPIDEMIC IN NEW SOUTH WALES.

THE New South Wales Department of Public Health has issued a very full report on the influenza epidemic of 1919 as seen in that colony. We gave on July 31st, 1920 (p. 185), a summary of the mortality statistics. The population of New South Wales is two millions; in Sydney, the capital and principal seaport, 36 per cent. of the population of 800,000 were attacked, and 3,902 persons died—a case fatality rate of 1.3 per cent. Dr. W. G. Armstrong, the Deputy Director General of Public Health, points out that the comparatively late appearance of the pandemic in Australia and the isolated position of the continent gave the Commonwealth an unusually favourable opportunity of attempting to hold up infection by measures of quarantine. England was first invaded in May, 1918; America, as well as South Africa, in September, and New Zealand in October. During October vessels arriving in Australia from Africa and New Zealand were quarantined for several days; the first influenza case arrived from New Zealand on October 25th. For three months the quarantine was attended with success, but in January Melbourne became infected, and from there Sydney and all parts of Australia. In New South Wales energetic measures were taken to check the spread of the disease. The report states that notification, isolation of patients and contacts, prohibition of assemblies, compulsory masking in public places and severe restrictions on travelling, together with prophylactic inoculation, checked for a certain time the development of the epidemic and afterwards prevented it from assuming the explosive character seen in many other countries.

Prophylactic Inoculation.

For the prophylactic inoculations a mixed vaccine was used, obtained from patients in quarantine; for the most part its composition was: Pneumococcus 1,000, influenza bacillus 100, streptococcus 100, *Staphylococcus aureus* 250, Gram-negative micrococci 250 million respectively per cubic centimetre. An initial dose of ½ c.cm. was followed in seven days by a dose of 1 c.cm. No charge was made, and between 35 and 40 per cent. of the inhabitants of Sydney and nearly 25 per cent. of the population of the whole State were inoculated. It was not possible to collect evidence of the effect of inoculation on the liability to be attacked, but the mortality appears to have been distinctly lessened. Among 13,000 persons treated for influenza in the public hospitals of Sydney, the mortality in the uninoculated was 16.5 per cent., compared with 8.2 per cent. in those who had received three prophylactic injections. Some doubt is expressed as to whether the protection conferred was really specific, or whether the vaccine had a general "alterative" effect due to the injection of foreign proteins. Notification and isolation of patients had little value except in the early stages of the epidemic; the control of travelling was found to be useless, but prohibition of assemblies is thought to have been attended with some success. The evidence of the Sydney epidemic was against the suggested spread of the epidemic by "carriers"; in no case was infection observed to be conveyed by those who had been discharged from quarantine while still harbouring Pfeiffer's bacillus in their throats. A study of the cases of influenza occurring in the hospital staffs show that one attack of influenza appeared to afford a high degree of immunity, which was not, however, very lasting. Among 1,488 members of these staffs 814 were attacked by influenza, but of these only four subsequently suffered from a second attack. Although the figures are small, there is some evidence of a special degree of susceptibility among pregnant women: among 224 pregnant women treated in hospital the mortality was 26.7 per cent.; mortality rates of 8.0 and of 14.9 per cent. were observed among the much larger totals of females treated in hospital at the ages of 20 to 29 and 30 to 39 respectively.

Bacteriology.

Dr. J. B. Cleland, principal microbiologist to the Department, contributes a comprehensive report on the pathology of the epidemic. From bacteriological studies he is inclined to believe that the primary etiological agent of influenza is at present unknown, but is probably a virus of the filter-passing variety. In fatal pulmonary cases organisms of one or more groups were usually present in considerable numbers; that most frequently found was the pneumococcus, but the influenza bacillus, streptococcus, and *Staphylococcus aureus* occurred, each in about one-third of the cases. Dr. Cleland regards these bacteria as secondary invaders flourishing in the exudate or haemorrhagic areas resulting from the action of the primary virus in the lungs. Animal inoculations with blood or with material from the lungs, sputum, saliva, or nasopharyngeal secretion of influenza patients, led in every instance to negative or inconclusive results; monkeys and baboons were found in forty experiments to be refractory to the disease. A description of the *post-mortem* findings in 130 cases is illustrated by a number of fine coloured plates.

Conclusions.

In his prefatory letter Dr. Robert T. Paton, the Director-General of Public Health, pays a tribute to the untiring services rendered by the staffs both of the ninety-two emergency and of the pre-existing hospitals; he mentions also the valuable services rendered to the Department by a Consultative Committee of the British Medical Association formed at the request of the Government. Dr. Paton concludes that the most potent factor in the saving of life appears to have been the institution of early treatment. He believes that the wearing of well-fitting masks by persons brought into contact with cases was of considerable value, and he has no hesitation in advising inoculation and re-inoculation at fairly short intervals should the State again be threatened with an invasion approaching in virulence that of 1919. For this purpose large quantities of vaccine are being prepared.

THE Jewish Medical Society of Palestine is publishing a quarterly journal entitled *Harefuah* (Healing); the first number is dedicated to Jewish medical men who were killed in Palestine during the war.

HISTORY OF ASYLUM WAR HOSPITALS.

The valuable and interesting report to the Home Secretary on Asylum War Hospitals in England and Wales, by Sir Marriott Cooke and Dr. Hubert Bond, Medical Commissioners of the Board of Control, to which we made brief allusion in our issue of September 11th, is worthy of the attention of our readers and the public generally, since more than one-sixth of the total number of sick and wounded men from all fronts during the war, or 482,949 officers and men, were treated in these hospitals.

It is, perhaps, necessary to ask, even in these times, what the Asylum War Hospitals are, or were before they sprang into being. They were twenty-four out of the hundred or so public mental hospitals of England and Wales, or in still surviving legal phraseology, the County and Borough Pauper Lunatic Asylums, or, as the novelist and sentimental crank would term them, the madhouses of the country. That they should, with varying degrees of conversion, according as they were old or up-to-date institutions, have been easily and rapidly converted into first-class general medical and surgical hospitals, which won the highest praise from the Medical Department of the War Office, from highly qualified civilian critics, and from the officers and men treated therein, may be surprising to those unacquainted with the buildings, organization, and resources of a public mental hospital.

How this was effected is fully described in the report; in terse and clear exposition Sir Marriott Cooke and Dr. Hubert Bond describe how the Board of Control came to meet the dire need of the War Office for hospital accommodation in the early months of 1915 by a scheme the practicability and soundness of which soon won over the support and collaboration of all parties concerned.

England and Wales were divided into areas, and one asylum in each area selected as a war hospital and the mental cases therein evacuated into the other asylums in that area. Thus were 15,000 beds almost immediately available, till eventually, by further development of the same scheme, over 31,000 beds were provided, in which 482,949 officers and men were treated. At this time some well-meaning but technically ignorant and ill-informed persons, both inside Parliament and outside it, protested against our sick and wounded heroes being located in "pauper lunatic asylums." It may be asked, Where else could nearly half a million sick and wounded have been cared for? A perusal of the report will furnish an answer. The military hospitals framed on a peace basis were inadequate to deal with such numbers, the Territorial hospitals had to be built and organized *de novo*, and, excellent as they were, consisted mostly of temporary buildings which could not compare in resources and amenities with going concerns like the asylums with their "skeleton" medical and nursing staffs, wards, laundries, kitchens, bakeries, engineering and building departments, water, lighting, drainage, and heating, all staffed and ready, not to mention extensive grounds, recreation fields and halls, available to the convalescent. The civil general hospitals both in London and the provinces contributed what beds they could spare from civilian requirements, but even the total, added to in some cases by temporary hut wards, was comparatively insignificant and inadequate, while the auxiliary Red Cross hospitals were equipped for convalescents only. Some schools and workhouses were also converted into war hospitals, but not one of these temporary or permanent institutions could compare in all-round suitability with the Asylum War Hospitals; indeed, all that was absolutely essential for the conversion of mental hospitals into war hospitals was additional doctors and nurses.

In a report by medical members of the Board of Control, which is the Government department concerned in the administration of the Lunacy Acts and the welfare of the insane in this country, we should expect to hear how mental disorders occurring in the officers and men of the army were met, not only that directly due to the injuries and incidents of war, but as a result of the ordinary incidence of mental disorder expectancy among three to five millions of men of ages 20 to 40. This incidence was wisely anticipated and provided for by Sir Marriott Cooke and Dr. Bond, and we are not disappointed, for the report fully goes into this question and describes the provision for mental disorders actually due to war conditions, and for those who, presumably, would have become insane apart altogether from war, but for which latter the army was now responsible.

In Section XVIII of their report the Commissioners give a full and most interesting account of what was accomplished in this direction for the 38,440 patients suffering from psychoneuroses. Most of the Asylum War Hospitals had one or more wards where such cases on discovery were transferred from the general medical and surgical wards of the hospital. This accommodation, however, soon proved inadequate, so a special institution (that known as Moss Side, Maghull, near Liverpool), containing 500 beds, was taken over, but to meet the ever-increasing numbers more and more beds had to be found, for it must be remembered that the mental and physical standards had to be lowered owing to the demands for men from the various fronts, and many men mentally unstable and even actual deficients slipped into the army, only to break down in training or very early on foreign service. So further provision for 250 beds was made at Springfield War Hospital, 300 at the Napsbury War Hospital, 1,000 beds at the Lord Derby Hospital, 600 beds at the Radcliffe War Hospital, 465 beds at the Welsh Metropolitan War Hospital, Cardiff, 400 beds at the Ashurst Hospital, Oxford, and 474 beds at the Maudsley Hospital, which was used as a clearing hospital for London. All these institutions in peace time were mental hospitals, staffed by medical men eminent and experienced in the treatment of mental and allied disorders, such as Sir Frederick Mott, Dr. Edwin Goodall, Dr. Rows, and many others. One has only to read the extremely interesting appendices of the report describing the advanced psycho-therapeutic and other methods of treatment pursued in the mental sections of those war hospitals, to enable one to answer the question what, or where, better arrangements could have been made for those anxious and distressing cases.

We draw attention to this official record of a great achievement partly because the great and humane work amply vindicates itself against much adverse criticism based on misunderstanding, not to say ignorance, and partly because it is gratifying to know what our professional brethren did behind the scenes of war, away from the limelight of the battle front, but also because the value of historical record is much enhanced if we can learn from it solutions of problems of the future. Our readers are aware that bills are being framed by various interested bodies, the Ministry of Health among others, for the early treatment of mental disorders, incipient or actual, without the legal trammels of the Lunacy Acts, the principle underlying all prospective legislation being that as insanity is an illness it should be dealt with by doctors and not by lawyers. Now it is a striking fact that the whole of those 38,440 cases of mental and allied disorders were treated in their early stages—that is to say, for the first twelve months—wholly by doctors without any of the provisions of the Lunacy Acts being invoked at all. True, the cases of the civilian and the soldier are not strictly and wholly comparable; the general disciplinary provisions of the Army Act and King's Regulations ensure that a soldier shall obey the orders of his C.O. and if the C.O. orders his removal to any place the order is obeyed, and so long as he is a serving soldier he may be ordered to the mental ward of a hospital, or to a military mental hospital, if a military medical officer thinks fit. However, the broad fact remains as stated, and we do not find in the report, nor has it been common knowledge that any abuse, injustice, or wrongful detention has arisen. The civilian has no watchful medical officer to procure the best treatment for him without the degrading and often fatal delay of the legal formalities of certification, but he has his family or panel doctor, his friends and relatives, and even himself to take the steps needed to obtain immediately the necessary treatment.

Again, there is an increasing body of opinion that many acute illnesses cannot be treated at home, especially in the case of the poor, and that "team work" (as it is called) in the medical attendance on the case must supplement the individual practitioner. We find in this report evidence of the success of institutional treatment and of the advantages of collaboration by the medical staff, for in all the war hospitals every patient had the advantage of present-day knowledge which could be brought to bear on his case by the specialist and consultant medical staff.

The Commissioners close their report with an expression of indebtedness for the success of their work to the Army Council, the local authorities owning the war hospitals, the commanding officers and staffs of the war hospitals, and last, not least, to the authorities of the "receiving" asylums, without whose co-operation the primary principle of the scheme could not have been carried out.

British Medical Journal.

SATURDAY, SEPTEMBER 25TH, 1920.

FOUNDATIONS OF MEDICINE.

THE address of Dr. Thomas Lewis, which we print elsewhere, sustains a thesis which has been defended by others, but never, we think, in terms that appeal more directly to medical practitioners. The moral of Dr. Lewis was expounded in the Acts of the Apostles. Our medical Peters, confronted with "all manner of four-footed beasts of the earth," and invited to kill and eat, in their turn protest that they have never eaten anything that is common or unclean, and receive the old rebuke, but not in the old spirit. Some conceive a contempt for principles the application of which is so difficult, and become mere empirics; others imagine that the discovery of some method, the mastery of some technique, will provide them with a philosopher's stone. Both errors are tragic enough. The physician of a teaching hospital sees the gradual disillusionment of the youth fresh from the physiological department. The investigator who only meets graduates is impressed by the other fallacy. Having at length won a place in the temple of science for his method—usually after years of neglect or controversy—his is the painful duty of explaining to those anxious to worship at the shrine that the new god, though an exacting master, is not omnipotent.

Dr. Lewis finds a remedy in the humanizing of physiology, and has himself provided illustrations of the process in his special field of applied physiology, while the writings of Dr. Leonard Hill afford many examples of first rate importance. That the proposed reorganization of preliminary and intermediate teaching would have more effect than any other single change is, we think, evident; Dr. Lewis has argued the case so admirably that we need not attempt to reinforce it; instead, we will refer to another weakness of the existing order.

Sir James Paget, in a letter printed in his biography, stigmatized as nonsense the idea that the success of a physician or surgeon "is not only no proof of his being a scientific man, but rather evidence against his being so."[1] And he adds: "Gull has done more thoroughly scientific work, and does still in his study and practice, and shows in all a more scientific tone and power of mind, than a large majority of those who have been elected into the Royal Society as anatomists or physiologists." This censure is not less applicable to our own times. There is, in fact, a touch of intellectual snobbishness in contemporary estimates of scientific merit. That the successful manipulation of delicate apparatus or proficiency in the disciplines of the mathematician or the chemist ought to be recognized by such honours as science has to confer is admitted by everyone. It is not admitted that the man working with the common intellectual tools of all may be in truth performing a task which requires as much ability and gives as much scope for "originality" as anything hedged about by the barbed wire of mathematical or physical technique.

Let us imagine that a general practitioner of medicine set himself the task of carrying on the work that Sydenham and Huxham began, that he were a medical Gilbert White and wrote a natural history of disease as he saw it. Such a task would give scope for the highest powers of intellect and imagination, but it would certainly not be the way to enter the charmed circle of "distinguished scientists." In the past forty years members of the English medical profession—some, general practitioners; some, Government officials; some, medical officers of health—have elucidated the etiology of many industrial diseases. Much that was once obscure regarding, say, industrial lead poisoning, occupational phthisis, the pneumonoconioses, the nystagmus of miners, has now been made clear. The evidence is scattered through official reports, minutes of evidence, and casual articles in our columns and those of other medical journals. Of the authors of these researches what percentage have been crowned with scientific laurels? Had they devoted themselves to laboratory work, how many of them would have been recognized as "eminent scientists"?

We should ourselves stand convicted of intellectual snobbishness if we suggested that the giving or withholding of this or that official honour can turn a true investigator from his path. One does not bribe men to become Pasteurs or Listers with membership of the Academy of Laputa or honorary degrees of the University of Weissnichtwo. But the conventional assumption that certain techniques are scientific and others not does indicate a low general standard of taste which cannot fail to react upon the general level of achievement. There was a time when the experimental philosophers were very definitely regarded as the intellectual inferiors of the erudite bearers of gold-headed canes; Sir George Baker and Sir Lucas Pepys were much more imposing figures in their time than Dr. William Wells or even Dr. Wollaston. The philosophers triumphed, they won their right to an equal share in the governance of the kingdom of scientific medicine, but now the pendulum has swung too far in the opposite direction.

We would preach the doctrine that in the house of science there are many mansions; that the general practitioner of medicine, using no methods not available to all members of the profession, may still achieve scientific results of the highest importance; that the brains with which Opie mixed his colours are still the only indispensable ingredient of scientific research. Dr. Thomas Lewis has realized this important truth and his remarks deserve the earnest attention of all.

In the etiology of disease there are, as Sir James Mackenzie has pointed out, many causes the study of which can only be undertaken by the practitioner; they cannot be isolated and transferred to the laboratory. The rendering available of such knowledge does not depend upon the further loading of the medical armamentarium with special techniques, but upon the inculcation of a higher standard of general mental training. It is our duty to regard the ordinary practitioner of medicine not as a hewer of wood and drawer of water for the superior intellects of the laboratory, not even to incite him to imitate in an amateurish way the particular methods of the laboratory investigator, but to welcome him on equal terms as a scientific investigator and make sure that his achievements do not have to wait longer for recognition nor obtain a less full recognition than those of his colleagues in other branches of scientific work.

THE BOARD OF EDUCATION AND A POST-GRADUATE SCHOOL.

THE letter from Dr. George E. MacLean, the Director in this country of the American University Union in Europe, published at p. 492, deserves the careful consideration of the medical schools of Great Britain. of

London in particular, and also, we venture to think, of the Board of Education. We have reason to believe that the invitations to attend post-graduate courses in Vienna have had a very wide circulation in America and have been accompanied by assurances not only of a cordial welcome, but of plenty of food, comfortable accommodation, and in fact everything needed, exactly as before the war. We do not profess to know how such statements are to be reconciled with the appeals which are being made in this country to save Vienna from starvation, but our interest in the matter lies in the circumstance that American colleagues should be induced to give the medical schools of Great Britain the go-by and travel on to Vienna. Dr. MacLean says that his visitor told him that the British medical profession was not particularly cordial in its reception of American students; this assertion we take leave to deny. But his other statement, that in London the post-graduate work was so submerged and intermingled with the undergraduate work that the opportunities were not comparable with those formerly afforded in Vienna and Berlin, is well founded.

It may be granted that a large part of the attraction Vienna used to have for American and British graduates was that the post-graduate classes included short intensive practical courses in certain specialities during which the teacher laid himself out to help his pupil to make a beginning in the use of special instruments; the stories of the old woman in the class of laryngology who could day by day make her throat more and more difficult to examine are legendary. No attempt has been made to institute such elementary classes in London; it is not a lofty kind of teaching, still it has to be done, and graduates who come for it will stay to attend more scientific courses. London has never succeeded in establishing a post-graduate school on a permanent basis. Several attempts have been made, but when, after the armistice, a need suddenly arose there was no organization in working order. The Fellowship of Medicine gallantly stepped into the breach, and arranged courses in London which admirably met the emergency. It is true that a post-graduate medical association had been brought into existence shortly before the war, but its organization remained rudimentary; the two organizations were amalgamated, and the combined committee has been making a brave struggle to establish post-graduate teaching on an adequate footing in London. We fear that it must be said that the effort has not succeeded. Last autumn the committee recorded its considered opinion that if a post-graduate medical school were to be established in London it was essential that it should have command of a general hospital; for a time there were sanguine hopes that one of the best known general hospitals in London would accept the suggestion. We understand that this hope must now be abandoned, and matters seem to be thrown back very much into the position in which they were at the beginning of 1919; the position is, in fact, more urgent. Not only ought Great Britain to take a legitimate pride in rendering its medical centres attractive to graduates from Great Britain and foreign countries, but the need for post-graduate schools for our own practitioners is, with the ever-extending points of contact between medicine and public authorities, rapidly increasing. From this point of view the situation, in London at least, is discouraging; the medical schools are concerned for undergraduates, and it has not proved easy to arouse sufficient permanent interest in any project for the establishment of a post-graduate school.

That there is a need for a post-graduate medical school, with its own general hospital, in London, has, we understand, been accepted in principle by the University Grants Committee. That Committee, which originated with the Board of Education, but is now dependent on the Treasury, can only make a grant to an existing institution, which must be of university rank. The opportunity of now attracting graduates from beyond the seas is slipping away, and it would be wise to act at once. The matter well deserves careful consideration by the central education authority. We venture to suggest that the Board of Education should at an early date appoint a strong committee, containing representatives of medical teaching and specialists, to report as to the steps which should be taken to fill a serious gap in the existing provision for medical education—a gap to which its medical officer, Sir George Newman, forcibly drew attention in his *Notes on Medical Education in England*, published in 1918.

THE SCIENTIFIC BASIS OF VENTILATION AND OPEN-AIR TREATMENT.

ADVANCES in the practice of medicine may either come empirically or be prompted by scientific research which at the outset may not appear to have any direct practical bearing. It is an old and perhaps somewhat threadbare objection to the whole-time teachers of anatomy and physiology that this plan, though all to the advantage of these sciences, does not in one respect—namely, the application of these sciences to clinical work—compare favourably with the original arrangement by which surgeons and physicians taught these subjects as a parergon to their routine clinical work. Whether or not this holds good, a most valuable field of research has been extended through the establishment by the Medical Research Council of a department of applied physiology under the direction by Dr. Leonard Hill, who has so successfully applied laboratory instruments and results to the problems connected with industry, public health, and disease. In his report to the Medical Research Council on "The Science of Ventilation and Open-air Treatment," a subject that he has long made his own, Dr. Leonard Hill[1] combines the results of much experimental work with a review of existing knowledge, and thus provides in an accessible form a scientific basis for the practice of ventilation and open-air treatment. The ground covered and the store of information, sometimes drawn from unexpected sources, are remarkable.

Successful ventilation is described as depending on the prevention of stagnation of body heat on the one hand, and of uncomfortable chilling of the body on the other hand; but the greater the number of air changes, the less the danger of droplet infection from the carriers of catarrhal disease. Chemical purity of the air is of course important in mines and some factories where poisonous gases or fumes are likely to be liberated, and in rooms into which the products of imperfect combustion are allowed to escape from improperly flued stoves or gas burners. But, as Dr. Leonard Hill has shown, the widespread explanation of the discomfort and impaired health from crowding in ill ventilated rooms is erroneous; it is not the excess of CO_2, lack of oxygen, or the presence of organic impurities in the expired air that are responsible; the real cause is not chemical but physical—

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[1] The Science of Ventilation and Open-air Treatment. Part I, 1919, pp. [illegible]. Special Report Series No. 32. Part II, 1920, pp. 296. Special Report Series No. 52. Medical Research Council. Published by H.M. Stationery Office.

namely, a stagnant, moist, and hot condition of the air. Incidentally Pettenkofer's rule, taught for sixty years by sanitarians, that the percentage of CO_2 is a valuable indicator of the purity of the atmosphere, is controverted; and it is pointed out that the victims of the Black Hole of Calcutta succumbed to heat-stroke and not to suffocation. The supposed presence of organic poisons in expired air has exerted a harmful effect on the progress of hygiene by inducing sanitary engineers to seek after chemical purity and to neglect measures to secure the adequate cooling and evaporative powers of the air, which have a most important influence on health but cannot be estimated by the ordinary thermometer. Accordingly the kata-thermometer—an alcoholic thermometer primarily designed for the measurement of its own rate of cooling when the temperature approximates that of the human body—has been employed as an anemometer and evaporometer in the numerous series of experiments here epitomized. Many observations have been made with this instrument by other workers, and for help in the mathematical and physical aspects of the subject Dr. Leonard Hill is indebted to his assistant, Miss D. Hargood-Ash. The effect of wind on heat loss was thus carefully studied and a mathematical formula constructed.

The penetration and action of light on living organisms, the effect of sunlight, the circumstances in which heat-stroke occurs, the cutaneous pigmentation and racial adaptation to climate, are fully discussed, and many experiments with the kata-thermometer to elucidate evaporation from white and from black skins are recorded. The ideal conditions for health and vigour are realized when the sun warms the skin and breezes keep up a high rate of cooling; it is worth while to quote the epigrammatic dictum: "It is absurd, then, to shut out the sun from rooms in order to save carpets and covers from fading. People who shut out the sun and wind bring about the fading of their own complexions." The chapter "Concerning Clothes" contains the results of ingenious research and practical deductions. The fatal error in clothing is want of ventilation; clothes should be as light as possible, permeable to the air, allow free evaporation, as far as possible not become wet from perspiration, and if damp, not cling to the skin. In ordinary conditions it is only the underfed who suffer from scanty clothing, but the design of aeroplanist or arctic dress should be based on an outer layer of windproof material and inner layers of soft fluffy woollens entangling plenty of air. The loss of health, wealth (50 millions sterling yearly in Great Britain) and happiness due to the smoke nuisance are clearly set out; the remedy is to carbonize all the coal at the gasworks, to use the coke thus provided for generating electric power and lighting, the gas for heating, lighting and power, and to secure the valuable by-products; for this reform gasworks and electric power stations should be run in combination. In the next section, on the dust nuisance, the reasons why some dusts are injurious and others not, are given.

In the chapter on health and environment attention is called to the significant way in which, despite the absolute decline of mortality in both areas, the rural districts maintain almost constantly a relative advantage of more than 30 per cent. over the urban districts in which for more than a generation the sanitary administration has been the more effective of the two. After the picturesque statement, "when the citizen takes his walk in the streets, motor cars pollute the air with exhaust fumes and in dry weather act as dust squirts, making the atmosphere teem with dust particles made unclean by man and animal," Dr. Hill recommends, as a preventive of race decadence, that in a reconstructed England the cities should be small garden towns, smokeless, and provided with well-ventilated workshops and electric light. In the chapter on "Fever and Open-air Treatment" free evaporation from the skin and respiratory tract is considered to be advantageous, probably from the passage of immunizing bodies into the blood with the tissue fluids which make up the volume of the blood; and it is suggested that the old-fashioned treatment of bleeding did good by attracting the tissue juices in large quantities into the blood. The open-air treatment of tuberculosis should be based on physiological principles, and not on a blind belief in the virtues of fresh air. It is just as reasonable to expose a debilitated febrile patient to wet, cold, and windy weather as it is to confine him in an overheated room with stagnant air. While warmth should, if necessary, be supplied, the greatest care should be taken to avoid overheating by the sun's rays. The good effects of the open-air treatment in children and the tuberculous largely depend on the increased metabolism due to the higher rate of cooling induced by the exposure. In the concluding chapter, on the methods of ventilation and heating, Dr. Hill decides that in this climate of mist and cloud the most healthful of the five chief systems is the radiant heat of an open fire and the ventilation maintained thereby and by an open window when necessary.

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ROCKY MOUNTAIN SPOTTED FEVER.

ALTHOUGH Rocky Mountain spotted fever is to most of us no more than a name, and that not included in the last edition of the official Nomenclature of Diseases, there are several points of interest in connexion with this disease, which Professor Burt Wolbach[1] has defined as "an acute specific infectious endangiitis, chiefly of the peripheral blood vessels." Except for its geographical qualification, it might be confused with the more or less popular synonyms for cerebro-spinal fever and typhus; and indeed in 1907 Dr. Louis Sambon ingeniously argued that typhus was identical with it. The general rule in nosology is towards analysis rather than towards synthesis and to the effect that diseases tend to be split up into distinct if often allied morbid processes; from an epidemiological standpoint, Hamer duce et auspice Hamer, this has been challenged, and, although bacteriological research provides the surest basis for the differentiation of infections, the recent researches of Noguchi have shown how closely yellow fever and spirochaetosis ictero-haemorrhagica are etiologically related. In Sir William Osler's textbook Rocky Mountain spotted fever is given the synonym of tick fever, and thus confusion might well arise in connexion with the relapsing or tick fever of Uganda and East Africa, which is due to a spirochaete and is probably much the same as the relapsing fever of Europe. Both the diseases are conveyed by ticks, but the nature of the virus of Rocky Mountain spotted fever has been variously described, and has given rise to much discussion. In 1902 L. B. Wilson and W. M. Chowning, who first incriminated the tick as the carrier of the infection, described an intracorpuscular protozoon parasite, a *Piroplasma*, similar to that causing Texas fever in cattle and transmitted by a tick. This was confirmed by J. F. Anderson in 1903, but emphatically refuted by C. W. Stiles the year after. In 1906 H. T. Ricketts, of the University of Chicago, began his brilliant observations which proved the transmission of the infection by the wood tick (*Dermacentor venustus*), the hereditary passage of the virus through generations of ticks, and complete immunity after an attack of the disease in experimental animals. In 1908 McColla recorded the transmission of the disease by a tick from an infected human being to two volunteers who had incubation periods of three and nine days respectively. Professor B. Wolbach, of the Harvard University Medical School, has now published an exhaustive report on the etiology of the disease, undertaken at the joint request of the Montana Department of Health and the Montana State Board of Entomology, and thus carries Ricketts's work further and confirms it in many respects. He brings forward evidence that the parasite responsible for the disease has three definite morphological types: the initial form in infected ticks is a relatively large extranuclear, delicately staining rod without chromatoid granules; the next is an exceedingly small rod with chromatoid granules, and is seen in nuclei in sections of ticks, and rarely in the smooth muscle cells of blood vessels in mammals; and the final one is a relatively large lanceolate paired form, apparently rich in chromatoid granules—this is the form transmitted from the tick to mammals, and is that found in their blood and lesions; it is probably a resting or slightly more resisting stage. Ricketts recognized this form, but unfortunately confused it with bacteria which are occasionally present in non-infected ticks in large numbers and of size small enough to make error possible. For this parasite the name *Dermacentroxenus* (Dermacentor + ξένος = citizen) *rickettsi*, in honour of Ricketts, who first saw it in the blood, is proposed. Attempts to cultivate it failed, and a decisive conclusion as to its nature—namely, whether it should be classified among the bacteria or protozoa—is not justified by the data at present available. The name Rickettsia was applied by da Rocha-Lima in 1916 to minute bacillary forms found by Hegler and von Prowazek in typhus, and regarded as identical with those described in Mexican typhus by Ricketts; but Wolbach considers that the name Rickettsia is not applicable to the organism that he finds in spotted fever. Typhus and Japanese river fever or flood fever, which present a strong clinical resemblance to it, and to Rocky Mountain spotted fever, will probably be eventually brought into a nosological group characterized by a specificity of the parasite for the peripheral blood vessels. Both in man and experimental animals the lesions of spotted fever are practically confined to the peripheral blood vessels, including those of the external genitals; there is first endothelial proliferation with parasitic invasion of the vessels followed by necrosis of small groups of cells; the affection of the cutaneous vessels accounts for the rash which appears about the third day as a macular eruption, first on the wrists, ankles and back, then all over the body, and becoming petechial. Professor Wolbach, whose monograph contains numerous beautiful illustrations of the organism and of the histological changes, also describes the clinical course of the disease in man, and some other aspects of his research, such as experiments to prove the specificity of the parasite, investigation of its properties, and the features of the infection in experimental animals.

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[1] *Studies on Rocky Mountain Spotted Fever.* By S. Burt Wolbach. Boston. Reprinted from *Journal of Medical Research*, Boston. 1919, xli, 1-197

TETANUS IN HOME HOSPITALS

We have received from Major General Sir David Bruce, K.C.B., F.R.S., an analysis of 1,458 cases of tetanus which occurred in the home military hospitals during the years 1914-1918.[1] Summaries of the author's series of separate analyses have appeared from time to time in the BRITISH MEDICAL JOURNAL;[2] in his latest analysis Sir David Bruce, surveying the cases as a whole, has tabulated much information which possesses clinical as well as historical interest. These 1,458 cases correspond to an incidence of 1.2 per 1,000 among 1,242,000 wounded treated in home military hospitals. The occurrence of complete trismus within twenty-four hours was of grave import—seven cases out of ten were fatal; when closure of the jaws occurred after the appearance of other symptoms of tetanus, eight cases out of ten recovered. The mortality for general tetanus without trismus was 24 per cent.; no death occurred among 201 cases of local tetanus. The rate of mortality among the whole series of 1,458 cases was 34.8 per cent., and among all the cases occurring in France and in England 47 per cent.; the death rate in the pre-serum days was about 85 per cent. Doubtless the mortality would have been lower if prophylactic injection in adequate doses had always been employed; many cases of trench feet, for example, succumbed to tetanus before it was learned that they must be treated as wounded men. The death rate was 55.5 per cent. in 1914, 20.5 per cent. in 1917, 26.3 per cent. in 1918, and 15 per cent. in 1919. The mortality was perceptibly less when there was no bony fracture. Figures are given confirming the now well-established finding that the mortality rate varies inversely with the duration of the incubation: in those in whom symptoms of tetanus appeared within ten days of the wound, from the eleventh to the twenty-second day, or after twenty-two days, the rates of mortality were 58.1, 35.3, and 17.3 per cent. respectively. Among the 1,458 cases, 899 (61 per cent.) are noted as having received a prophylactic injection of antitetanic serum. Of these, 203 died, giving a mortality of 22.5 per cent. Among the remaining 559 cases in whom prophylactic treatment, though possibly given, is not recorded, 298 died—giving a mortality of 53.3 per cent. Turning from preventive to curative treatment, Sir David Bruce dismisses the use of carbolic acid, magnesium sulphate, and other salts, with the remark that in home hospitals they proved a failure, and soon dropped out of use. Serum treatment of experimental tetanus in monkeys showed in Professor Sherrington's hands a recovery rate of 44 per cent. in a series of twenty-five animals. Statistical investigation of the value of antitoxin given curatively in the wounded presents many serious difficulties, but Captain Golla, a member of the Tetanus Committee, believes that the therapeutic use of serum is of little or no practical value. Sir David Bruce remarks that "it is clear that medical officers will continue for the present to give a case of tetanus the benefit of the doubt, and use antitetanic serum therapeutically." Antitoxin appears to have no power of neutralizing toxin in the nervous system, but may neutralize free toxin circulating in the blood or lymph. If a fatal amount has not been absorbed by the nerve cells the injection of antitoxin may be of use; by animal experiment it appears to be proved that the intrathecal route is the best.

CARDIO VASCULAR RESPONSE TO INJECTIONS OF ADRENALIN

HYPODERMIC injections of adrenalin or epinephrin (to use its non commercial though perhaps less common name) are so frequently employed as an efficient remedy in asthma, and are now becoming—at any rate in America—such a routine diagnostic procedure in the detection of thyroid intoxication, that information about the reactions thus induced is interesting. Individuals vary much in the cardiovascular response to these subcutaneous injections, and very unpleasant symptoms, such as palpitation, throbbing in the head, tremors, shivering, nervousness, distress, and precordial pain of an anginoid character, may follow; the physical signs include a rise in systolic pressure, increase of the pulse pressure or the difference between the systolic and diastolic pressures, rapid pulse, mydriasis, and glycosuria. As is well known, Eppinger and Hess, who introduced the conception of vagotonia and sympatheticotonia, considered that persons with an excess of adrenalin and increased tonicity of the sympathetic (as distinguished from the autonomic or parasympathetic) system were characterized by a well marked response to adrenalin. This explanation has met with more criticism than confirmation. and Dr. P. W. Clough.[1] in "a study of the cardio-vascular reaction to epinephrin and epinephrin sensitiveness in patients with hypertension" will have none of it. He gave hypodermic injections of 1 c.cm. of Parke, Davis and Co's. 1 in 1,000 adrenalin solution to 95 persons. 32 of whom were regarded as normal subjects, and on the basis of the cardio-vascular response, as judged by the degree of rise in the systolic blood pressure, of the increase in the pulse pressure, and the acceleration of the pulse, divided them into four groups—namely, those with a negative or insignificant reaction, a moderate, a well marked, and a very well marked reaction. Of the two factors—direct stimulation of the heart and vaso-constriction—the first plays the chief part in moderate reactions, whereas in severe reactions the second is also of importance. Out of the 32 normal persons 82 per cent. gave an insignificant or moderate reaction. The most striking point among these observations was the frequency of a well marked reaction in patients with a high blood pressure, which was taken as 155 mm. Hg or more; out of 22 such patients 15, or 68 per cent., were found to show marked reactions to adrenalin, whereas such reactions were obtained in only 26 per cent. of the other 68 cases, and in 18 per cent. of the 32 normal subjects. In none of these 15 cases were there any noteworthy sympatheticotonic symptoms as formulated by Eppinger and Hess. In his critical discussion of the significance of this sensitiveness to adrenalin on the part of persons with a high blood pressure, Dr. Clough, controverting the usual opinion, concludes that it is now well established that adrenalin is not a direct means of maintaining the blood pressure at the normal level, and, further, that in spite of a number of positive results which are shown to be open to fallacy, there is not any satisfactory direct proof of an increased amount of adrenalin in the blood in human disease, or that high blood pressure is due to or associated with adrenal over-activity or "hyperadrenalinaemia." In the great majority of patients with high blood pressure there is no evidence of any thyroid disturbance, and it is therefore doubtful if there is any direct relation between the two conditions. The sensitiveness to adrenalin of patients with a high blood pressure is very probably only one of the manifestations of a general abnormal reactivity of the cardio-vascular system, such patients often showing an unusually well-marked blood pressure response to exercise, emotion, or excitement. These are, of course, the conditions in which Professor Cannon and others believe that an increased secretion of adrenalin occurs, but, as mentioned above, Dr. Clough does not accept this conclusion, and he considers that this sensitiveness may be due to an abnormal state of the sympathetic or the nerve endings without its being necessary to assume overactivity of either the chromaffin system or of the thyroid.

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[1] Reprinted from the *Journal of Hygiene*, vol. xix, No. 1, July 28th, 1920. Cambridge: The University Press.

[2] BRITISH MEDICAL JOURNAL, October 23rd, 191[illegible]; June 30th, 1917; September [illegible], 1917; December 1st, 1917; February 23rd, 1918; March [illegible], 1918; October [illegible], 1918; July [illegible], 1919.

AYERZA'S DISEASE.

Among the papers contributed to the two volumes dedicated to the late Sir William Osler in honour of his 70th birthday there is one on Ayerza's Disease by Professor A. S. Warthin of the University of Michigan, who in a previous paper in 1917[2] referred to this term as first used earlier in that year by Barlaro. As very few British physicians are familiar at any rate with this name, it is perhaps comforting to find that the case reported by Professor Warthin is the first to be published in the English language. The condition is one of chronic cyanosis, dyspnoea, and polycythaemia associated with syphilitic disease of the pulmonary artery; and its clinical manifestations are therefore those of the Osler-Vaquez disease or polycythaemia rubra. Since it was first described in 1892 several forms or varieties of Osler-Vaquez disease have been isolated; thus in 1908 Dr. Parkes Weber recognized a division of the cases into those with and those without splenomegaly, and further those without obvious splenic enlargement have been subdivided into those with increased arterial blood pressure (polycythaemia hypertonica or Geisböck's disease), and those with a normal or low pressure. Congenital cases have been called Blumenthal's disease, and the syndrome, for as such it must be recognized, seems to have a rather unfortunate attraction for eponymous nomenclature. In some cases of primary tuberculosis of the spleen erythraemia has been a prominent feature. Professor Warthin doubts the existence of a primary erythraemia, at any rate with cyanosis and dyspnoea, and believes that in all such cases the erythraemia is compensatory in nature and secondary to pulmonary or other morbid lesions leading to insufficient oxygenation. As an illustration he fully reports a case with the complete symptom- and pathological-complex of the Osler-Vaquez syndrome with chronic cyanosis, high erythraemia, and splenomegaly, with the secondary phenomena of dyspnoea, visual disturbance, gastro-intestinal disorder, general weakness, and oedema in a man who was under observation for five years. *Post-mortem* investigation showed that the underlying cause was a very high grade syphilitic mesarteritis of the pulmonary artery and its branches. The literature of pulmonary arterio-sclerosis is rapidly increasing, particularly in Spanish America, and clinical cases of pulmonary arterio-sclerosis of syphilitic origin appear to be commoner in tropical than in temperate countries. Thus in 1908 Sir Leonard Rogers published in the *Quarterly Journal of Medicine* ten cases of extensive atheroma and dilatation of the pulmonary arteries, almost certainly syphilitic in origin, as a not very rare cause of fatal cardiac disease in Bengal, the principal symptoms being palpitation, dyspnoea, and great dropsy, due to tricuspid regurgitation. Abel Ayerza, Professor of Clinical Medicine in the National University of Buenos Aires, first described in 1901 the syndrome characterized by cyanosis, erythraemia, dyspnoea, cough with mucus or muco-purulent sputum, haemoptysis, headache, vertigo, and somnolence; and in 1913 F. C. Arrillaga gave the most complete account of the condition in a monograph containing eleven cases.

FORGOTTEN COMPRESSES IN THE BLADDER.

AT a recent meeting of the Société Française d'Urologie a communication was read detailing the histories of three cases in which compresses had been left in the bladder. In two patients cystotomy combined with external urethrotomy had been performed for traumatic rupture of the urethra. In the third case an adenoma of the prostate had been enucleated, and the residual cavity plugged. In all three post-operative cystitis was a pronounced symptom, with frequency of micturition and dirty urine. Removal of the foreign bodies, which were found to be encrusted with phosphates, led to rapid cure. Berne-Legarde and Ramos, who recount these experiences, conclude that it is important that the surgeon himself should withdraw the compresses employed, and not delegate the duty to others. An interesting discussion followed, in which several urologists admitted having seen similar cases. Marion has had two, one a prostatectomy performed by himself, the other a similar case operated upon elsewhere. In both he found tampons; one he was able to remove with a lithotrite. Marion has, moreover, on three occasions seen threads from compresses eliminated subsequent to operation. Pillet has met with a case in which phosphates were encrusted on the threads of a pack used in the course of a prostatectomy. Legueu stated that he had in his museum three pieces of gauze which had been overlooked at the end of an operation. As with forgotten swabs elsewhere we have to deal here with three categories: First, those in which a swab intended to serve some temporary purpose or meet some sudden emergency is, in the end, left behind; second, there are those cases in which a swab becomes torn across or leaves behind it fragments shredded off—often through friability engendered by repeated sterilization; third, it occasionally happens that a gauze pack or drain purposely left behind disappears into the wound and is forgotten by the person dressing the case. No one but the operating surgeon can realize how easy it is to leave compresses and swabs behind.

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[1] P. W. Clough, *Bull. Johns Hopkins Hosp.*, Baltimore, 1920, xxxi, 266–273.

[2] Warthin, *Amer. Journ. Syphilis*, 1917, I.

THE CLEANSING OF CHURNS.

THE inquiry made by Stenhouse in 1916[1] showed that between one-hundredth and one-fiftieth of rail-borne milk was sour on arrival at its destination, and that in London alone an annual loss of 90,000 gallons of milk was thus brought about. A similar loss was found to occur in the North of England. Suspecting that inefficient cleansing of milk churns before their return (empty) to farmers might be a source of contamination of fresh milk, Cumming and Mattick,[2] in October and November, 1919, examined 500 empty milk churns found on railway platforms. Only 16 per cent. of the churns examined were clean and dry; 28 per cent., though apparently clean, were wet. In 56 per cent. the presence of milk, or of an evil smell, or of both, was noticed. Each churn was washed out with one litre of sterile normal saline solution and samples of the washings were examined bacteriologically within one hour of collection. Those churns which contained milk, or milky water, showed very high bacterial counts (for example, eighteen million bacteria per cubic centimetre of washings); lactose-fermenting organisms were found in high dilutions. Churns which were apparently clean and dry showed both high and low bacterial counts, but lactose-fermenting organisms were few or absent. Out of thirteen clean and dry churns five only showed counts of 5,000 or fewer bacteria per cubic centimetre of washings; the best figure found was 170 bacteria per cubic centimetre of washings, corresponding to at least 170,000 bacteria in the churn. In churns insufficiently cleansed, especially if left damp, a favourable opportunity is afforded for the proliferation of bacteria; the cleansing of such churns presents great difficulties to the farmer, even in the rare instances in which he is provided with the necessary apparatus. The dirtiness of empty milk churns being so great, even in comparatively cold weather, the present inadequate methods of washing and cleansing would appear to contribute in no small degree to the loss of milk caused by souring in transit. In further experiments it is hoped to establish the minimum time of steaming necessary to ensure as complete sterilization of the churns as is possible under practical conditions.

COEXISTING PRIMARY MALIGNANT TUMOURS.

When a patient is known to have a malignant tumour and examination reveals a second neoplasm it is generally the case that the latter is a metastasis of the first. Jentzer[3] remarks that this is not invariably the case and that two entirely independent neoplasms are occasionally encountered in the same patient. The classification of multiple tumours is that given by Askanazy: (1) multiple benign or malignant tumours in the same system; (2) multiple benign or malignant tumours in several systems; (3) multiple metastatic tumours of malignant origin. The second category is that which is rare, and Jentzer has found in the literature only two "triple" cases. The first comprised cancer of the lip, penis, and stomach; the second, cancer of the thyroid, suprarenal hypernephroma, cancer of the gall bladder, polypus of the colon, and adenoma of the pituitary body. To these cases Jentzer is able to add four personal cases. In one man he found a hypernephroma of the left suprarenal with wide metastasis, squamous carcinoma of the tongue and cervical glands, and carcinoma of the stomach. In another, epithelioma of the right eyelid, carcinoma of the stomach, carcinoma of the rectum. In a third, cylindroma of the skin over the knee, carcinoma of the breast. The first case is especially interesting in that each of the three malignant growths was situated in a different and independent system. The author concludes from his experience that it is not absolutely justifiable to give up hope when tumours are discovered which seem to be metastases of one previously discovered (and perhaps already removed); in theory at least, each malignant growth is susceptible of independent treatment. In the last case outlined above both tumours were successfully removed.

THE Harveian Oration before the Royal College of Physicians of London will be delivered by Sir Frederick Andrewes, M.D., F.R.S., Professor of Pathology in the University of London and Pathologist to St. Bartholomew's Hospital, at 4 p.m. on Monday, October 18th.

THE first Murphy Memorial Oration of the American College of Surgeons will be delivered by Sir Berkeley Moynihan on October 11th during a meeting of the College in Montreal. The oration has been founded in honour of the late Dr. J. B. Murphy of Chicago, whose fame as a scientific surgeon and clinical teacher is well known in all schools. On the same occasion Sir Berkeley Moynihan will present to the College a mace, the gift of the surgical consultants of the British Army during the war.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from September 4th to September 20th, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London W.C.2.

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[illegible] Dr. Richard [illegible]	1 1 0	[illegible] Dr. [illegible]	1 1 0
[illegible] Dr. Alfred D. [illegible]	1 1 0	[illegible] Dr. W. [illegible]	0 10 6
[illegible] Dr. W. [illegible]	1 1 0	[illegible] Dr. [illegible]	1 1 0
[illegible] Dr. [illegible]	1 1 0	[illegible] Dr. [illegible]	1 1 0
			[illegible] 1 0

We have received from Mr. Everett M. Capon, L.D.S., of Liverpool copies of a leaflet drawing attention to the importance of clean teeth and giving instructions as to how and when the teeth should be cleaned. The leaflet (the issue of which had to be suspended during the war) is again issued for distribution to children or hospital patients. The copyright has been presented by the author to the Benevolent Fund of the British Dental Association.

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[1] [illegible]

[2] [illegible]

[3] [illegible]

THE MEDICAL DEFENCE UNION.

THE annual general meeting of the Medical Defence Union, Limited, was held at the rooms of the Medical Society of London on September 16th. In moving the adoption of the report of the Council for 1919–20 the President, Sir JOHN TWEEDY, drew attention to the importance of the work carried on by the Union and the advantages of membership of such an organization. He referred to the new arrangement coming into force on January 1st, 1921, by which each member of the Union would be provided with indemnity to the extent of £2,500 against damages or costs of the other side in any case taken up by the Union on his behalf; in his confident opinion the power and influence of the Union would, as a consequence, be greatly increased. He had been impressed during his term of office by the ability of the Council to deal with the great variety of matters—often of extreme difficulty—which came before them, and he had been struck more particularly by the wide acquaintance with the various phases of medical practice which the provincial members possessed. No matter how difficult, complicated, or exceptional the case submitted to the Council, there always seemed to be someone qualified by experience to give a reasoned opinion on it. He believed the Union had an assured future of increasing usefulness before it. The report of the Council and the financial statement for the year 1919 were adopted unanimously.

In the annual report it is stated that during 1919 the membership increased by 127; new members elected numbered 584. The guarantee fund amounted to £11,963. The receipts during 1919 were over £8,000—a record in the history of the Union; the surplus of assets over liabilities was £9,093. The solicitors report that of 138 cases referred to them (compared with 123 during 1918), 31 were libel and slander actions prosecuted or defended; the majority were settled by obtaining full withdrawal and apology from the offenders. During the year 18 malapraxis actions have been defended and 86 miscellaneous and personal matters have been referred to arbitration; the latter phase of the Union's work, though less spectacular than litigation, was in many respects more beneficial. In none of the 138 cases referred to the solicitors was an action lost, and in one instance only, and then in accordance with the express wishes of the member, was it necessary to effect a settlement by monetary payment. In three instances proceedings were taken for the suppression of unqualified practice. In many cases where members had sought to recover payment of their fees through the medium of the courts, the claim—at first resisted on the grounds of wrongful treatment or malapraxis—was admitted as soon as the Union had identified itself with the member in his defence. Members are urged to consult the Union at the earliest possible stage in any matter in which they need assistance; at the time of accepting appointments it is advisable to obtain a written statement of the terms and conditions of the engagement. With regard to complaints against panel practitioners, members are advised that by attending inquiries held before Medical Service Subcommittees they may in many cases avoid the necessity of subsequent appeals to the Ministry of Health. As the result of a number of instances in which reasonable claims for payment have been refused or ignored by the naval or military authorities, the Council feels it necessary to warn medical practitioners that when invited to undertake professional service for the State they should insist upon a definite agreement as to the date and source of payment. By resolution of the annual meeting newly registered practitioners may be admitted to the Union after January 1st, 1921, without entrance fee, provided they join within one year of registration.

ON GETTING RUSTY.

By RUSTICUS.

THE town doctor often expresses envy of the pleasanter conditions in which his brethren in the country do their work. He congratulates us on the fox-hunting, salmon fishing, grouse shooting, and other non-professional slaughter in which we are supposed to pass our time. We, on the other hand, are adept in picturing the heroic circumstances of our lives—our long journeys, always in snow, always at night, to fight with death a battle in which our valour and skill usually gain the victory.

This paper has nothing to do with the physical difficulties and dangers, privileges and pleasures of our lives. Some of the weapons of our warfare are not carnal. How are we to keep them keen and bright?

First, of course, *reading* suggests itself. Reading is necessary—its benefits are obvious. But a man who is tired *by* his work is likely to be tired *of* his work, and it takes some resolution for him to be diligent in professional reading. Resolution carried out, however, soon gathers strength, and professional reading can, in virtue of its own attraction, often win one away from lighter literature. Even then it is not without its danger—the danger of detachment from the concrete subject. The country doctor should check what he reads by what he sees. So far as his own experience carries him he should mentally corroborate or impugn what the writer says, and if his experience is meagre he should use his earliest opportunity to put to the test any proposition suggested. He has not the chance to see all he can read about, but he has the chance to read about most of what he sees. To be profitable his reading should be related to this; I may almost say it should be mainly about this. It is not desirable that he should limit his outlook to the short base-line of his own measuring, but however short it is he should use his own base-line to take the bearings of his distant observations.

I have found it useful to keep one textbook as an index to what I have read on any subject, and to pencil on the margin references to current literature or to other books which I do not possess, or which I use less often. Taylor's *Medicine* is a book which I use for this purpose. I frequently jot on the margins of my own library a name or a date, or both, illustrative of the subject under consideration. I do not insult a writer by scribbling "rot," "bosh," or "splendid." If I have reason to challenge what he says, and if the book is my own, I pencil a quite respectful symbol for future reference. Revisal months or years later has sometimes led me to erase the mark; has sometimes shown me that I had misunderstood the writer; and, in any case, has elicited fuller consideration of the subject.

A means of grace more difficult either to use or abuse is the *laboratory*. This may range from a spoon and a candle to a farm of guinea-pigs. One of my colleagues has an *x*-ray plant; all of us have a few test tubes. I do not think that many general practitioners have time to do their own bacteriological examinations, but, so far as he can, a man will do well to keep his hand in at qualitative and even quantitative examination of urine and blood, even though he depute most of this work to the completely equipped laboratory. If his patients are in good hands, most of his results will be negative, and it is dull work fishing if you catch no fish. Occasionally his own microscope and his own test tube will reward his search.

In reading and in laboratory work it is good to go back to the preliminary studies of our academic curriculum—physics, chemistry, biology, anatomy, physiology. It is wrong to say "go back." I had learned nothing of the orbital structure of the atom, of niton, of Mendelism, of chromaffin tissues, or of vitamines twenty years ago. It is not from books on surgery, medicine, and midwifery that such knowledge as I have got has been gathered. If the fundamental subjects were of use in our undergraduate days they are useful now, and we pilgrims must pitch our old tents on new ground. We cannot even understand new books on medicine, surgery, and midwifery without humble reference to elementary books such as our children are using at school. I confess to having found a good deal that I did not know in Walker's *Inorganic Chemistry* within the last few months. Recently, too, I have become acquainted in many bowls of duckweed with protozoons, rotifers, crustaceans, and diatoms, which formerly I knew only from pictures. "And what the better am I?" I have a more vivid concept of the cilia of the healthy bronchus and of the handicap which the loss of the cilia entails. I understand better the action of vasodilators in flushing the human capillaries, which I never saw in life, and the structure of the myotomes, which I never saw in a human fetus at all. Also, it has been pleasant amusement.

We cannot dispense with such revisal without loss. There are many things which we erroneously think we know. For instance, all of us know in a way that the earth travels round the sun in an ellipse; few of us know that this ellipse, drawn with a blunt pencil on an eight-inch sheet of paper, would be indistinguishable from a compass-drawn circle with the same centre and a radius equal to half of any diameter of the ellipse. Most of us accept the statement that the cornea constitutes about one-sixth of the surface of the eyeball. This is quite wrong; the proportion is about one-fourteenth. The mathematical error is a simple one, prevalent through mere inadvertence.

Is the country doctor never to do any light reading? The paradoxical answer is true that the man who does most hard reading will get through much light reading as well.

Perhaps the most valuable of all prophylactics against mental rust is the *record of work done*. There are many ways of keeping records. That which seems to me ideal is the medical history sheet or card. In the course or at the end of a busy day I should find it impossible to write up every case on its individual sheet. The compromise on which I have declined is a daily journal in which I enter a short note of the condition of each patient and what I have done for him. If it is necessary to review his case at length, it can be done with the help of the dated card index on which the money charges are entered; but I am not now dealing with the *prima facie* use of the journal. Its prophylactic value against rustiness is that when writing it up I have to formulate my concept of the case definitely. Year after year before his death there stood at my shoulder, there still stands, the ghost of my teacher Sir Thomas Fraser checking vague approximation. "Pulse quick! Temperature normal! How quick? What did the thermometer actually record, and where did the patient hold it?" Over and over again has the act of writing down suggested something that I had omitted to investigate, and brought signs and symptoms into significant perspective. I am aware that this would be impossible in many town practices. I have kept it up for about twenty years in a humble class country practice busy enough to save me from bankruptcy.

My urban brother will probably think that I have less opportunity of congenial social intercourse than he enjoys in the town. To a certain extent this is true. It is a great delight to have a talk on any subject with the city physicians and surgeons who honour me with their friendship. But here in the country we discover that the college-bred man has no monopoly of culture. A working shepherd on my list of insured persons has for many years been the Aristotle and the Socrates of relays of brainy lads who have spent their Saturdays in his fields learning botany, astronomy, and honesty of thought from him. He told me that he first read Euclid when he was 28 years old. He noticed from the squared tiling of a dairy floor that "the sum of the first n odd numbers was n^2" (the terms are given as he used them); he correlated this with the binomial theorem, and took me out of my depth. A retired grocer in my village brings his knowledge of Mendelism into practice, and systematizes into theory his results in growing potatoes. And such small music as I know I have learned in large proportion from a working cobbler and a lawyer's clerk.

I am not going to apologize for the size of my hat. As a matter of fact I am not self-satisfied. I feel very rusty. Of course I know that I am neither the best dressed nor the handsomest man in my neighbourhood. But I should think still worse of myself if I did not take some care for physical and mental decency, if I did not read a little, write a little, wash a little, and shave a little on most days of the year.

England and Wales.

NEW SANATORIUM FOR LIVERPOOL.

Of the tuberculosis institutions contemplated by the National Insurance Act the first to be undertaken was that at Fazakerley, Liverpool. It was begun in 1914 and, but for the war, would have been completed the following year. Now, after many delays, the institution is in working order, and [illegible] beds are available for the treatment of pulmonary tuberculosis. The institution will be formally opened during the Tuberculosis Conference at Liverpool in October, but the members of the city council were on September [illegible], at the invitation of Dr. J. G. Moyles, chairman of the Hospital and Port Sanitary Committee, accorded a private view of the buildings and equipment. Unfortunately Dr. Moyles was prevented by illness from receiving the visitors, but his place was taken by Dr. Utting, his deputy, and former chairman of the committee. Dr. Utting conducted the party over the institution and grounds, describing the system of working, and giving an interesting history of its evolution. The sanatorium consists of a number of separate buildings: administrative block, nurses' home, male, female, children, and hospital pavilions. The plan was selected by competition, the architects being Messrs. Hooper and Co., of Surrey. The pavilions for adults are two-storied. On the ground floor the front of each compartment can open completely, and behind the compartments runs a corridor the whole length of the building. In the case of the upper story the compartments extend backwards over the corridor—but, being the same size as those below, space is left in front for a roomy balcony. The pavilions for children have only one story. Attached to the institution are workshops, and in the development of the tuberculosis scheme a labour colony is contemplated. Land for this purpose is already available on the corporation's Fazakerley Estate. In accordance with the National Insurance Act, the Treasury has contributed £90 per bed to the initial cost. The Treasury grant amounts to about £22,000 in a total expenditure of over £50,000. The Treasury, in addition, defrays half the expenses and interest on loans. The sanatorium will be in charge of Dr. Rundle, the medical superintendent of the adjoining infectious diseases hospital. The Hospitals Committee, under Dr. Moyles and his predecessor Dr. Utting, are to be congratulated on the completion of this institution for pulmonary tuberculosis, which, with the Highfield Hospital, which has just been taken over from the Select Vestry for the Treatment of Surgical Tuberculosis, should go far to meet the requirements of the city as regards tuberculous disease.

THE ANTI-TUBERCULOSIS CAMPAIGN IN KENT.

With the gradual return of medical officers from military service the depleted staffs of tuberculosis dispensaries, hospitals, and sanatoriums have once more been brought up to the pre-war standard, and in many cases have been considerably increased. The reports of the work done by them in the counties are appearing from time to time, and prove that there is no lack of activity in the endeavour to deal with all the varied problems of prevention and treatment which are now well recognized although by no means solved. From the county council of Kent a good account of the work done during the past year is detailed by Dr. Alfred Greenwood in his annual report. The county is divided into seven districts, each fully staffed, and the experience of each division is recorded separately. It is satisfactory to learn that the ever-present difficulty of dealing with the advanced case shows some signs of being met. The danger of close association with the advanced, and perhaps dying, case—too often unavoidable in small tenements—is more clearly recognized by possible "contacts" than ever before. A special sanatorium for infective cases has been provided, and more active measures for protecting children from possible infection have been adopted. The value of bacteriological work has been abundantly proved, not only for diagnosis but also for treatment of infections other than pure tubercle by inoculation. The want of success in checking the progress of disease is not due to want of means, but simply to lack of power to administer them effectually. No new facts or suggestions have been brought to light, but the previous sum of knowledge has been steadily added to, and former conclusions have been fully confirmed by later experience.

THE METROPOLITAN POLICE.

The annual report for 1918 and 1919 of the Metropolitan Commissioner of Police* has now been issued. In the abstract of the report of Sir Charles Ballance, the chief surgeon, it is stated that the average daily number of members of the Metropolitan Police Force absent through sickness was 854 in 1919, and 906 in 1918, out of about 16,000 men; the daily average loss by sickness was 4.91 per cent. in 1918, compared with 5.42 in 1917. The increased sickness in 1918 was attributable to the influenza epidemic, which reached its maximum on July 7th, when 1,406 men (8.79 per cent.) were on the sick list. During the second wave of the epidemic of 1918 quinine prophylaxis was tried on a large scale, but there was no evidence of its success. The proportion of men who were inoculated with a mixed vaccine was too small for any conclusion to be drawn as to the value of this form of preventive treatment. There were 267 deaths in the Force in 1918, as compared with 100 in 1919, and 107 in 1917. Much more dental treatment appears to have been undertaken in 1919, when 7,724 extractions were performed, and 1,076 dentures supplied, compared with 3,860 and 693 respectively in the previous year. From the tabular statement of apprehensions for crime it appears that in 1919, 3.336 per thousand of the estimated population were apprehended for simple or aggravated drunkenness. This figure may be compared with the very low figures of 1.625 and 2.604 for 1918 and 1917 respectively, 4.420 for 1916, and figures ranging, roughly, between 7 and 9 per thousand for 1900 to 1914. Prostitutes apprehended numbered about 2,750 in 1918 and 1919—a slight reduction on the figures of the three preceding years. In the juvenile courts 1,957 cases were charged in 1919 compared with 3,341 in 1918; convictions numbered 466 and 1,008 in these two years respectively; 1,626 children and 983 young persons were received in places of detention in 1919, compared with 2,735 and 1,433 in 1918. The number of persons killed in street accidents in London was 688 in 1919, compared with 612 in the previous year; personal injuries numbered 19,021 in 1919 (the highest figure since 1916), compared with 15,091 in 1918. Of 688 lethal accidents in 1919, 136 were caused by motor omnibuses, 42 by tramcars, 26 by taxicabs, 138 by private motor cars, 25 by motor cycles, and 203 by commercial motors. Among the killed were 20 persons who were improperly riding behind vehicles. Of the 19,027 street accident injuries in 1919, 3,724 were caused by private motor cars and 2,335 by commercial motors.

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* Report of the Commissioner of Police of the Metropolis for the Years 1918 and 1919. London: His Majesty's Stationery Office. 1920. Price 6s. net.

Ireland.

DEATH OF SIR JOHN BYERS.

WE have received, with very great regret, news of the death of Sir John William Byers, M.D., the distinguished professor of midwifery and of the diseases of women and children in Queen's University, Belfast, and one of the leading members of the medical profession in the North of Ireland. Sir John Byers died on the night of September 20th. We hope to publish an obituary notice in an early issue of the JOURNAL.

DUBLIN DOCTORS AND THE HEALTH COUNCIL REPORT.

A meeting of the Dublin Borough medical practitioners was held in the Royal College of Surgeons on September 9th, when Sir William de C. Wheeler, Vice-President of the Royal College of Surgeons, was in the chair. The principal subject for consideration was the report of the Irish Public Health Council, which was approved; members were urged to procure copies of the report, which are for sale at Messrs. Ponsonby, Ltd., Grafton Street, Dublin (4d. net). Drs. Delaney, E. Magennis, McGrath, Nesbitt, and R. J. Rowlette were appointed to attend the meeting of delegates.

THE LATE MR. ROBERT CAMPBELL.

In our last issue we printed, at page 455, an obituary notice of the late Mr. Robert Campbell, M.B., F.R.C.S., surgeon to the Royal Victoria Hospital, Belfast, who died on September 6th, at the age of 54. The funeral service was conducted at the house in College Gardens, Belfast, by the Rev. H. J. Rossington, who gave an impressive address, and the interment took place in the family burying place at Templepatrick, amid many manifestations of sorrow.

Australia.

[FROM A SPECIAL CORRESPONDENT.]

UNIVERSITIES CONFERENCE.

A CONFERENCE of delegates from all the Australian universities was recently held in Sydney; at one of the sessions a discussion took place on a proposal that the medical course should be extended to six years. It was made by the University of Adelaide, and in supporting it Sir Joseph Verco, the delegate of that university, said that at present the course in Adelaide really extended to six years, as students were able to take certain preliminary scientific subjects outside the university in the first year, and it was thought desirable to bring these first year students into the university. Professor Anderson of Melbourne said the general opinion in Victoria was that the course must be lengthened. Professor Wilson, Dean of the Faculty of Medicine of Sydney, agreed that a change was needed involving the lengthening of the course, but he thought that only one-third of a year might be sufficient. There were some who thought that the students in their fourth and fifth years should have a longer time for clinical work, but he personally thought that the teaching in the early fundamental science was a more important part of the medical training, inasmuch as clinical study could be continued at the post-graduate stage, while a man would, on the other hand, never go back to physics, chemistry, or biology. He was opposed to the idea of pushing these subjects back into the secondary schools curriculum, since science required a more mature mind than that of a youth of 16 or 17 years. He was in favour of the standard for preliminary scientific subjects being raised. It was ultimately decided to refer the whole matter to the Faculties of Medicine in Sydney, Melbourne, and Adelaide.

The conference decided upon the establishment of a Standing Advisory Committee for the Australian Universities. The duties of this committee are:

1. To collect and critically examine information for arrangement in reports, with advice, to the constituent universities.
2. To consider and make recommendations tending towards the co-ordination of educational requirements.
3. To compile a year-book of the Australian universities and to prepare such other publications of common interest as may be requested from time to time by the universities.
4. To arrange for the holding of inter-university conferences and generally to promote the exchange of views between the universities.
5. To act as a medium of communication between the Australian universities and the Universities Bureau of the British Empire and similar bodies in foreign countries.
6. To consider the general aspects of any matter referred to it by any constituent university.
7. Generally to promote common action in any matter concerning the work and development of the universities.

It was decided to refer to this Standing Committee the following questions:

Appointment of graduate-study boards for advice to travelling scholars.

Establishment of uniformity of practice in regard to university emoluments and tenure.

Recognition of Australian matriculation and other academic status by the universities of the United Kingdom.

The relation between the State and the university.

It was also agreed to ask the committee to endeavour to arrange for a preliminary conference in London of the Dominions delegates to the British Congress, and to consider whether it would be advisable to send an Australian Mission to the United States. The conference also decided to make representations to the Government for the alteration of the present duty on scientific apparatus which could not be made in Australia.

RESIGNATION OF PROFESSOR WILSON.

Professor J. T. Wilson, F.R.S., Challis Professor of Anatomy in the University of Sydney, has resigned his chair on his appointment to the Chair of Anatomy at Cambridge. The Senate, on accepting his resignation, passed a resolution expressing their deep regret that the university was to lose the services of one who had been a distinguished teacher for many years, who by his scientific work had brought lustre to the university, and who had been a great inspiration to his students. There is widespread regret at the departure of Professor Wilson, and he will carry with him the best wishes of a very large circle of friends and students.

NEW PROFESSORSHIPS AT THE SYDNEY UNIVERSITY.

At a special meeting of the Senate of the University of Sydney, further consideration was given to the recommendations of the Professorial Board in regard to the McCaughey bequest. Owing to the death of Sir Thomas Anderson Stuart the professorship of physiology is vacant, and on the recommendation of the Faculty of Medicine it was resolved that in future there shall be a Professor of Physiology in charge of the department, and an Associate Professor of Physiology, who would be entrusted with the duties of teaching and research in that branch of the subject of physiology which does not represent the primary interest of the full professor. A committee was appointed to report upon the steps to be taken to fill the chair of physiology and the associate professorship, the chair of surgery, and the chair of dentistry. It has also been decided to appoint a new professor of English literature, of English language, of French, an associate professor of German and comparative literature, a professor of electrical engineering, and a lecturer in entomology in the Faculty of Science. No steps have yet been taken towards filling the chair of anatomy shortly to be vacated by Professor Wilson.

CHILDREN AND THE SLUMS.

Dr. Harvey Sutton, principal medical officer of the Public Instruction Department of New South Wales, delivered a lecture before the Health Society recently on "The child as the test of social health." He said that one great trend of modern times had been the development of the city, for civilization and city-making had gone hand in hand. In Australia the proportion of persons living in the cities as compared with the country was greater than in the Old World. In New South Wales about two-fifths of the population lived in the metropolis, and the central city was growing at the expense of the country. A study of infantile mortality in this State showed that in 1893 the infantile death rate in Sydney was 140 per 1,000 births, as compared with 97 in the country. After 1898 there was a marked and rapid drop in the rate, and the improvement was remarkable in that the rate for the city now approximated to that for the country. It was noteworthy that the first gain occurred after the city and country milk supplies improved and the provisions of the Dairy Supervision Act of 1895 were enforced. The child problem was the most reliable index of the slum. Overcrowding and associated housing defects showed themselves in the child by dwarfed development, dirt, disease, and death. As a rule the life chances of an infant were twice as good in residential areas as in thickly populated industrial suburbs. The intensity of dental disease was closely parallel to over population. Of 500 children in a suburb with very bad patches of insanitary houses only three children did not require dental attention, whereas ordinarily at least twenty-five would be expected to have perfectly healthy mouths. Dirt, flies and other insects, and facilities for contact, provided every chance for the transmission of infectious diseases. Dwarfed growth was very distinctive of bad housing. The question arose, What should be the minimum size of the house? Each family had a right to adequate breathing space, separation of the boys and girls, facilities for the amenities of a home and for cleanliness. In conclusion Dr. Sutton urged that the importance of the child should be better realized in Australia, where far more attention was given to stock raising than to the raising of human beings.

Correspondence.

AMERICAN GRADUATES IN EUROPE: LONDON'S OPPORTUNITY.

SIR,—Perhaps your readers will be interested in what was to me a startling item of news. A young qualified physician from one of the Middle Western States of the United States came to my office saying that he was on his way to take up advanced work at Vienna. He said that a committee of [illegible] had circularized the physicians in [illegible] saying that they had [illegible] for physicians to go to Vienna for study, as before the war [illegible] had been accustomed to do. The committee gave assurance that they had prepared the way for the reception of these physicians in Vienna and for the [illegible] of all [illegible]. Furthermore, the committee were prepared to aid in securing [illegible] passports and [illegible]. I expressed surprise that any one, in the present famine conditions of Vienna and in view of the [illegible] of the war, should attempt to go there for study. I then presented the facilities for advanced medical study in Great Britain and in London. My [illegible] replied that it was the impression among the physicians in his community that the British medical faculty were not particularly cordial in the reception of American students, and that despite the fact of the great clinical advantages of London, the post-graduate work was so submerged and intermingled with the undergraduate work that the opportunities were not comparable with those which were formerly enjoyed in Vienna and Berlin.

Inasmuch as it is one of the functions of my office to promote the exchange of American professors and the interchange of migrating students with the British, and to direct here the stream of American students earlier going to the Continent, it seems as though I ought to apprise the medical schools and hospitals of the above fact. If properly organized I believe no better authorities or facilities for post-graduate work exist anywhere than here. But unless something is done at once it is evident that our late enemies will soon recover the patronage and prestige that they had before the war. If the British-American fellowship of our nations is so important to the future peace and progress of the world, as is frequently proclaimed, how important it is that not only our universities but also our great professions co-operate in making personal contacts and professional studies in common. This is a critical and opportune moment. Evidently there is no time to lose. My office, which represents some sixty of the leading universities and colleges of the United States, the Institute of International Education in New York, the American Council on Education, the American Association of University Professors, and the Association of American Colleges, is maintained primarily for the service of American professors and students, particularly graduate students. A cordial welcome has thus far been given by the British to the office and our students, but in the field of medicine it seems to me particularly desirable that the interest already shown by the British brethren should be applied immediately to the further organization and promotion of post-graduate study.—I am, etc.,

GEORGE E. MACLEAN,
Director, British Division, American University Union in Europe.

50, Russell Square, London, W.C.1, Sept. 17th.

THE OCCURRENCE OF URTICARIA AFTER SPECIFIC FEVERS.

SIR,—As I have only just returned home after an absence of several weeks, I have only now had the opportunity of reading Dr. E. Ward's paper on "Urticaria after the specific fevers," which appeared in your issue of August 21st, p. 279. The subject is, in my opinion, deserving of deeper interest than it has hitherto received. The rashes that occur immediately after an attack of a specific fever do not consist solely of urticaria. A blotchy morbilliform erythema and erythema marginatum are not uncommon; and it may be noted that in the first three of the cases recorded by Dr. Ward another rash was observed to be present (blotchy, macular, erythematous). These rashes are well known to those who see much of the acute infectious diseases, and will be found mentioned under the description of "secondary" or "accidental" rashes in most of the special textbooks, and also in works on cutaneous diseases, and more than one writer has reported isolated cases. But so far as I know little has been written concerning their significance. While many of the acute specific fevers exhibit special and characteristic rashes, these secondary rashes are common to all of them.

I believe, with Dr. Ward, that they are a phenomenon of the process of immunization, or perhaps of anaphylaxis. I discussed the question very briefly in an address on "Serum sickness," which was delivered upwards of seven years ago before the Hunterian Society, and was published in the *Lancet* for 1913, i, p. 6[illegible].—I am, etc.,

[illegible] Hospital, Homerton, Sept. 18th. E. W. GOODALL.

TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

SIR,—In connexion with Mr. Clifford Morson's letter in the JOURNAL of September 18th, p. [illegible], I should like to ask what evidence he has of the existence of a sphincter at the lower end of the ureter.

Some years ago Mr. T. H. C. Benians and I made a series of careful dissections of this region, and found that instead of there being any increase in the circular muscular fibres at the lower end of the ureter there was a definite decrease. Apparently the way in which regurgitation of urine from the bladder is prevented is by the interureteral muscular bundle, which forms the base of the trigone, contracting with the muscular fibres of the bladder generally, and so pulling the ureters downwards and inwards towards the middle line, increasing their obliquity, and bringing them within the sphere of control of the bladder fibres, which in the region of the ureteral orifice are partly arranged in a loop-like fashion.

That a considerable amount of movement takes place of a telescopic character between the ureter and bladder is suggested both by the continuation of the interureteral bundle for a considerable distance beyond the bladder, along the posterior wall of the ureter, and by the presence of a very distinct sheath known to German writers as Waldeyer's sheath. We found in certain cases that the portion of the bundle lying along the ureter was almost commensurate in circumferential dimensions with the ureter itself. No doubt the peculiar nature of the flow of the urine into the bladder has something to do with the peculiar anatomical arrangement.—I am, etc.,

WILLIAM WRIGHT.

Medical College, London Hospital, E., Sept. 21st.

PUERPERAL SEPSIS.

SIR,—One wonders whether the biblical quotation from Proverbs, that "In the multitude of councillors there is safety," is really true if it is applied to the divergent views expressed during the last few weeks in the BRITISH MEDICAL JOURNAL as to the causation of puerperal sepsis.

One marvels at the childlike faith of Dr. A. Campbell Stark in his statement that he considers "puerperal sepsis is in *every case* an auto-infection." He has surely never read what I consider overwhelming proof that the variable incidence of this scourge in classified and selected districts is due to the variable incidence in the same districts of septic wounds due to industrial accidents. He will probably be amused at my assertion that in 99 per cent. of cases auto-infection has nothing to do with the case, and that therefore it is unwise for anyone to lay this flattering unction to his soul.

When one considers the meticulous care thought necessary and practised by surgeons to prevent sepsis, why should one wonder that, with the necessarily incomplete methods that have to be adopted by the average general practitioner in puerperal cases, we should so frequently have sepsis as a complication?

Again, I suggest that every medical officer of health will bear me out when I assert that there is a larger percentage of puerperal sepsis among cases attended by both a medical practitioner and a midwife than in cases where the midwife alone is in attendance. It is rather an ugly assertion but it is true, and until this ugly fact is appreciated and acted upon I have little hope of an improvement in puerperal mortality.

If my statistics prove anything they certainly prove that where accidents abound puerperal sepsis also abounds, and the inference is that auto-infection is a bogey which it is unsafe to raise as a determining factor in puerperal sepsis. So convinced am I of this fact that I will forward a free copy of my book on *Puerperal Fever and Allied Infectious Diseases* to any one sufficiently interested; its perusal, I feel sure, will convince an unbiassed reader that the source of puerperal sepsis is not in the patient herself but in her environment, and that in the majority of cases the chief factor is the hands, clothes, or instruments, of those conducting the labour.—I am, etc.,

Heywood, Sept. 14th. GEORGE GEDDES, M.D.

SIR,—The fact that sepsis sometimes follows manipulation during labour is no proof of cause and effect, for it occurs often in cases where there has been no manipulation, and the vast majority of cases where there has been much manipulation are *not* followed by septicaemia. If it be indeed true that manipulation is the chief cause of puerperal sepsis, surely the fact is an opprobrium to obstetrics. What would be thought of a surgeon who refuses to operate because he is not sure of keeping his hands, his instruments, or his patient's skin free from infection?

Yet this is modern teaching: Do not, if you can avoid it, touch a patient in labour, for, if you do, you will very likely give her puerperal fever! Meanwhile the majority of labours in England are conducted by midwives, who are not troubled by such scruples, and whose proportion of septic cases is no greater than that of any other class.

No doubt the ano-perineal region in women always bears organisms from the bowel, but so does that of *everybody* who adopts the usual custom of smearing the part with faecal matter. It is not difficult to get the district surgically clean, and, of the very numerous operations performed on this part of the body, how many are followed by septicaemia?

The theory of auto infection may be wrong, or, like many generalizations, it may be only part of the truth, but it is the only theory that will explain the present fantastic incidence of puerperal sepsis. It is to be hoped that the new impetus given to the teaching of midwifery may result in some great improvement; but, before any advance is likely to be made, we must clear our minds completely of traditional ideas, derived from the time when antiseptics and bacteriology were unknown.—I am, etc.,

Wanstead Park, Sept. 20th. A. CAMPBELL STARK.

MENINGOCOCCUS CARRIERS.

SIR,—With regard to the question of meningococcus carriers, possibly the following notes may be of interest.

During the early part of last year I was called to a case about 1 a.m. The patient was a boy of 11½ years of age, and when I saw him he was only conscious for short intervals and when spoken to in a loud voice. He showed marked opisthotonos.

The onset of his condition was sudden. He partook of a good tea about 5 o'clock, and afterwards complained of headache and indefinite pains, which gradually increased until he was in the condition in which I saw him. I made a lumbar puncture, withdrawing a quantity of cerebro-spinal fluid, and injected antiserum. Unfortunately the child died about 10 a.m. The cerebro-spinal fluid showed many bacteria, which grew on ordinary blood agar.

The house in which the boy lived with his father, mother, and four other children, was one of a six-tenement house, and was on the ground floor. There were twenty-one inhabitants in the six tenements, from every one of whom I took a naso-pharyngeal swab. From the twenty-one swabs only two were positive. One positive swab was from a sister, aged 10 years (A), the other was from a girl of 10 years (B) who lived in the top flat.

The history of the infection seemed to be as follows: The girl B had been on a visit to Glasgow, where a few cases of cerebro-spinal fever had been reported. She and her mother had returned a fortnight before the fatal case developed. The girl A, sister to the patient, went to school with B, and played with her after school hours.

The conclusion is that B was the original carrier who gave the infection to A, another carrier, who passed it on to the patient.

The case, I think, is interesting, first, from the suddenness of onset and rapid fatal conclusion, and secondly, from the fact that a second carrier intervened between the original infection. The patient, from very careful inquiry, had not, so far as the parents and relatives knew, been in contact with B.—I am, etc.,

Bournemouth, Sept. 20th. J. OLIVER HAMILTON.

MORTALITY OF VENEREAL DISEASE.

SIR,—Mr. Bayly objects to my correction of Sir J. Crichton-Browne's exaggeration. If Mr. Bayly can read plain facts, and if his critical faculty can be divorced from the unscientific melodrama of the "hidden hand of pathology," he may yet see the truth. I showed the gross exaggeration of calling the venereal the third killing disease. As Mr. Bayly wishes to ignore the figures in my letter, he needs to charge me with camouflage, and hastens also to call my case hopeless. His pathological remarks make poor reading, but when anyone in scientific medicine ignores pathology and the duty of proof, he has indeed a poor case. He is the only one who openly funks the demand for pathological proof for their statements, and I expect he has heard of the difficulties of providing them. Dogmatic assertion is so much easier, it goes down with so many audiences—even with many medical ones—for the critical faculty is never prevalent. Lord Astor applied a sensible brake to the alarmists, and

I do not need Mr. Bayly's invitation to collaborate with those who will keep to the truth and avoid the ridiculous and lurid which has disfigured some aspects of a probably beneficial antivenereal campaign.—I am, etc.,

London, W., Sept. 20th. CHARLES RUSS.

POLICE SURGEONS' FEES.

SIR,—As a divisional police surgeon of the county of Wilts, I write to say that I heartily agree with Dr. Withers Green in his remarks on police surgeons' fees (September 11th, p. 413).

The scale of fees for police surgeons of this county was drawn up as far back as 1896, and although the police have received a considerable increase in pay, the fees for their medical officers have not been revised except in the case of payment for examination of recruits. This examination has naturally to be a searching one, and takes considerable time; yet the fee paid was only 2s. 6d. On application to the committee for an increase it was raised to 5s. a head. Surely in these days it is still inadequate. The application for a revision of the other fees which were fixed in 1896 was not acceded to.

It is to be hoped the British Medical Association will take the whole matter up.—I am, etc.,

Devizes, Sept. 15th. R. STEELE.

DOSIMETRIC CHLOROFORM.

SIR,—Dr. Fairlie's article on a simple method of continuing ether administration with the Vernon Harcourt inhaler (BRITISH MEDICAL JOURNAL, September 18th, p. 438) is of interest as advocating the more extensive employment of dosimetric chloroform anaesthesia. Excluding cases of sepsis, where the danger of acidosis precludes its use, chloroform still occupies a valuable place, and its dangers can be, as he remarks, discounted by the employment of a percentage inhaler. Personally, I prefer the one I described in the *Lancet* of April 1st, 1916, as with it there is always an excess of air, rebreathing is impossible, and in addition it is without valves and cannot get out of order. Ether can be substituted after the induction with chloroform by merely pouring in ether to replace the chloroform. With percentage methods I feel that the anaesthesia is as safe as it can indeed be,

[illegible]

Many who swear by the drop method have learnt that to laugh at danger means that it comes all the sooner.

Chloroform is by no means disagreeable to take, it is powerful so that any degree of anaesthesia and relaxation can be produced and the after-effects are usually slight. Having recently had four doses of my own "smelle," and ether on three occasions, I can honestly as a patient testify to the unpleasant after-results of the latter. I knew I was [illegible] after; hence my hope that the present disrepute of chloroform may lessen and that its employment at least in [illegible] cases may again become popular. Anaesthetists should remember that ether is not the only [illegible] to produce sleep. [illegible], I think, remains [illegible] [illegible] [illegible] [illegible].—I am, etc.,

[illegible] CYPRIAN T. W. HIRSCH.

PRICE OF PETROL ON THE CONTINENT.

SIR,—[illegible]

I cannot, therefore, understand why Mr. Buist is satisfied that vendors of motor fuel "would be much in pocket if they ceased selling motor fuel in this country and disposed of all they could secure in markets overseas." I would rather suspect the vendors of being as commercially minded as other gentry of the same ilk, particularly from what a visit to France has taught me in regard to dealers in motor tyres at home. I bought a tyre in devastated Arras for £8 (at the current rate of exchange) of exactly the same size and make for which I had paid £13 in London. The inner tube for it costs £2 1s. 9d. at home and can be bought in France for £1 6s. I can produce the English and French price lists of the same goods, at the same dates. By shoeing my car in France I can save over £20. The difference of £5 on the price of a single tyre seems difficult to explain, and it certainly suggests some profiteering in this country.—I am, etc.,

September 22nd. STCLAIR THOMSON.

Obituary.

SIR WILLIAM BABTIE, V.C., K.C.B., K.C.M.G., LL.D., M.B.,

LIEUTENANT-GENERAL A.M.S. (RET.)

WE announced last week, with deep regret, the sudden and unexpected death at Knocke, on the Belgian coast, of Sir William Babtie, on September 11th. He was found dead in an armchair in his room at the hotel where he had been staying for some time with Lady Babtie and his daughter. The body was brought to London and an inquest was held on September 16th by the Westminster coroner, who found that death was due to natural causes.

William Babtie was the eldest son of the late John Babtie, ex-provost and J.P. of Dumbarton, and was born on May 7th, 1859. He studied medicine at the University of Glasgow, and in 1880 graduated M.B. and obtained the L.R.C.P.and S.Edin. diplomas. In the following year he entered the Army Medical Service as surgeon, and he reached the rank of surgeon-general after thirty years' service. He was senior medical officer in the island of Crete in 1897–98, and for his services during the troubles there was awarded the C.M.G. During the South African war he served as staff officer to the principal medical officer with the Natal army; he was present at the actions leading up to the relief of Ladysmith and the subsequent operations in Natal and the Eastern Transvaal.

Babtie won the V.C. at the battle of Colenso on December 15th, 1899, for his conspicuous bravery in attending wounded under heavy fire and in attempting to save Lord Roberts's son, who was lying in the open desperately wounded. The official record in the *London Gazette* of April 20th, 1900, ran as follows:

> The wounded of the 14th and 66th Batteries, Royal Field Artillery, were lying in an advanced donga close to the rear of the guns without any medical officer to attend to them; and when a message was sent back asking for assistance, Major W. Babtie, R.A.M.C., rode up under a heavy rifle fire, his pony being hit three times. When he arrived at the donga, where the wounded were lying in different corners, he attended to them all, going from place to place exposed to the heavy rifle fire which greeted anyone who showed himself. Later on in the day Major Babtie went out with Captain Congreve to bring in Lieutenant Roberts, who was lying badly wounded out on the veldt after a gallant attempt to save the guns. [illegible]

A graphic account of how Babtie won the Victoria Cross was contributed to our columns by Sir Frederick Treves on April 28th, 1900, p. 1048. Apart from this gallant act, Babtie's services in the South African war were recognized by mention in despatches, and promotion to lieutenant-colonel, and he received the Queen's medal with five clasps. In the years that followed he held the appointments of Assistant Director-General A.M.S. at the War Office, from [illegible], Inspector of Medical Services [illegible], to Deputy Director-General A.M.S. [illegible]. In March [illegible], he was appointed Director of Medical Services in India, reaching that country three months before the outbreak of war. He held the appointment until [illegible], when he was brought to the Mediterranean for special service. In the words of the Mesopotamia Commission, which regarded him as D.M.S. India as partly responsible for the breakdown of medical arrangements in the operations for the relief of Kut, "He was considered of sufficient importance to be detached to Egypt in the spring of 1915 in connexion with medical problems which had arisen there: and in June of the same year need of his ability was experienced elsewhere in connexion with the war, and he was recalled from India." Many felt at the time that the findings of the Commission did less than justice to Babtie, and their view was upheld by the subsequent statement by the Parliamentary Secretary to the War Office that General Babtie's case had been referred to the Army Council, who, after full consideration of all the facts, decided that the explanation he had been called upon to offer was satisfactory in all respects, and that his services should not be lost to the army.

In June, 1915, Sir William Babtie, as has been said, was sent on special duty to act as principal Director of Medical Services in the Mediterranean during the operations in Gallipoli, Salonica, and Egypt. On his return to England in March, 1916, he was made Director, and later Inspector of Medical Services at the War Office. Babtie was honorary surgeon to the King from 1914 to 1919; he was created K.C.M.G. in 1916, and K.C.B. in 1919. On attaining the age of 60 he was placed on the retired list, with the honorary rank of Lieutenant-General. Last year the University of Glasgow conferred on him the LL.D. degree, and at the Annual Representative Meeting he was elected to represent the Army Medical Service upon the Council of the British Medical Association.

Sir William Babtie married in 1903 Edith Mary, daughter of the late W. H. Barry, J.P., of Ballyadam co. Cork, and widow of Major P. A. Hayes, R.A.M.C. The funeral took place on September 18th at Guildford with full military honours. It was attended by the Director-General of the Army Medical Service and many officers of the R.A.M.C. and representatives of the War Office and the Army Nursing Service. The British Medical Association was represented by Dr. Cecil Lankester, Chairman of the Guildford Division.

Lieut.-General Sir ALFRED KEOGH, G.C.B., G.C.V.O., sends us the following intimate appreciation:

The premature death of Sir William Babtie will have caused widespread regret in the Army, where his high character and qualities were appreciated. If the story of the reform of the Army in matters medical is ever set forth in detail, it will be found that by far the largest part was the work of General Babtie. This is not the time nor the place to give such particulars as are within my own knowledge and experience, but it may at least be stated that after principles of reform had been enunciated, it lay with him, in the various positions which he held in the War Office, to give to them practical shape and workable form. He came to the War Office at a period when a man of his type and experience was the need of the time. It was inevitable that qualities such as he possessed should have marked him as peculiarly fitted for the administrative side of army medical work. Even as a young officer he began to acquire that knowledge of the various branches of the Army which was his special characteristic—a knowledge which in later years enabled him to perform distinguished public service. And yet it is doubtful if this career was the one he would have chosen if left to himself. It was rather that his marked aptitude for business, his passion for accuracy and detail, his peculiarly logical mind, had forced his chiefs to use these rare qualities at a time in the history of the medical corps when such qualities were especially needed. Thus, from almost the very outset of his career we find him in the districts, and later in the commands, involved in administrative work.

I was first associated with him in 1902, when I became Deputy Director-General. He was far from always concurring with the declared policy which at that time was advocated. The admirable frankness which he displayed in expounding his own views was only equalled by the loyalty with which he carried out any definitely detailed policy. It is impossible to speak of this period of Sir William Babtie's career in the restrained words of an obituary contribution. Let me, therefore, say that at a time when, as the phrase goes, many "sat on the fence," awaiting such developments as might determine on which side they would descend, he was never one of them. He was as fearless in the moral as in the physical sphere, propounding his views, too, with such cogency of argument, derived from a complete knowledge of his subject, as to be always convincing. His influence, therefore, in current events during the period of which I speak was very great. Apart from the contentious questions of those years, all now happily settled, in the more prosaic field of routine Babtie has left an enduring mark on the Army Medical Service. He possessed a special knowledge of the history of the Army, and especially of the development of the medical branch. He was essentially philosophic, developing the future on the experience of the past, restraining with rare wisdom by the cogency of his historic proofs temperaments more ardent than his own. It was his peculiar gift to possess this type of mind combined with the spirit of progress, and those who knew him best will recognize him in this poor picture of him which I endeavour to draw.

It is not generally known that Sir William Babtie was the first medical official at the War Office who was concerned with the officer personnel of the Royal Army Medical Corps. Previous to 1902 the head of Branch A.M.D.1 was a civil servant. There was the tradition, still existing elsewhere, that medical men were best governed by men who had had no medical education. It was not without some misgiving that a change was approved. From that time forward it became possible to have some regard to the fitness of the individuals for the posts to which they were deputed, and the labour involved in re-regulating the personnel with some regard to efficiency devolved upon Sir William Babtie. It was inevitable that a task ever fraught with such consequences of good to the soldier should meet with opposition from the more conservative elements in the Corps, but from that time forward the hospitals began to fall into the hands of clinicians, necessary equipment was provided, and full effect given—as it could not otherwise have been given—to the recommendations of the Reorganization Committee and the Advisory Board. With the authority of experts behind him, Babtie was able to establish the era of efficiency ushered in by the events of 1901. This was his great work. Those who know what it involved will best appreciate it. He never failed in anything he undertook.

Of the incidents in his career after my own retirement I am less able to speak; but an examination of the events connected with his few weeks of service in India—a country wholly unprepared for foreign war—and his subsequent service as co-ordinator in the confusion in the Mediterranean, enables me to say that the superlative ability of this great officer was never displayed to more advantage than in the events with which he had to deal. We are left to regret a great public servant, a devoted lover of the Corps of which he was the most distinguished ornament.

Lieut.-General Sir JOHN GOODWIN, K.C.B., Director-General A.M.S., writes:

The death of Sir William Babtie will be deeply felt by every officer in that service to which he had devoted his ability and energy throughout his whole service career. His foremost idea throughout his life was the welfare and progress of the R.A.M.C. and the army nursing services. The more closely one was associated with Sir William the more one realized the sterling qualities which he possessed: his mental ability, his untiring energy, his high ideals with regard to work and duty, and his unswerving loyalty and devotion to the army.

Speaking from a personal point of view, his death leaves a gap which it is impossible to fill; even after his retirement he still retained his energy and intense avidity for work, and the assistance which he so freely gave us on various committees, on the Army Nursing Board, and in many other directions, cannot be expressed in words. The medical and nursing services have lost a loyal friend and helper whose memory will always be held by them in gratitude, esteem, and affection.

Lieut.-Colonel R. H. ELLIOT, Chairman of the Naval and Military Committee, writes:

I gladly and gratefully avail myself of the opportunity to pay a tribute to Sir William Babtie's work on behalf of the Association, and I am sure that all of my colleagues on the Naval and Military Committee will gladly associate themselves with all that I have to say. When in 1919 the Representative Body elected him to the Council in the interests of the R.A.M.C., there were some who felt that one who had held such high positions in the War Office, and who was so closely identified with the aims and aspirations of his own Service, might not necessarily prove an ideal British Medical Association Councillor. It took but a very short time to break down all such ideas, and at this year's Cambridge Meeting his re-election was felt to be a source of strength to the Association. To those of us who knew him in the intimate atmosphere of committees and subcommittees, his untimely death cannot but leave a sense of grievous loss. The same personal courage that earned him on the field the highest honour that the Sovereign has to bestow was equally conspicuous in debate; but with it there was a geniality of manner, a kindly tact, and an absolute absence of all "side," that made his most outspoken utterances acceptable even to those who disagreed with him. He had an intimate knowledge of the ways of officialdom, and especially of army officialdom; and he was always willing to use his personal influence, and his opportunities of access to those in authority, in the service of the Association. As a member of committee he was invaluable to the chairman, for he never wasted time, or strayed from the subject under discussion. His clear, keen mind went right to the heart of the question, and his ready tongue gave expression to his thoughts in the fewest possible words. He was a member of the Territorial Subcommittee, whom it will be hard, if not impossible, to replace. What he did not know of the subjects discussed was worth forgetting, and every suggestion he made carried the greatest weight with his fellow members. Not the least of his attributes must be reckoned that we one and all not only admired him for the deeds which have made his name a household word and for the ability, of which we were daily conscious, but we also valued very highly his simple, generous friendship. The British Medical Association is the poorer for his loss.

WE regret to have to record the death of Dr. T. F. McFARLANE, President of the Dundee Branch of the British Medical Association. On September 11th, while mounting the stair of a tramcar, Dr. McFarlane fell, and, landing on the street, sustained a fracture of the base of the skull, from the effects of which he died on September 18th, without in the interval recovering full consciousness. Born in Edinburgh in 1864, Dr. McFarlane studied medicine there and in 1886 graduated M.B., C.M. After holding a house-surgeoncy in Birmingham he joined the late Dr. Gray in Dundee as assistant, and later carried on a full general practice, in which his skill and kindliness endeared him to his patients. Among his colleagues he was noted for his high sense of professional honour and for his *bonhomie* which illumined the earnestness of life by flashes of a somewhat whimsical humour. He was unmarried and is survived by a brother.

CAPTAIN JOHN WALTER PIGEON, Indian Medical Service, was killed in action in Mesopotamia on September 3rd, aged 33. He was the only son of Dr. Henry Walter Pigeon of Bath. He was educated at Sherborne School, Christ's College, Cambridge, and at St. Bartholomew's Hospital. He graduated as B.C.Camb. in 1914, after taking the M.R.C.S. and L.R.C.P.Lond. in the previous year. He entered the I.M.S. as Lieutenant on August 1st, 1914, passing in first, and became Captain on March 30th, 1915. He had been serving in Mesopotamia for the past five years. He married in 1912, and leaves a widow.

The Services.

DEATHS IN THE SERVICES.

[illegible] Colonel [illegible] Bengal Medical Service (retired), died [illegible] of heart failure [illegible] on August [illegible], aged [illegible]. He was born on November [illegible], 1861, the son of the late William [illegible], and was educated at [illegible] College, Birmingham, and Durham University, [illegible] M.B. in 1887 and M.D. in 1897, having [illegible] the M.R.C.S. in [illegible] and the L.R.C.P.Lond. in 1887. After holding the post of resident clinical assistant at the [illegible] General Hospital and of resident medical assistant at the Newcastle-on-Tyne Infirmary, he entered the I.M.S. as surgeon on October 1st, [illegible], becoming lieutenant-colonel in 1907 and retiring with [illegible] on April 2nd, 1919. His first five years' service were spent in military employ, during which he served on the North-West Frontier of India in the two Miranzai campaigns of 1891 (medal with clasp) and in the Zhob Valley expedition of 1890. In June, 1892, he went into civil employ in Bengal, where he served for twenty-three years, latterly holding the important civil surgeoncies of Murshidabad and Howrah. In March, 1915, he was recalled to military duty for service in the recent war and went to Mesopotamia in command of the Bengal ambulance, being mentioned in dispatches in the *London Gazette* of October 19th, 1916.

Colonel Philip Cecil Harcourt Gordon, Army Medical Staff (retired), died on May 4th, aged 56. He was born in London on January 17th, 1864, took the L.R.C.P.and S.Edin. in 1885, and entered the army as surgeon on August 1st of that year, attained the rank of colonel on March 1st, 1915, and retired on September 30th, 1919. He served in the third Burmese war in 1885–87, when he was mentioned in dispatches (*London Gazette*, September 2nd, 1887), receiving the medal with two clasps, and in the South African war in 1901–2, in the operations in the Transvaal, Orange River Colony, and Cape Colony, gaining the Queen's medal with three clasps, as well as in the recent war of 1914–18.

Captain Claud John Burgoyne Pasley, R.A.M.C., died at Port Harcourt, Nigeria, on August 26th. He was the son of the late Dr. C. Burgoyne Pasley of Trinidad, and was educated at the Westminster Hospital, taking the M.R.C.S. and L.R.C.P.Lond. in 1912. After filling the posts of house-surgeon and assistant house-physician at the Westminster Hospital, he joined the West African Medical Staff and served as resident medical officer in the Colonial Hospital at Lagos. He took a temporary commission as lieutenant in the R.A.M.C. on June 15th, 1916, and was promoted to captain after a year's service.

Medical News.

THE Italian Government has conferred upon Dr. Leonard Hill, F.R.S., the Italian silver medal "Ai Benemeriti della Salute Publica."

AT the meeting of the Johnson Society, during the celebrations at Lichfield of the 211th anniversary of the birth of Dr. Samuel Johnson on September 18th, Sir Norman Moore, President of the Royal College of Physicians of London, was installed as president in succession to Sir Sidney Lee.

THE annual dinner of past and present students of Charing Cross Hospital and Medical School will be held in the Adelaide Gallery, Gatti's Restaurant, on Monday, October 4th, at 7 for 7.30 p.m.

AT the opening of the winter session at St. Mary's Hospital Medical School on Friday, October 1st, at 3 p.m., the prizes will be distributed by Dr. J. G. Adami, C.B.E., F.R.S., Vice-Chancellor of the University of Liverpool.

THE opening ceremony of the eighty-sixth winter session of the Middlesex Hospital and Medical School will be held on Friday, October 1st, at 3 p.m., at the Scala Theatre. Professor T. Swale Vincent will deliver an introductory address, and the prizes will be distributed by Admiral of the Fleet, Earl Beatty. After the ceremony tea will be provided at the hospital, and the wards and research departments will be open for inspection. The annual dinner will be held on the same evening at 7.30 o'clock, in the Wharncliffe Rooms, Great Central Hotel.

THE opening ceremony of the winter session at the London (Royal Free Hospital) School of Medicine for Women (University of London) will be held at Hunter Street, Brunswick Square, W.C.1, on Friday, October 1st, 1920, at 3 p.m. The introductory address will be given by Miss A. Maude Royden on "Revolutionary Thought." Academic dress will be worn. A luncheon will be held at the Fishmongers' Hall on Tuesday, October 19th, at which representative women will meet to support the School of Medicine for Women and the development of medical education for women. Sir Alan Anderson, Honorary Treasurer of the school, will be in the chair, supported by Dr. Mary Scharlieb, Miss Aldrich Blake, Dr. Jane Walker, Lady Barrett, Dr. Louisa Garrett Anderson, and other medical women.

THE autumn session of the West London Post Graduate College will open on Monday, October 11th, at 5 p.m., when the Right Hon. Sir William Bull, M.P., will give the inaugural address. The chair will be taken by Mr. C. F. Marshall, chairman, West London Hospital. Medical practitioners are cordially invited to attend.

A course of twelve practical demonstrations on the management and feeding of infants and young children will be given by Dr. Eric Pritchard, on Tuesdays and Thursdays, at the St. Marylebone General Dispensary, commencing on October 5th.

Sir Archibald Garrod, K.C.M.G., F.R.S., has taken up his duties as Regius Professor of Medicine in the University of Oxford, and has gone into residence at Oxford (133, Banbury Road).

A post-graduate course for 1920-21, to be held in the Hospital for Diseases of the Chest, Golden Square, will commence on October 11th, at 5.30 p.m. The course consists of six lectures, given on Mondays and Thursdays.

The late Dr. Charles Workman of Glasgow, who held a large interest in the firm of J. and R. Workman of Belfast, left personal estate in the United Kingdom valued at £96,797.

The price of drugs in Germany has risen enormously, codeine and morphine being quoted at 15,000 marks a kilo, as compared with 290 to 514 marks in 1914.

According to the United States National Chamber of Commerce two-thirds of the medical men in the United States possess motor cars.

The King of Italy has conferred the silver medal for military valour on the Italian Red Cross for its services in the war.

The Ministry of Health has issued, for the assistance of local authorities and voluntary workers, a list of residential institutions in connexion with maternity and child welfare. The list comprises 116 homes for mothers and babies, with 1,539 beds; 44 homes (including residential nurseries) for children under 5, with 1,053 beds: 88 maternity homes and hospitals, with 1,145 beds; 48 hospitals (including observation wards) for children under 5, with 577 beds: 14 convalescent homes for mothers with babies, with 123 beds; and 8 convalescent homes for children under 5, with 162 beds.

On September 11th and 12th two new cases of small-pox were admitted to hospital in Glasgow, on September 13th one, on September 14th one (and on the same day the one hundredth death occurred), on the 15th three, on the 16th three, and on the 17th four. Stray cases have also been met with at Larbert, Croy, and elsewhere. The medical officer of health for Glasgow (Dr. A. K. Chalmers) has made a statement regarding the epidemic in which he gives instances in which mild unrecognized cases have been followed by grave cases in the same family; the unrecognized case went about freely and constituted a serious danger. Vaccination, of course, is the means of preventing such dangers, as the sufferers from the mild form of the disease may not themselves realize the nature of their malady. An additional reason for anxiety is the near approach of winter, when the disease is likely to become more infectious and to be more severe in its effects.

Letters, Notes, and Answers.

As, owing to printing difficulties, the Journal *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal.

The postal address of the British Medical Association and British Medical Journal is 429, Strand, London, W.C. 2. The telegraphic addresses are:

1. EDITOR of the British Medical Journal, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"Included Fetus."

Mr. W. McAdam Eccles (St. Bartholomew's Hospital, E.C.1) informs us that he has lately removed an "included fetus" from a male infant aged 8 months. Mr. Eccles would like to hear of any similar cases, and where the specimens are preserved.

Carbon Tetrachloride Poisoning.

"A. D. H." writes: I have recently attended a girl who is employed in painting golf-ball moulds. She states that she vomits after every meal and has some headache. She is somewhat anaemic, but otherwise normal. I am informed that the paint used contains carbon tetrachloride, but no other solvent, such as benzol or naphtha. Can you tell me whether any cases are on record of injurious effect of carbon tetrachloride, and, if so, what are the symptoms that have been observed?

*** The vapour of carbon tetrachloride, if frequently inhaled, is injurious to health and has a poisonous effect. Its action is very similar to that of chloroform vapour or the vapour of tetrachloride of ethane, the symptoms of which were described by Dr. W. H. Willcox in the Lettsomian Lectures on jaundice for 1919 (British Medical Journal, May 17th, 1919). The symptoms at first produced are those of dyspepsia of a toxic type, anaemia, and ultimately a condition of toxic jaundice is likely to develop should the inhalation of the poison continue. Carbon tetrachloride was used as an anaesthetic in the early days after the introduction of chloroform, but owing to its more toxic effects its use for this purpose was discontinued. More recently carbon tetrachloride has been used as a hair shampoo to remove grease, but owing to a fatal case occurring and its dangerous properties its use for this purpose has been discontinued.

Income Tax.

"H. H. E. S." fears that if his total income is shown as including income taxed by deduction before it reaches him, he may be assessed upon it and thereby run a risk of paying tax twice on that income.

*** Tax will not be charged in one sum on the total income any more than in the past. Income is still divided into various schedules and classes, and only that income which has not been taxed will be assessed. From the assessments so made will be deducted the allowances to which the individual is entitled, and £225 of the residuum will be charged at 3s.—assuming that the residuum amounts to £225 or more. The advantage of the new system is that in such cases no adjustment has to be made in respect of the income taxed by deduction, the amount of which is often indeterminate until the end of the financial year.

Climate in Rheumatoid Arthritis.

"Rheumaticus" seeks information as to the climatic treatment of a case of rheumatoid arthritis. The patient's age is 35, and the main features are synovial swelling in both wrists, one knee, and one ankle, with great stiffness in shoulders, back, and knees on rising in the morning. The tendency is to get worse in spite of all treatment namely, vaccines, spas, etc., in this country (England). Can anything be hoped for from prolonged residence in a warm, dry climate—for example, Egypt—or are there more suitable places than this?

Seborrhoea.

"S." writes: I would be very much obliged if any reader of the Journal could tell me of a satisfactory method of treating seborrhoea capitis. The patient, a man aged 40, has used a variety of lotions, etc., including resorcin, sulphur, and salicylic acid. It has existed several years, and is now fast destroying the hair. The scalp is dry, though his skin generally is slightly greasy. He has a rather sensitive skin, has the same trouble in the moustache, and two fair sized patches on the chest and back. He had psoriasis on the back of the hands many years ago, but none since. He consulted a skin specialist, whose only suggestion was the usual sulphur and salicylic acid ointment, which was useless, and very unsightly. Is any internal treatment useful or necessary?

LETTERS, NOTES, ETC.

The Decimal Point.

It has frequently been said that the decimal point was first used by Napier of Merchistoun in his book on logarithms (1616), but it was pointed out in an article on Stevinus, the introducer of decimal fractions, in the eleventh edition of the *Encyclopaedia Britannica*, that the point separating the integers from the decimal fractions seems to be the invention of Bartholomaeus Pitiscus. Dr. James Dundas White has told the whole story in *The Times Literary Supplement* (September 9th). It deserves its place as a footnote to the history of science. Pitiscus was a mathematician who in 1600 published at Augsburg a book on trigonometry, containing tables of natural sines calculated to a radius of 100,000. Rheticus, in his *Canon Doctrinae Triangulorum* (Leipsig, 1551), sets out a table of sines, etc., to a radius of 10,000,000. Pitiscus, in his book on trigonometry, published about fifty years later (Augsburg, 1600), gave the sines to radius 100,000—dropping the last two integers given by Rheticus—for example, 38268 34 became 38268. This, however, involved a loss of accuracy, which for certain angles was so serious that when he published a new and enlarged edition in 1608, Pitiscus, while retaining his radius of 100,000, placed an ordinary full-stop—called "full-point" by the printers—after the last integer [illegible] the subsequent figures as decimals after it, thus: [illegible] 54. Napier did not use the decimal point in the first (Latin) edition of his book published in 1614, but adopted it in the English version published in 1616. When later on the sines were given to radius 1, the whole natural sine was in the decimals, so that 9998942 became 0.9998942. It is worthy of note that this is the proper way to write a decimal fraction; the 0 before the point should never be omitted. In medical writings it very often is, involving a great risk of error, for the full-stop may be omitted by the printer or broken away in printing.

THE USE OF ANTIMONY IN LEPROSY.

DR. UPENDRA NATH BRAHMACHARI, lecturer in medicine at the Campbell Medical School, Calcutta, writes with reference to the note on the use of antimony in leprosy by Dr. Cawston in the JOURNAL of July 17th, 1920, to state that he and his colleague, Dr. Madan Mohan Dutt, published a preliminary note on the treatment of leprosy by antimony in the *Indian Journal of Medicine* for April, 1920. In this note the writers stated that they had treated a few cases of leprosy with intravenous injections of tartar emetic and antimonyl sodium tartrate. In some of the cases there had been a remarkable improvement, especially in the anaesthetic cases. Though they deem it too early to attempt to draw any conclusion, they consider the results encouraging. In the July issue of the same publication Mr. B. B. Maity, house-physician at the Campbell Hospital, stated that he had got very satisfactory results by the intravenous injection of antimony in some cases of leprosy, especially of the anaesthetic variety. Potassium and sodium antimonyl tartrates were used, the dose being from 2 to 4 c.cm. of a 2 per cent. solution. Dr. Brahmachari claims priority in the recommendation of this method of treatment, and hopes to be able at some future time to report some cases in detail.

GALL STONES AND PARSLEY.

DR. C. EDWARDS (Bridport) writes: Parsley is mentioned twice in Celsus (circa B.C. 60), Book II, cap. xxxi: "But these promote urine, whatever things growing in the garden are of good smell, as parsley, rue, etc." Book IV, cap. ix, in the treatment of splenitis: "All things in foods and drinks which are fit for promoting urine. And either the seed of trefoil or cummen or parsley, etc." Dr. J. Carroll (Wigan) might be interested to learn that Dr. Hugh Smythson, in his *British Herbal*, published in 1781, states under Parsley: "The roots are useful in medicine, and are recommended in a strong decoction for the jaundice. It operates powerfully as a diuretic and removes obstructions." His friend Sir John Hill seems to have copied his note from this or some other previous book very literally.

DR. H. FERGUS WOODS (London, W.) writes to say that Hahnemann, a century ago, mentioned parsley as a remedy for gonorrhoea, and says that its value in certain cases of gleet and dysuria has been established.

ERGOT AND IRON MIXTURES.

DR. R. WATSON COUNCELL (London, S.E.) writes with reference to the note on this subject in last week's JOURNAL: The vegetable acids acetic, citric, malic, all discolour iron or steel, leaving a black stain. The best decolorizing agent is phosphoric acid, as will be evident on mixing a usual dose of iron with one of digitalis, diluting the mixture and adding a few drops of ac. phosphor. dil. The mixture clears up at once.

POSTURE IN DEFAECATION.

DR. D. H. [illegible] (Neath) writes: In reply to Dr. Alex. MacRae (September 11th, p. 418), I did not say the *only* cause of [illegible] and constipation was neglect in not adopting the "squatting" posture. My statement was based on my own experience and on common-sense anatomical and mechanical considerations. As to the prevalence of haemorrhoids I am informed by those qualified to speak that in India this condition is rare owing to the habit of the natives using water instead of paper after defaecation, and hernia is comparatively rare too, the "squatting posture" being the rule.

[illegible] ERUPTIONS AND INTERNAL INFECTIONS.

DR. W. I. MIDDLETON (Bournemouth) writes: From time to time I have called attention to my belief that [illegible]

a slight cough, with very little dyspnoea or expectoration. A similar coincidence has occurred in other cases. I should like to emphasize here the fact that the eruption produced by the acupuncture and croton oil method has nothing whatever to do with "sepsis."

AN ABDOMINAL OPERATION IN 1701.

IN the *Glasgow Medical Journal* for September, Dr. George A. Allan gives an interesting account of "Medicine in Scotland in the early part of the eighteenth century." The story is related of Houston, a Glasgow surgeon, who, in 1701, was called to see a woman suffering from abdominal pain and swelling, and from dyspnoea. With a lancet he made an incision of five inches and found a "glutinous substance bung up the orifice." Using lint wrapped round a fir splinter, he managed to remove about nine quarts of this glutinous material, together with a number of cysts the size of oranges. He put in three stitches and dressed the wound with pledgets of wool coloured with balsam, and with napkins steeped in French brandy. The patient lived for thirteen years.

ACUTE ULCERATIVE STOMATITIS CAUSED BY DRUGS.

DR. REDMOND ROCHE (London) writes: Twenty-five years' experience of a fairly extensive use of the coal-tar products inclines me to think idiosyncrasy is comparatively uncommon with regard to them. A few years ago I had an instance of it similar to that recorded by Dr. Bristowe in your issue of September 11th, p. 399. A quarter of an hour after a single dose of antipyrin gr. viij my patient's lips swelled up considerably and the tongue to a lesser degree. The symptoms passed off after a few hours. The patient did not know what he had taken, but told me that a few years previously a doctor in New York gave him a cachet for neuralgia and the same symptoms followed immediately.

TARTAR EMETIC AND ITS TOXICITY.

DR. J. C. MCWALTER (Dublin) writes: Adverting to Dr. Christopherson's suggestion that tartar emetic, given intravenously, appears to be less toxic, perhaps I may state that I administered it intravenously in doses up to 2½ grains without finding any signs of nausea, vomiting, or other indication of inconvenience or toxicity. This was in Malta, where we tried it as a remedy for malaria. I concluded it had little or no curative effect in this disease. In Egypt I tried almost every remedy for bilharziosis without any definite benefit, but we decided that whilst other drugs might be merely useless, the amount of tartar emetic necessary to rid a man of bilharziosis would probably do him harm. I have used it externally in leishmaniasis without any beneficial effect that I could detect.

THE LATE DR. LEONARD GUTHRIE.

MANY friends of the late Dr. Leonard Guthrie at the Hospital for Epilepsy and Paralysis, Maida Vale, London, W., to which he was physician, are anxious to obtain a copy of a photograph of him for reproduction. The photograph will not be injured in any way. Communications should be addressed to Mr. H. W. Burleigh, secretary of the hospital.

A TRIORCHID.

CAPTAIN V. R. SUNDARESA AYZER, I.M.S. (Karachi), sends us photographs and particulars of a case of triorchidism. The condition was discovered accidentally during examination of a 19 year old native of Trichinopoly. The third testis was situated above the normal left one, and had its own globus major and globus minor, and its own cord, distinctly traceable, at the side of the other normal left cord, as far as the left internal abdominal ring; it was moored to the left wall of the scrotum. The components of its cord were distinguishable, and it appeared to have the normal "testicular sensation."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 50, 51, 54, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 52, 53, and 54.

THE appointment of certifying factory surgeon at Southall (Middlesex) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

Sir HUMPHRY D. ROLLESTON, K.C.B., M.D., F.R.C.P.,
President.

DISCUSSION ON THE DIAGNOSIS OF THE NERVOUS DISORDERS OF THE STOMACH AND INTESTINE.

OPENING PAPER.

BY
ARTHUR F. HURST, M.A., M.D.Oxon., F.R.C.P.,
Physician and Neurologist to Guy's Hospital

No more appropriate subject than the diagnosis of the nervous disorders of digestion could have been chosen for discussion at this meeting of the British Medical Association. For it was here in Cambridge that Gaskell did his pioneer work on the autonomic nervous system, and it is here that Langley has for so many years carried out his remarkable investigations, which have added such a wealth of detail to the foundations which had been so truly laid. And one of the earliest clinical contributions to the subject came from the pen of our revered President, the Regius Professor of Physic in the University of Cambridge, who in 1884 chose "Visceral Neuroses" as the subject of his Goulstonian Lectures.

For a discussion on such a wide subject as the diagnosis of the nervous disorders of the stomach and intestines to be profitable it is essential to stick to facts. Much of the traditional teaching dates from a time when knowledge of the physiology and anatomy of the stomach and intestines was very rudimentary, and clinical methods of examination were much less accurate than they are now; but it has kept its place in textbooks of medicine in spite of the failure of modern research to confirm it.

An attempt must first be made to gain a clear conception of what is meant by certain terms, such as functional, neurosis, psychoneurosis, neurasthenia, and hysteria. A functional disorder is one which does not depend upon organic change; it may be either biochemical or nervous in origin. Functional disorders of nervous origin, the only ones with which we are concerned to-day, are of two kinds—the neuroses, which are independent of mental processes, whether conscious or subconscious, and the psychoneuroses, which have a psychical cause. This distinction is of fundamental importance, as the psychoneuroses alone are amenable to psychotherapy.

Neurasthenia has generally been classified as a neurosis. But it really depends upon definite though evanescent organic changes in the central nervous system and in the suprarenal and possibly other endocrine glands, which result from mental and physical exhaustion and chronic intoxications. It is therefore an organic and not a functional disorder. As, however, the somewhat ill-defined condition, which has in the past been known as nervous dyspepsia, has been regarded as often if not always caused by neurasthenia, the relation of neurasthenia to the nervous disorders of digestion requires discussion.

The psychoneuroses can be broadly classified under the headings of hysteria and psychasthenia. Before the war I should have classed the tics separately, but I am now convinced that they are really hysterical. By hysteria I mean a condition in which symptoms are present which have been produced by suggestion and are curable by psychotherapy. During the war my fellow workers and I gathered together a great deal of evidence to show that in the absence of gross hysterical manifestations there is no underlying condition to which the name of hysteria can be given. We have confirmed Babinski's observations that Charcot's physical stigmata are invariably a result of suggestion on the part of the observer, and, what is more important, we are firmly convinced that although an abnormal degree of suggestibility predisposes to hysteria, it is not an essential part of it, and that hysteria may occur in individuals with a perfectly normal mental make-up. When this is once realized, it becomes clear that absence of the mental characteristics which lead to an individual being labelled as neurotic does not in any way exclude the possibility of the digestive or other disorder from which he is suffering from being hysterical, any more than it can be assumed that symptoms in a neurotic girl are not due to organic disease. It follows that a diagnosis can only be made from the nature of the symptoms and the results of physical and laboratory methods of examination.

I. NERVOUS DISORDERS OF THE STOMACH.

Nervous Dyspepsia; Atonic Dilatation of the Stomach; Hyperchlorhydria and Hypochlorhydria.

The traditional description of the nervous disorders of digestion depended upon false ideas of physiology and anatomy. It was, for example, assumed that a certain degree of tone and a certain activity of peristalsis were normal and that a normal stomach secreted juice of a certain strength. Any divergence from these standards, which were as a matter of fact often very vague, was regarded as evidence of disordered function. Such a condition as atonic dyspepsia, due to atonic dilatation of the stomach caused by deficient tone, associated with deficient peristalsis and secretion, and acid dyspepsia due to hypersecretion, were described, whilst the more scientific writers talked of hypochlorhydria and hyperchlorhydria as clinical entities. In addition to the motor and secretory neuroses, a sensory neurosis was recognized, in which indigestion was supposed to result from hyperaesthesia of the gastric mucous membrane. But my own investigations, which have been confirmed by numerous radiographers both in England and abroad, and the recent chemical investigations by fractional test meals, carried out by Reyfuss and Crohn in America and Ryle and Bennett at Guy's Hospital, have shown that such great variations occur in the muscular tone, peristalsis, and secretory activity of the stomach in normal individuals that it may well be doubted whether what is generally regarded as atonic dilatation, hyperchlorhydria, and hypochlorhydria do not really fall within the normal limits. This remains true even when the diagnosis is supported by an x ray examination and gastric analysis, but what can one say of the cases in which the diagnosis is made in their absence? I have seen so many doctors who believed that they had atonic dilatation of the stomach, but were found with the x rays to have hypertonic stomachs, and I have seen so many cases in which the symptoms pointed to hyperchlorhydria, but achylia was actually present, that I am quite certain that it is utterly impossible to form a reliable estimate of the muscular or secretory activity of the stomach from a consideration of the symptoms alone. The investigations I carried out with several Guy's students some years ago proved, moreover, that the theory of gastric hyperaesthesia has no basis in fact, as the mucous membrane of the stomach, both in health and disease, is entirely insensitive to tactile, thermal, and painful stimuli and to hydrochloric acid up to the maximum strength in which it could conceivably be present in the gastric juice.

The discovery of variations from the average normal tone, peristalsis and secretion in individuals with digestive symptoms is therefore no evidence that these variations are in any way responsible for the symptoms. The atonic dilatation and hyposecretion, which are supposed to be the cause of the dyspepsia of the exhausted neurasthenic, exist as a rule only in the imagination, as there is not the smallest evidence to show that true neurasthenia in any way affects the motor or secretory functions of the stomach. I can well believe that an exhausted individual, who happens to have a stomach the tone, peristalsis and secretion of which are below the average, will be more likely to suffer from indigestion than a man with an average normal stomach. His condition may be correctly described as neurasthenic dyspepsia, and he may benefit from treatment directed to increase the motor and secretory activity of his stomach, but it must be remembered that the neurasthenia is not the cause of the deficient tone and secretion, and that in the absence of the neurasthenia there would be no digestive symptoms, although the deficient tone and secretion would still be present. Exhaustion may be the exciting cause of a different group of gastric symptoms in a man whose stomach is of the hypertonic, hypersecretory type, and these symptoms may be the herald of an attack of duodenal ulceration. But the hypertonus and hyperchlorhydria are congenital and not caused by the exhaustion or the duodenal ulcer which may ultimately develop; they simply predispose to a certain form of indigestion—the acid dyspepsia or hyperchlorhydria of the textbooks, which occurs as a result of various conditions, one of which is exhaustion.

It is clear from what I have said that there is little justification for retaining such terms as atonic dilatation of the stomach, hyperchlorhydria, hypochlorhydria, atonic and acid dyspepsia, as descriptions of clinical conditions. But we can separate two varieties of neurasthenic dyspepsia, which, however, can only be recognized with certainty with the aid of the *x* rays and gastric analysis: the atonic, occurring in an individual with a stomach with less than the average tone and secretion; and the hypertonic, occurring in one with a stomach with more than the average tone and secretion.

Hysterical Vomiting.

Hysterical vomiting has long been recognized, but the old view of the nature of hysteria led to the belief that it was a comparatively rare condition, which only occurred in neurotic females, who showed the so-called hysterical stigmata. I had begun to realize already before the war that this was too narrow a conception, but it was not until I saw the large numbers of otherwise healthy soldiers suffering from this condition that I realized how common it really was, and my experience during this last year has fully confirmed my expectation that it would prove equally common in civil practice. Hysterical symptoms result from suggestion: the suggestion which gives rise to hysterical vomiting is vomiting. Whether this is emotional in origin or due to gastric irritation, reflex action or toxaemia, auto-suggestion leads to its aggravation whilst the primary cause is still present, or its perpetuation after the latter has disappeared. To the auto-suggestion is almost invariably added the hetero-suggestion involved in treatment by dieting, drugs or other measures, which have been adopted or continued longer than necessary owing to want of recognition of the hysterical element in the case. Hundreds of gassed soldiers continued to vomit after the gastritis caused by the swallowing of irritant gas dissolved in the saliva had completely disappeared. We ultimately came to the conclusion that whenever vomiting persisted for more than a month after gassing it was certainly hysterical. In the same way vomiting caused by acute indigestion from food poisoning or food excess may continue after the irritant has been expelled from the stomach, and the persistent vomiting of young women, which was formerly regarded as due to gastric ulcer and more recently to chlorosis, is most frequently of this nature. The reflex vomiting of phthisis and chronic appendicitis are often greatly exaggerated by the addition of an hysterical element, and when vomiting persists after the removal of a chronically inflamed appendix, the condition is generally hysterical and not the result of hypothetical adhesions. An individual who has once been seasick and on his next trip across the channel lies down in the saloon with a basin by his side directly he gets on board, will certainly succumb to the mass suggestion afforded by his vomiting neighbours as soon as the ship starts.

The most important of all forms of hysterical vomiting, which has led to the death of many mothers and of still more unborn infants, is the so-called pernicious vomiting of pregnancy. I have not yet seen a case in which immediate recovery did not follow psychotherapy. We have proved conclusively that the so-called acidosis is due to starvation and dehydration and is not an indication of [illegible].

I was recently asked to see a patient in the fourth month of [illegible] was convinced from past experience that the condition would prove to be hysterical, although arrangements had already been made to terminate the pregnancy. On cross-questioning her I discovered that when she began to vomit her father had said to her, "You will have a bad time of it, as your mother was sick all the time she was carrying you." I explained to her how this remark had acted as a suggestion, and how she would be able to retain ordinary food directly she was given it, as she would eat it with enjoyment, instead of drinking milk, which she disliked, as a matter of duty. She accepted this explanation at once, and when I returned later in the afternoon she was eager to put it to the test by having some tea and buttered toast. She took this in my presence, and kept it down without difficulty. She had more solid food for supper, and next day she had a good breakfast, and steak for dinner. She had vomited a little in the early morning, but with this exception she remained perfectly well. She took an ordinary diet, and gained 16 lb. in weight in four weeks; the ammonia index rapidly fell to the normal for pregnant women, and diacetic acid disappeared from the urine. There was a slight return of vomiting in the morning during the third week, but this was quickly controlled by further psychotherapy, and now, in the seventh month of pregnancy, she is still perfectly fit.

The diagnosis in cases of this kind is easy, as in the absence of obvious organic disease such as appendicitis, vomiting which begins early in pregnancy and does not cease at the end of six or eight weeks, is always hysterical.

Apart from pregnancy it should be remembered that severe pyloric obstruction is the only gastric disease which causes persistent vomiting. If this can be excluded, and if there is no fever, no headache, and nothing pointing to organic disease elsewhere in the abdomen, the vomiting is probably hysterical.

Flatulent Dyspepsia and Aërophagy.

We are, I think, often too ready to accept our patient's own diagnosis. He says he is suffering from flatulence, and we treat him with diet and antiseptic drugs for flatulent dyspepsia. But when we look more closely into the matter we find that the condition is almost invariably a psychoneurosis and can be rapidly cured by psychotherapy, although there may be a small organic basis requiring other treatment.

A patient with so-called flatulent dyspepsia complains of a feeling of fullness in the upper part of the abdomen, which he at once assumes is due to flatulence, by which he means an accumulation of gas, and which he probably assumes is a result of fermentation. But careful investigation has shown that fermentation very rarely occurs in the stomach, which empties itself too rapidly and secretes a juice which is too acid for any appreciable amount of bacterial activity to occur. Only in cancer of the pylorus, in which gastric stasis and deficient acidity are present together, can severe flatulence be really due to fermentation. In the absence of the characteristic symptoms suggesting this condition, which would call for further investigation with the stomach-tube and *x* rays, a complaint of flatulence can be assumed at once to be due to something else than fermentation.

Aërophagy is the only common cause of flatulence. The patient feels some slight discomfort in his stomach, which he thinks is due to wind, and which he hopes he will be able to "disperse" by eructation; as there is really no excess of gas present, the attempt proves unsuccessful, but results in the swallowing of air. After half a dozen or more attempts have been made without success, air being swallowed on each occasion, the stomach becomes so distended that an attempt is at last successful. Aërophagy is a psychoneurosis. In severe cases it persists long after the primary gastric discomfort has disappeared. It may, then, be regarded as a visceral tic, and, like all hysterical symptoms, it can be readily cured by pure psychotherapy.

The gas brought up in aërophagy is odourless and tasteless. There can be little doubt that aërophagy is present if eructation is frequently repeated, and no doubt at all if it occurs six or more times in rapid succession, as fermentation could not conceivably give rise to such a large quantity of gas. Eructation occurring before breakfast in the absence of pyloric obstruction is always due to aërophagy, as there is nothing in the stomach from which gas can be produced. The diagnosis can be confirmed by means of the *x* rays, with which it is easy to watch the whole process of aërophagy.

Occasionally a patient complains of flatulence, but says that he never brings any wind up, although he is much troubled with abdominal distension. It may at once be concluded that he is suffering from pseudo-flatulence, as if excess of gas is in the stomach it can always be brought up without difficulty. In cases of doubt, the absence of any accumulation of gas can be confirmed with the x rays. Pseudo-flatulence may be caused by spasm of the diaphragm: a sensation of great distension is suddenly experienced, and the abdomen becomes so enlarged that the clothes have to be loosened. The distension disappears as suddenly as it came without eructation or passage of flatus; it also disappears under an anaesthetic and on firmly compressing the whole of the abdomen for some minutes. The x rays not only demonstrate the absence of excess of gas in the stomach, but also show the low position of the diaphragm and the absence of respiratory movements. This condition of hysterical spasm of the diaphragm was not uncommon in soldiers, especially after dysentery or colitis.

Psychasthenic Gastric Symptoms.

It is now recognized that many cases formerly regarded as neurasthenic are not really suffering from the result of exhaustion, their condition being of psychical origin and more accurately called psychasthenia. Though the chief symptoms are psychical, the uncontrolled emotions of the psychasthenic give rise to physical symptoms, amongst which may be disturbed action of the stomach and intestine, as would be expected from the physiological researches of Pavlov and Cannon, which have recently been extended by the observations on normal men by Bennett and Venables at Guy's Hospital. The most common gastric symptoms are a vague feeling of uneasiness or sinking in the epigastrium, anorexia and nausea; occasionally hysterical vomiting occurs as a complication. These physical symptoms may be a source of much distress to the patient, and not infrequently he consults a doctor about them without mentioning his more important mental symptoms unless pressed to do so. It is consequently of the greatest importance to get the patient's confidence and to learn every detail of his history—what worries he has, how he sleeps, whether he has nightmares, and whether he has any phobias or obsessions. If the symptoms do not correspond with any organic disease and no physical signs of disease are found on ordinary examination, and if the mental symptoms of psychasthenia are present, the digestive symptoms can generally be assumed to have the same origin, and no good can be done by further concentrating the patient's attention on his abdomen by test meals or x-ray examinations, although there is no doubt that the depressing emotions which are the cause of the symptoms inhibit to some extent both the secretory and motor functions of the stomach.

The only treatment required is psychotherapy; diet and drugs are useless, as the physical symptoms are merely the expression of a psychical disorder, which cannot be cured except by psychical means. Dr. T. I. Bennett will speak presently of the researches which are being carried out by himself, Dr. Ryle, and their fellow workers at Guy's Hospital, and Dr. R. G. Gordon will have more to say on the subject of gastric symptoms in psychasthenia.

II. NERVOUS DISORDERS OF THE INTESTINE.

Constipation.

It is comparatively rare for a patient to consult a doctor on account of constipation without having already attempted to cure himself with aperients. But no accurate diagnosis can be made until it has been ascertained whether the patient is really constipated at all. In my experience the symptoms generally ascribed to auto-intoxication caused by intestinal stasis are really produced by purgatives, which are, as Gulliver was told in his voyage to the Houyhnhnms, "equally annoying and disgustful to the bowels." They lead to the absorption of excess of toxic material, partly by hastening the half-digested contents of the small intestine into the caecum, where fermentation and putrefaction are consequently increased, and partly by causing the contents of the transverse, descending, and pelvic colon to be fluid instead of solid, so that absorption of toxins takes place throughout the length of the bowel instead of in the caecum and ascending colon alone.

In spite of his probable protests the patient should be instructed to see what happens if no drugs are taken for a week, an effort being made to open the bowels each morning. In most cases he quickly loses his abdominal pain and his so-called toxic symptoms. The bowels are often opened daily, in which case a diagnosis of *hysterical pseudo-constipation* can be made—hysterical because the patient had suggested to himself as a result of faulty education combined with the reading of pernicious advertisements that he was constipated and required aperients to keep himself well, whereas a little psychotherapy in the form of explanation of the physiology of his bowels and the origin of his symptoms, and persuasion to try to open his bowels each morning without artificial help, results in a cure. In many cases, however, the patient does not succeed in opening his bowels, although he may feel more comfortable than when he was taking drugs. A further abdominal and rectal examination should now be made. If no sign of organic disease is present, and if, as is generally the case, no accumulation is felt in the abdomen, the rectum will be found to be filled with faeces, which are in some cases stony hard, but in others quite soft, proving that there is no delay in the passage through the intestines. In spite of this the patient has no desire to open his bowels, although a normal individual would feel an urgent call to defaecation under such conditions. In 1908 I called this condition of inefficient defaecation dyschezia, to distinguish it from true intestinal stasis, in which there is delay in the colon. The majority of cases of dyschezia, which is the commonest form of severe constipation, are of nervous origin. They are caused by neglect to respond to the call to defaecate owing to laziness, insanitary conditions of the w.c., or false modesty. The rectum gradually dilates, so that an increasing quantity of faeces is needed to produce the adequate internal pressure required to give the sensation of fullness, which is the natural call to defaecation, and finally the sensation is lost completely. But the patient is still capable of emptying his rectum if he tries. He has, however, so convinced himself that he cannot get his bowels open unless he takes enemata, or such enormous doses of aperients that the fluid faeces practically act as enemata. He thus suggests to himself that his rectum is powerless to act by itself, true hysterical dyschezia being thus produced. In many cases no treatment is required beyond explaining to the patient the nature and cause of his condition and persuading him to make an effort to empty his rectum, which he must realize is really quite capable of doing its work, but occasionally it is also necessary to re-educate his rectum with graduated enemata.

In severe cases it is advisable to examine the intestinal functions with the x-rays, a barium meal being given after the patient has discontinued taking his aperients. The time table I gave ten years ago for the passage of food along the alimentary canal was nothing more than the average taken from numerous records obtained with the x-rays, but it has unfortunately often been regarded as representing the normal standard, the slightest variations from which indicated the presence of intestinal stasis. The fallacy of this has often been pointed out, as the normal limits are very wide, but I still frequently see patients who have been advised to submit themselves to colectomy or other drastic treatment as a result of an x-ray examination which showed a somewhat slow passage, which was, however, well within the normal. It is therefore necessary once again to describe briefly what evidence is required in order to diagnose stasis in different parts of the intestinal tract.

Ileal stasis should only be diagnosed if no trace of barium has reached the caecum six hours after the opaque meal, or if a considerable quantity of barium-containing chyme is still in the end of the ileum nine hours after the meal, if the stomach is known to have emptied itself in three hours. If most of the barium is still in the caecum and ascending colon at the end of twenty-four hours, they are the seat of stasis, even if a little has passed to the more distant parts of the colon, but a faint shadow of the caecum is often visible in normal individuals even three days after the meal. If the splenic flexure is reached in twenty-four hours, and the greater part of the barium is in the transverse colon at the end of forty-eight hours, there must be stasis in the transverse colon. Lastly, if at the end of twenty-four hours the greater part of the barium has collected in the pelvic colon or rectum or both, and in spite of this no desire to open the bowels is felt, dyschezia can be diagnosed.

Apart from dyschezia the only common form of constipation of nervous origin is that resulting from anorexia. Anorexia is a common symptom of both neurasthenia and psychasthenia, and the deficient stimulation of the intestine which it causes generally leads to a slow passage through the whole colon. Intestinal activity is also likely to be inhibited by depressing emotions in psychasthenia. There is, however, no evidence to show that the nerve exhaustion of neurasthenia has any influence on the bowels. I am convinced that no such thing as atonic constipation exists, for tone and peristalsis are independent functions; and whereas deficient peristalsis is a common cause of constipation, the *x* rays have proved that atony of the colon is a rare condition, generally organic in origin, and not necessarily associated with any disturbance in peristalsis.

Intestinal Hypochondriasis.

When a patient complains of auto-intoxication and intestinal stasis, gravely discusses the question of kinks and adhesions, and produces a diary in which every action he passes is minutely described, the diagnosis of intestinal hypochondriasis is obvious. The medical profession is, I fear, largely responsible for this common nervous disorder, as these terms are employed too thoughtlessly, for the conditions they refer to are all rare and can only be diagnosed after a most thorough investigation. If this proves negative, the patient must be taught that his auto-intoxication is a result of drugging, that intestinal stasis in moderation is a virtue, as it promotes digestion and absorption of his food, and that we all have kinks and adhesions, and so long as they remain in the abdomen and do not get on the brain they do not really matter. No man knoweth his own bowels; what is a good action for one is a poor thing for another, and the sufficiency of a stool should be judged by the comfort felt after it has been passed out and not by its size, its shape or its consistence. He alone is happy and devoid of that most trying of the nervous disorders of the bowel—hypochondriasis—who follows Sir James Goodhart's admirable advice to do as the dogs do and never look behind him.

Nervous Diarrhoea.

When a patient complains of frequent actions of the bowels his stools must be examined before a diagnosis of diarrhoea can be made. What is called diarrhoea by the patient is often the frequent passage of small scybala, and the most common cause of this is dyschezia, the condition being due to rectal retention with overflow. The passage of a little mucus with hard lumps of faeces is of no importance, as mucus is the natural lubricant of the bowel and is secreted whenever hard faeces are retained in the rectum or pelvic colon. But if mucus or blood is present with soft or liquid stools, colitis, either primary or secondary to a growth, can be diagnosed with certainty. When, however, in a case of chronic diarrhoea, neither mucus nor blood is present, and the toxaemia of Bright's disease and Graves's disease can be excluded, the possibility of a nervous origin requires consideration. The colon is not in constant activity like the stomach and small intestine, and its movements are very rarely seen during an *x* ray examination. Its whole motor activity is confined to a small number of powerful peristaltic waves each day, which travel along the greater part of its length.

In 1913 I found with Alan Newton that this "mass peristalsis" very rarely occurs except as a result of the gastro-colic reflex excited by taking food into the stomach. It is exaggerated in certain individuals to such an extent that, in addition to passing a solid stool on getting up in the morning, they have diarrhoea after breakfast and also after their other meals. This nervous diarrhoea is a pure neurosis and can only be overcome by the regular use of minute doses of drugs which have the power of damping down the reflex. In most cases, however, it becomes exaggerated owing to the patient's absorption in his fear that he will have diarrhoea at an inconvenient moment. A dinner party becomes an impossibility for him, and he gradually becomes more and more of a recluse. At this stage psychotherapy is required to overcome the psychical element which has developed on the top of the neurosis.

The bowels seem to be so little under voluntary control that I doubted for a time whether nervous diarrhoea could ever be regarded as hysterical. But C. H. Ripman had a soldier under his care at Seale Hayne Hospital with severe nervous diarrhoea of nearly two years' duration, which he cured at a single sitting by direct suggestion under hypnosis. As there was no doubt about its origin as a result of suggestion, it fulfilled the conditions required for a diagnosis of hysteria, having been caused by suggestion and cured by psychotherapy.

But a diagnosis of hysterical diarrhoea is not enough. The ultimate object of diagnosis is to gain a basis for rational treatment. It is therefore necessary in each case to discover what is the nature of the suggestion which has caused the diarrhoea. Careful cross-examination will generally reveal some definite cause. In most cases the original attack of diarrhoea was emotional in origin, overactivity of the bowel being one of the rarer of the many physical symptoms of emotion. When diarrhoea has once resulted from an emotion, any repetition of the emotion, even in a much slighter or modified form, or anything reminding the patient either consciously or subconsciously of the event which gave rise to the emotion, is likely to suggest a recurrence of the diarrhoea. This pure psychoneurosis may also occur as a complication of the exaggerated gastro-colic reflex I have already described, the bowels becoming so much a plaything of the patient's emotions that any important engagement, and not merely engagements for meals, and finally excitement of any kind, will lead to diarrhoea.

Muco-membranous Colitis.

Muco-membranous colitis is a condition in which constipation is associated with the constant or intermittent passage of membranes of coagulated mucus and with attacks of pain. I do not speak of mucous colitis, for there is no colitis without mucus, and the expression should therefore be discarded. The accumulation of hard faeces in the colon of individuals with an irritable nervous system may lead to reflex spasm of the intestinal muscles and reflex secretion of mucus. The latter remains so long in contact with the mucous membrane before it passes on that it has time to be coagulated by mucinase, a slowly acting ferment present in the mucous membrane; it thus forms thin membranes which are passed either with the stools or separately.

But it is not sufficient to find these membranes in the stools of a constipated patient to diagnose muco-membranous colitis, as they may also be passed in certain organic diseases, the most common of which is a growth of the pelvic colon. A careful investigation of the abdomen is therefore necessary, and this should include a sigmoidoscopic examination, as many cases of cancer of the pelvic colon can be diagnosed in no other way. I would ask you to regard the sigmoidoscope as an instrument which the practitioner and physician should learn to use as well as the surgeon. It is perfectly safe in careful hands if no anaesthetic is given, and after a little experience, which teaches one to dispense with inflation, it can be introduced without causing pain. If no growth is discovered the mucous membrane is generally found to be perfectly healthy in appearance; there is really no colitis present at all beyond the slight catarrh caused by the irritation of retained faeces, and corresponding with this the membranous shreds of mucus are found microscopically to contain few if any leucocytes. If, however, the patient has been treated with large intestinal douches of irritating fluid, some inflammation is generally present, just as the exactly analogous condition of the bronchi in asthma may be complicated by bronchitis caused by the inhalation of irritating fumes. When, therefore, muco-membranous colitis is not associated with organic disease, it may be regarded as a neurosis, and as it is most likely to occur in exhausted individuals, whose nervous system has become abnormally irritable, treatment is required for the exhaustion and for the constipation. Unfortunately there is a great tendency for the neurosis to develop into a psychoneurosis, and here again we are, I fear, ourselves largely to blame. So long as the patient does not know she is passing mucus she is comparatively well, but when she once knows, and still more when a course of Plombières treatment has made her a connoisseur in faeces, a mental element is added, which it is often difficult to remove. I know of few sadder spectacles than the bedridden young woman, the only child of a widow, whose life is devoted to keeping up her daughter's reputation as an intestinal martyr. But get her away from her parent, her purges and her Plombières, and she will soon be free from her psychoneurosis; the muco-membranous colitis, the pure neurosis, may still be present though it requires but little treatment beyond wholesome neglect.

In these introductory remarks I have endeavoured to describe how the more important nervous disorders of the stomach and intestine can be recognized. At the same time I have shown how much would be gained by boldly discarding the traditional teaching in so far as it was founded on theory and not on facts. This discussion will, I think, be most fruitful in results if it leads to a satisfactory classification of gastric and intestinal neuroses based on observed facts, as this alone will give us the data required to diagnose when a disorder of digestion is nervous in origin, what is the nature of the underlying nervous condition, and to what disturbances in function it has given rise.

T. IZOD BENNETT, M.B.Lond.

WITH the assistance of a large number of medical students, Dr. Ryle and I have, during the past year, been investigating the whole question of gastric digestion by means of the fractional test meal method. This method, which has been largely employed by Rehfuss, Crohn, and Reiss in America, consists in withdrawing samples at quarter-hourly intervals from the stomach of the subject by means of the Einhorn tube, which I show you here. Samples are taken until the stomach is empty, each is then titrated, and a continuous curve showing the free hydrochloric acid and total acidity, together with the rate of emptying of the stomach, is obtained. Our investigation is on an extensive scale, and includes an *x*-ray examination of every case, the collection of family histories, diet diaries, etc.

From the outset it was apparent that much investigation of the normal healthy individual was required; I have obtained curves of seventy healthy students, and am going to continue the research until fully 100 have been examined. At the present moment certain conclusions can already be made; the first is that an estimation of gastric acidity made at any single moment after a test meal is, by itself, often grossly fallacious. It is relatively of no more value than would be an observation of one single point in the cardiac cycle on a polygraph tracing. For instance, in Fig. 1 are plotted the curves from three individuals; a single estimation made an hour after the meal would give a reading of 0.054 per cent. of free hydrochloric acid; and yet a glance at the complete curves demonstrates that these three individuals belong, one to the average normal group, one to a group marked by rapid emptying, and the third to a group at present classed as "hyperchlorhydria."

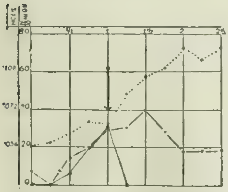

FIG. 1.—To show fallacy of single estimation one hour after test meal.

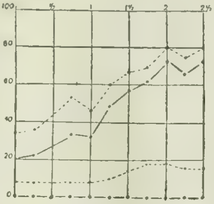

FIG. 2.—Curves of gastric acidity from two healthy students.

The second conclusion we have formed is that the terms "hyperchlorhydria" and "hypochlorhydria" as signifying pathological entities must be abolished; both occur frequently in healthy subjects. In Fig. 2 I show the curves of acidity of two healthy medical students; one you saw on the last chart; it is a marked "hyperchlorhydria"; the other is the extreme degree of hypochlorhydria in which HCl is entirely absent described as achylia gastrica. But whilst such extremes occur not infrequently, it is possible to establish a normal average curve; in thirty-eight of the first fifty students examined the curves corresponded closely to this average type; six, representing 12 per cent., come into the category "hyperchlorhydria," and seven, or 14 per cent., may be called "hypochlorhydria." There is no sharp line of demarcation between the groups; I have plotted their free acid in contrast in the following figure (Fig. 3).

The next fact to which I wish to draw attention is that profound changes in the physiological gastric cycle may be caused by emotive disturbances. It occurred to me that the effect of the emotions might well be demonstrated by the aid of hypnotism, and in this section of the work I have received the most able assistance of Dr. J. F. Venables, of the Neurological Department of Guy's Hospital. Helped by several enthusiastic volunteers from amongst the students, we have hypnotized a number of subjects during the course of test meals, and have then made varying suggestions to them. In Fig. 4 is a demonstration of the effect of suggested hunger; free HCl only is plotted, and it will be seen that the suggestion, which lasted less than half an hour, caused the acid percentage to rise sharply to 50 c.cm. N/10 NaOH with a subsequently rapid fall, whilst the rate of emptying was reduced by half an hour. In Fig. 5, on the other hand, is the effect of suggested nausea; the subject is a man whose normal gastric cycle is a rapid one, the effect of the emotion has been to delay the appearance of the free HCl for a very long time, whilst emptying of the stomach was made far slower.

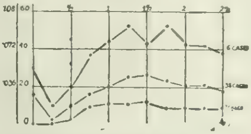

FIG. 3.—Average free HCl of the three normal groups contrasted.

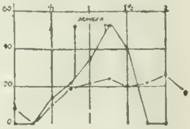

FIG. 4.—Effect of suggestion hunger.

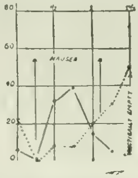

FIG. 5.—Effect of suggestion nausea.

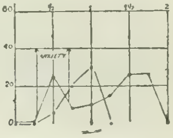

FIG. 6. Effect of suggestion anxiety.

The final curve (Fig. 6) was made a few days ago; the subject, an ex-officer of the Royal Flying Corps, was told, under hypnosis, to imagine himself again flying, and to be about to attempt a landing in difficult country in a failing light. The effect of the suggestion, anxiety, working through the sympathetic system, is very beautifully seen; even more marked than the alteration in the acid curve is the slowing of emptying, which is delayed to twice its normal time.

I have many other curves, showing anger, satisfaction, and other emotions, but the work is still in the incomplete state, and I do not wish to bring before you suggestions which are not yet fully proved.

THOMAS R. BROWN, M.D.,

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I AM a little embarrassed at being called upon, unexpectedly and therefore quite unprepared, to discuss Dr. Hurst's brilliant paper, for I had come to Cambridge to listen, not to speak; to learn, not to teach. Last night your "Grand Old Man of British Medicine," Sir Clifford Allbutt, who, with my old chief, Sir William Osler, I have always regarded as the leaders of medical thought in the Anglo-Saxon world, told us of the new currents in medicine, sketched its great future, sounded the note of danger of ultra-specialization in various fields, notably in that of psycho-analysis. To-day Dr. Hurst has taught us anew the interdependence of bodily symptoms and systems, the difficulty of depending upon concrete individual findings, and the need of a particular catholicity of judgement in the subject which he has presented to you—the diagnosis of the nervous disorders of the stomach and intestines. No one is better qualified than he to talk upon such a subject, for his reputation rests almost, if not quite, as much upon his neurological as upon his gastro-enterological contributions to medicine, and we in America have been greatly helped and stimulated by his work in both fields. With many points of his discourse I heartily agree—for example, his belief that the majority of cases of constipation simply represent a pernicious habit or are due to the abuse of drugs, that dyschezia is a real clinical entity, that secretory findings should always be taken *cum grano salis*. Anyone who has performed animal experiments on the gastric secretion, or has had an opportunity of studying the gastric picture in human beings with a permanent or transitory gastric or intestinal fistula, usually, of course, of operative origin, realizes, on the one hand, the marked influence of the psyche upon these secretions, and on the other how really wrong the terms "hyperchlorhydria" and "hypochlorhydria" are, as, if we can depend upon such studies, gastric juice as secreted by the stomach is of almost constant acidity, although hyper- or hypo- or ano-secretion may give rise to the pictures which are generally recorded as increased or diminished or absent acidity.

With this undoubted dependence of the secretory picture upon the emotional state of the patient, with the recognized fact that the normal curve of secretion differs very markedly in different absolutely healthy individuals, and that the undoubted influence, be it mechanical or be it psychical, of the newer forms of tubes used which remain constantly in the stomach during investigation, must play some rôle in the secretory curve, we have always felt that all we can honestly expect from our secretory studies in a case—studies which undoubtedly must always be repeated to be of value—is in telling us in a very general way the secretory *tendencies* of the individual under study.

With a finished clinician such as Hurst a definite diagnosis of a nervous disorder of the digestion may be made with the practically complete elimination of all possibility of organic cause, but to those less well trained in the fields of general and special diagnosis attention may be called to the fact that before one definitely states that the case is of purely nervous origin it is well to consider:—

1. The importance of a thorough and complete general [illegible] demand because of the frequency with which [illegible] symptoms are encountered in [illegible] such as, notably, the renal or cardiovascular [illegible] states of internal secretion [illegible] patients gastric symptoms may [illegible] and vice versa.

2. The fact that every gastro-intestinal lesion is associated with more or less functional disturbance, and that obviously the degree of this functional disturbance is largely dependent upon the relative [illegible] of the nervous system of the patient.

3. [illegible] especially in the last mentioned group, [illegible] the organic lesion and the functional response, and the consequent necessity, even if the organic lesion is [illegible] to follow this with the proper treatment for the functional derangement, which may last long after the organic cause has been removed.

It has always been very helpful to me in studying cases in this field to regard the digestive system as being under the influence of two sets of nerves fundamentally antagonistic in their action, the sympathetic and the vagus, and to realize that when this balance is broken up, either because of reflex stimulation from other parts of the digestive tract, or from other organs or tissues which are not functioning normally or which are organically diseased, or from an unstable or [illegible] state of the nervous system, or from disturbances in the emotional sphere, we may have a variety of digestive symptoms dependent upon the various factors previously mentioned, and [illegible] that when the nervous disorder of digestion may be [illegible] and even the functional symptoms associated with organic lesions be [illegible] helped by such treatment [illegible] complete [illegible] and [illegible] that we are justified in diagnosing [illegible] nervous disorders of the stomach and intestines and of treating them accordingly.

W. LANGDON BROWN, M.D., F.R.C.P.,

London.

Recent improved methods of investigation have shown (1) That conditions supposed to be nervous may really be organic. Thus I have had cases presenting the symptoms [illegible] but which as the result of combined examination for occult blood in the stools, diastase in the urine, and by *x* rays, were shown to be due to duodenal ulcer burrowing into the pancreas. The diagnosis was confirmed in some cases by operation, and, unfortunately, in others by *post-mortem* findings. Yet the attacks were very unlike duodenal ulcer, and in some instances had been diagnosed as enteralgia. (2) That conditions supposed to be organic may really be purely functional. I would mention atonic dilatation of the stomach as an example of this; it used to be considered that this condition was secondary to gastritis. Gastritis is a comparatively rare disease, though the tendency to diagnose it has been much increased by the fact that it is one of the few digestive diseases a soldier was allowed to have. I can assert positively that the test meal in several such instances, far from being that of gastritis, showed marked hyperchlorhydria. I have seen dilatation, as proved by *x*-ray examination, come on and pass off coincident with the onset or the passing off of a mental strain. Fatigue is known to delay the emptying of the stomach, and if there is any tendency to atonic dilatation this will greatly increase it. Recently I saw a man who, in addition to heavy business duties, had his night's rest incessantly disturbed by the illness of his wife. His stomach was greatly dilated, and I removed by the tube more than a quart of foul-smelling gastric contents with an acidity as high as 0.3 per cent. Yet this man, when away during a visit to Holland, free from business worries and getting undisturbed nights, was able to eat and drink anything he wished without discomfort. (3) That a very slight organic lesion may provoke an unduly violent response if the nervous arc be unduly irritable and unstable. This is well shown in reflex dyspepsia, where hyperchlorhydric symptoms are induced by a lesion outside the stomach. Some such lesions are severe enough to produce symptoms, however stable the nervous system, such as duodenal ulcer. But other lesions, particularly in the ileo-caecal region, as Craven Moore points out, may cause no symptoms unless and until the susceptibility of the nervous arc is greatly exaggerated. It is therefore difficult to exclude an organic basis altogether. As Dr. Hurst has shown in other organic lesions, functional symptoms may be superadded, and this is true of the digestive system.

The point to which I want to direct attention is the nervous mechanism by which these functional disturbances are brought about.

The visceral or vegetative nervous system was defined by Gaskell as composed of two main divisions—the sympathetic and the parasympathetic. The sympathetic is katabolic, reducing potential energy to kinetic, defensive in its manifestations and interacting closely with the thyroid, pituitary, and adrenals. The parasympathetic is anabolic, leading to storage of reserves and associated with the activity of lymphoid structures throughout the body. Eppinger and Hess have tried to distinguish two types of neurotics—the sympathicotonics and the vagotonics—in which one or other of these divisions reacts unduly to stimulation. The skin of the vagotonic, according to them, shows dermographia and a tendency to urticaria and other skin eruptions, his lymphoid tissues tend to hypertrophy, his blood to show eosinophilia, and there is a liability to anaphylactic shock. Laryngeal spasm, respiratory arrhythmia, bradycardia, low blood pressure, increased gastric tonicity, hyperchlorhydria, spastic constipation, would all be produced through an over-sensitive vagus.

Without accepting all Eppinger and Hess's conclusions, I think I have been helped in diagnosis by looking for other vagotonic signs in a patient apparently suffering from functional dyspepsia; and, if they are present, giving him belladonna whatever other treatment is employed. Speaking generally, irregular and exaggerated contractions in the form of colic or tenesmus are due to irritation of the parasympathetic, whereas tonic spasm and atony are both due to sympathetic irritation—spasm due to constriction of the sphincters, and atony due to inhibition of normal movements. These two are frequently if not generally associated. With atonic dilatation of the stomach there may be pyloric spasm. Nor does this spasm merely assert itself in the sphincter below the irritable focus; it may occur in those above. Keith has likened the alimentary tract to a railroad divided into block sections, each provided with its signalman and telephone apparatus. The signalman of one section refuses to accept any further traffic until his section is clear; all the sections are closely correlated. If one is blocked the others, too, become automatically blocked. This would explain the widespread results of visceroptosis and the effect of sympathetic inhibition upon it.

Although we know that the conditions which produce visceroptosis are generally congenital, we also know that it need produce no symptoms until the patient has suffered from (*a*) debilitating illness, or (*b*) nervous shock. In the former instance the atony of the intestinal muscles increases the drag of the contents on the mesentery; in the latter the sympathetic inhibition of those muscles would produce the same effect. A vicious circle is thereby at once set up, for, as Tyrrell Gray showed, the drag on the mesentery sets up further sympathetic inhibition, increasing the stasis, which increases the dragging in its turn. We can thus understand the close association between visceroptosis and nervous symptoms, and the difficulty in deciding which factor was really primarily responsible. That nervous factors may predominate is shown by the marked improvement which follows the happier psychic state induced by a definite object or occupation in life.

May I refer in conclusion to a point on which I think the profession too often feed the imaginings of the neurotic—I mean an unduly rigid diet. The patient clamours for some special diet, and is dissatisfied unless he gets it. Consequently, he frequently gets one which is physiologically unsound. It impairs his nutrition and helps to increase his obsessions as to his digestive incapacity. This attitude should be discouraged. Restrictions should only be ordered for some definite reason. Here, as elsewhere, we must follow the maxim that if our treatment does the patient no good, we must at least see that it does him no harm.

H. Tyrrell Gray, M.Ch.Cantab., F.R.C.S.,

London.

I appreciate the honour of being invited to this discussion no less than I welcome the opportunity of learning directly the views of my medical colleagues on a group of visceral disorders in which frequently I feel the need of their help and co-operation. It is only natural that I should approach the subject under discussion from a somewhat different standpoint; and I feel sure you will not be too critical of my ignorance of some of the aspects of the far-reaching problems involved, particularly when these do not immediately concern my own particular line of study.

It is important to realize that the motor mechanism of the different regions of the alimentary tract is adapted to the character of the contents. Langdon Brown emphasized the fact that the nervous excitation of secretion gradually gives way to the chemical; and a similar gradual change, as the voluntary mechanism imperceptibly merges into the involuntary, is noticeable in the motor mechanism. Conditions are not necessarily analogous in different situations; thus, in regions where the contents are solid and semisolid, I believe the mechanism to differ from that in the regions where the contents are fluid.

As the voluntary or conscious mechanism gradually merges into the involuntary, the corresponding establishment of a dual nerve supply is to be noted—the sympathetic and parasympathetic—the one inhibitory and the other motor in function. The point at which the sympathetic enters into its inhibitory function is doubtful; but, on clinical grounds, I believe that it only innervates the pyloric half of the stomach musculature onwards—that is, from that point where the peristaltic waves normally commence. If this is correct, it is a point of considerable importance. These two nerve systems are associated with two entirely different varieties of gastro-intestinal movement. The parasympathetic (vagus and pelvic visceral nerves) terminating in Auerbach's plexus, excites or exaggerates the normally continuous rhythmic waves.

The sympathetic is purely inhibitory to intestinal contractions, except at the sphincters; and on this innervation I believe depends the mechanism of the peristaltic wave. With the details and functions of these two types of gastro-intestinal movement I need not now weary you; but I do wish to emphasize the importance of a clear differentiation between the two in the study of visceral disorders: a failure in this respect is, I believe, responsible for much confusion of thought. It is clear that interference with the motor functions of the gastro-intestinal tract may be effected in several ways through the alteration of the normal balance of nerve impulses reaching the viscera from these two sources; that is:

(*a*) By a relative [illegible] or a relative [illegible] of the intestine [illegible] by enterospasm.

(*b*) By a relative [illegible] or [illegible] sympathetic stimuli leading to gastro-intestinal inhibition.

It is the latter (*b*) with which we are especially concerned in the present discussion; and of these the increase of sympathetic nerve impulses plays the most important rôle, since it is so pre-eminently through the efferent sympathetic that impulses from the higher centres exert their influence on the vasomotor and visceral systems. Amongst disorders due to a diminution of normal parasympathetic impulses I should be inclined to class, though with some diffidence, the intestinal distension and constipation associated with paraplegia, Hirschsprung's disease, etc.

Now the psychical influence on the function of stomach and intestines is familiar to all of us clinically, though I confess I am not personally in a position to appreciate fully the niceties of classification presented to us in the opening address. Also, on general principles, it must be conceded that, as in all medicine and surgery, treatment directed to the primary cause should be capable of effecting a cure or at least an improvement. So that if a visceral disorder can be traced to a psychical origin, presumably psychotherapy should be capable of effecting a cure. But I would submit that investigation must be carried much further than the mere classification according to origin, if the true pathology of any given disorder is to be appreciated and the treatment based on sound principles.

Thus, violent emotions, as has been demonstrated in animals and recognized in man, may initiate a general intestinal inhibition. Further, since a constant mild or even physiological stimulation, which allows no interval for rest, may in time equal the effects of a short violent stimulus, it follows that any excessive mental activity will not be without its concomitant inhibitory effect on the visceral system; and the same holds good for abnormal psychical conditions.

That such conditions are associated with various forms of "dyspepsia" (so-called) is common experience; but to label such disorders as varieties of "nervous dyspepsia"; to classify them according to their primary origin; and to base the treatment on such a classification with the expectation of a cure, is to invite disappointment alone.

In the case of the stomach, for instance, how does a general sympathetic stimulation affect this viscus? If my clinical deductions are correct, only the pyloric half and sphincter will be affected, the former being inhibited, the relaxation of the latter being prevented. In the visceral tract the effect of a local lesion takes precedence of a general, so that, even in the presence of a generalized inhibitory effect, such a pyloric closure constitutes an actual (even if intermittent) obstruction. The result is an increase and extension of peristaltic waves towards the cardiac end. Now this is not characteristic of stomachs whose function is inhibited from psychic causes, except under conditions which I shall refer to subsequently. Further, the achylia which usually accompanies the "dyspepsia" of this type is not, as a rule, associated with the active stomach. On these and other grounds I believe the effect of the emotions, etc., on the stomach to be almost entirely indirect. I have elsewhere expressed the belief that hunger, together with the associated exaggeration of gastro-intestinal rhythmic movements, is excited primarily by the afferent vagus impulses from the congested and loaded gastric, pancreatic and (possibly) intestinal glands. Exhaustion of the higher centres from any cause, such as fear, rage, worry, anxiety, overwork, unhappiness, etc., is manifested through the splanchnics in an excessive adrenalin secretion, leading, as we know, to suprarenal exhaustion.

The resulting suppression of pancreatic functions may well lead to a deficient afferent vagus impulse from this gland and the anorexia which is a common feature of this type of patient. Such a conception will account for the characteristic symptoms manifested by these patients. Thus a defective afferent vagus stimulus will lead to a defective efferent response which will be evidenced by deficient rhythmic waves leading to poor peristalsis, or, in other words, to the "silent stomach." This defective mobility will probably be further associated with defective secretion (particularly from the cardiac end and fundus), thus accounting for the achylia and deficiency in hydrochloric acid. This is in marked contrast to the hyperactive stomach with hyperchlorhydria resulting from secondary reflex sympathetic stimulation from a lesion elsewhere. But, while I am inclined to regard the "silent stomach" as an indication of abnormal psychical disturbance, it by no means follows that the reverse is true. For it must not be forgotten that the vagus deficiency referred to leads also to defective rhythmic waves and a consequent imperfect peristalsis—that is, a defective motor power of the intestine. I have elsewhere endeavoured to show that this particularly affects the lower ileum and large intestine and may lead to any degree of intestinal stasis. Now in those subjects where there are no anatomical defects which predispose to direct or reflex intestinal inhibition (that is, when there is no mesenteric or peritoneal abnormality, whether congenital or acquired), the resulting dyspeptic symptoms, primarily and continuously of psychic origin, are clearly amenable to psychotherapy; and this method of treatment should be capable of effecting a permanent cure. But when such a primary psychic abnormality occurs in the presence of mesenteric bands or adhesions, ileal mesenteric control (whether from Lane's kink or "controlling appendix"), congenital mobility of caecum or colon, general visceroptosis, defective abdominal wall, etc., the clinical picture may well be of a different character. For in all these conditions, though normal function may be maintained, any overloading of the bowel is likely to throw the strain of support on the mesentery and initiate direct local and reflex general sympathetic inhibition, so that a secondary vicious circle becomes established, having its immediate origin in a local condition; even though the remote primary cause be psychical.

It has already been mentioned that in the gastro-intestinal tract the local condition dominates general influences; so that a resulting pyloric spasm would, in such an event, lead to an active stomach indistinguishable from the type seen to result from a primary local lesion.

What I should like to suggest for your consideration is this: That there are many subjects of so-called "nervous dyspepsia," the origin of which is clearly psychical, but in whom anatomical conditions (of which congenital mobility of the colon and mesenteric bands are the most frequent and important) predispose to intestinal inhibition in any of its forms should the exciting cause be severe enough, or sufficiently prolonged to establish it permanently. In such cases an established secondary lesion may lead to its own pathological sequelae, and in itself, though not the primary factor, may constitute the actual *fons et origo* of gastro-intestinal inhibition. Under such conditions psychotherapy can at least cause improvement indeed, in a small way I know it can, particularly when combined with scientific medical treatment; it may even succeed in placing the sufferer in such a position as to neglect, by an effort of will, the discomforts associated with his complaint. But is this the same thing as cure? Under these conditions, can suggestion put him in such a position of health that neither doctor, diet, drugs, laxatives, vaccines, nor careful hygienic instructions need interfere with his daily occupation or amusements?

It is one thing to keep a patient in tolerable health with constant medical attention and care; it is quite another thing to place him beyond the need for these. Therefore, I should like to ask this. It is certain that some patients are wrongly operated upon when a psychical condition alone is at fault. Is it not at least equally probable that medical and suggestive methods might achieve better and more permanent results, with less likelihood of relapse, if anomalies or developmental [illegible] of potential harm were also remedied? Similarly, I think, we surgeons often lose the opportunity of completing a permanent cure when we remedy the anatomical condition and overlook or neglect the psychic element.

At the same time it is curious to note that a large proportion of neurotic introspective subjects, whose insides are their chief problem and entertainment in life, are the victims of congenital mobility of the colon or general splanchnoptosis—a fact which raises the question as to the possibility that, though such a condition is compatible with perfect health, this condition may be sometimes the primary origin of the psychic conditions under discussion.

We hear a great deal to-day of intestinal absorption and intoxication; and doubtless it is a very important subject. Yet no one can encounter the extraordinary condition of good health which may exist with constipation of an almost incredible degree, without wondering whether the importance of this has not at times been exaggerated.

I have elsewhere attempted to show that constant pathological afferent stimuli may result from continuous increase of mesenteric tension or drag (such as is to be noted in general visceroptosis). The efferent response to such stimulation is not limited to visceral reflex sequelae, but may be manifested in tachycardia, sweating, adrenal exhaustion and its attendant lassitude, etc. I would ask if it is not at least probable that the nervous origin of such symptoms at least equalizes in importance the much abused intestinal auto-intoxication? Psychic abnormality may well owe its inception to such continued impulses.

Such a conception is not without its clinical support.

For instance, I should like to quote the instance of a lady of something over 40 years, who had suffered for over thirty years from constantly progressive constipation and cachexia of the most pronounced type; enemas and purgatives often repeated were frequently without any result. Indeed, I have rarely seen such a picture of misery and hopelessness. The abdomen was explored in 1916, the appendix removed, and some bands divided. She had had a marked thyroid enlargement which subsided after the operation, but returned with a progressive deterioration of health. I saw her about eight months ago, and resected about two-thirds of the most flabby, dilated, overloaded, and inelastic colon I have ever seen. (Professor Keith was unable to find any recognizable evidence of the existence of Auerbach's plexus.) Almost immediately the thyroid enlargement practically disappeared; it became larger when she started walking about again; and now that her health is restored and she is able to enjoy her life the thyroid has assumed almost normal proportions.

These sudden variations appear to me to be too rapid to be attributed to infective agencies; and I have regarded it, rightly or wrongly, as evidence that pathological nerve impulses of visceral origin are often responsible for symptoms hitherto regarded as the result of intestinal absorption.

R. J. M. BUCHANAN, M.D., F.R.C.P.,
Liverpool.

DR. BUCHANAN expressed his admiration of the work of Dr. Hurst, and welcomed the communication. He did not wholly agree with the idea that hysteria occurred in normal individuals, or that the stigmata of hysteria were a result of suggestion on the part of the observer. Many diseases had been recognized and classified before the underlying condition had been discovered. The physical stigmata might be discovered by accident. He related a case, one of so-called spinal disease, and for which an eminent orthopaedic surgeon had ordered a spinal support, and rest in bed. Dr. Buchanan recognized the hysterical nature of the case by the presence of anaesthesia of the right side of the face, from the presence of flies upon it, but to which the patient was quite oblivious. He did not consider that the flies suggested the anaesthesia, and he disclaimed suggestion on his own part. He considered that if vomiting suggested vomiting in hysterical cases, the initial cause might rightly be regarded as organic. He had noted the type of vomiting in soldiers described by Dr. Hurst, even in those who had not been gassed and who had not been out of this country. In many of these he had noted evidences of the stigmata of degeneracy, the common one being polymastia. Dr. Buchanan was not convinced that the pernicious vomiting of pregnancy was always hysterical, and related a case which, if this were true, ought to have come into this category, but which was due to the presence of a placenta left after incomplete artificial abortion—a case in which the woman had every reason in her own mind to hide her true condition, and the desire to do this should have suggested that the vomiting should cease. It did, but only when the placenta had left the uterus.

Dr. Buchanan did not consider that the feeling of distension attributed to flatulence—the so-called pseudo-flatulence—should be regarded so lightly. Personal experience was sometimes valuable, and Dr. Hurst would have been surprised had he told Dr. Buchanan on the afternoon of a certain day that his feelings of distension and flatulence were neurotic, to find that within a few hours he had experienced an almost fatal haemorrhage from the duodenum. Dr. Buchanan considered that constipation and dyschezia were synonymous terms, but held that although common-sense persuasion was a useful asset in treatment, there were cases in which no amount of persuasion, but only instrumental delivery could produce the desired result. It was interesting to note that Dr. Hurst considered it occasionally necessary to re-educate the rectum by means of local suggestion in the form of graduated enemata.

In reference to the question as a whole, Dr. Buchanan drew attention to the two schools of thought—the psychical and the physical: the former considering that the number of those who suffered from so-called functional disturbance of the stomach was greater than those who suffered from organic disease; the latter, that "nervous dyspepsia may cease to be classed as a distinct type of disease when methods of diagnosis shall have become more perfect." In Dr. Buchanan's experience the so-called nervous or functional diseases of the stomach were fewer than had been previously accepted, and in the majority of cases which were previously so classified organic disease was present. He considered that, in the near future, "psychic causes will be regarded as equivalent to the exhaustion of diagnostic resources." He recalled the fact that functional disturbance and organic disease often coexist, and the one enhances the other; and he issued a note of warning lest the substance be left for the shadow. Further, that those who became over-enthusiastic in favour of the so-called psychical cause, stood in danger of having their belief rudely and dramatically shaken, and that not infrequently.

Dr. J. A. Nixon (Bristol) spoke of the value of Dr. Bennett's investigations as showing the wide variations compatible with normal health and nutrition, also of the importance of taking every advance made in physiological knowledge to the bedside. Though the emotional factor in the control of gastric and intestinal functions was, as Dr. Hurst pointed out, very powerful, still it should be realized that underlying the strong emotional impulse might and frequently did exist a physical or organic basis. This organic basis might be very slight and apparently insufficient. It would require every scientific method of investigation to discover this organic cause, and then it was exceedingly difficult to estimate how far the psychical element was superadded.

Dr. R. G. Gordon (Bath) said: There seems to be a tendency amongst physicians who are interested in the organic diseases of the digestive system to presume that those who practise psychotherapy never examine the physical condition of their patients. One might retort that the former do not always sufficiently consider the psychical factor. Dr. Hurst referred to the digestive complaints of patients suffering from psychasthenia, and it is very common for such patients when they consult the physician to hide their mental and emotional symptoms owing to their fear of insanity, and their dread that if they talk about them they will immediately be incarcerated in an asylum. For this reason they lay stress on any physical symptoms they may feel. It is characteristic of these cases that they have little control over their emotions—they are irritable, they weep easily and laugh easily, and therefore will experience all the more readily the physical expressions of the emotions. As Knupf and others have shown, the chief of these are activities and inhibitions of the unstriped muscles of the body and those muscles only partially under voluntary control. Under the stress of anxiety the diaphragm is affected, and this is translated by the patient as something wrong with the stomach. This may be intensified by hysterical aërophagy, etc., but the point to be borne in mind is that in this particular group the trouble is not digestive at all, and while careful physical examination is necessary in all cases, the mental examination should not be neglected. and in some cases the anxieties and obsessions of psychasthenia will be unearthed by sympathetic questioning.

Dr. W. T. Tyson (Folkestone) said: The literature of the subject is exceedingly scanty, but as far as my reading goes, the best paper on it is by Sir Clifford Allbutt in his *System of Medicine*. These cases occur at all ages, in quite young people as well as in those of advanced life. Men and women are equally affected. The symptoms are the same as in other diseases of the stomach, only they have no discoverable anatomical basis; but there are some marked peculiarities—for example, the symptoms often cease suddenly for a week or much longer without any obvious change in the diet or in treatment. The general nutrition varies very much, sometimes it is not at all affected, and at other times there is great emaciation. I consider that the diagnosis is often most difficult, and sometimes impossible.

Dr. E. Hobhouse (Brighton) said: With much of Dr. Hurst's interesting paper I cordially agree, and particularly with his remarks on the cases of this character arising during the war, of which I saw fairly large numbers. But there is one fundamental difficulty which arises as soon as we begin to attach neurological labels to these diseases; it has been partially revealed in the discussion this morning. No two writers seem to agree exactly as to what they mean by neurasthenia, psychasthenia, hysteria. Many, for example, would disagree with the definition of hysteria given by Dr. Hurst, which practically eliminates any hysterical state and reduces hysteria to a congeries of symptoms produced only by suggestion. To gain further information as to his exact point of view, I should like to ask Dr. Hurst what he considers to be the exact mechanism of suggestion in the cases he mentioned of spasm of the diaphragm associated with chronic disease of the colon. Further, I would ask why he denies to neurasthenia that effect on the digestive processes which he admits in cases of psychasthenia, even though the two conditions are fundamentally different. Before we can really discuss many of these questions quite satisfactorily I think we need a neurological congress to determine what we mean or intend to mean by the various terms employed. On the general question I believe the truth will be found ultimately somewhere midway between the positions taken up by Dr. Hurst and Dr. Buchanan respectively.

Dr. Emanuel Libman (New York) spoke as follows: The disturbance of the gastro-intestinal tract not due to structural disease may be classified as neurogenic, psychoneurogenic, metabolic, and endocrine. Dr. Hurst has drawn the distinction between neurogenic and psychoneurogenic causes, and Dr. Brown has drawn attention to those of endocrine origin. It is interesting to note the occurrence of disturbances due to diseases of the accessory sinuses, especially of the sphenoid sinus. Gastric disturbances occur, but these have been less studied than the intestinal ones. While attacks of sinusitis may be accompanied by diarrhoea, more commonly there is a spasm which involves the sigmoid flexure. This effect is probably due to a toxic effect upon the nerves. The symptoms of so-called flatulent dyspepsia may be produced by sigmoidal spasm, by chronic appendicitis, and other causes. Of course Dr. Hurst, in his presentation, excluded all organic causes when he discussed the question of flatulent dyspepsia. The picture produced by any disease depends a great deal upon the sensitiveness of the person involved, especially the sensitiveness to painful impressions. One can tell a great deal about that by a simple test that I have been using for a number of years. One presses first on the mastoid process. This is used as a control because it is normally not sensitive. Then one presses against the styloid, and most people will indicate that the pressure is painful. Some people are much less sensitive than what we can call the normal, some are not sensitive at all, and some are very sensitive. We find hyposensitive, hypersensitive, and what we can call normally sensitive types. Individuals who are hyposensitive often do not develop the full-fledged symptomatology of a disease. Thus, if they have an ulcer, they are apt to complain of burning, or pressure, rather than of pain. They are also apt to have less marked hyperalgetic areas on the skin with visceral disease. We had a good opportunity of studying this last point by making observations on sigmoidal spasm. When the sigmoid is contracted it is usually locally tender when rolled. There is often present a hyperalgetic area that has not been described. It lies about midway between the left superior anterior spine of the ilium and the umbilicus. When this area is present there is always also present a hyperalgetic area on the right side, just above Poupart's ligament, having about the same localization as that described by Sherren in cases of appendicitis. (The difficulty found with Sherren's observation was due to the fact that the zone on the right side was often due to sigmoidal spasm.) In hyposensitive persons we found the hyperalgetic areas of sigmoidal origin diminished or absent. In the area for diagnosis, of all data depending on sensations of pain, we find that the symptoms are all the more significant if the patient is hyposensitive, and that the absence of certain symptoms, in a given disease, in a hypersensitive person, should make us cautious in making the diagnosis positive. In making some observations on patients suffering from putrefactive intestinal conditions we came across what appears to be a good example of a metabolic (or better chemical) effect upon intestinal innervation. In some of these persons we found that the faeces contained very few colon bacilli. They were treated by the implantation of colon bacilli (according to the method of Mr. J. J. Connellan, who based his work on the observations of earlier investigators). In a number of the patients so treated the toxicity of the faeces was reduced. He noted that in some of those in whom the treatment had been successful, and who before its administration were constipated and suffered from sigmoid contraction, the movements became copious, and were no longer narrow. The evidences of sigmoidal contraction often diminished or disappeared for quite long periods. We must therefore keep in mind the possibility of toxic intestinal contents causing disturbance in the intestines by affecting the local nervous mechanism.

Dr. **Craven Moore** (Manchester) said: War experience has shown that psychical influences may be the underlying factor in a more or less grossly manifest disorder of the functional activity of the stomach. Personal investigation of a large number of these cases showed that the disorder was one of motility. In normal civil experience nervous dyspepsia of psychical origin does obtain, but it is comparatively uncommon; the great majority of all such cases are of reflex origin, depending on some lesion more or less gross and more or less remote from the stomach—duodenum, gall bladder, appendix, colon, kidney, organs of generation, etc.; and on a varying instability of the reflex nervous mechanism. The functional disorder concerns both secretion and motility. In the diagnosis and treatment of these cases it is of first rate importance to recognize the existence of these two factors, treatment being directed to the removal of the maintaining lesion and the restoration of a normal nervous stability.

Dr. A. R. P[illegible] (Dublin) expressed the opinion that no case of gastro-intestinal disorder should be finally regarded as purely functional in origin till all known methods of physical examination had failed to disclose evidence of any organic disease. X-ray examinations, [illegible] gastric contents, etc., were in many cases essential to arriving at a correct diagnosis. Detailed clinical examination, however, even though aided by [illegible] of physical investigation, might, at times, fail to detect any organic lesion and yet at [illegible] the case might not be functional. As an illustration of the difficulty which may arise in differentiating between a functional and an organic case he mentioned briefly the history of a young woman who was admitted to hospital suffering from severe and persistent vomiting, and [illegible]. [illegible] negative. [illegible] [illegible] gastric contents [illegible] after [illegible]. An autopsy revealed advanced tuberculous disease of both adrenals. There was no pigmentation of the skin or mucous membranes.

Lord Dawson of Penn (London) urged the necessity of taking a broad view in cases of this class. He roughly divided two types of patient who were liable to suffer from vague gastro-intestinal discomfort: first, those who were found to have high blood pressures suffered abdominally whenever they were below par, and secondly, others who were found to have a low blood pressure were patients who were always ailing and who frequently had symptoms of abdominal discomfort—such patients suffered from the raising into consciousness of functions that ought to be unconscious. In all patients in whom there was a strong suspicion of organic disease Lord Dawson recommended an early exploratory operation.

Opener's Reply.

Dr. **Hurst** said: I wish in the first place to make it clear that I never make a diagnosis of either organic or functional disease in a chronic gastro-intestinal case until a thorough investigation has been carried out. In addition to the ordinary clinical examination, the gastric functions are studied by means of the fractional test meal, the stools are examined, and occult blood is looked for after the patient has been on a haemoglobin-free diet for three days. An *x*-ray examination of the entire alimentary tract is carried out, and a sigmoidoscopic examination is made in intestinal cases. A diagnosis of colitis ought never to be made until this has been done, and I cannot agree that the term should now be used in the absence of definite evidence of inflammation of the colon. When the investigation has been completed, it should be possible to say whether the condition is organic, functional, or—as it is in very many cases—organic with a superadded functional element. If the condition is functional, it is then necessary to find what is its exact origin, and whether it is due to neurasthenia, hysteria, or psychasthenia.

It is only in certain cases of hysterical vomiting that complete investigation may not always be necessary or desirable. For example, we learnt during the war that if vomiting persisted for more than three weeks after gassing, it was always hysterical, and as we had no means for carrying out complete investigations, we proceeded at once to cure the patient by psychotherapy. I cannot agree with Dr. Nixon that most cases of digestive disturbance during the war were organic. We had probably fifty cases of vomiting in soldiers at the Seale Hayne Hospital, and out of these about forty were hysterical and were cured by explanation and persuasion, generally at a single sitting. The remainder had an organic basis—the primary cause of vomiting being generally appendicitis, dysentery, or phthisis; even in these the reflex vomiting was often exaggerated and the patient's condition aggravated by the addition of an hysterical element.

With regard to the so-called pernicious vomiting of pregnancy, if Dr. Parsons's advice was followed and the psychotherapeutist only called in when everything else had failed, it would be too late, as in several of the cases I have seen the patient was moribund, and if further investigations had been carried out before psychotherapy had been employed the patient would certainly have died.

Mr. Tyrrell Gray has referred to the advantages to be gained by a close association of physicians with surgeons. With this I cordially agree, and I must acknowledge that I have learned more about gastro-intestinal diseases from Sir Berkeley Moynihan than from any physician. But it is none the less a matter of regret that in the Surgical Section at this moment he should be discussing eight different operations for gastric ulcer, when, if practitioners and physicians only did their duty, cases of ulcer would never reach the stage in which the surgeon's help was required. I think Mr. Tyrrell Gray lays rather too much stress on spasm, as achalasia, or absence of relaxation, is more frequently the cause of delay at the cardia, pylorus, and ileo-caecal sphincter than spasm. I also think he lays too much stress upon the necessity of correcting displaced organs by surgical means. I cannot believe that in the majority of cases a congenitally low caecum is of any more importance than a crooked nose.

There is no time now to explain to Dr. Buchanan why I do not believe in such a condition as hysteria apart from hysterical symptoms. Hysterical vomiting and many other hysterical symptoms are found with equal frequency in people who show no evidence of any undue suggestibility, and have none of the physical or mental stigmata which have been thought to be characteristic of hysteria. He will find a more complete discussion of this question in the Seale Hayne Neurological Studies which we published during the war. I did not mean to suggest that a feeling of distension like that which he felt before his haematemesis is hysterical. but a feeling of this kind is in many cases the exciting cause of hysterical aerophagy.

In reply to Dr. Hobhouse, the digestive symptoms which follow exhaustion or neurasthenia are entirely distinct and need entirely different treatment from the symptoms resulting from the disordered emotions in psychasthenia.

Dr. Parsons must have entirely misunderstood me if he thought I would attempt to treat by psychotherapy a case such as the one he related of death from Addison's disease. Psychotherapy is, of course, only indicated in digestive symptoms which result from hysteria and psychasthenia, and nobody in his senses would suggest that Addison's disease is of this nature.

Finally, I should like to indicate what I believe to be the best method of treating the digestive psychoneuroses. I did not use the word "psycho analysis," as this has come to be regarded as synonymous with the discovery of a sexual origin of disease and the employment of certain elaborate methods of examination, but a psychological analysis is none the less essential if we wish to discover the psychical origin of hysterical and psychasthenic symptoms. This can almost invariably be done by tactful cross-examination when we have obtained the patient's confidence. The symptoms can then generally be cured within a comparatively short period by explanation, combined in some cases with persuasion and re-education.

SUBACUTE PERINEPHRIC ABSCESS OF NON-RENAL ORIGIN.

BY

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PERINEPHRIC ABSCESS, not secondary to disease of the kidneys, is a fairly common condition which is frequently misdiagnosed in the early stages. When accompanying renal disease attention is more directly focussed on the kidney region and associated abscess is unlikely to be missed, but the insidious development of metastatic perinephric abscess and the paucity of localizing symptoms at first are responsible for many mistakes and make the subject one worthy of special consideration.

ANATOMY.

The kidney is closely invested by its true capsule and enclosed within the fibro-fatty capsule, the anterior and posterior layers of which blend above with the fascia covering the diaphragm and below fuse an inch or two below the lower pole of the kidney. Laterally the layers soon fuse and medially the renal pelvis is invested by the layers which are lost in the fascia in front of the vertebrae. The fibro-fatty capsule is lax and cellular, and is not very vascular—a fact which may account for the feeble resistance which is offered when microbial infection takes place. The capsule rests upon the diaphragm above and the psoas and quadratus lumborum below, but there is a layer of fascia which intervenes, the thin diaphragmatic fascia and the dense anterior lamella of the lumbar fascia in the upper and lower parts respectively. Anteriorly, where the kidney lies in contact with various viscera the fibro-fatty capsule is not so cellular and the peritoneum is in relation with it in several places.

As might be expected from anatomical considerations, the majority of abscesses develop posterior to the kidney. Of 14 perinephric abscesses under my care, 8 were retrorenal, 2 were above, 3 were below, and one was intraperitoneal in front of the kidney.

ETIOLOGY.

The term subacute is meant to exclude cases of tuberculous infection which sometimes develop apart from any renal or vertebral focus.

The common organism found in the abscess is *Staphylococcus aureus*. Of 12 abscesses in which the nature of the organism was reported upon, 8 contained the staphylococcus, 3 a streptococcus, and one a bacillus of undetermined nature.

The source of origin of the infection is often doubtful, but in general the cases can be referred to two groups: (1) Metastatic cases following a suppurative process elsewhere in the body, especially whitlows, carbuncles, or boils; (2) those associated with or consequent to dysentery or diarrhoea. Three of my cases developed immediately consequent on a whitlow. This source of metastatic infection has been frequently noted. Several observers (notably Israel) have drawn attention to the fact that sometimes a perinephric abscess is the result of extension of a small cortical renal abscess of metastatic origin. One of my cases seemed to fall into this category, for there was a small localized abscess in the cortex of the kidney communicating with the perinephric abscess. Such cases do not present urinary symptoms. Four cases were associated with dysentery or diarrhoea, but the organism in all four was a septic organism (three staphylococcal, one streptococcal), so if there be any direct connexion between the two conditions it must be that the inflammatory condition in the colon permits septic organisms to escape more readily. In one patient who on clinical grounds had been diagnosed as a case of typhoid fever (though no laboratory confirmation was forthcoming) a bacillus was found in the abscess, but its exact nature was not determined. In several cases it was difficult to find any focus from which infection might have occurred.

SIGNS AND SYMPTOMS.

The course of a perinephric abscess may be divided into two stages:

I. The stage of symptoms only.
II. The stage when signs are present and may predominate.

I.

The onset is usually very insidious. The patient feels out of sorts, and when he consults a doctor the only constant feature is slight fever. The morning temperature may be normal; in the evening it is usually raised to 100° or 101° F. Sometimes pain in the side below the ribs is complained of, but no indication of any serious trouble around the kidney can be elicited. The absence of local indications causes the condition to be mistaken for a continued fever, such as one caused by the typhoid group of organisms.

Occasionally the onset is more acute, with a rigor or "chill" and general pains such as may accompany an influenzal attack. In the absence of local symptoms this may easily mislead and cause a diagnosis of influenza to be made. Vomiting is occasionally noted.

II.

After a variable period during which the patient's general condition depreciates considerably, whilst the fever continues or increases, definite signs appear either in the abdomen or in the thorax or in both. It is not usual for diagnosis to be made until the signs appear. This accounts for the very variable time in the course of the disease that the cases come to the surgeon. The average time in my series from the commencement of the disease until surgical intervention was approximately three weeks—a fact which gives clear indication of the common absence or paucity of localizing symptoms in the early stages of the condition.

In the second stage the symptoms comprise irregular fever, a varying grade of anaemia, loss of weight consequent on the fever, and pain in the subcostal region. The signs are tenderness on pressure in the angle between the last rib and the erector spinae, and evidence of compression of the lung or effusion of fluid in the lower part of the chest; or if the abscess is subnephric a swelling in the right loin. There may be flexion of the thigh owing to psoas-irritation. Blood examination will show a leucocytosis.

The fever is remittent and may reach 101° to 103° at night. The anaemia is progressive and may become extreme. The pain is of a dull aching nature, sometimes referred to the hypochondrium, more often felt in the loin, immediately under the rib margin. In every case pain is elicited on deep pressure at the erector-costal angle.

The signs in the thorax are sometimes those of compression of the lung evidenced by dullness and other signs of consolidation, but more usually pleural effusion causes diminution of breath sounds at the base of the lung.

There may be a few moist sounds heard on auscultation. The pleural exudate is sometimes clear serum or may be sero-purulent. In one case in which there was a thick-walled abscess containing thick pus below the diaphragm there was a slight sero-purulent effusion containing streptococci in the pleural cavity. The leucocyte count averaged about 15,000 in those cases examined; the smallest count was 10,600 and the largest 27,500. A differential count never showed any great variation from the normal proportions.

The signs and symptoms of an intraperitoneal perinephric abscess may be baffling. The only case I have seen was a sequel to a retroperitoneal abscess on the left side. It developed when the patient was convalescent from the former condition, and was clearly due to infection spreading through the peritoneum. The diagnosis was not made for certain until an abscess caused a definite swelling in the left hypochondriac region.

In the late stages of a perinephric abscess there may be a fullness in the loin, and oedema of the skin and subcutaneous tissues may develop in that region. This is a rare event, however, since the lumbar fascia is very dense and prevents the pus from reaching the surface easily.

Diagnosis.

Diagnosis is usually easy when the condition is well developed. An irregular fever, accompanied by leucocytosis and pain in the loin (especially elicited by pressure in the erector-costal angle), with either a lump in the right lumbar region or the signs of pleural effusion, or basal congestion of the lung on the same side, make the diagnosis probable. Examination of the urine is usually negative; the presence of pus would be in favour of pyonephrosis. When in doubt, needling of the subphrenic region is necessary to confirm the presence of pus, and in some cases exploration by incision is indicated.

Differential Diagnosis.

Nine out of the thirteen patients were either living in tropical or subtropical countries, or had dwelt in them comparatively recently. That the diagnosis which had been made prior to the calling in of the surgeon was in three cases malaria was not therefore surprising. Two other cases had been diagnosed hepatitis of dysenteric origin. Two cases were thought to be enteric fever, one pleural effusion, another empyema, and finally one had been taken for influenzal pneumonia.

In a tropical country the continued irregular fever very frequently leads to a tentative diagnosis of malaria, and this is sometimes apparently confirmed by the finding of the parasite in the blood. In two cases in my series this was the case. But antimalarial treatment caused no improvement in the symptoms, and the local signs of perinephric abscess gradually asserted themselves. An increased leucocyte count is an important differentiating factor in diagnosis. The leucocyte count is also of value in distinguishing enteric fever from perinephric abscess, for as a rule there is no increase in the leucocytes in typhoid and paratyphoid fever. It would appear as if the presumed diagnosis of enteric fever may somewhat lull the medical attendant into a false satisfaction that the full diagnosis has been made, for the perinephric symptoms were in two such cases allowed to advance considerably before attention was focused upon them. Examination of the faeces for the causative bacilli and of the blood serum for agglutinative reaction to the bacilli should serve to exclude enteric fever definitely. In the second stage, when signs appear at the base of the lung, and when referred pain may be complained of in the hypochondrium, there is likelihood that pleural effusion, empyema, or basal pneumonia may be diagnosed on the one hand, or hepatitis or even liver abscess on the other. Amoebic hepatitis would be suspected if the faeces contained amoebae; it can be readily excluded if the symptoms do not rapidly abate on the administration of emetine hydrochloride [illegible] per diem subcutaneously. With liver abscess the history is often different, and there may be pain in the shoulder. If there is no swelling in the loin the only way certainly to diagnose is by exploration by a hollow needle. This is best carried out under an anaesthetic. The needle should be one with a good-sized lumen and at least three inches long. It should be attached to the barrel of a 10 or 20 c.cm. Record syringe, of which the suction power should have been previously tested. The place for exploration should be the eighth or ninth space in the axillary line, or the ninth or tenth space in the scapular line. If no pus is found, then the needle may be thrust in any dull spot in the spaces above that may seem a possible site of the abscess. With a subphrenic abscess about the upper pole of the kidney it is quite common to find a serous effusion in the pleural cavity, and on one occasion in my series the effusion was turbid and found to contain streptococci. If clear serous fluid is withdrawn by the needle the point must be in the pleura, for serous effusion under the diaphragm is exceedingly rare. The needle should be withdrawn and inserted in a lower space to a greater depth, when pus should be found.

In retronephric or subnephric abscesses the swelling in the loin will be obvious, but the likely diagnosis will be pyonephrosis. A pyonephrosis usually causes a more prominent swelling anteriorly than does a perinephric abscess, and there is nearly always some history of urinary trouble. An x-ray photograph to demonstrate any stones, and examination of the urine for presence of pus and to exclude tubercle, are necessary procedures. A radiogram is also useful in demonstrating any displacement upward of the diaphragm or indication of any abscess above the liver, whilst the outline of an enlarged kidney might be seen. Cystoscopy may also be of use in excluding renal disease.

A more acute perinephric abscess needs to be differentiated from a retrocaecal perforated appendix. In such cases a small abscess may develop retroperitoneally below the kidney and diagnosis may be difficult unless the history of the case be carefully borne in mind. When a perinephric abscess causes irritation of the psoas with consequent flexion of the hip the subsequent lump may at first draw attention more to the hip-joint than to the psoas region. I have known a streptococcal subnephric abscess mistaken for tuberculous hip disease.

Prognosis.

Uncomplicated extraperitoneal perinephric abscess of non-renal origin is a condition which permits us to give an excellent prognosis if skilled surgical assistance is available. Every case I have treated recovered, although two or three had reached an extremely debilitated condition before the abscess was detected.

The prognosis of intraperitoneal perinephric abscess is more doubtful. The only case in this series was a streptococcal infection which followed a retroperitoneal infection, and which led to infection and necrosis of part of the spleen with a consequent fatal result. We are not concerned here with intraperitoneal abscess developing in the perinephric region consequent on contiguous inflammatory conditions such as appendicitis or leaking duodenal ulcer.

Treatment.

The treatment of perinephric abscess is by incision and drainage. In retronephric and subnephric cases the procedure is very simple. Under an anaesthetic, and with the patient lying on the sound side, an oblique incision about two inches long is made at the outer border of the erector spinae about half an inch or an inch below the last rib. The soft tissues are incised until the middle lamella of lumbar fascia is reached and the quadratus lumborum seen. The latter muscle is retracted, and the anterior lamella of lumbar fascia, which is often thickened, is incised. The finger is then inserted into the perinephric space and the indurated or oedematous abscess swelling identified. By means of a director, sinus forceps, Spencer Wells forceps, or the finger, the abscess is opened and a rubber drainage tube inserted. The wound is loosely sewn up and the tube stitched to the skin.

The drainage of suprarenephric abscesses is often more difficult. They may be opened by a transcostal route, but I have always managed to drain them by a subcostal incision. In one case though I could just reach the induration through an incision made in the loin at the outer border of the erector spinae, yet I found it impossible to open it. I therefore made a costal incision, excised a portion of one of the lower ribs, opened the pleura, and then, by bimanual manipulation, was able to open the abscess through the original incision. The costal incision was promptly sewn up and kept free from contamination.

In this case the slight downward movement of the diaphragm, consequent on opening the pleura, facilitated the opening of the abscess from below.

I append an account of a case of bilateral perinephric abscess which came under my care in Baghdad two years ago. Such a condition merits recording because of its rarity and difficulty in diagnosis.

Pte. G., of the Highland Light Infantry, came under my care in May, 1918, with the history of a month's continued fever. He had been treated for two weeks as enteric fever. The blood examination showed no malaria parasites but there was a leucocyte count of 25,250. The differential count showed polymorphs 77, lymphocytes 18, large mononuclears 4, transitional 1. When I saw him there was clear evidence of a left perinephric abscess. On May 23rd, 1918, I opened an abscess which lay behind the left kidney. The abscess cavity was bilocular, one small loculus being inside the true capsule of the kidney, indicating a possible origin from a small metastatic cortical renal abscess. The urine had shown no pathological changes.

After operation the patient's condition improved slightly but the fever continued. The sinus was explored on June 6th, 1918, but no other pocket of pus was found. On June 14th the leucocyte count was found to be 26,000, and the patient had become very anaemic and emaciated. For some days he had complained of pain in the right hypochondrium and had a slight cough, and there was evidence of slight basal congestion of the right lung. On June 15th I once more explored the left-sided sinus unsuccessfully. I then needled the liver, the right base of the chest and the right subphrenic region, but found nothing pathological. With the concurrence of Colonel Hugo, I.M.S., I then made a right subcostal incision, and inserted a finger well up under the diaphragm above and behind the kidney, and to my relief opened an abscess in that position. Both abscesses contained staphylococci only. An uninterrupted recovery followed the drainage of the second abscess. In the case of this abscess the only localizing signs were slight tenderness under the right costal margin, and slight congestion of the right lung base.

Summary of Thirteen Cases of Retroperitoneal Perinephric Abscess of Non-renal Origin.

Case.	Cause.	Previously treated as	Time Elapsed before Diagnosis Made.	Position.	Leucocytes.	Micro-organism.
1	? Enteric	Enteric fever	9 wks.	Retro.	—	A bacillus.
2	Dysentery	Hepatitis	2 wks.	Retro.	10,600	Staph.
3	Dysentery	Hepatitis	10 days	Sub.	—	Staph.
4	Whitlow	Pleural effusion	2 wks.	Retro.	15,000	Staph.
5 A	?	Enteric fever	5 wks.	Retro. (l.)	25,250	Staph.
5 B	?	Enteric fever	—	Supra. (r.)	26,000	Staph.
6	Whitlow	—	—	Retro.	15,700	—
7	Whitlow	Malaria	4 days	Retro.	11,000	-
8	Diarrhoea	Malaria	2 days	Sub.	—	Staph.
9	?	Influenzal pneumonia	4 wks.	Retro.	—	Staph.
10	Diarrhoea and Carbuncle.	Empyema	2½ wks.	Supra.	27,500	Strept.
11	?	?	7 wks.	Retro.	—	Staph.
12	Influenza	Hip disease	4 wks.	Sub.	—	Strept.

All the cases recovered.

MENSTRUATION DURING SCHOOL LIFE.*

BY

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As the medical inspector of a large girls' school I have had the opportunity of obtaining details, over a period of five years, on the menstrual function in 1,200 healthy girls, the larger proportion of them boarders. Owing to my absence abroad during part of the war, the notes were kept for two years by Dr. Eveline Cargill, to whom I am greatly indebted. The girls are examined medically every year, and, in addition to the health chart, a note-sheet on the particulars of menstruation is kept for each girl, dating from the first time she is examined after the onset of the catamenia. In many cases menstruation had begun several years before the first interview. The girls, whose ages range from 9 to 21 years, are in sound health and are the children of educated parents in easy financial circumstances.

The main objects of these investigations were:

1. To determine the proportion of girls suffering from any disability during menstruation.
2. To inquire into the habits of each girl during her period, with a view to tracing the effects of these habits on her health.
3. To watch the effect of school life on the menstrual function, especially with regard to study, exercise, and general hygiene.

The results of some of the inquiries are shown in Table A, but some of the terms used in it require explanation.

Irregular Menstruation.—Under this are included all those whose periods do not occur every three, four, or five weeks. It therefore includes all cases of amenorrhoea—which subject will be dealt with later.

No Pain or Discomfort.—The proportion of girls free from any disturbance whatever (73 per cent.) is probably larger than the average among girls of the well-to-do classes, but a possible explanation of this is also given below. In this group are included those who state that they are usually free from any discomfort, but have experienced slight pain or discomfort very occasionally.

Pain.—This, which is mostly of the congestive type, is difficult to estimate, and at the best can only be roughly classified. The spasmodic type of dysmenorrhoea is very rare, only 4 out of the 1,200 cases being recorded. There was one case of intermenstrual pain or Mittelschmerz.

Incapacitated.—Under this heading are grouped all those who state that, on account of pain, sickness, or headache, they are rendered unable to carry on their ordinary pursuits. In some cases they have to retire merely for half an hour or so.

Malaise.—This term refers to all those who suffer from headache, nausea or lassitude in a mild degree.

Rest during the Period.—It is found that the large majority of those who are in the habit of lying down or resting in bed during the period, do so against their own inclinations by order of the mother.

Baths.—It is surprising to find how the old prejudice against the use of water during the menstrual period still clings even to educated people, who in other respects are most attentive to the laws of personal hygiene. In most families the girls are still taught that it is dangerous to take baths at those times, and that their ablutions should be limited to the face, neck and hands. Very few are allowed to wash their feet until after the flow has ceased. The figure 23.4 given in Table A is much larger than the proportion of girls taught at home to take baths. In this and, in fact, in all the figures the influence of school life and teaching is already manifest.

Games and Exercise.—It was found that most of the children would, if left to themselves, play games, cycle, and take walks as usual throughout the period, but that they have not been allowed to do so. It is amusing, however, to find how many of the elder girls succeed in overriding their parents' objections if the period happens to coincide with a hockey or tennis match, a dance, or a day's hunting. In no case has any ill effect been acknowledged.

TABLE A.
(Number of girls questioned, 1,200.)

	No.	Percentage.
Regular menstruation	646	53.8
Irregular menstruation	554	46.1
No pain or discomfort	877	73.0
Discomfort or slight pain	294	24.6
Severe pain	29	2.4
Incapacitated	64	5.3
Malaise	109	9.0
Rest during the period	276	23.0
Baths during the period	281	23.4
Games and usual exercise during the period	488	40.7
Constipation during the period	108	9.0

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* The substance of a paper communicated to the Gloucestershire Branch of the British Medical Association.

Constipation.—Although this is not a common complaint among school girls some of them have a tendency to it during menstruation, and it seems to be a common belief that aperients should be avoided at these times.

Advice Given to Each Girl.

To every girl I explain that menstruation is not a malady but a natural function, and that the natural and proper thing is for her to feel quite well and free from pain or any unpleasant sensations. I emphasize that it should not be necessary to lie down, and that if she feels too poorly to enter into the ordinary life of the school, she should have advice from her doctor, as any trouble connected with her period can be much more easily put right now than after it has become established for years.

I further explain, usually to her great astonishment, that it is quite safe for her to have a bath, and that she should if possible take one at the onset of the period, hot enough just to flush the skin, and continue to take a warm bath daily throughout the period; that immersion in hot water will relieve, if it does not put a stop to, any slight headache or feeling of local discomfort.

With regard to exercise, I tell her that, provided she feels well, exercise will do good rather than harm, and that there is no need to cut herself off from walking, cycling, horse-riding, outdoor games, dancing, or gymnastics. Swimming, for obvious reasons, cannot be indulged in. I furthermore explain that most unpleasant sensations associated with menstruation are dispelled by a brisk walk, whereas they are prolonged by lying down. In all cases the consent of the parents is obtained before any change in regimen is adopted.

All girls suffering from amenorrhoea associated with ill health, menorrhagia, leucorrhoea, constipation, or the severer forms of malaise and dysmenorrhoea, are referred for treatment to their medical attendants.

As already stated, Table A gives the details elicited at the first interview. Of these 1,200 girls 734 have been seen more than once. In Table B the information obtained at the first and subsequent interviews is tabulated for comparison.

TABLE B.

(Number of girls questioned at each interview, 734.)

	First Interview.		Subsequent Interview.	
	No.	Percentage.	No.	Percentage.
Regular menstruation	383	52.2	525	71.5
Irregular menstruation ...	351	47.8	209	28.5
No pain or discomfort	498	67.8	625	85.1
Discomfort or slight pain ...	224	30.5	105	14.3
Severe pain	12	1.6	4	0.5
Incapacitated	38	5.1	7	0.9
Malaise	70	9.4	17	2.3
Rest during the period	149	2 .3	46	6.2
Bath during the period	84	11.9	313	42.0
Games and usual exercise during the period	270	36.3	493	67.1
Constipation during the period	52	7.0	19	2.5

It will be observed:

1. That the percentage of girls who suffer from no disturbance, or as they commonly express it "don't feel any different," has risen from 68 to 85 per cent.
2. That there is a notable diminution in the number of those suffering from various degrees of pain or malaise, a total of 17 per cent. as against 31 per cent.
3. That only 6 per cent. instead of 20 per cent. lie down during the period.
4. That there is a large increase in the number of those taking baths and playing games.
5. That there is a decrease in the number of cases of constipation.

It appears to me that these figures bear a relation to one another, and that it is the practice of taking baths, and more especially exercise, which has reduced the number of those suffering from the congestive forms of dysmenorrhoea and constipation. In studying the individual note sheets this fact has been brought out in a very large number of cases.

The Effect of Baths and Exercise.

Over a hundred former sufferers testified to the beneficial effect of the hot bath, many attributing their freedom from pain entirely to it. Several, however, have not obtained their mothers' consent to try the bath. Two said that they felt faint after the bath, so did not repeat it. Five felt no benefit at all; one of these has since been cured of her dysmenorrhoea by appendicectomy; another, who was formerly free from pain, has had dysmenorrhoea ever since she was operated on for appendicitis.

The verdict in favour of exercise during menstruation is also almost unanimous. Several of the girls had discovered its beneficial effect before the first interview. Many volunteered the information that they had pain or felt poorly during the holidays only; most of these were made to lie down when at home during the first day of the period. Six, of whom two did not like games at any time, stated that exercise did not suit them; two of them said that exercise had the effect of making the next period more profuse. In some of the boarding houses the old regulations still hold, and the girls are forbidden to go to the playing field for the first three days of menstruation. On comparing the records of these girls with those of the houses where freedom of action is allowed, the efficacy of the bath and exercise is very apparent. For the last five years the large majority of the girls have been free to play games or take any other exercise (except swimming) during menstruation, and not one casualty has occurred, nor have any cases of ill effect been reported to the house doctors.

A word of explanation is called for with reference to the apparent discrepancies between the figures in the Tables A and B. In Table A 73 per cent. are stated to be free from any disturbances during menstruation, whereas in Table B the figure is only 67 per cent. I believe both these figures to be above the average; they are certainly higher than those obtained by Dr. Chisholm,[1] who found that, among the school girls she was examining, in "58.6 of the cases there was no disturbance of any kind admitted." The discrepancy is due to the fact that Table A is compiled from a larger number of girls seen recently, and it is found that the percentage of girls free from any menstrual disturbance, when first questioned on the subject, is increasing year by year, as is also the percentage of girls taking baths and exercise during the menstrual period, this practice being adopted from the first by the younger children in some of the boarding houses.

It is agreed by writers on gynaecology that congestion is a large factor in the cause of the commoner types of dysmenorrhoea. This theory is borne out by the effect of the hot bath, which, by dilating the peripheral vessels, reduces the amount of blood in the internal organs. At the onset of menstruation the effect of this on the engorged uterus is especially marked, and the individual becomes conscious of the change. As there is no inflammation in the uterus, the rule of keeping an inflamed organ at rest does not apply here, and it seems only reasonable to expect that exercise, which stimulates the circulation, should prove to be the best remedy for any symptoms arising from the congestion.

This method of dealing with dysmenorrhoea seems to be more practised in America than in England. In Dr. Engelman's presidential address[2] before the American Gynecological Society in 1900 the beneficial effect on menstruation of exercise and physical training among college students, as revealed by his exhaustive investigations, is brought out very definitely. Dr. Clelia Duel Mosher[3] advocates special exercises of the abdominal muscles for the treatment of dysmenorrhoea, and describes how pain, excessive flow, nausea, and headache have yielded to this treatment in an interesting series of cases. Dr. Mosher does not, however, recommend that schoolgirls should be permitted to continue their regular gymnastics or athletics, though she allows that women with more mature judgement may find that they can do so with impunity.

Periodicity.

Irregularity.—It is striking in what a large proportion of the girls the flow is irregular. When they are first interviewed the number is nearly half (48 per cent.), and it remains high even after one or more years. The figure obtained by Dr. Chisholm is 16.2 per cent. The difference must be largely due to the fact that my investigations are among girls the large majority of whom are at boarding school, and consequently affected by change of environment. It seems that there may be some advantage connected with an irregularity of the flow in young girls, since dysmenorrhoea is associated with regular menstruation in a greater proportion, 66 per cent., than it is with irregular menstruation, where the percentage is 34.

The Effect of Study on the Regularity of the Flow.—It is still a matter of common belief that education in girls has a harmful effect on the functions of the generative organs, and that the amenorrhoea which so often occurs as soon as a girl goes to school or college, after perhaps years of regular menstruation at home, is an indication that she is using her brain to the detriment of her health, the first organs to suffer being the generative organs. It certainly is a very common thing for amenorrhoea to set in for three months or more after a girl arrives at the school which supplies me with my data. But it is also a common occurrence among servant girls going from the country to situations in a town, and occurred frequently among hospital nurses who went abroad during the war; yet in both these cases there is no change in the character of the work, nor any greater mental strain. In connexion with this point it was of interest to compare the frequency of the occurrence of amenorrhoea among the boarders and the day girls. It was found that whereas it occurred during the first term in 24 per cent. of the boarders, it was only present in 5 per cent. of the day girls, although the mental strain is no greater for the boarders, but is, in fact, undoubtedly less on the whole, owing to the stricter régime allotting fixed hours for recreation and sleep. The only girls in whom there is a tendency to overwork are those studying for an examination, and from this point of view a record has been kept as to the nature of each girl's work. The total number of girls reading for public examinations was 297; of these the number who developed amenorrhoea during their period of study was eight—that is, 2.6 per cent.—and these, with one exception, were boarders, some of whom began examination work on entering the school, and were therefore liable to temporary amenorrhoea owing to change of environment. Hence we may conclude that whatever the cause of the amenorrhoea in the 29 per cent. of the cases examined may have been, it was not due to mental strain. In a few cases the amenorrhoea was associated with chlorosis or other signs of ill health, but this was very exceptional, only two cases being noted among the candidates for examination.

Dysmenorrhoea.

Whereas the boarders are more subject to amenorrhoea, dysmenorrhoea is relatively more frequent among the day girls. If under the term dysmenorrhoea are included all conditions of pain, discomfort, and malaise, the percentage of cases among those who have been a year or more in the school is 3.7 among the boarders and 11.3 among the day girls.

The Relation between Dysmenorrhoea and Study.—Of the 297 girls working for examinations there were seventeen—that is, 5.7 per cent.—in whom dysmenorrhoea began, or was accentuated, during the period of study. From this it cannot be concluded that study *per se* is the cause of the dysmenorrhoea, especially in view of the fact that the proportion of sufferers among the examination candidates is smaller than that among the total number of girls in the school who have reached the age of puberty, the relative figures being 13 per cent. and 15 per cent. It must be remembered, too, that if a girl is pressed for time, the first things she gives up are her games and walks. This is followed at once in some cases by constipation, pelvic congestion, and dysmenorrhoea. Among those who are my own patients the dysmenorrhoea has yielded at once to the taking of more exercise without any alteration in the course of the study. I would suggest, therefore, that pressure of brain work affects menstruation adversely only in so far as it encourages sedentary habits.

Relation of Dysmenorrhoea to Social Position.—That painful menstruation is more complained of among women of the leisured and educated classes than among those of the working clases is doubtless the experience of most general practitioners. The reason generally given is the increased susceptibility to pain brought about by careful nurture, and it is suggested that this increased sensitiveness is one of the prices paid for higher civilization. It is said that dysmenorrhoea is unknown among savages. Statistics verifying this statement are not available, but since such a large proportion of carefully brought up girls menstruate without pain, dysmenorrhoea is clearly not a necessary accompaniment of civilization.

I would suggest that the greater frequency of dysmenorrhoea among the well-to-do is the result of the enforced inactivity to which so many of the children have to submit, owing to the anxiety of the mothers to "take every care" of their daughters during the period. In the poorer homes the natural activity of the girls is seldom interfered with, hence their relative freedom from dysmenorrhoea.

Date of Onset of Menstruation.

It is also stated that menstruation begins somewhat later among girls where the conditions of life are not good. The following table summarizes the data I obtained on this point, which, though having no direct bearing on the subject of this paper, may be of interest as it refers only to girls in whom health is a matter of primary consideration.

TABLE C.

Age of Onset of Menstruation.	Number of Girls.
9	1
10	12
11	69
12	224
13	357
14	309
15	125
16	40
17	7
18	4

CONCLUSIONS.

1. That the majority of schoolgirls are free from any menstrual disturbance.
2. That, if no unnatural restrictions are imposed, the proportion of girls free from any menstrual disturbance tends to increase.
3. That girls in normal health should be encouraged to take baths and exercise during the menstrual period.
4. That the amenorrhoea to which schoolgirls are subject is not caused by mental strain.
5. That study *per se* is not a cause of dysmenorrhoea, although if pursued to the exclusion of daily exercise it may be indirectly a contributory factor.

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THE PLACE OF MUSCLE RE-EDUCATION IN THE TREATMENT OF ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS).

BY

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LATE LIEUTENANT-COLONEL R.A.M.C.; OFFICER-IN-CHARGE, MUSCLE RE-EDUCATION DEPARTMENT, ALDER HEY SPECIAL MILITARY SURGICAL HOSPITAL, LIVERPOOL; AND HON. PHYSICIAN TO OUT-PATIENTS, MELBOURNE HOSPITAL.

SINCE the necessity became apparent for a specialized form of muscle treatment in the after-treatment of the loss of muscle function caused by war injuries, the expression "re-education of muscle" has become very familiar. The modern conception of muscle re-education as a therapeutic measure is not, however, a war product; the principles on which it is based had been elaborated and applied to the treatment of infantile paralysis several years before the war. Muscle re-education is an entity quite distinct from the routine physical therapeutic procedures of massage, electricity, passive movements, and Swedish remedial exercises. In all cases of muscle weakness it is, in my opinion, the essential procedure, and any other methods used in conjunction with it are subsidiary. It is important, therefore, that a clear conception should be held of the meaning of the term "muscle re-education."

Muscle re-education as successfully applied to the early treatment of infantile paralysis is the gradual stimulation, and slow awakening to activity, of the voluntary motor impulse which has been lying dormant, temporarily put out of action by the interruption to its path caused by the oedema, toxicity, and vascular deprivation accompanying the acute inflammation in the neighbourhood of the anterior cornual cells of the spinal cord. With the gradual subsidence of the inflammatory process, recovery more or less rapid and complete occurs in the nervous structures, and muscle re-education then aims at restoration of the continuity of the motor impulse, and the re-establishment at the earliest possible moment of co-ordination with the almost intact muscle system. To do this calls in no small degree for patience, perseverance, and experience. After the first shock of the paralysis has passed off there is much mental inertia on the part of the patient as regards voluntary movement; recovery may be taking place in the spinal cord, and yet no call to action be made by the higher centres. The receptive and propagative powers of many of the anterior cornual cells having been lost or greatly diminished, voluntary movement over a particular area is found to be impossible; the attempt is therefore given up and a flaccid paralysis of variable extent results. To start the motor machine working again in its normal physiological manner, and not merely as a reflex imitation, a mental effort is required, and this can only be accomplished if the cerebrum is capable of interpreting correctly a spoken order for a particular limb movement, and then of activating the motor cells of the cerebral cortex for the performance of this movement; in a young child who is a recent victim of infantile paralysis, the amount of mental effort required is very appreciable. It is inconceivable, however, that any mental effort on the part of a child should succeed in producing movement in a limb if all the anterior horn cells subserving motor function for that limb had been destroyed, or, to quote an expression in common use, "irreparably damaged." Clinical study shows that the paralytic sequelae of poliomyelitis have undoubtedly a tendency to recover; this, to my mind, is explained most simply by the theory of gradual recovery of the nerve cells from the effects of the inflammatory process. Microscopic pathology shows that not all the anterior cornual cells in any one area suffer equally; the destruction rarely seems to be complete. Since return of motor function, either partial or complete, can be proved to take place after an attack of anterior poliomyelitis, it is necessary to postulate either, firstly, recovery of slightly damaged nerve cells, or secondly, nerve cells with intact connexions sufficient to ensure movement remaining active at other levels of the cord. It may only be the stimulus of great necessity which makes these long connexions respond, in order to ensure that function may gradually be restored to some degree of its former vigour. Muscle re-education, while recognizing the great importance of the morbid anterior cornual cells, at the same time desires and attempts to displace them from recognition as the sole factor of importance, it refuses to be prevented by the knowledge that the nerve cells may have been grossly injured from attempting to secure recovery of muscle function. If one assumes, as is supported by much clinical evidence, that some degree of recovery of muscle function is possible in every recent (two weeks to two years) case of infantile paralysis, no effort should be spared to regard and study muscle itself as the predominant factor in this disease, and in this way to endeavour to obtain the greatest amount of recovery possible.

The Importance of Muscle.

This conception is new. Hitherto, in these conditions, muscle has been largely ignored and attention has been concentrated on the pathological processes in the nervous system. Muscle must now be restored to its rightful and prominent place in the treatment of a condition of the neuro-muscular system. [illegible] pointed out to me, and accurate diagnosis of the site of the nervous lesion may be of academic and practical value, but it alone is of no value from the point of view of the patient's regaining muscular function. The muscle must not be left to fight for its existence unaided. In these recent [illegible], we must concentrate our treatment on muscle itself, and must adopt every means in our power to coax tiny movements back and gradually to blow into a flame the spark which has so nearly been extinguished. In poliomyelitis, after the acute stage of the illness, we are dealing with a nervous system portions of which have been more or less damaged; but with a muscular system, on the other hand, which should be nearly intact except in so far as it has been practically cut off for some weeks from its source of nervous energy. If no attempt at voluntary movement is made for some considerable time, a great and precious opportunity will have been lost. Without overlooking for a moment the importance of rest as a curative and helpful factor, I consider that rest alone will not restore muscle function, nor can it initiate it. If we rest the limbs in accurately fitting splints, and simply wait for recovery of movement to appear, both muscle and recovering nerve cell will, through their mutual absence of function, gradually react unfavourably on each other; the final result, in spite of massage and electricity, being the atrophy, fibrous degeneration, and wasted shortened limbs unfortunately so familiar in this disease. On the other hand, it would be wrong treatment, especially in the early stages of the disease, to attempt to obtain voluntary movement at the expense of grave muscle fatigue. This is a danger to be constantly watched for and guarded against; but I think it can occur very seldom, owing to the great difficulty experienced in getting a child to concentrate its efforts at muscular movement for a time sufficiently long to render fatigue possible. The ideal of treatment is a delicate co-ordination—recovery of muscle function going on hand-in-hand with nerve cell recovery. The neuro-muscular system is thus regarded from a clinical point of view as a physiological whole with interdependent parts exhibiting continual mutual action and reaction.

Rest must be combined with sane and skilled attempts at muscle re-education. At first rest for twenty-two or twenty-three hours out of the twenty-four on accurately fitting and properly devised splints is an essential part of our modern treatment of this disease; in my opinion, however, even more important is the temporary removal of the splints for a short period of time (twenty minutes to one hour one to three times daily, with adequate precautions against the positional stretching of weak muscles), for the purpose of attempting voluntary movement under the easiest possible obtainable conditions. In this connexion it is most important to remember that each weak muscle or muscle group must be very carefully studied, so that when the attempt to obtain movement is made advantage can be taken of every factor likely to be of help, such as, for example, leverage, direction of action of the muscle, effect of gravity, effect of working on a smooth flat surface (such as powdered cardboard); in view of the effect of fatigue, only a small amount of work should be done at any one time. There is a zero position for every muscle and muscle group—that position in which the paralysed muscle and its healthy opponent are in a state of equilibrium. This is the position in which muscle re-education should be begun each day and in which the limbs should be rested. Mackenzie, who originated the idea of this zero position, states also that a biological law underlies the recovery of a so-called paralysed muscle. Muscle or muscle group action is a complex function, one made up of several separate activities; the loss in the acute stage, and consequently the later recovery, follow in a definite ancestral or evolutionary sequence. According to this view one cannot regain all the functions of a muscle at once, even to a small extent, but by re-education one can gradually obtain them all, and finally then increase their strength of action. For example, the quadriceps femoris group, the extensor of the knee joint, may, if affected by infantile paralysis, be able to straighten out the flexed knee when the patient is lying down, but be quite unable to keep the knee extended when an attempt is made to lift the heel off the bed. Similarly the flexors of the elbow may just manage to bend the elbow to a slight degree when the patient is lying down and movement is made along a smooth flat surface, but utterly fail to bend it when the arm is hanging by the side. The action of gravity associated with man's assumption of the upright position is chiefly responsible for these differences of functional activities.

The following case illustrates these considerations:

M. L., aged 6, was brought to me in January, 1920, for paralysis of her left leg and foot, left arm and right arm. The infection had occurred on October 5th, 1919, and then I saw her nearly three months later than I should have wished; especially in the case of the upper limb, early diagnosis and immediate treatment are of vital importance. I was informed that the paralysis had originally been more extensive, affecting the neck muscles also; there had been some slow improvement, most marked in the neck muscles, but also apparent in the left hand and left leg, but this appeared to have ceased. Massage was being given once daily, but no splints had been ordered, and no attempt had been made at re-education. On examination, both arms were found to be paralysed—the right completely, while on the left were present weak movements of the hand and wrist only, movements of fingers being good, but opposition of thumb to fingers weak. Walking was possible, but there was a definite limp with drop-foot on the left side, also hyperextension of the knee and some eversion of the foot. From clinical experience of this disease, I considered that I was quite justified in recommending treatment, but I was very guarded in my prognosis, especially as regards the right arm and hand. To my mind the essential movements to be recovered were abduction and elevation of the arms at the shoulder, flexion of the forearm, and supination of the hand, as well as dorsiflexion of the foot and extension of the knee. Before re-education could be attempted, however, some means of procuring anatomical rest had to be devised, especially for the arms. It was obvious that the dragging weight of the upper limbs was rapidly causing atrophy of the shoulder girdle muscles, and that unless this weight were removed the child would never again raise her arms (there is less justification for leaving a shoulder unsupported in a case of paralysis than there is for the non-setting of a fractured humerus). A double right-angled arm abduction splint of light iron was fitted to the patient's upper limbs. (So far as I am aware, this is the first reported case of a double-arm abduction splint having been used in the treatment of the paralyses caused by this disease.) By its means anatomical rest was given to the shoulder girdle muscles—to the deltoid muscle especially, but also to the flexors of the forearm and the supinators, as well as the hand muscles. The splint, so arranged that mid-supination was the resting position, was worn continuously, being put on after the morning re-educative exercises and taken off at night; it was not found possible to get it worn in bed. It is necessary to lay great stress on the importance of the right-angled abduction arm splint in the treatment of infantile paralysis affecting the upper limb—first, because adequate rest for arm muscles has not previously been sufficiently insisted on, or rather has been conspicuously neglected; and secondly, because of the necessity for overcoming the objections of the parents and the child to the wearing of a somewhat cumbersome apparatus. Rest for the left leg and foot was obtained by ordering, for twelve months from the onset, no walking and very little standing. To prevent deformity a special day and night shoe was provided, designed to keep the foot at a right angle and to prevent eversion or inversion; this was extended to above the knee, with a pad under the knee to allow of a few degrees of flexion. Active movements, after being originated by me, were helped and supervised by the mother twice daily for a variable time, depending mainly on the child's sense of fatigue; all movements were done lying down, and a constant endeavour was made to find easy limb positions. The exercises for the leg and foot were comparatively simple, being mainly concerned with developing the tibialis anticus and the quadriceps. Progress was uninterrupted; walking, when allowed, can now be performed in practically a normal manner. With regard to the arms the problem was much more difficult, but great perseverance by mother and child eventually produced the result that both arms could be abducted and raised above the head; flexion at the elbow could be obtained in both when the patient was lying down, but only to a comparatively small degree on the right side. Apart from a little flexion at the wrist, no further movements have occurred in the right arm, and the prognosis as regards the hand is still very uncertain. On the left side practically normal movements have been obtained, including pronation and supination of the hand, but the hand and arm cannot yet be raised above the shoulder when the child is more than half sitting up. The action of gravity then comes into play, and the muscles are not yet sufficiently strong to overcome it; the principle of gradual acquisition of function is being followed, however, and the child is being elevated stage by stage on pillows (this gradual elevation is the only method by which weak shoulder girdle muscles can be slowly re-educated to perform their normal natural functions). The improvement effected by rest and muscle re-education in the case under review has been continuous and considerable, and in my opinion no other combination of treatment could have produced results at all comparable.

The Immediate or Ideal Treatment.

For the treatment of infantile paralysis to be placed on a satisfactory footing there must be general recognition of the two guiding principles of immediate anatomical rest and of scientific muscle re-education, both to be applied at the earliest possible moment. Infantile paralysis being a notifiable disease, and the future of sufferers from it being of such grave importance to the community (a cripple is a constant charge on the State), it is advisable that parents of children affected should be given by the health authorities printed directions explaining how rest, especially for the arms, can best be obtained. The day is past when we can stand calmly by and regard infantile paralysis somewhat in the light of a visitation or punishment; as a scientific profession we can no longer be content to give the hopeless and helpless prognosis "Nothing can be done." One requires to see very few of the complete arm or upper arm old cases of infantile paralysis to realize how miserable is the future of a young subject with both arms paralysed; wasting, shortening of the limbs, subluxation of the shoulder-joints owing to deltoid atrophy, and general disablement, possibly combined with a deformed leg or legs, make death almost preferable. If the lines of treatment above indicated are followed, much that is hopeful and cheerful can be safely promised.

Conclusions.

It is endeavoured in this paper to show that each and every child surviving the first onslaught of infantile paralysis can be assisted to regain muscle power; a few may remain permanent cripples, in spite of every care, but if treatment is begun at once and properly carried out the majority should recover more or less completely. The paralysis is not the disease; it is the obvious sequela. Our aim in treatment is, therefore, not the cure of the disease but the restoration of function; this must be begun at once, before postural defects have occurred, or fibrous changes in the essential structures have taken place. Rest must be given immediately; muscle re-education should be attempted as soon as we can reasonably be sure that the inflammatory process has ceased, which may be at the end of the first week. The clinical signs will be absence of pain, tenderness, or pyrexia. We must remember that unless guided volitional effort takes place, limbs may hang helpless which have, unknown to the individual, recovered a great deal of their power. Whatever may be the explanation of the changes in the spinal cord, it is most important for the physician to realize that the muscles, if only they are handled correctly, will show a large percentage of recovery. We can never tell in any individual case what the extent of that recovery may be, and it is the practitioner's business to exploit it in every case to its fullest capacity. It is essential that the attempt at muscle work be made under the easiest possible physical conditions; there must be no fatigue, and after attempting to work the muscles must be at once adequately rested in the correct anatomical position. Children and parents very soon take an intense interest in every detail of the treatment, especially if in the case of the former an element of play or game can be introduced in the exercises to vary the monotony. The three cardinal points of treatment are: (1) anatomical rest; (2) muscle re-education; (3) general care of the patient, particularly as regards warmth of the limbs, light massage for a short period preliminary to the exercises, careful superintendence of the whole life of the child, and the avoidance of fatigue and strain.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY A HERNIATION OF SMALL INTESTINE INTO THE PARADUODENAL FOSSA.

THE following case is of interest for several reasons: (1) the rare occurrence of the condition; (2) the insidious onset and gradual development of the symptoms of obstruction; (3) the ease with which the obstruction was relieved; (4) the rapid convalescence and the absence of shock, which shows the importance of using all anti-shock measures we have at our disposal in dealing with such cases.

I. H., aged 11 years, had complained of a feeling of discomfort almost amounting to pain after coming home from school. Her father, who had some knowledge of medicine, applied massage of a rather violent description to her abdominal wall, hoping by this means to procure an action of her bowels. As this failed, enemata were given, the result being a very slight action dark in colour. On the following day the discomfort and pain were exaggerated, she felt sick, could not eat, and the bowels had not moved, though she had passed some flatus. I saw her in the afternoon, with Dr. E. W. Sharp of Bradford, and found the following: The child was pinched about the face, her tongue was moist and slightly coated. She had not vomited, and she complained of an indefinite pain in her abdomen; the abdomen was not distended, there was a slight general rigidity, it moved with respiration, but there was indefinite tenderness on the left side, above the level of the umbilicus. Thinking that the condition might be due to some indiscretion in diet we decided to watch the case. Two days later her condition became much worse. She had abdominal pain, distension, vomiting, and her bowels had not acted, and no flatus had been passed. She was seen on this occasion by Dr. Wrangham of Bradford, who diagnosed intestinal obstruction and recommended immediate operation. I saw her the same evening (July 3rd, 1920) in a nursing home, and found the abdomen very distended and tympanitic. She was vomiting, and peristalsis was plainly visible through the anterior abdominal wall.

Laparotomy was performed, and on opening the peritoneal cavity some slightly turbid fluid escaped. The junction of the distended and collapsed small intestine was quickly found, and at this point a small loop of the gut was found to enter the paraduodenal fossa, and obstruction was absolute. The intestine was removed from the fossa without difficulty and the fossa was closed by two stitches of catgut, although there was plastic lymph present which would probably have obliterated it without the aid of stitches. As the intestine had not lost its lustre at the point of obstruction, and as a wave of peristalsis passed across the constriction, and seeing that the distended gut contracted when stimulated with a warm towel, the abdominal wound was closed in three layers without drainage. Subcutaneous saline was given throughout the operation. The child was bandaged in cotton-wool, and all the manipulations necessary were carried out without delivering the gut. The operation lasted seventeen minutes.

Convalescence was uneventful, there was very little shock, and recovery has been complete.

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A CASE OF EXTRAUTERINE FETATION PRESENTING IN THE VAGINA.

In July, 1918, I attended a woman who appeared to be suffering from a miscarriage. The patient, a multipara, thought she was six months pregnant: she complained of almost continuous pain, and had a red vaginal discharge. The head of the fetus could be felt through a thin bag of membrane, but I found the uterus little, if at all, enlarged to the left of the presenting mass, and distinctly separable from it. I perforated the membrane (which was the thin attenuated vaginal wall) with my finger, and delivered the fetus, which appeared to be of about five months' development, and which had evidently been dead some time. The placenta was removed with some little difficulty, leaving a large ragged hole in the right vaginal fornix. There was a little haemorrhage, and the patient made a good recovery. I believe this to have been a case of extrauterine fetation which developed and came down between the layers of the broad ligament.

[illegible] ARTHUR E. JOSCELYNE, M.D., M.R.C.S.

A CASE OF URINARY SINUSES.

This case came under my care on account of the illness of the general surgeon of the hospital. I must make the remoteness of this sort of surgery from my own sphere the excuse for regarding as an exceptional case what may be fairly familiar to genito-urinary surgeons.

A [illegible] complained of passing urine and stones from three openings in his right thigh. The sinuses were situated in Scarpa's triangle, [illegible] below the origin of the adductor longus. Four years previously he had had a bullet wound, with entrance [illegible] of the symphysis pubis and exit at the lower border of the left gluteus maximus, [illegible] tuberosity. Much blood was passed by the urethra that day; subsequently there [illegible] on the inner side of the thigh which burst with formation of the urinary sinuses. After about three months there was complete cessation of urination through the penis, after he began to pass small stones from the sinuses. [illegible] A probe [illegible] the lower part of Poupart's ligament. [illegible] the pubic bone, but that about the roots of the penis appeared natural. The thigh [illegible] with the aid of [illegible] A probe passed through the [illegible] urethra [illegible] the [illegible] one stone [illegible] large [illegible] a large metal [illegible] changed every three days for [illegible] three or four days. [illegible] the urethra [illegible] I [illegible] complete [illegible] The man said he had never suffered from [illegible]

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Reviews.

TROPICAL OPHTHALMOLOGY.

NOT so very many years ago the number of really useful English books on ophthalmology was by no means large, and it is an eloquent testimony to the advance in our knowledge of the subject, and the changed conditions in recent years, that the publication of a book on the tropical aspects of ophthalmology should satisfy a very real need. Lieut.-Colonel ELLIOT, in *Tropical Ophthalmology*,[1] not only gives an account of the common diseases of the eye met with in the tropics, and places his unrivalled experience of the most suitable methods of treatment at the disposal of the practitioner, but at the same time gives a description of the rarer forms of disease, and this renders the book indispensable to the specialist in the subject. In remote parts of the empire the medical man has to be "an all-round specialist," and he will find few branches of medicine and surgery of greater value than ophthalmology in helping him to gain the confidence of the inhabitants. Nor must we forget that tropical disease, as a minor consequence of the war, is seen in the United Kingdom much more frequently than formerly.

As stated in the preface, the object of the book is not only to make information on the subject readily accessible to the worker, but to stimulate him to study the many little-understood tropical conditions that affect the eye. "We see what we have been trained to see, and we very often miss the obvious phenomena for which our minds are unprepared." Parasites, glare, dirt, and ignorance are the chief factors producing eye diseases in the tropics as elsewhere, and all of these are fully discussed. The ocular diseases caused by parasites peculiar to the tropics are of the greatest interest, and the author has conferred an inestimable boon on all workers by collating the available information on the subject and rendering it not only readily accessible but a pleasure to read. A glance at the bibliography will give some idea of the labour required to write a pioneer book such as this; information must be painfully sought for in papers written in many journals and in many languages.

The author paints a vivid picture of the tropical "hot weather" season:

> "It is very difficult for anyone who has not actually lived the whole year round in a tropical country to appreciate the influence of heat, wind, and dust. The minds of those of us who have done so go back to those first days of each year, when the covers of the books on our shelves began to curl up backward, when, as we emerged from our bungalows, the heat of the breeze struck like a blow, painfully drying up the skin, and suggesting a blast from a furnace. . . . Then, as the year moved on in a succession of days, each one of which seemed hotter than the last, every blade of grass disappeared from our compounds (gardens) and from the maidans (commons), till the earth's surface assumed one brown, baked hue, variegated only by the interlacing, gaping cracks in the soil. The dust devils, dancing down the road, and the blinding storms of wind, charged with desiccated and faeces-laden earth, come back to memory like the incidents in an evil dream."

Colonel Elliot's most practical notes on operations for senile cataract and glaucoma will, naturally, be of the greatest value to surgeons practising in the tropics. His personal preference is for a capsulotomy operation combined with irrigation, and this is strongly recommended for the beginner, who, as he acquires experience, may decide later what type of operation is likely to be the most successful in his hands. The remarks on prophylactic trephining in countries where the ignorance of the general population is a marked feature, are of considerable interest, and a strong case is made out for this procedure. Colonel Elliot does not, however, contend that prophylactic trephining should be employed indiscriminately, but that the surgeon "must weigh carefully the circumstances of each case and decide it on its merits, conscious of the responsibilities that attend either action or inaction."

The chapter on quinine poisoning is of importance to the general practitioner, and there are interesting and valuable sections dealing with hospital management. The success of the surgeon in remote parts depends not only upon his dexterity and knowledge, but also, in no small part, on the care which he devotes to hospital administration. The paragraph on the Indian crow gives an account of one of the minor difficulties which confront the head of an Eastern institution:

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[1] *Tropical Ophthalmology.* By Robert Henry Elliot, D.Sc., M.D., B.S., F.R.C.S., Lieut.-Colonel I.M.S. (retired). London: Henry Frowde, and Hodder and Stoughton. (7 plates, 117 figures. 31s. 6d. net.)

> "No one who has not watched these birds can form a just idea of the pest they constitute in a hospital where many of the patients are blind. Even in other institutions they have a very evil reputation as shameless and persistent thieves, but their knowledge of the limitations of the blind seems almost satanic."

Colonel Elliot makes a powerful appeal for a better understanding by the civilian executive of the aims of the medical officers and the value of their work. Parsimony and petty jealousy are the deadly sins which so often hamper progress, and he attacks these with courage and conviction.

The book is extraordinarily well illustrated. Seven coloured plates are included; these and the reproduction of the numerous photographs are quite exceptionally good. The author makes a most generous acknowledgement of the services of those who have contributed information and material. He may be congratulated upon having produced a pioneer book; the benefit he has conferred on all workers in the tropics should be some compensation for the vast labour incurred in writing it.

SHIBBOLETHS OF TUBERCULOSIS.

FROM the earliest times to the present day the progress of knowledge has been persistently retarded by fixed ideas. Everyone forms his own conception of any new group of facts, but in most cases one or two such facts stand out prominently and throw others into the mental background. Thus it has been in the case of tuberculosis. So much has been stated and written upon the subject that most adults of either sex have formed opinions more or less stereotyped upon the salient points, and are apt to hold on to them with marvellous tenacity in spite of the teaching of later experience, which in many cases has proved their fallacy.

The tendency to hold fast by preconceived opinions is not limited to non-medical persons, but is shared, though perhaps in less degree, by many medical practitioners, and this tendency has reacted unfavourably upon a vast number of patients who have been subjected to obsolete forms of treatment, disappointing to themselves and disastrous to their surroundings. The appearance of a work, *The Shibboleths of Tuberculosis*,[2] specially devoted to the sweeping away of such early misconceptions as may prove harmful in practice is doubly welcome, proceeding as it does from the pen of a writer who is in a position to speak with many years' experience of life in the midst of tubercle. Dr. MARCUS PATERSON, like many others who have had a like experience in hospital and sanatorium life, has been brought face to face with most of the problems that have to be solved in dealing with consumption and the consumptive patient. Hence he speaks with authority, but at the same time supports his statements by quotation from other specialists whose published works command respect.

Dr. Paterson has attacked the subject by division into fifty-nine chapters, each one devoted to a special preconceived idea, such as we have referred to above, which in his opinion requires modification or rejection, as the case may be. Thus his opening chapter deals with an accepted "shibboleth" that it is good to sterilize milk to limit the spread of tuberculosis. In this he points out the well-known fact that bacilli are sometimes to be found in butter and cheese, and apparently does not think it worth while to destroy a part since it is not possible to destroy the whole. He suggests that the ingestion of a moderate amount of tuberculous poison during childhood may have an immunizing effect in the long run. He does not make any mention of the risk of infection by bread, which of all foods passes more directly "from hand to mouth" than any other. If it were possible to control the known sources of infection, the sputum and all milk and its products, still the air passages are at all times open to the entry of dust-borne microbes. The question of marriage of possibly tuberculous persons is discussed at length, and its difficulties are clearly pointed out. The problems of heredity, real or supposed, are solved by the conclusion that very few babies are born with tuberculous disease; some may inherit an aptitude for its development, but the greater number of children born of tuberculous parents remain free from any evidence of the disease if removed from unhealthy environment. Too great reliance must not be placed upon the results of x-ray examination. Active tubercle casts no shadow on the plate or screen, and it is not always possible to gauge the amount of local mischief by means of radiography.

As superintendent for many years of the Frimley Sanatorium, the author speaks feelingly with respect to the duties of the office of medical superintendent when conscientiously carried out. It must be assumed that such duties have been neglected if the management of a sanatorium can be described in the current slang of the day as a "cushy job." He shows very clearly that the work is never-ending, a trial to the temper as well as to the physical powers of endurance. Being entirely convinced as to the effect of auto-inoculation by means of graduated exercise, he regards it as the one really effective means of arresting the disease, and hence he has but little to say in praise of the many forms of climatic treatment in which the air of the mountains or of the sea is at present utilized. The sanatorium, which has of late come in for a good deal of disparagement, can only be effective when put to its right uses. If employed as a home for consumptives it will probably do more harm than good, but where it is used as the best means of active treatment by auto-inoculation the results, he considers, fully justify its maintenance.

A very large number of minor "shibboleths" are in turn considered in this work, which we strongly commend to the notice of those who have the difficult task of dealing with consumptives in private practice. It may be equally commended to the consideration of the patients also.

LOCAL ANAESTHESIA.

THE subject of local anaesthesia is exhaustively expounded by Dr. GEORGES CANUYT and Dr. J. ROZIER in their work on local and regional anaesthesia in oto-rhino-laryngology.[3] Most appropriately a preface has been contributed by that great master of laryngology, Professor Moure of Bordeaux, for not only was he foremost in the introduction of the method in Europe, but the work on which the present volume is based comes from his own school.

The first chapter of the book is devoted to a detailed general account of local and general anaesthesia without any reference to special regions. This chapter is admirable; the methods, principles, advantages and risks are well described. In the later chapters the applications of the methods to the surgery of the nose, including plastic operations, the larynx, the ear, the palate, the tonsils, the tongue, the thyroid gland, the lips and the lower jaw, are described. It must be understood that the authors describe an extension of these methods, which goes far beyond the limits of the usual practice in this country. Whilst the technique of intranasal and intralaryngeal operations owes everything to local anaesthesia, it is at least doubtful if such methods are the best for the major external operations, such as those on the frontal sinus, thyrotomy, and excision of the larynx. This is, however, an excellent reason why the opinions and experience of the authors should receive the most careful study and consideration, more especially as they are expressed with scientific moderation and with the precision which seems almost peculiar to French writers.

In the employment of regional anaesthesia anatomical knowledge is essential, and the anatomical descriptions are detailed and accurate. So much space, however, is devoted to this subject that the reader may well feel that he might have been left to refer to Testut or Cunningham, though the book is thus made complete and self-contained. No one interested in the advancement of otology and laryngology should fail to make himself acquainted with the claims of this school, but the book may well make a wider appeal to surgeons, for the authors take a broad view of their subject and deal with many points of importance and interest in general surgery.

Instillation of drops of cocaine into the conjunctival sac is the routine anaesthetic for use in cases of cataract in all parts of the world, and a similar method of obtaining anaesthesia is extensively employed in dealing with other ocular diseases, in cases in which the eye is quiet, free from injection and from signs of raised intraocular tension. Dr. DUVERGER, in his work on local anaesthesia in ophthalmology,[4] presents the case for a more extensive use of local anaesthesia by the method of injection and deep infiltration of the tissues with solutions of novocain and other cocaine derivatives combined with solutions of adrenalin. He claims that when the drug is properly injected a perfect anaesthesia can be obtained for all ophthalmic operations, including such procedures as excision of the lacrymal sac, excision of the globe, squint, operative treatment of acute glaucoma, and for operations on inflamed painful eyes; those who have made use of this method will certainly agree with him in his claim. The book is an excellent one; it gives a historical section, an anatomical summary, and precise instructions as to how to employ the method advocated in the various diseases of the eye. The illustrations show very well the spots at which the needle is to be inserted. It is a work that will be a useful addition to the library of the ophthalmic surgeon.

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[2] *The Shibboleths of Tuberculosis.* By Marcus Paterson, M.D. London: John Murray. 1920. (Demy 8vo, pp. 329; 2 figures. 10s. 6d. net.)

[3] *L'Anesthésie Locale et Régionale en Oto-Rhino-Laryngologie.* By Drs. Georges Canuyt and J. Rozier. Paris: Gaston Doin. 1920. (Roy. 8vo, pp. 199; 117 figures. Fr. 14.)

THE SCHOOL CHILD.

To the "English Public Health Series," edited by Sir Malcolm Morris, Dr. JOSEPH CATES, M.O.H. St. Helens, has contributed a sixth volume, *The Welfare of the School Child*,[5] which is well worthy to take its place with those already contributed by the editor, Dr. Scurfield, Dr. W. G. Savage, Dr. John Robertson, and Dr. Mary Scharlieb.

In his introduction Dr. Cates emphasizes the fact that the condition of the school child is a result of many antecedent conditions, parental and infantile. The infant carries into school the result of five years of home life, and for good or evil that period will be largely responsible for the physical and mental condition of the entrant to school. During the nine months of ante-natal gloom, too, the career of the future infant may be seriously crippled. A high infant death rate in a community implies in general a high death rate in the next four years of life, while a similar association is found between low death rates at both age periods. School children suffering from malnutrition commonly come from families where there has been a relatively high rate of infant deaths, and it may be expected that any condition likely to bring about infant death will certainly entail a large amount of sickness in childhood. With this clearly in view the author proceeds to consider the determining causes of what he considers [illegible] malnutrition. His conclusion places the blame on defective environment:

> [illegible] are widespread and [illegible] depressed [illegible] malnutrition will be prevalent [illegible] have as a [illegible] wage-earner, [illegible] and, put in [illegible] receptacle for [illegible] paved, and [illegible] make the best use of these [illegible] provided.

The book in its several chapters deals with dental disease, defects of vision, hearing, and speech, heart and lung diseases, minor ailments, the cripple child, the mentally abnormal child, school buildings, the school nurse, and special schools. Each subject is treated in a simple and clear fashion and the effect is to provide a very readable and satisfactory introduction to the subject, suitable for beginners in school medical inspection and for the [illegible] of [illegible] upon whose clear understanding of the conditions and needs of their charges rests in great part the success of school medical work.

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NOTES ON BOOKS.

Drs. ROBERT HUTCHISON and HARRY RAINY'S well known *Clinical Methods*[6] has in its twenty-three years of existence won a secure place in the esteem of medical readers. The present—the seventh—edition fully maintains its past reputation and has been thoroughly revised and brought up to date. There are three new coloured plates showing the blood in malaria, the fundus oculi in various conditions, and the tympanic membrane in health and disease. The section on the circulatory system is now illustrated by a number of electro-cardiograms selected by Dr. G. D. Mathewson from the collection of the Clinical Medicine Research Laboratory of the Royal Infirmary, Edinburgh. In the section on the examination of the blood, in which the authors have had the advantage of advice from Dr. P. N. Panton of the London Hospital, a reference might perhaps have been made to Professor Arthur Hall's convenient modification of the Tallquist method of rapidly determining the percentage of haemoglobin. This popular manual contains the maximum amount of information in the smallest possible compass.

Dr. C. B. KER'S large and handsome monograph on *Infectious Diseases*[7] offers medical practitioners and the richer medical student an admirable practical textbook of "fevers," the thirteen most prominent of which are discussed at full length, and with the knowledge accruing from a very considerable experience, in this volume. The first chapter gives an introduction to the subject, discussing bacteriology, immunity, anaphylaxis, and kindred topics of importance, in a simple manner that is readily intelligible as well as adequate. The next thirteen chapters are devoted to the same number of specific infectious disorders, enteric fever in particular being discussed with a great abundance of detail. The last chapter contains an account of various fever-hospital problems, the coexistence of infectious diseases, cross-infection, the supervention of sepsis, and return cases. Dr. Ker writes clearly, and from the practical point of view is to be congratulated upon the fullness of his information in the matters of prevention and treatment. The book is well illustrated with charts and plates, some of the latter being excellent direct colour photographs well reproduced by the printer, who, for the rest, has done his work excellently. The volume is to be cordially recommended to the attention of students and practitioners of medicine.

The Influence of Man on Animal Life in Scotland: A Study in Faunal Evolution, by Dr. James Ritchie,[8] of the Natural History Department of the Royal Scottish Museum, and therefore not the eminent bacteriologist of the same name, is an attractively written and beautifully illustrated book, well suited for holiday reading in the country, especially if the holiday be taken north of the Tweed. It is based on lectures given in December, 1917, to a general audience at Aberdeen under the Thomson Lectureship in Natural Science. The influence of man's acts is only one of several factors bearing on the instability of a country's fauna, and, as it was necessary in the investigation of this problem to select a fauna of manageable compass, that of Scotland had obvious advantages. Part I deals with man's deliberate interference with animal life, such as the domestication of animals, their protection, intentional destruction, and the purposeful introduction of new animals. Part II, on man's indirect interference with animal life, discusses the influence of destruction of forests, and the unconscious introduction of parasites, such as fleas, rats, wood wasps and beetles. At the end of the book there is an interesting chapter on the recoil upon man of his influence on animal life, in which reference is naturally made to the diseases spread by rats and fleas. There is a spot map of Scotland showing the village incidence of malaria in the eighteenth century, an infliction which passed away with that century.

The Woman of Forty,[9] the most recent addition to Dr. EDITH B. LOWRY'S series of books on sex hygiene, is a wholesome and brightly written piece of advice to women approaching middle age. At the menopause women may, as everyone knows, do peculiar things, become estranged from their husbands, and justify the use of the term "the dangerous age" as regards their future happiness. Change from town to country life for two or three years at this critical period may save the situation and make her fit for thirty years of mature usefulness. In recommending such women not to dwell on or study their ailments, Dr. Lowry wisely warns them to avoid the habit of making every conversation with a friend an "organ recital," for to do so is to advertise the advancing years. The chapter on general health contains much sound advice about seeking medical supervision to prevent illness, and contains several good illustrative cases showing the value of *x* rays in detecting focal infection at the roots of the teeth. Enthusiasm, mental activity, and sympathetic interest in others are among the qualities the woman of 40 should cultivate to save herself from an unhappy and premature old age.

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[4] [illegible]

[5] [illegible]

[6] [illegible]

[7] *Infectious Diseases: A Practical Textbook.* By Claude Buchanan Ker, M.D., F.R.C.P.Edin. [illegible] London: Henry Frowde and Hodder and Stoughton. [illegible] 7 plates, [illegible]

[8] *The Influence of Man on Animal Life in Scotland: A Study in Faunal Evolution.* By J. Ritchie, M.A., D.Sc. [illegible] F.R.S.E. Cambridge: The University Press. [illegible] Roy. 8vo, pp. [illegible], 90 [illegible]

[9] *The Woman of Forty.* By Edith B. Lowry, M.D. Chicago: [illegible]

In his account of *Venereal Disease and its Prevention* Dr. R. LEBLANC[10] writes in simple language for the lay public an essay on preventive medicine, and, as he expressly points out, not one on morals. The first part contains an elementary sketch of the anatomy and physiology of the sexual organs; gonorrhoea is described in Part II, and then syphilis is dealt with. Prevention in men and in women is then described, and the appendix contains the British Venereal Diseases Act, 1917, and the new German regulations with regard to venereal disease, 1918. The author is an earnest advocate of preventive methods, and is convinced that the best and perhaps the only means of getting at the root of the whole question is a thorough education of the public in the problems of venereal disease.

Mr. A. W. KNAPP's book on *Cocoa and Chocolate*[11] is a comprehensive work for the general reader who wants to know all about the cacao bean and its products. Beginning with a sketch of the history of cocoa (more correctly from the Mexican and historical point of view written cacao some four hundred years ago) and chocolate, the author describes the cultivation and harvesting of cacao, the manufacture of the cocoa and chocolate known to us all, the by-products of the industry, the adulterations to which cocoa and chocolate are so lamentably prone, and the quantities in which they are produced. The book is well written and illustrated.

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[10] *Venereal Disease and its Prevention.* By R. Leblanc, M.R.C.S., L.R.C.P., late Pathologist at No. 1 Stationary Hospital. Letchworth: G. W. Browne. 1920. (Pp. 158; 2 figures. 7s. 6d.)

[11] *Cocoa and Chocolate: their History from Plantation to Consumer.* By Arthur W. Knapp, B.Sc.Birm., F.I.C., B.Sc.Lond. London: Chapman and Hall, Ltd. 1920. (Demy 8vo, pp. 210; illustrated. 12s. 6d. net.)

THE HISTORY OF SCIENCE.

REPRINTS OF EIGHTEENTH CENTURY PAPERS.

UNDER the direction of M. Solovine, the firm of Gauthier-Villars of Paris have commenced the publication of a collection of essays of fundamental importance in the development of modern science. The collection is published under the general title of *Les Maîtres de la Pensée Scientifique.* As is truly pointed out in a general preface, it is now often difficult to consult the original writings of men the results of whose investigations have become the commonplaces of textbooks. The series now projected is designed to "render accessible to men of science and to the educated public the original text of writings which mark the successive stages in the slow and laborious construction of the great edifice of science." There can be no doubt that the aim is excellent, and we can only hope that the programme is not too ambitious for fulfilment. At the same time it must be said that, judging from the two sets of memoirs before us, the lack of notes explaining the terms and phrases used in the eighteenth century may prevent them from being understood by the general reader. The memoirs to be noticed are those of Lavoisier on respiration and transpiration,[1] and those of Spallanzani on the animalcules occurring in infusions.[2] In both instances short biographical notices are provided.

Lavoisier's work with regard to the nature of respiration was of first-rate importance, and it will be interesting to indicate its relation to the movement of scientific thought in his day. Lavoisier was a wealthy man, one of that company of financiers (fermiers-généraux) to whom the French State conceded for a fixed annual sum the right of collecting the indirect taxes. The system was the cause of many abuses, and one of the first acts of the Revolution was to upset it. Lavoisier was imprisoned at the end of November, 1793, was found guilty along with twenty-eight of his colleagues, and was guillotined on May 8th, 1794, when he was only a little over 50 years of age.

Lavoisier early showed interest in many departments of science, but distinguished himself especially in chemistry, a subject which he studied under Rouelle at the Jardin du Roi. In his first paper, published in 1765, Lavoisier showed that gypsum sets as plaster-of-Paris by becoming hydrated, but that when over-burnt it would not rehydrate. Next, in 1768, he read to the Académie des Sciences an essay on street lighting, which gained him admission to that body. His important work was commenced in 1772 and published in May, 1775, under the title "Mémoire sur la Nature du principe qui se combine avec les métaux pendant la Calcination et qui en Augmente le poids." A century before John Mayow at Oxford had distinguished in air a *spiritus nitroaereus vel ignoaereus*, which was used up in combustion and respiration from another gas which remained after the former had been exhausted. He pointed out, moreover, that these ignoaerean particles became inserted into metals when calcined—for example, when antimony was calcined by the sun's rays through a burning-glass, and by actual weighing he proved that there was a considerable increase in weight. But the perverse theory about phlogiston prevented Mayow's observations from being recognized.

Joseph Black (1728–1799), an assistant to Cullen in his chemical laboratory in Edinburgh, whilst experimenting, among other things, on the lithontriptic medicines, with the object of dissolving gravel and bladder calculi, discovered that what Van Helmont had called "gas sylvestre" and he termed "fixed air" (carbonic acid gas), when driven through a clear solution of lime-water, gave rise to a precipitate. The gas being absorbed by caustic lime could be weighed, and there was thus formed a means of testing the amount of gas in expired air and distinguishing it from the other gas—nitrogen.

In 1766 Henry Cavendish (1731–1810), a grandson of the Duke of Devonshire, about whose chemical education information is wanting, read to the Royal Society a paper on "factitious airs," in which he distinguished an inflammable gas which escaped when iron, tin, or zinc was dissolved in weak sulphuric or hydrochloric acid. When this gas was mixed with atmospheric air and exploded about one-fifth turned into water. In 1783, by using the principle of the eudiometer described by Hales, and adopting from Volta the exploding by means of an electric spark, Cavendish was able to demonstrate the formation of water by the combination of this gas (hydrogen) with the oxygen of the air.

In 1772 Daniel Rutherford, a pupil of Cullen's and Black's, in his M.D. dissertation, showed that if the "fixed air" were removed from expired air by caustic lime there remained a residual gas which was irrespirable and which extinguished flame. This so-called "mephitic air" was connected with nitre by Cavendish, who obtained nitric acid from the atmosphere by means of the electric spark. Lavoisier named this "mephitic air" azotic gas, or azote, to indicate its inability to sustain life; the name nitrogen was given it by Chaptal, the French chemist.

It was in 1767 that Priestley (1733–1804) began his chemical experiments with "fixed air" produced by fermentation in a neighbouring brewery. In 1771 he made a first-class discovery by proving that plants absorbed carbonic acid and gave out oxygen. But these and his further experiments were entirely confused by his adherence to the phlogiston theory, which gave a reverse explanation to his discoveries. In 1772 he introduced the pneumatic trough for the collection of gases over mercury. In 1774 he made the so-called "mercurius calcinatus," that is, oxycarbonate of mercury, or red oxide of mercury, called "red precipitate," which he then placed in a close vessel and heated by the aid of a burning-glass when there was given off what Priestley called "dephlogisticated air." Priestley later asserted that, being in Paris in October, 1774, he had informed Lavoisier of his experiment. Be that as it may, Lavoisier proved by his *Mémoire* in May, 1775, that mercuric oxide when heated by itself gave off gas which corresponded with the respirable portion of the air: when mercuric oxide was heated with charcoal "fixed air" was produced; hence he concluded that "fixed air" was formed by a union of charcoal with the respirable air. In a further *Mémoire* in 1777 on general considerations concerning the nature of acids and on the principles of which they are composed, Lavoisier concluded that the principle which combined with metals when calcined was the principle constituting acidity, the "acidifiant" or "oxygine" principle, an essential in calcination and burning. But he went beyond the mark in assuming the "acidifiant principle," for it was quickly shown that hydrochloric acid contained no oxygen.

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[1] *Mémoires sur la Respiration et la Transpiration des Animaux.* By Antoine-Laurent Lavoisier. Les Maitres de la Pensée Scientifique. Collection de Mémoires publiés par les soins de M. Solovine. Paris: Gauthier-Villars et Cie. 1920. (Double fcap. 16mo, pp. 71. Fr 3.)

[2] *Observations et Experiences faites sur les Animalcules des Infusions.* By Lazare Spallanzani. Tomes I and II. Les Maitres de la Pensée Scientifique. Collection de Mémoires publiés par les soins de M. Solovine. Paris: Gauthier-Villars et Cie. (Double fcap. 16mo. Tome I, pp. 113, Fr. 3; Tome II, pp. 122, Fr. 3.)

The foregoing is a brief account of discoveries made shortly before the memoirs now reprinted. In this communication (*Académie des Sciences*, 1777) Lavoisier stated that respiration was a slow process of combustion; a portion of the carbon contained in the blood in the lungs combined with the respirable portion of the air to form "fixed air," just as happens when charcoal is burnt. The heat produced in this slow combustion was the source of animal heat. The "fixed air" was identical with the so-called aëriform calcic acid obtained by treating chalk with acids. The so-called "mephitic air" or "azote" remained unaltered in the respired air.

The memoir on the production of heat in oxidation combustion and in animals, by Lavoisier and La Place, was published in 1780. They compared the heat produced in animals with the amount of carbonic acid gas given off in expired air. As they calculated that the amount of heat produced was greater than could be explained by the gas expired, they concluded that there was an additional source of heat, by the hydrogen in the blood combining with the oxygen of the air. They thought that the oxidation occurred in the lungs, which was a retrogression on Mayow, who had held that the contraction of muscle was due to a combustion of his spiritus nitroaereus. Spallanzani (in his *Memorie sulla respirazione*, published in 1803 after his death) proved by experiments on snails, hibernating dormice, and bats, that oxidation occurred in the tissues, oxygen which had been stored up being used. The second of Lavoisier's memoirs, here reproduced, read to the Société de Médecine in 1785, is directed to the thesis that respiration involves both a combustion of carbon to form carbonic acid, as well as of the hydrogen in the blood to form water.

The third memoir is by Seguin and Lavoisier; it related experiments on guinea-pigs under bell jars, and others by Seguin on himself. The results led them to suggest that some of the carbonic acid gas was formed in the course of digestion, and that it passed by the chyle into the lungs and so escaped.

In the fourth memoir the same authors set themselves to distinguish three processes: (*a*) the respiratory change in the lungs in which there took place a process of slow combustion with oxygen by which carbon combined to form carbonic acid and hydrogen to form water; (*b*) that of transpiration, including the loss of water and heat by the skin, and (*c*) the digestive process which supplied the blood with the carbon and hydrogen. To distinguish cutaneous transpiration from pulmonary transpiration they repeated the experiment of Sanctorius; the experimenter was seated in a weighing chair, enclosed, except for the nose and mouth, in a sack made impermeable by rubber [illegible]. In this way they compared the weight of fluid escaping by the skin in twenty-four hours and that from the lungs with the quantity of carbon and hydrogen taken in.

Animalcules of Infusions.

A French translation of Spallanzani's book relating to observations and experiments on the animalcules of infusions fills two volumes of the [illegible]. The translation is that published by Senebier in Geneva in 1786, but unfortunately Spallanzani's illustrations have not been reproduced.[3]

Leeuwenhoek, at the end of the seventeenth century, made a number of observations which were confirmed and extended by others, so that by the middle of the eighteenth century protozoa, diatoms, spores of algae, spermatozoa and other objects of the same size were to a certain extent distinguished. The philosophers who held the theory of spontaneous generation had ceased to maintain their thesis in the case of larger living beings and plants. What could be observed in "infusions" had become the battle-ground. Liquids made by boiling or simply macerating seeds and other vegetable materials were used, and also animal materials, such as yolk of egg dissolved in water, and various mixtures with rain water, or ditch water, or sea water. These liquids were then allowed to decompose for a day or two. The most remarkable objects in these infusions were the animalculae or infusoria; some were named and others can be recognized from the descriptions—volvox, vorticella, monas, paramoecia, amoebae, rotifers, flagellate and ciliate infusoria; other objects were more vaguely termed vermiculi. But besides these there were smaller objects which had only a vibratory movement; some claimed these to be germs, others inanimate granules.[4]

In 1749 John Turberville Needham (1713–1781), a Roman Catholic priest commonly called the Abbé Needham,[5] addressed to the Royal Society his *Observations upon the General Composition and Decomposition of Animal and Vegetable Substances.* He imagined a vegetative force which existed in matter. As the result of two other forces, resistant and expansive, an infinitude of combinations could be imagined by those with a mathematical turn of mind; to others his philosophy was incomprehensible. But he was supported by Buffon, who believed that minute animals, including worms, were produced from putrescible matter.

Needham's essay was translated into French, and Spallanzani's first publication was a criticism of it; a long controversy ensued. Spallanzani commenced by confuting and ridiculing the observations by which Needham had sought to confirm his speculations. Needham had heated infusions and then let them stand with porous corks. The animalculae which then developed as the infusions decomposed were claimed as evidence of his vegetative theory. Spallanzani heated his flasks containing the infusions and then sealed them hermetically. Needham replied that Spallanzani's infusions had been overheated, that the vegetative force was destroyed, and so no animalculae developed.

Spallanzani divided the living forms in his infusions into two classes—a higher class actively moving, having a definite structure, easily destroyed by heat, and a lower class, destroyed only by much greater heat. Boiling an infusion for half a minute destroyed most of the actively moving organisms; the infusions required to be boiled for at least three-quarters of an hour to render them sterile when hermetically sealed. If boiled for a shorter period, there followed in the hermetically sealed flask a development of organisms to a degree varying with the length of time the heat had been applied. In order to establish that the lower forms which resisted heat were the germs of the active animalculae, he made the following comparisons:

Frog's eggs resisted heat up to 110° F., and a few an extreme of 133° F.; all tadpoles were killed at 110° F. Eggs of flies blown on meat bore heat up to an extreme of 138° F., but not 140° F.; the maggots perished at 108° F. Peas, lentils, wheat grains, linseed, and cloverseed were not prevented from germinating by a dry heat up to 167° F., or even as much as 212° F., but all plants from the foregoing seeds were killed at a heat above 140° F. Cloverseed even withstood boiling a little without losing the power of germinating. A few of the active animalculae survived cold at the freezing point, but not the cold of a freezing mixture, although their germs did so. The animalculae, like small animals, could not live in the vacuum produced by the exhaust pump.

The animalculae could be observed to propagate by division, also by ova which first collected within the organism. Observations made on polyps by Trembley corresponded with those in the animalculae. After an infusion had been rendered sterile by boiling, germs of the animalculae fell in from the air or penetrated a porous cork. The spermatozoa found in the testes of living animals, or in the sperm just ejaculated by the horse, were similar organisms to the infusoria. The spermatozoa were quite distinct from the granular matter amongst which they actively moved in the sperm.

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[3] [illegible] a most excellent account of the life of [illegible] published in the British Medical Journal, [illegible], vol. ii, p. [illegible].

[4] Baker, H.: *Employment for the Microscope.* London, 1753.

[5] He is not to be confused with Dr. Walter Needham, as does Garrison, *History of Medicine*, second edition, 1917, p. 318.

British Medical Journal.

SATURDAY, OCTOBER 2ND, 1920.

HUMAN METABOLISM.

The popularity of science and the enthusiasm for it to which the war gave rise are perhaps declining, but researches undertaken in the critical years should stimulate us to build upon the foundations then laid. Amongst these pioneer investigations that reported by Professor (then Lieut.-Colonel) E. P. Cathcart and Captain J. B. Orr on the *Energy Expenditure of the Infantry Recruit in Training*[1] takes an honourable place. The authors were directed to solve a specific practical problem, namely, that of the food requirements of infantry soldiers in training under the conditions of the last two years of the war, but the results they obtained are of wider interest.

At the outset of the report a question of much importance is raised. A number of experiments (81) was made upon the basal metabolism of 9 subjects by indirect calorimetry. It appears from the protocols that although the mean (per square metre of surface per hour) was almost identical with the figure proposed by American observers, the range was wide. We collect from the records that in 9 experiments the value was from 32 to 34 calories, in 10, 34–36, in 23, 36–38, in 19.5, 38–40, in 14.5, 40–42, and in 5, 42–44 (the fractions result from distributing observations falling at the limits of the classes). Is this range due to (*a*) natural variability of the individual subjects, to (*b*) the effect of differences in previous diet, or to both factors? The authors show, in agreement with Benedict and Murschhauser, that the second factor is certainly important, a high protein diet raising the level of basal metabolism; while the data analysed by Benedict and Harris suggest that natural variability is also involved. A question which Professor Cathcart and Dr. Orr raise, but from paucity of data could not settle, is whether in averaging results one should weight by the number of experiments or by the number of subjects. They have actually adopted the former method, and, in our opinion, were justified in so doing. But the question ought to be fully answered, and can only be when a larger number of data exist for individual analysis. The problem is essentially a simple one. If we pooled a thousand measurements of the stature of adult English with a thousand measurements of adult French, the final average would be of little value. May we pool 1,000 metabolism experiments on A with 1,000 on B, external conditions being identical? Nothing like enough data exist to answer this question, but it must be had in mind when the results of such an inquiry as the present are assessed.

Turning to the results, we find, as might be expected, a great diversity in the output associated with different phases of the soldier's life. Lying down cost about 40 calories a square metre an hour, sitting at lectures nearly 50, standing at attention about the same, and standing at ease rather less. Squad drill without arms cost 88 calories, with arms 130; entrenching required 187 calories, and marching was the most costly of all. The authors assign as an average figure for route marching 258 calories and for marching in battle order 214, or with full equipment 233. They devote special attention to the subject of marching, and clearly bring out the effects of load and of velocity. The evidence that there is an optimum rate is clear; some of the data have been more closely analysed in another paper by Cathcart, Lothian, and Greenwood, while some interesting remarks are made upon the effect of changing the distribution of the load. The infantry soldier, we read, is often overloaded. "It was not infrequently the case that the load the soldier had to carry, one way and another, and, moreover, be prepared to fight at any moment, amounted to 75 to 80 per cent. of his body weight; it was actually known to exceed this preposterous figure in some instances. It is admittedly difficult to know how to deal with the problem, but it is in urgent need of solution. The infantry soldier is a fighting man; he is not a mere beast of burden."

A comparison of these results with those obtained by the same experimental procedure upon industrially employed persons is much to be desired, but unfortunately few comparative data exist. Professor Waller has published some important series of observations, but the technique was different. The nearest parallel is afforded by Greenwood, Hodson, and Tebb's work on some of the more laborious processes carried out in munitions factories.[2] Thus they did fourteen experiments on five women "labouring." The task was to remove steel filings from trays under the lathes with large shovels, place them in iron barrows, and to wheel away and dump the contents outside the shop. Their average figure was 184 calories. The nearest military parallel would be that of entrenching—intermittent navvy work, probably more intermittent, but, while it lasted, more strenuous than that of the women. Here the average output, 187 calories, is very close to that of Greenwood, Hodson, and Tebb. The result of Cathcart and Orr's work was to suggest that the average recruit, if not underfed, was dangerously near the limit, but, records of successive weighings not confirming the inference, the authors surmise that the use of the old British Association standards of height and weight was improper. A sample of weights of recruits led them to reduce the hypothetical mean surface from 1.77 square metres to 1.70. Upon this basis the ration issue was defective to the extent of 372 calories in the case of adults, and gave a positive balance of 116 for the boys. "In practice this would mean that when the values of the food purchased locally by the soldier *plus* the supplies from home are taken into consideration, along with a slight reduction in the energy output for the reasons already stated, the adult recruit's intake and output of energy probably just balance, and the young recruit would obtain a sufficient surplus to permit of the increase in weight found."

In the results actually achieved, and still more in the suggestions it conveys for future work, this report on the energy output of recruits in training is worthy of high commendation. We should like to be able to add that upon these foundations much more is likely to be built; but, we fear, few events are less likely. Except for the enthusiasm of a few individual workers, such as Professor Waller, this matter will attract little attention unless and until the nation is again menaced by starvation.

STRAINS OF THE SYPHILITIC VIRUS.

The doctrine that general paralysis is due to syphilis, which had been gaining ground during the later years of the last century, is now generally accepted. The percentage of cases of general paralysis in which a history of syphilis was obtained increased as the inquiries on this head were more carefully made. In the earlier part of the nineteenth century the percentage was thought to be 2 or less. By 1880 it had risen to 15 or 30, and in 1900 to 60 or 80. Fournier, who in 1879 asserted that general paralysis was due to syphilis, founded this belief on what he had observed in a series of individuals he had been able to watch for years after infection. The matter was clinched when, in 1913, Noguchi demonstrated the treponema in the brain of general paralytics. Levaditi and Marie, who were among the first to confirm Noguchi's observations, have now published an essay[1] in which they review the clinical facts and set out in consecutive manner the experimental evidence they had previously published in support of the hypothesis that general paralysis is produced by a particular strain of the treponema.

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[1] His Majesty's Stationery Office, pp. 70. 3s. net.

[2] *Proc. Roy. Soc.*, B, xci, 1919, p. 62.

Fournier, in the course of the inquiry already mentioned, had come to the conclusion that general paralysis followed an attack of syphilis the early manifestations of which were mild. To this rule there were hardly any exceptions. Among the 243 syphilitics in whom the primary manifestations were serious and long-lasting not one eventually developed general paralysis or locomotor ataxy. On the other hand, in 83 patients who all eventually became general paralytics the early manifestations were mild, and secondaries sometimes wholly absent. This observation of Fournier's was well known thirty or forty years ago, and the fact that the initial symptoms in patients who afterwards developed general paralysis were mild was accounted for on the supposition that, owing to this mildness, treatment was inadequate or neglected. This explanation, never satisfactory, has been proved to be incompatible with the clinical facts and histories. Among other things direct evidence was obtained that in certain series of cases of general paralysis syphilis had been contracted from the same source. The lesions of general paralysis and locomotor ataxy differ in their histology from those ordinarily produced by syphilis, and even before the discovery of the *Treponema pallidum* Erb, Nonne, and Mott had been impelled to come to the same conclusion as Marie—that is to say, they accepted the hypothesis that in general paralysis and locomotor ataxy the virus was of a particular kind attacking the nervous centre and therefore properly described as neurotropic, that of ordinary syphilis, which attacks in particular the cutaneous structures, being termed dermotropic.

Inoculation experiments in the rabbit showed that in general paralysis the treponema might be present in the blood and in cerebro-spinal fluid as well as in the cerebral substance. Certain differences were observed in the local lesion produced by inoculation with this neurotropic virus when compared with the dermotropic virus of ordinary syphilis. Marie and Levaditi set them out at length. It may suffice to say that the incubation period was longer on the first transmission from man to rabbit, and that, though it shortened with each passage from rabbit to rabbit, it remained much longer than for the dermotropic strain when similarly transmitted. The local lesion was slighter and more superficial, being a papulo-squamous erosion which quickly healed apparently without scar. Finally, rabbits, after recovering from the results of inoculation with the neurotropic strain, were not again susceptible to that strain, but were susceptible to the dermotropic strain. The converse held with this latter strain, the animal inoculated with it remaining susceptible to the other.

The authors admit that they have not proved conclusively that the treponema with which the patient who eventually becomes a general paralytic or tabetic was infected is always of the neurotropic strain at the time the syphilis is contracted. There is as yet no evidence that in man the local lesion is different. It is possible that in some persons the central nervous system is peculiarly susceptible, and that the dermotropic treponema is in them transformed into the neurotropic. Marie and Levaditi, however, reach the conclusion that the nervous sequelae of syphilis are due to infection from a special source by a strain of treponeme with a more or less marked neurotropic aptitude; this strain can easily adapt itself to the cerebro-spinal centres, and possibly may eventually be transformed into a variety with fixed characters which would justify its being called exclusively neurotropic.

THE EFFECTS OF INBREEDING AND CONSANGUINEOUS MARRIAGES.

THE popular impression, that inbreeding in animals and consanguineous marriages in man are bad for the race, probably depends to some extent on the opinion expressed in 1878 by Charles Darwin that "the consequences of close interbreeding carried on for too long a time are, as is generally believed, loss of size, constitutional vigour and fertility, sometimes accompanied by a tendency to malformation." The matter, indeed, was regarded as so definitely settled that no experimental work was done for many years, and it is only within the last decade and a half that the problem has been again attacked. Among the researches bearing on this question, that carried on for more than nine years by Dr. Helen Dean King,[1] Assistant Professor of Embryology at the Wistar Institute of Anatomy and Biology, Philadelphia, deserves special attention on account of the minute care and attention to detail displayed, especially as regards hygienic and dietetic conditions. Albino rats were employed, and the experiments began in 1909 with two females that were mated twice with a brother from the same litter, and then twice with an unrelated male stock; for twenty-eight generations this programme was continued, all the females used being from inbred litters. In the earlier generations the inbred rats showed all the defects popularly supposed to appear in any closely inbred stock; thus many females were sterile, the litters were small, many of the rats were dwarfed and short-lived, and malformations, especially of the teeth, were common. If the experiments had been stopped at this point the results would have confirmed the conclusion reached by Darwin and others, that inbreeding invariably leads to sterility and physical degeneration. Fortunately, however, many rats in the general stock colony, in which there was no inbreeding, showed the same features, and it was found that the diet was at fault. After correcting the adverse factor in 1911 all the characteristics said to be typical of the dire effects of inbreeding were banished, and have never reappeared. These results confirm the conclusion of Gentry on swine and of various stock breeders on horses and cattle (Chapeaurouge, Anderson) that there is not any general physiological law forbidding inbreeding, and that the results obtained depend largely on the character of the stock that is inbred.

A paper just published, "On the physical effects of consanguineous marriages in the royal families of ancient Egypt," by the late Sir Marc Armand Ruffer,[2] and intended to form part of a volume of *Studies in Palaeopathology*, entirely confirms the experimental results just mentioned. Although the legislation of most modern nations shows evidence of the conviction that the offspring of consanguineous marriages are prone to all manner of evils, this appears to be a comparatively recent idea; for mention of such marriages is not uncommon in early Hebrew records, as is shown by reference to the Bible; and marriage between brother and sister was fashionable from very early times in Egypt, where, throne and property being inherited through the woman, mother or wife, as legal head of the house, it was very doubtful if "a king could reign except as the husband of the heiress of the kingdom" (Petrie). As the king was the ruler, whereas the queen, though the heiress to the throne, had no executive power, the only way to keep the regal power in the family was for the nearest male descendant of a king to marry the heiress, who was very often his sister. As such marriages were common, evil effects would not have escaped the notice of satirists, and yet there is no such reference in Egyptian literature. The records of the royal families of the eighteenth and nineteenth dynasties, and of the Ptolemies (direct and indirect lines), in which the physical and mental characters of the individuals are available, have been analysed with a wealth of interesting historical detail by Sir Marc Ruffer, and do not show that the repeated consanguineous marriages exerted any unfavourable influence on the physical characteristics or mental powers of the royal families. In fact, from the history of the Ptolemies there is no evidence that their predisposition to obesity or to gout was increased by their consanguineous marriages.

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[1] [illegible] *Rev. de Méd.* [illegible]

[1] *Studies in Inbreeding.* Reprinted from the May, July, October 1918, and August 1919, issues of the *Journal of Experimental Zoology*.

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ANIMAL EXPERIMENTS IN 1919.

The customary return has been made by the Home Office showing the number and nature of experiments on living animals during 1919 under licences granted under the Act 39 and 40 Vict., c. 77. The report for England and Scotland is signed by Sir G. D. Thane, the chief inspector. The total number of licensees was 714, but of these 352 performed no experiments. Tables are given showing the names of all registered places, the names of those who held licences, and the number of experiments returned by each. Of the 362 licensees who performed experiments, it is specified whether these experiments were done under the licence alone or under any special certificates. Those performed without anaesthesia are distinguished from those in which anaesthetics were used. Experiments with anaesthetics numbered 4,459. Inoculations, hypodermic injections, and some few other proceedings performed without anaesthetics, included 58,418 experiments. In no case was a certificate dispensing entirely with the use of an anaesthetic allowed for an operative proceeding more severe than subcutaneous venesection; serious operations are always required to be done under an anaesthetic. The total number of experiments was 62,877, being 14,733 less than in the previous year. The report shows how strict are the regulations which must be complied with in performing experiments on living animals; it wholly refutes a great part of the allegations made by the antivivisection organizations. A large number of experiments—for the most part simple inoculations and similar proceedings—were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. During the year a large number of experiments were witnessed by the inspectors, their visits usually being made without previous notice. "We have found the animals suitably lodged and well cared for and the licensees generally attentive to the requirements of the Act and the conditions attached to their licences by the Secretary of State." Three irregularities were reported, two of them technical in nature. In the third case an applicant for a licence began forthwith a series of feeding experiments intended to bring about a condition of disease undoubtedly calculated to give pain within the meaning of the Act. In view of this disregard for the provisions of the Act the applicant was told that the Secretary of State did not feel justified at the time in granting him a licence. The inspecting staff now consists of the chief inspector and two full-time inspectors, who between them cover the 206 places registered for animal experiments in England, Scotland, and Wales. Of these places a considerable number, however, were temporary war institutions whose registration was cancelled before the end of 1919. The report for Ireland is signed by Dr. M. C. McKenna, who states: "I have every reason to believe that the holders of licences have obeyed the spirit as well as the letter of the Act, and that experiments have not been unnecessarily multiplied." The number of licensees was 27, of whom 10 performed no experiments. During the year 449 experiments were performed, of which 340 were simple inoculations under Certificate A. It must be borne in mind that operative procedures and experiments performed under Certificate A, without anaesthesia, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment during the time needed for the development of the results of administering a drug or injection. It is wrong to assume that the animal is in pain during the whole or, indeed, any part of this time. "In cases of prolonged action of an injected substance," writes Sir G. D. Thane, "even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases is not observed at all." In a very large number of inoculations the results are, of course, negative, and the animals suffer no inconvenience whatever; such experiments are therefore entirely painless.

HEART SURGERY.

Sir Charles Ballance's Bradshaw Lecture on the Surgery of the Heart[1] in its published form gives twelve illustrations of specimens in the War Museum. Those specimens are significant of the one new factor introduced by the last six years' experience—namely, the large number of surgeons who have operated upon the heart, some of them a good many times; and the still greater number who are almost as familiar with the inside of the thorax as with the peritoneal cavity. At any "abdomen and chest" centre near the front a young surgeon soon became familiar with wounds of the diaphragm; learnt to open the chest and manipulate the lung freely; and, more important still, was rid of the idea that special anaesthetic apparatus was essential. True, the patients, though severely wounded, were young healthy men, for the most part picked lives; but then even "peace" surgery of the heart has hitherto been almost entirely confined to wounds, and those generally in young adults. The question of access has always exercised the minds of writers upon the subject, and Sir Charles Ballance is content to describe the three usual routes, recognizing that the actual choice is generally determined by circumstances special to each case. Similarly with the question of "drainage"—upon which in the past very decided views have been expressed, both for and against—the old rule of general principles has proved correct. It is wise to do without drainage in suitable cases. Sir Charles Ballance has contributed an observation of importance in this matter of drainage, especially in cases of established pyopericardium. He has shown that pus in the recess of Haller cannot be drained except by an opening in the left lateral aspect of the pericardial sac, and his book should be carefully studied for an elucidation of the anatomical reasons. It is an interesting speculation as to what the immediate future will bring forth in this field. There have not been wanting suggestions from physicians for surgical intervention in such conditions as mitral stenosis; neither is there any lack of successful animal experiments in the same direction. Given at the moment a large number of surgeons who have operated on the heart for injury, may we not look for effective realization of the physician's dreams?

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[2] *Proc. Roy. Soc. Med.*, 1919, xii (Historical Section). 145–190 (issued August, 1920).

[1] The Bradshaw Lecture on the Surgery of the Heart. By Sir Charles A. Ballance, K.C.M.G., C.B., M.V.O., M.S., F.R.C.S. (8vo, pp 154; illustrated. Macmillan. 1920. 10s. 6d. net.)

WELFARE OF THE BLIND.

THE proposals which the Advisory Committee on the Welfare of the Blind made to the Ministry of Health last year were accepted by the Government, and in the report of this year[1] we find the first account of the working of these proposals. It was desired that provision should be made for the better education, training, employment, and maintenance of the blind. For these services grants have been authorized for workshops, home workers, blind homes, hostels, home teachers, and for book production. County associations receive a grant towards their costs according to the number of registered blind in their area. Attached to the giving of these grants were conditions as to the suitability of the workshop or other arrangement; and it is now reported that there has resulted much needed reform in the sanitary conditions of a number of workshops and homes, and an increase of the interest shown by those responsible for these institutions; in the words of the report, "A fresh impulse has been given to all work on behalf of the blind." The system of grants has resulted also in the co-ordination of a number of agencies and workshops for the blind to their advantage. A few established agencies, both in the provinces and London, have held aloof so far, even to the extent of abstaining from making any application for a grant from the Ministry; the Committee hopes they may see their way to reconsider their decision. Comment is made on the satisfactory arrangement for co-operation with the Ministry made by the National Institute for the Blind, an institution which holds a commanding position in the blind world. But 46 per cent. of the blind are, for one reason or another, unemployable, and this class of the blind is the crux of the whole problem. The grants of money to workshops have benefited these by releasing money subscribed by the charitable for the assistance of these helpless ones. Further the report draws attention to the proposals (now law) whereby the old age pension should be available for a blind person at the age of 50 years. At that age a blind person who has not previously been trained in hand work is hopelessly at a disadvantage, and a definite provision for meeting this incapacity is an undoubted necessity. The report contains a number of valuable statistics relating to the present location and employment of blind persons.

THE BISHOPS' DILEMMA.

IT is curious to find the Christian Church on the defence against three modern aberrations of the twentieth century: Spiritualism, Christian Science, and Theosophy. In the "Middle Ages" each of these heresies would have been [illegible] with bell, book, and candle. Nowadays they are considered fit subjects for serious discussion at the Conference of Bishops of the Anglican Communion, drawn from all parts of the world to the number of 250, which met in Lambeth this summer. The adherents of these faiths are treated gently as erring sheep; so that in the Encyclical letter which prefaces the resolutions and reports of the conference it is stated that even if "adherents of these movements are drawn into practices and cults which injure their spiritual life and endanger their loyalty to Christ," yet, "it must not be forgotten that these movements are very largely symptoms and results of reaction against materialistic views of life." This reaction has been strengthened as a result of the war. "The bereaved heart of mankind, with earnest, if not always wise, endeavour, is straining to bridge the space that lies between earth and heaven." The bishops consider that Church people do not take enough account of the recent growth of knowledge about the power of spirit and mind over body. Some schools of thought within the Church are, they say, liable to fall into a narrow dogmatism, forgetful of the needs of such souls as are deeply conscious of the mystery into which all known truths shade off; the three movements make their appeal to professed members of the Church unsatisfied by the normal teaching and discipline offered to them. The special committee appointed by the bishops to consider the three heresies soon found the inquiry elusive. The literature, they state, is voluminous; but it was not easy to find authoritative statements to enable them to define precisely the marks which distinguish the teaching and practice to be accepted by adherents. They find in the literature the statement that Theosophy is a body of truths, but that members are not bound to accept any particular statement of them. Christian Science uses the terms "reality," "error," "material" and "spiritual," but the bishops' committee finds it difficult to be sure that it appreciates the meaning attached to them. The committee, however, gives five characteristics common to all three subjects. First, they are protests against materialism and a materialistic basis of human life. Secondly, they draw much of their strength from a new knowledge of the extent of psychic powers with which human nature is endowed. Thirdly, they claim to supply something which the teaching and practice of the Church fail to give. Fourthly, they contain nothing essentially new, many of the doctrines being a revival, sometimes couched in the same terms, of Gnosticism and Neo-Platonism; hardly one of them finds its centre in the central revelation of the Christian faith—the incarnation of our Lord. It is not necessary here to go into the examination of the three heresies, but from the investigation of spiritualism the bishops state that the researches of the Psychical Research Society and others lead them to understand that certain conclusions have been reached. They summarize the conclusions as follows: (1) There is a conviction of the reality of telepathy. (2) There is a conviction of the reality of a subconsciousness. (3) This does not necessarily imply communication with beings no longer limited by the conditions of bodily existence, though there are phenomena which appear to support the hypothesis. (4) In investigating phenomena that seem to indicate such communication great difficulties arise, owing to the play of the subconscious self in the medium employed and in the inquirer. The bishops wisely give a serious warning against unregulated exercise of an element of human consciousness which acts independently of the reason and the will and against allowing reason and will to abdicate in its favour. The medical man and the scientist, having possibly come to [illegible] the validity of some of the conclusions that have been stated, will support emphatically this warning. As regards that spurious worship of the goddess Hygeia called on a duplicated *lucus a non lucendo* principle Christian Science, we confess to a preference for Christian teaching combined with common sense. And the Oriental mystic who likes a body of truths which nobody, even though a member of the society, need accept, may be left to enjoy Theosophy.

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[1] The Second Annual Report of the Advisory Committee on the Welfare of the Blind [illegible]. Published [illegible]

SCIENTIFIC AND INDUSTRIAL RESEARCH.

THE fifth annual report of the Committee of the Privy Council for Scientific and Industrial Research[1] deals with the period from August 1st, 1919, to July 31st, 1920. Mr. Balfour, the Lord President, records that the work of the department has grown more rapidly than could be foreseen a year ago. Co-ordinating boards have been set up to organize all the scientific work which is of common interest to the fighting forces of the Crown. These boards include technical representatives of each of the fighting services and of civilian departments materially interested in their work, as well as independent men of science. Again, a Building (Materials and Construction) Research Board has been formed at the request of the Ministry of Health and is preparing a comprehensive scheme of work. Steady progress is reported by both the Fuel Research and the Food Investigation Boards; in connexion with the latter the department, in co-operation with the university, has undertaken to erect at Cambridge an institute for biochemical and biophysical research at low temperatures. The report of the Advisory Committee is signed by the administrative chairman, Sir William McCormick, who takes this occasion to review what has been achieved during the past five years—"the formative period of our existence." The Advisory Council and the department which has grown up round it were not created as part of the machinery for war; they contributed to the common need, but they were brought into being to remedy deep-seated shortcomings revealed by the war, and the full effect of their activities could not be looked for until after peace had come. The programme has gradually been defined, so that it now falls under four main heads: (1) The encouragement of the individual research worker, particularly in pure science; (2) the organization of national industries into co-operative research associations; (3) the direction and co-ordination of research for national purposes; and (4) the aiding of suitable researches undertaken by scientific and professional societies and organizations. What has already been done in each of these spheres is briefly reviewed in the report. In making grants to individual research workers the department is guided not so much by the themes they propose to pursue as by the evidence obtainable as to their scientific capacity, the aim being to assist promising workers as well as promising lines of inquiry. This seems to us the right line to take. It is worthy of note that the grants made to individual workers have grown from approximately £3,200 in 1916–17 to £26,700 in 1919–20, while for the ensuing academic year provision has been made for grants to individual research workers and students in training to the amount of £45,000. Much of the report is, of course, taken up with matters lying outside the sphere of medicine. The reports of the Mine Rescue Apparatus Research Committee were referred to in our issue of August 21st, p. 283; the work of this committee will probably come to an end at the close of the present year. The Oxygen Committee has had a medical uses subcommittee with an oxygen workshop laboratory and liquid air plant at Edinburgh, but henceforward the purely medical side of oxygen research will be dealt with by the clinical subcommittee of the Medical Research Council. Another committee, that dealing with gas cylinders, has undertaken to design and test an oxygen cylinder that could be satisfactorily handled in sick wards or hospitals. The Anti-glare Glass Research Committee is studying the suitability of different types of coloured and neutral tinted glasses for use by troops in tropical countries, by airmen, and by the navy. During the past year the financial and scientific control of the Industrial Fatigue Research Board has passed to the Medical Research Council.

THE TEACHING OF PHYSIOLOGY.

IN Dr. Thomas Lewis's address[1] delivered at Cardiff to the Physiological Section of the British Association the relation of physiology to medicine was considered from the standpoint of the physician. In the discussion which followed, Professor P. T. Herring, Chandos Professor of Physiology in the University of St. Andrews, discussed the problem from the point of view of the teacher of physiology. He expressed sympathy with Dr. Lewis's plea that the teaching of physiology to medical students should be directed to helping them, as far as possible, when they were doing clinical work in the later years of the curriculum. Physiology, Dr. Herring remarked, is now so wide a subject that the time has come when physiologists must make some selection as to what portions of the subject should be taught to the medical student. Students taking science courses have two years for study, and to them it is possible to attempt a more complete exposition of the subject. For the medical student, however, the study of physiology is confined to the second year. In that period he has to be taught the very rudiments of experimental work—to be shown how to use his hands with simple instruments, how to make records of vital phenomena; above all, he has to be taught to cultivate the faculty of critical observation. In selecting a course of physiology for medical students there is a readily comprehensible difficulty in giving proper weight to the parts which are deemed to be of the greatest medical importance; every part of the subject has some bearing on medical problems, and probably no two teachers would agree as to what should be included and what omitted. The existence of great scope for variety in the treatment of the subject is far from being an evil; the chief disadvantage to the student lies in the examination system, which demands the taking of the degree or diploma of one or other of the examining bodies, whose requirements are not uniform. There is much to be said for the instruction of the medical student, during his final years of study, in physiological subjects of particular medical interest, especially when it happens that recent work has added to the knowledge of those subjects. At this stage of his training the student is in a better position than in his second year for the appreciation of the significance of physiological science. In this stage of his career, too, access to human subjects in whom physiology may be studied is easier than in earlier years (although the foundation of institutes of clinical research, such as that of Sir James Mackenzie at St. Andrews, may help in the earlier provision of material for physiological study). Apart from administrative difficulties, the chief impediment to such later teaching is that the time-table of the medical student is already overloaded, and that another year of study would probably be required. To many teachers, Dr. Herring remarked, instruction in practical physiology in its experimental aspects was unsatisfactory; it must be remembered, however, with regard to the clinical instruction of the medical student (during his second year of study) in physiological science, that at this period the student was in most cases unable properly to appreciate the significance of even a smattering of instruction in ordinary clinical methods. At this stage the very rudiments of experimental work had to be imparted; how far the student at this time could appreciate such instruction as was suggested by Dr. Lewis seemed doubtful.

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[1] Published by H.M. Stationery Office. Copies may be obtained (price 1s.) through a bookseller, or at any of the Stationery Office's addresses in London, Manchester, Cardiff, Edinburgh, and Dublin.

[1] BRITISH MEDICAL JOURNAL, September 25th, 1920, p. 459.

THE WHITE MAN IN NORTH QUEENSLAND

The report for 1919 of the Australian Institute of Tropical Medicine, Townsville, Queensland, contains accounts of researches conducted by Dr. A. Breinl, Dr. W. J. Young, and Mr. G. Hill. The conclusion has been reached that qualitative, but not quantitative, physiological changes are found, in correspondence with the tropical climate, among the white inhabitants of North Queensland. During the hot season the quantity of urine is decreased and that of the sweat increased; diminished secretion of sodium chloride in the urine is compensated by its increased elimination in the sweat. After exercise the body temperature is found to rise more quickly, and subsequently to decrease more slowly than in a temperate climate. In accordance with a decrease in the amount of protein metabolized there is a diminution of total urinary nitrogen. The alveolar air in resting inhabitants of tropical Queensland shows a lower carbon dioxide content than the European average. In view of the statement made by De Hangen and Schut of Java, that the blood-sugar content of white men living in tropical is greater than that of those living in temperate climates, a research into the composition of the blood in North Queensland has been commenced. In nine cases examined by the colorimetric method of Lewis and Benedict, the blood-sugar ranged from 0.099 to 0.126 gram per hundred cubic centimetres, and the average was considerably higher than that reported by Gettler and Baker in America. In the blood of eleven persons examined by Maclean's method, the average figure was 0.102 gram. These examinations were made at noon; it was found, however, that the figures varied considerably according to the time which had elapsed since the last meal.

THE EXISTENCE OF THE FORAMEN OF MAGENDIE.

The perforation in the roof of the fourth ventricle, described a century ago by Magendie and the lateral orifices in the same structure, known variously as the foramina of Retzius, Key, or Luschka, though described in practically all textbooks of anatomy have not always been recognized by anatomists as existing in the living subject. The existence of the median opening, Magendie's foramen, was denied by Kölliker, Cruveilhier, and others. Cannieu has been the only observer to doubt the presence of the foramina of Retzius. The critics maintained that these holes were artificially produced during dissection. Injection experiments, substantiating their existence, cannot be altogether accepted, for the roof of the fourth ventricle is so extremely fragile that if coloured fluids injected are found to pass from the spinal theca to the ventricles, one cannot be certain that a rupture of the velum was not produced, especially in the cadaver. Coupin[1] has studied the question in small mammals such as mice, rats, guinea-pigs, young cats, and young rabbits. He states that in the case of rodents, if the region of the bulb is examined immediately after death, without making any traction on the bulb or the cerebellum, the covering of the fourth ventricle appears to be perfectly continuous, but that if the examination is made several hours after death and traction is put on the cerebellum, a hole comparable to the foramen of Magendie is often produced. As the result of examining serial sections of the brains of the animals mentioned, he says that the foramina of Magendie and of Retzius can be shown not to exist. He fixed his specimens and subsequently decalcified the bony encasement in order to obviate post-mortem changes and to protect the finer structures from injury. Under such conditions the sections showed that there was no interruption of the covering either in the middle line or laterally. So far as these observations go, and they ought to be repeated, they indicate that in the smaller mammals, at any rate, there is no direct communication between the ventricular cavity and the subarachnoid spaces.

MEDICAL SOCIETY OF LONDON.

The programme for the first half of the 148th session, 1920–21, of the Medical Society of London has just been published. The annual general meeting will be held on October 11th, at 8 p.m., and Sir William Hale-White will deliver his presidential address on "Then and Now," at 8.30 p.m. On October 25th a discussion on the determination of degree of renal function will be introduced by Professor J. B. Leathes; and on December 6th Sir Berkeley Moynihan will introduce a discussion on the surgical treatment of malignant disease of the colon. On November 8th there will be a clinical meeting, and November 22nd will be devoted to cardiological matters. The Lettsomian Lectures will be given in February and March, 1921 by Mr. George E. Gask, and the annual oration will be delivered in May by Lord Dawson of Penn.

Sir Robert Philip of Edinburgh, Lieut.-Colonel Nathan Raw, M.P., and Dr. David Lawson of Banchory, have been appointed as delegates of the British Medical Association to attend the Conference of the National Association for the Prevention of Tuberculosis, to be held at Liverpool on October 7th and following days.

It is announced by the Medical Women's Federation that Miss Sophia Jevons, M.B., has decided to stand as an independent candidate for the University of London at the next parliamentary election. Dr. Jevons is a co-opted member of the London County Council Education Committee, and has had considerable experience in social work.

The Ministry of Health has set up a Departmental Committee on the Causes and Prevention of Blindness, with the following as its members: The Right Hon. G. H. Roberts, M.P., Mr. J. C. Bridge, F.R.C.S., Dr. A. Eichholz, C.B.E., Mr. N. Bishop Harman, F.R.C.S., Mr. J. B. Lawford, F.R.C.S., Mr. E. D. Macgregor, Mr. G. F. Mowatt, Mr. J. S. Nicholson, Mr. J. H. Parsons, C.B.E., F.R.C.S., Mrs. Wilton Phipps, Mr. W. M. Stone, Dr. James Taylor, and Mr. Stephen Walsh, M.P. The terms of reference of the Committee are to investigate and report on the causes of blindness, including defective vision sufficient to impair economic efficiency, and to suggest measures which might be taken for the prevention of blindness. The Ministry has appointed Mr. G. H. Roberts to be chairman, and Dr. R. A. Farrar and Mr. P. N. R. Butcher joint secretaries. We understand that the first meeting will be held next week.

As a memorial to the late Major-General William C. Gorgas it is proposed to establish in Panama an international institute for research in tropical diseases.

The Draft Regulations of March 11th, 1920, having been published for the required period, the Board of Education has confirmed, without important amendment, the consolidated Regulations relating to special services of elementary education (other than nursery schools) for promoting the healthy physical and mental development of children. Attention is directed to the opinion expressed in the explanatory Memorandum, that remedial schemes conducted on a large scale for open-air schools, including camp schools, should be recognized under the Special Schools Regulations.

The Home Service Ambulance Committee of the British Red Cross Society and the Order of St. John in England has issued a handbook showing the addresses of ambulance stations and of the officers in charge in England and Wales and Ireland. The service, it will be remembered, was established on the release of the joint committee's ambulances from war work, and the aim of the committee is to distribute ambulances on such a scale that whenever an illness or accident occurs there shall be a motor ambulance within a convenient distance. The service is arranged on a county basis, and is under the supervision of the director in each county. In London applications for ambulances should be made to the Secretary of the Home Service Ambulance Committee, 19, Berkeley Street, W.1.

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[1] C. R. Soc. Biologie, vol. lxxxiii, No. 27, 1920.

THE MUNICIPALIZATION OF HOSPITALS.

THE BRADFORD EXPERIMENT.

BY

CHARLES BUTTAR, M.D.

I.

IT may not be widely known that Bradford now possesses a municipal hospital. While academic discussion has been taking place on the Dawson report and the future of health services, the City Fathers of Bradford have been engaged in instituting a health centre of their own. A visit to the city has led to the conviction that a study by the medical profession of the methods by which this institution has been brought into existence, and of the proposals for its management in the future, is of the utmost importance. Already, it is believed, other industrial towns are watching developments with interest, and if success is achieved at Bradford, there can be no doubt that there will be a large extension of what is in some ways a revolution in hospital organization and management in this country.

Bradford is a city of some 300,000 inhabitants, engaged chiefly in the wool trade. It is only twelve miles from Leeds, and for a long time there were no medical men in the city who confined themselves to purely consulting and specialist work. The institutional treatment was provided by the Royal Infirmary, the Children's Hospital, the Eye and Ear Hospital, and a Poor Law infirmary. More than ten years ago it was recognized that the buildings of the Royal Infirmary were out of date, and provided insufficient accommodation. Accordingly another site for the infirmary was acquired, and plans were got out for a new building. But the £200,000 then thought necessary was never collected; the war, though adding much to the wealth of Bradford, interfered with the proposals for building, and the site remains as it was ten years ago.

In the meantime Bradford, which has always prided itself on its municipal efforts, has become more socialistic; it now has a city council in which there is a majority of Labour representatives. Every new State proposal for health services has been anticipated or adopted by the council, until at the present time there are said to be twenty-seven full-time medical officers engaged in municipal health work. After the war the City Council was seized with a desire to crown its health activities by possessing a hospital of its own, and on April 1st of this year it entered into an arrangement with the Poor Law guardians by which the old Poor Law infirmary, which had been used as a war hospital, should be leased to the council for five years. Under this agreement the council takes over the care of all Poor Law patients, except the aged and imbecile, who had been housed elsewhere during the war; the guardians retain the right to visit the hospital, and the cost of maintenance is divided between the council and the guardians according to the number of days beds are occupied by the patients of the respective bodies. The superintendent of the Poor Law infirmary becomes a whole-time officer of the municipal hospital under the M.O.H. This arrangement appears to have been provisionally approved by the Minister of Health, but the details of the scheme are to be submitted for his approval this month. It appears probable also that Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill—a bill which ranges from houses to clinical thermometers—is designed to legitimize such projects as the Bradford Municipal Hospital.

The City Council proposes that its new hospital shall be completely up to date, with a first-class staff and first-class equipment, and shall provide the best possible treatment. But it does not appear that in designing the scheme the council has taken into consideration the existence of the Royal Infirmary and of the other voluntary hospitals, nor has any communication been addressed to the medical profession of Bradford. It is curious that a council of representatives largely drawn from the Labour party, which protests so strongly against "secret diplomacy," should elaborate its schemes with so little contact with the outside world. From what has been said about the Royal Infirmary it is plain that the new municipal hospital will be a serious rival to the old voluntary hospitals; and one of the aldermen boldly asserted that voluntaryism is absolutely dead in Bradford. Recently the City Council held a meeting to consider proposals made by one of its committees with regard to a war memorial for Bradford. One proposition was that the war memorial should take the form of a new general hospital. Though the matter of the memorial was ultimately referred back to the committee, the Labour members succeeded by a small majority in defeating the proposal for such a hospital. In the course of the debate the following expression was used: "If they were to have a new hospital let it be provided out of the rates, so that every man could regard it as his right and not as a charity." While active hostility to the Royal Infirmary was kept in the background, it was plain that the Labour members did not intend to tolerate any rival to the scheme they have in hand.

It seems clear that for a long time past a contest has been going on in Bradford between the voluntary system and the system of municipal control and support. On the voluntary side attempts have been made to unite the three voluntary hospitals, and to collect subscriptions for the building of a large new hospital on the site acquired by the Royal Infirmary and to make this hospital the war memorial for Bradford. These attempts have failed, and the apparent approach of a period of bad trade in Bradford has made the failure more complete. In the meantime the Labour members on the City Council seem desirous of giving the *coup de grâce* to the voluntary system, and by their refusal to adopt the proposal of a new general hospital as a suitable war memorial will leave the way open to the full development of their municipal hospital. Finally, the Royal Infirmary is handicapped by the fact that there is no university at Bradford such as exists at Leeds; and the lack of the prestige attaching to the medical school of a university increases the difficulty of those who desire to retain voluntary hospitals in the city of Bradford.

In the next article it is proposed to deal with the details of the municipal hospital scheme, and to show the effect that they will have on the consultants, the general practitioners, and the community.

(*To be concluded.*)

Ireland.

IRISH PUBLIC HEALTH COUNCIL.

Withdrawal of State Grants for Irish Health Services.

THE Irish daily press contains reports of a meeting of the Irish Public Health Council held on September 21st, at the offices of the Minister of Health for Ireland, when Dr. E. Coey Bigger was in the chair, and the members present were Sir John W. Moore, Sir Joseph A. Glynn, Dr. Maguire, Dr. Alice Barry, Mr. E. Bourke, C.B., Rev. P. Kerlin, C.C., Mrs. McMordie, Mr. E. F. Stephenson and Mr. J. E. Johnston, M.B.E. The Council went carefully into the question of the stoppage of grants for the health services in Ireland, and, it appears, was unanimously of opinion that all grants for such services should be made available without any conditions being imposed of a political character. In the afternoon the Council waited on the Chief Secretary, who is also the Minister of Health for Ireland, and having discussed several urgent health problems relating to Ireland, placed before him the serious consequences to the health of the community that would be entailed if the Government grants for health services in this country were withheld. The Chief Secretary was also reminded that a considerable portion of the salaries of Irish Poor Law medical officers was paid out of these grants, and that it would be penalizing these already underpaid officers if the grants from public funds were stopped as the result of making their payment contingent on boards of guardians and district councils giving certain undertakings of a political nature. The Council also laid particular stress on the necessity for continuing the grants for child welfare, tuberculosis, and other special diseases. The Chief Secretary, having discussed the question fully in all its bearings, promised that the Council's recommendations would be carefully considered by the Government.

Grants for Voluntary Hospitals.

The Council had under consideration the question of voluntary hospitals in the larger cities in Ireland. It being understood that the Committee of the National Relief Fund contemplates allocating a sum of £700,000 for voluntary hospitals in the United Kingdom, the Council decided to urge the Irish Government to press for a substantial share for Ireland, and to recommend that the question of the allocation of such share amongst the various institutions in the country should be most carefully considered, having regard to the circumstances of each hospital. The Chairman reported that he had secured from the Medical Research Council 412 mg. of radium bromide (value £8.000 to £10,000) for the purpose of medical research and the treatment of disease. A committee was appointed to regulate the conditions under which the radium should best be made available.

Scotland.

SCOTTISH TEMPERANCE ACT.

THE Scottish Temperance Act, passed in 1913. came into force last June, and by posters, handbills, meetings, and letters and articles in the daily press a spirited controversy is going on. Under the Act one tenth of the number of local government electors in the areas, numbering about a thousand, into which Scotland is divided may demand a poll in the manner prescribed by the Act. These requisitions for a poll must be lodged before the end of September. The poll must take place in November or December; in the majority of areas the date will probably be November 2nd, the day on which the municipal elections take place. The elector may vote for (1) a no-change resolution, leaving things as they are; (2) for a limiting resolution, which would have the effect of reducing the number of certificates for the sale of excisable liquors by one-quarter; or (3) a no-licence resolution, which would have the effect of allowing certificates for the sale of excisable liquors to be granted only to inns, hotels, or restaurants, at the discretion of the licensing authority. A no-licence resolution will be deemed carried if 55 per cent. of the votes recorded are in favour of it and not less than 35 per cent. of the electors on the register for the area have voted in favour of it. If a majority of the votes recorded in favour of a limiting resolution and not less than 35 per cent. of the electors vote in favour of it, the resolution will be carried; but the Act contains a further unusual proviso: this is, that if a no-licence resolution be not carried, the votes recorded in favour of it will be added to those recorded in favour of the limiting resolution. Should a no-licence resolution be carried, a licence may, as has been said, be granted to a restaurant or hotel, and the certificate will require that there shall be on the premises no drinking bars, and that liquor shall be sold only to persons lodging or residing in the house or taking a meal in the restaurant.

Correspondence.

THE WAR PHYSICAL CENSUS.

SIR,—Will you permit me to refer to Dr. H. B. Brackenbury's letter in the JOURNAL of September 18th, and to thank him for his appreciative remarks concerning my lecture at Aylesbury?

The time at our disposal did allow of some discussion, and criticism was directed to some of the points to which Dr. Brackenbury draws attention. It was obvious that this would be the case, inasmuch as the difficulties to which Dr. Brackenbury alludes were mentioned in my address and are carefully considered in the report of the Ministry of National Service. It is by no means pleasing to study the results of the report, and some of our colleagues at Aylesbury were inclined to account for the results obtained in their own area by bringing forward the explanation suggested by Dr. Brackenbury. They drew attention to the fact that many men who were efficient and physically fit had gone or had been called up for military service during the years of the war preceding the date to which the report of the Ministry of National Service refers.

In my address I laid stress on the necessity of not drawing alarmist or even too depressing conclusions from the results shown during the years 1917-18. I drew attention to the way in which exaggerated opinions as to the "progressive physical deterioration" of the nation, freely expressed after the South African war, were reduced to their proper value by the common sense of the late Sir William Taylor and others who gave evidence before the Interdepartmental Committee of 1904. I also mentioned the very interesting fact that the necessity for seeing and for examining large numbers of diseased and physically unfit men tends to disorder judgement, and to suggest a low opinion of the fitness of the remainder of a population from which these unfit individuals have been segregated. This curious psychological influence, due partly to aversion and partly to sympathy, affects not only laymen but also medical men. But the results of the two and a half million examinations made by the medical men employed on the work, gathered and sifted by the Ministry of National Service, must be accepted as being as near as possible to the truth at the time. They are the most accurate figures we have and likely to have for long. The possibilities of error were fully considered by those who collected and collated the evidence. Under-estimation on one side was balanced as carefully as possible against over-estimation on the other. In addition, a certain amount of statistical evidence as to the physical condition of those who passed into the army in the earlier period of the war is available, and corroborates the conclusions given in the report.

There are one or two points to which Dr. Brackenbury's attention has, perhaps, not been sufficiently directed. It must be recollected that even up to the end of the war extensive protection was still being exerted in the case of men engaged in certain essential reserved occupations. Large numbers of these men were never disturbed, even to the extent of having to undergo medical examination, up to the end. But the examination of these men as they were called up for service from time to time, especially from such groups as agriculturists and miners, should have given the results of normal or better than normal sections of the population. These results should be expected to raise an unduly depressed average. Again, the young men were being examined continuously as they reached the age of military service. The results obtained from these examinations were as a whole good, and should certainly be expected to raise the average. It was after carefully balancing the results that the conclusions expressed in the report were reached. It appears to me, therefore, that the opinion of those concerned in drawing out the report is worthy of full weight: "It appears therefore legitimate to infer that any broad deductions we may draw from the grading facts and figures will lead us to conclusions which, if they err at all, will err on the side of overrating rather than underrating the physical condition of our manhood." (Cf. the Report, p. 5.) But even if it were found after discussion that the points raised by Dr. Brackenbury were of sufficient moment to modify in a favourable sense the results shown by the figures actually obtained, I believe that Dr. Brackenbury would be the last to uphold that the result could be declared to be satisfactory. If we take the index of fitness referred to as "Keith's Index" in the report—a figure which was found to be sufficiently correct to act as a useful guide—it will be noted that the fitness of a normal group of adults in this country may be fairly expected to reach the ratio expressed by the number 89.3 per cent. The result of the two and a half million examinations gave an index of 70.9 per cent., showing a deficit of 18.4 per cent. I fear that all the mitigating considerations urged by Dr. Brackenbury would still fail to bridge satisfactorily the chasm between the degree of unfitness actually found and the degree of fitness which we have reason to expect. It is to this great and pitiable deficit in fitness that I desired to draw attention in my address and to urge remedial measures, some of which Dr. Brackenbury draws attention to in his letter.

He rightly refers to a great gap in our information—namely, that we have no corresponding information about our women comparable to that given by the physical census of our men. It will be readily understood that the difficulties lying in the way of making a similar review in the case of women are greater than in the case of men. It may, however, be of interest to know that arrangements were made for the physical examination of women seeking admission to certain of the Women's Auxiliary Corps during the war comparable to those made for men, so that the results might be collected and collated in the same manner. A certain amount of information was obtained as the result of the medical examination of over 60,000 women. I am sure, from what we do know, that it would not be wise to accept as near the truth that anything like a desirable or normal physical standard is attained by women throughout the country.

It may very well be the case, as Dr. Brackenbury suggests, that the future of the population, so far as breeding is concerned, depends more upon the fitness of the women than on the fitness of the men; but for our immediate purpose it seems that the most important factor in obtaining a higher degree of fitness in the future is the proper care both of the physical and the mental training of the children when they do arrive.

With reference to the whole series of examinations carried out by the Ministry of National Service, I would draw attention specially to the fact that the problem placed before the medical men concerned was not whether a man was fit for any form of service with the armed forces of the Crown, but it was to place the man in one or other of certain grades according to the degree of his physical fitness. The medical men were not asked to consider in the slightest degree any further or contingent question.

I would take the opportunity once more to urge the desirability of obtaining the fullest possible information regarding the fitness of our people from time to time. It seems to me that by this means we would obtain by far the most helpful and satisfactory guide to estimate the results of training and of the various plans for the improvement of conditions of life and of industry throughout the country.

I must not be led by Dr. Brackenbury to discuss with him questions involving the psychology of war and peace, or the advisability of accepting service from all classes of the community in times of emergency. I will not venture on a discussion as to whether Shakespeare was a Grade 1 man and what might have happened if he had been a soldier, nor whether it was well to employ the services of a man like Rupert Brooke in a military capacity. I would say, however, that men like these are the very men who would object to being left behind when their country requires their services in a good cause. Men of this type served the country well as soldiers, not only by their endurance and deeds of valour, but also by their mental gifts and powers of artistry, and by their example of willing service.—I am, etc.,

London, Sept. 25th. JAMES GALLOWAY.

THE EYE AND MOUTH IN SLEEP.

SIR,—While reading with great pleasure and interest the exceedingly instructive book by Dr. Frederic Wood Jones on *The Principles of Anatomy as seen in the Hand* (reviewed in your issue of August 21st), I came across a statement which appears to me to need qualification.

On pages 113 and 114 in Chapter XI, entitled "Position of Rest," the following statements are made:

> "The eye is kept open, and the mouth is kept closed by muscular effort. When rest is needed and muscular relaxation takes place in sleep, the upper eyelid droops and closes the eye, whereas the lower jaw drops and opens the mouth."

Without pretending to a knowledge of anatomy in any way comparable to that of Dr. Wood Jones, I am at liberty to contend that the physiological deductions quoted above do not accurately express nor explain the usual position of rest.

To begin with, the closing of the eyes during sleep is by no means wholly due to inhibition of the action of the muscles which raise the lids, but is completed by contraction of the orbicularis. In a condition of complete inhibition of all palpebral muscles the eyelid droops truly, but the eye is by no means closed. For example, it is well known that in death the eyes do not naturally close into the position of sleep. Also in complete facial paralysis and in advanced stages of exhaustion by illness closure is incomplete.

In dealing with the mouth, also, Dr. Jones has not expressed with any exactness the observed physiological fact. It is true that during sleep the lower jaw drops a little as a rule from the upper, so that the teeth are no longer in contact, but this movement is normally of small range and insufficient to cause parting of the lips, without which the mouth cannot be said to be open. In the absence of abnormal conditions of the nose and nasopharynx necessitating oral respiration, the most usual cause of an open mouth during sleep is over-extension of the neck or of the head upon the neck—that is, a faulty decubitus. Usually on going to sleep the head tends to drop a little forward.

I am writing this because, seeing the great and generally acknowledged importance to health and growth of normal nasal respiration, I feel that an erroneous impression given under the hand of so eminent an authority as Dr. Frederic Wood Jones has great potentialities for harm if allowed to pass unchallenged.—I am, etc.,

WM. SALISBURY-SHARPE, M.D., F.R.C.S.I.

London, W., Sept. 21st.

SCIENTIFIC RELATIONS WITH GERMANY.

SIR,—I venture with some diffidence to suggest a discussion in your columns of a question that may give rise to differences of opinion, but which has more than once been referred to in medical journals in this country—namely, that of the renewal of scientific relations with our recent enemies. The columns of the BRITISH MEDICAL JOURNAL, officially representative as it is of the profession in Great Britain and the Colonies, are surely the proper sphere in which to air these conflicting views.

It is nearly two years now since firing ceased on Armistice Day, and yet we are in danger of remaining indefinitely in the stage of "reprisals." Enemy subjects were excluded from the recent International Congress of Surgery, and, so far as I know, no steps are being taken to alter that decision or to admit them to any "international" meeting in the near future.

The *Presse Médicale* of August 25th, 1920, p. 1114, calls attention to an article in the *Deutsche medizinische Wochenschrift* of July 15th, 1920, p. 809, from which it quotes the following paragraph:

> We learn from some university circles that physicians of the countries with which we have been at war are expressing the desire to be allowed to attend German clinics. A general attitude should be adopted towards them. Certainly the conclusion of peace makes it possible to renew scientific relations between countries formerly at war; but this only applies to those of our recent adversaries who are really disposed to reconciliation. Frenchmen, Englishmen, Belgians, and Italians who have founded "international" societies excluding both German and Austro-German physicians, Frenchmen and Belgians who have erased the names of honorary German members from their societies cannot, obviously, enter into personal relations with us. The head of any German scientific institute who would consent to receive a citizen of these countries, so long as these resolutions remain in force, would gravely injure his personal dignity and *amour propre* as well as those of his nation. Physicians of enemy countries should at least have sufficient regard for the representatives of our science not to attempt any steps in the way of such a personal reconciliation.

It may be that it were well to leave to Time's gentle hand to heal the wounds that still gape and fester; but, Sir, it seems to me that it is not unworthy of our profession to do what we can even now, "with the hot blasts of hate still on our cheeks," to hasten the day when there shall be real peace and when the untimely deaths of war shall be no more.—I am, etc.,

A. A. WARDEN, M.D.Paris.

11, Avenue du Bois de Boulogne, Paris.

MORTALITY OF VENEREAL DISEASES.

SIR,—The question of the mortality resulting from venereal disease is a matter of special interest to medical women, for without doubt a very large proportion of such deaths occur either *in utero* or during infancy.

Very grave results might follow a minimizing of the mortality results of syphilis and gonorrhoea, and therefore the correspondence that has occurred in your columns between Mr. Charles Russ on the one side, in a position of isolation, and Sir James Crichton-Browne, Mr. C. F. Marshall, Dr. H. H. Sturge, Colonel E. T. Burke, Dr. Briscoe, and Mr. Wansey Bayly on the other, requires the careful and judicial consideration of medical women.

In summing up our opinions on this correspondence, we must consider both the evidence, the witnesses called, and the authority and experience of the "plaintiff" and "defendants." There can be little doubt that the list headed by Sir James Crichton-Browne contains the names of persons whose experience gives their opinions authority; and the witnesses cited by them, Sir William Osler, Sir Arthur Newsholme, Gaucher, Runeberg and Audry, are certainly responsible and reliable witnesses. Mr. Russ apparently relies on the Registrar-General as his sole witness, and probably this witness would be the first to acknowledge that his evidence was certainly inconclusive.

Three letters have been contributed to this correspondence by Mr. Russ, but his arguments are unconvincing, and he frequently mistakes the repetition of an unsupported statement for a new contribution to the evidence. Gibes at "unscientific melodrama" and "dogmatic assertion" are not argument, and are apt to recoil on the head of the user of such weapons.

In the ante natal clinics which are now an important part of every welfare centre we have increasing evidence of the appalling results of venereal disease upon the expectant mother and her unborn child. Anything which tends to lessen the gravity with which these tragic results are regarded is disastrous to the individual and to the nation alike. It is difficult to understand why Mr. Russ should be so anxious to disprove the malignancy of this ancient disease.

Our country needs all the power and skill of her sons and daughters if this monster is to be destroyed. The disease continues to spread wholesale disaster while we wrangle over issues of no real importance as compared with the pressing need for a united front against this enemy, which is not only undefeated after centuries of warfare, but is gaining ground.—I am, etc.,

London, W.1, Sept. 27th. JANE LORIMER HAWTHORNE.

VAGUS INHIBITION.

SIR,—I have just read Sir Clifford Allbutt's letter in your issue of August 14th last. Perhaps the following extract, supporting Sir Clifford's view that death may be due to vagus inhibition, may be of interest. Hilton Fagge, in a paper entitled, "On the Different Modes of Dying" *Guy's Hospital Reports*, 1879, p. 352), writes:

> In cases of aneurysm of the aorta it is not uncommon for sudden death to occur without the autopsy revealing a rupture of the sac or any other definite change. In such cases the fibres of the left vagus nerve are commonly spread out over, and inseparably blended with, the walls of the aneurysm, and it seems very likely that this ought to be regarded as the cause of the arrest of the cardiac pulsations.

—I am, etc.,

London, Sept. 27th. W. HALE WHITE.

TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

SIR,—Professor William Wright asks me what evidence I have of the existence of a sphincter at the lower end of the ureter, and from his research with the dead subject speculates upon the nature of the movement whereby urine is prevented from regurgitating from the bladder.

My evidence is based upon observation of the living subject. The cystoscope reveals the ureteric orifice contracted so long as there is no urine to expel; when urine is ready to be expelled it dilates, but no other than a [illegible] movement in the immediate vicinity of the [illegible] can be seen.

The point raised by so eminent an anatomist is of interest, for it affords an opportunity to coordinate the study of the dissecting room with clinical practice. Professor Wright and Mr. Renton demonstrate that no sphincter exists at the vesical end of the ureter, yet cystoscopy witnesses that a different arrangement of muscle fibres, not anatomically a sphincter, is similar in its action. —I am, etc.,

London, W., Sept. [illegible] CLIFFORD MORSON.

THE COLONIAL MEDICAL SERVICE.

SIR,—I venture to say that the whole of the members of the R.A.M.C. will be delighted to know of the probable reconstruction of the Colonial Medical Service. We know the hard work the Colonial Medical Service does, and will rejoice at their incorporation into a "service." May I suggest that where an officer of the R.A.M.C. has served in a colony and knows its climate and conditions, an open door should be left permitting transfer to the Colonial Medical Service, say, up to ten years' service? Our officers sometimes like certain colonies, and transfer should be possible, carrying pension rights.

The question of a "uniform" for evening dress purposes might be considered for the Colonial Medical Service. *Esprit de corps* gains even by such petty things.

I draw attention to the fact that medical officers sent to the Federated Malay States are officially sent out as "second class passengers." I regard this as a lamentable error on the part of the Colonial Office. It should be stopped forthwith. I wrote to the Secretary of State for the Colonies before the great war asking him to cancel such a stupid regulation, but I failed to move the Colonial Office. A young medical man going to the colonies needs to meet on board ship the best and most intelligent people, to learn all he can about the colony during the voyage. The most junior subaltern in the most unimportant military appointment would never be thus affronted by a stupid and injurious Colonial Office ruling. I wish the British Medical Association would address the Colonial Secretary on this matter.—I am, etc.,

GEORGE J. H. EVATT, M.D.,

London, S.W., Sept. 27th. Major-General, R.A.M.C. (ret.).

CADMIUM POISONING AND PLUMBISM.

SIR,—I am much obliged to you for drawing attention to my article on cadmium poisoning in spelter workers, in the EPITOME of September 18th, 1920, paragraph 268. The most important point in connexion with the subject is as to its truth or otherwise, for if it be true, then all the treatment in the past by means of iodides has been wrong.

Sir Thomas Oliver, in his book on lead poisoning, speaks approvingly of a method of treatment that I introduced a few years ago for the gastritis of spelter workers, which consists in the four-hourly administration of ½-grain doses of calcium permanganate.

It is a very moot point whether iodides are of much value even in the treatment of plumbism, but if given to spelter workers suffering from gastritis they help to transform what little lead may be present into a soluble and easily diffused form, whereby the lead penetrates more thoroughly into the system and sets up an additional toxic condition.

The only satisfactory treatment for plumbism is prophylactic, but, unfortunately, this requires co-operation and forethought on the part of the workman for his own personal apart from his financial interests. Such qualities are barely compatible with the trend of the times, when so much has been done for the workman that he is almost justified in feeling that everything shall be done for him. All workmen do not come under this category, for there are many who have worked well and looked after themselves, with happy results; but not troubling anybody, nobody troubles about them.—I am, etc.,

Swansea, Sept. [illegible] G. ARBOUR STEPHENS.

PUERPERAL SEPSIS.

SIR,—I heartily agree with my fellow practitioners that all that is known about the prevention of puerperal sepsis should be as widely diffused as possible. We all have our own opinions, but the great majority agree that we cannot afford to neglect the [illegible] methods for prevention that have stood the test of time. In my limited experience I am convinced of one thing—that is, that it is absolutely necessary to suture even the smallest perineal laceration. When I commenced practice twenty years ago I found that only a few of the older practitioners sutured perineal lacerations unless very extensive. I was afraid of being considered clumsy in my manipulation and followed their example. I found that my patients were frequently having small rises of temperature, even though I was scrupulously careful about my hands and instruments. I then tried suturing even the smallest lacerations, and found that a rise of temperature was a comparatively rare event. I came to the conclusion that a good many patients must be infected after labour from open wounds of the perineum, either from the anal surface, which is always contaminated, or from "clean" rags, which are the usual diapers in the country. My midwife also has learnt the advantage of having all lacerations sutured, and always sends for me after the birth for this purpose. This may seem a small thing to write about, but it may help to explain why sepsis only rarely follows extensive instrumental manipulation, as in these cases the lacerations are evident and are immediately attended to. We often arrive at a case when all is over, and may not take the trouble to look for lacerations, but if we do and attend to them we shall be well repaid.—I am, etc.,

Crumlin, co. Antrim, Sept 27th. Wm. Hunter, M.B.

THE NATIONAL HOSPITAL FOR PARALYSED AND EPILEPTIC.

Sir,—Will you very kindly allow me to approach the medical profession through the medium of your columns, as there appears to be some misunderstanding in respect of the present functions of the National Hospital for the Paralysed and Epileptic?

A short time ago, for financial reasons, it was found necessary to close wards, but, with the exception of a comparatively small number of beds, this step was averted by help from King Edward's Hospital Fund. The out-patient department has never been affected, and is fully open as before. As a large number of our patients are sent to us by medical practitioners, it is important that they should be informed that the hospital is open for the reception of patients, both in the wards and the out-patient department.—I am, etc.,

Godfrey H. Hamilton, Secretary,
National Hospital for the Paralysed and Epileptic.
London, W.C.1, Sept. 28th.

PRICE OF PETROL ON THE CONTINENT.

Sir,—I note Sir StClair Thomson's letter on this subject with much interest, in that the information on which I based my figures was derived from two sources—Paris and New York. The return from the latter was to the effect that a gallon of petrol in France was costing 2.28 dollars; thus confirming the information I had at that time from the French capital. That Sir StClair Thomson has been able to buy it at from 4s. 11½d. at Antwerp to a few pence over 5s. a gallon at Lille at present rates of exchange is welcome news, despite the fact that these figures represent increases respectively 6.25 and 6.75 fold on pre-war prices. I regret, too, that this does not alter the situation and prospects in regard to the world's oil industry.—I am, etc.,

September 27th. H. Massac Buist.

Obituary.

SIR JOHN W. BYERS, M.A., M.D., M.A.O.,

Professor of Midwifery, Queen's University of Belfast.

It was with very deep regret that we announced last week the death of Sir John Byers, which took place on September 20th at his residence, Dreenagh House, Belfast. He had recently returned from a five weeks' holiday in Scotland, and was in excellent health and spirits; he was distressed on learning of the death of his close personal friend and colleague, Mr. Robert Campbell, F.R.C.S.Eng., of whose skill he had availed himself on more than one occasion for his own family. He attended the meeting of the board of management of the Royal Victoria Hospital on September 15th, and moved the vote of condolence in a feeling speech. Subsequently he motored home, and was observed to be ill on arriving at his own door; and the signs of a right hemiplegia with loss of speech and subsequent deepening unconsciousness pointed clearly to cerebral haemorrhage. He sank rapidly on the 19th and died the following evening.

John William Byers was the only child of the late Rev. John Byers, M.A., missionary to China, and of the late Mrs. Margaret Byers, LL.D., founder and principal of Victoria College, Belfast, distinguished for her efforts to promote the higher education of women. He was born in Shanghai in 1853, and so was in his 67th year. He was educated at the Royal Academical Institution, Belfast, and had a brilliant collegiate and university course in Queen's College and University, gaining a gold medal and first honours in his B.A. and M.A. degrees, and honours with his M.D. He studied also in Dublin and in London, where he formed a friendship with the late Sir Jonathan Hutchinson and others. Settling in Belfast, he was appointed to the Belfast Hospital for Sick Children; and in 1882 was appointed as gynaecologist to the new department of the old Royal Hospital, which he organized so successfully. In this he had at first only four beds; in the new Royal Victoria Hospital he left the department with a well-equipped large ward, small ward, operating theatre, and out-patient rooms for the assistant. He was on the active staff for thirty-seven years, a member of the building committee of the new hospital, chairman of the medical staff for three years, and finally, on reaching the age limit, was appointed consultant. His colleagues on his retirement presented him with a Chippendale silver salver containing their autographs. He was also one of the active medical staff to the Belfast Maternity Hospital; and evidence of his recent energy is forthcoming in a short series of consecutive Caesarean sections, all successful, and two successful operations for ruptured uterus during the last year.

Sir John Byers was examiner in obstetrics in the old Royal University of Ireland, and was appointed professor of midwifery and diseases of women in Queen's College. He was a member of the Central Midwives Board for Ireland, having been elected by the medical practitioners resident in Ireland. He was honorary president of the International Congress of Obstetrics and Gynaecology in 1896; vice-president of the Obstetrical Society of London from 1899 to 1901; president of the Ulster Medical Society in 1893–94; president of the North of Ireland Branch of the British Medical Association, 1900–1; president of the Belfast Branch of the Irish Medical Association, 1903–9; president of the Section of Obstetric Medicine and Gynaecology at the meeting of the British Medical Association in Cheltenham, 1901, and delivered the address in obstetrics when the Association held its annual meeting in Belfast in 1909; president of the Section of Physical Education and Training in Personal Hygiene at the International Congress on School Hygiene in London in 1907; president of the Conference on Hygiene of Childhood, in connexion with the Royal Sanitary Congress at Belfast in 1911, and president of the Belfast County Borough Medical Committee in 1912–13. He was one of the two representatives of Ulster on the Council of the British Medical Association, and in 1905, when the Irish Committee was constituted, he was unanimously elected chairman.

Sir John Byers had many and varied interests; amongst these he was a diligent student of the folklore and dialect of Ulster, and was busily engaged during the last few years in the preparation of a book on the subject; he was one of the referees for the province in connexion with the *Oxford Dialect Dictionary*; and nothing pleased him more than to get into conversation with some countryman from an out-of-the-way district and learn his feelings, beliefs, and speech. In 1894 a number of his friends presented him with his portrait in oils, together with a replica for his wife; the former was hung in the Examination Hall of the College. He was always in the forefront in all matters of public health, and showed himself a clear and convincing speaker and a keen debater; one always knew on which side he was in a controversy, and he was a loyal and staunch friend; the students will miss a stimulating influence in the school, and the profession a protagonist who stood for its welfare and high interests. The amount of work he got through was enormous, and the range of his contributions and his activities has become, one may say, proverbial. Although he could not stand shuffling or underhand meanness, and exposed them ruthlessly, yet he had a kind heart and was ever ready to help the young medical man in his struggles; his last act of paying tribute to the worth of a dead colleague was a fit ending to his labours.

He is survived by Lady Byers and three sons, with whom deep sympathy is felt.

Lieut.-Colonel JOHN LEWTAS, C.B.E., M.D.Lond., I.M.S. (ret.).

The announcement of the death of Colonel Lewtas, on September 23rd, comes as a surprise to many of those associated with him during the later part of his active career in London.

Retired from the Indian Medical Service, in which he having gained much knowledge and experience as a military medical officer on the Frontier, and special experience as professor of ophthalmology in the Calcutta Medical College, he offered his services to the War Office at the commencement of the war. He was employed on recruiting duties at various stations in London and later on visits of inspection throughout the country. When the Ministry of National Service was reconstituted he was one of the War Office Medical Staff transferred to the new Ministry. For some time he was employed in the head office, and afterwards, until the close of the Ministry, as Commissioner of Medical Services in the Eastern Region.

From the early days of the war Colonel Lewtas took a very keen interest in the medical aspects of recruiting, and was at pains to study the methods employed in other countries, especially the medical recruiting problems presenting themselves to our medical colleagues in France. His experience of active military service in India, added to the knowledge acquired by study and observation in England, enabled him to render very special service when the Ministry had to build up a large medical organization in a short space of time during the third year of the war. The early medical instructions, especially those dealing with the physical grading of men, owed much of their value to Colonel Lewtas. His sound knowledge of the problems of eyesight and of vision was of great service.

Colonel Lewtas was an accomplished physician. His colleagues recollect with admiration how he was able, after a bout of hard work, to divert his attention to some abstruse problem of higher mathematics and commence again, refreshed, to consider a difficult question, probably involving political controversy, which at that time caused a good deal of anxiety. He was an example of the best type of military medical officer so frequently given us by the Indian Medical Service. Learned, experienced, wise, and always helpful, his loss is deplored by many of us who looked forward to years of his friendship in London.

WE regret to record the death, which took place at his home at Alexandra Park, Manchester, on September 24th, of Dr. ALEXANDER G. FRASER. Dr. Fraser was born in Aberdeen in 1846, and graduated M.A.Aberd. in 1867, M.B., C.M.Edin. in 1883, and M.D.Edin. in 1890. During his thirty-six years in practice in Manchester he gained the esteem of a wide circle of friends and patients. The first volume of his book, *Lights of Life and Love*, dedicated to "My friends in the medical profession," was published in 1916; it was followed later by a second volume.

Universities and Colleges.

UNIVERSITY OF LONDON.

A UNIVERSITY SITE.

THE President of the Board of Education wrote on September [illegible] to the Vice-Chancellor of the University of London stating that the Government offer of the site at Bloomsbury, north of the British Museum, would only remain open until the next meeting of the senate of the University; that meeting will take place on October 20th. The site, it will be remembered, comprises 11½ acres; it is at present covered by houses, but the leases of many of these expire before 1923, of others in 1928 and of most of the remainder in 1932. The Government offered the site for the headquarters of the University and for colleges and institutions connected with it, including in particular King's College. The removal of King's College to the new site would liberate the site it now occupies in the Strand, which will be very valuable, and the amount received from it would be a considerable set-off against the Government's expenditure on the Bloomsbury site. The Government offer includes maintenance [illegible], but not the cost of the erection of the new buildings. Mr. H. A. L. Fisher, in his letter of [illegible] that the Government offer is not available for any alternative [illegible] London, after careful consideration of the various sites [illegible] from time to time, and [illegible] all the circumstances, the Government [illegible] to the definite conclusion that the site north of the British Museum is the [illegible]; the only one which it could feel [illegible] the offer to the University. Mr. Fisher [illegible] of the desirability of having a university quarter, and says that the Bloomsbury site offers the greatest advantages for the creation of such a quarter. It is, he says, central, accessible from all parts of London, in a residential neighbourhood convenient for teachers and students, and adjoining the great national literary and archaeological collections; he also states that it is capable of expansion in the future, should the need arise—a point upon which many of the critics of the Government offer are not satisfied.

SCHOLARSHIPS.

The following scholarships have been awarded:

London Hospital Medical College.—Entrance scholarship in anatomy and physiology, open to students of the Universities of Oxford and Cambridge, to W. W. R. Brain, New College, Oxford.

St. Thomas's Hospital Medical School.—University scholarship (value £100) to C. V. Patrick (Rugby and Caius College, Cambridge).

UNIVERSITY COLLEGE.

An introductory public lecture to the courses of lectures on the history of science will be given by Sir William H. Bragg, F.R.S., on Thursday, October 7th, at 5 p.m. This lecture is open to the public without fee or ticket. The courses include one on the general history and development of science, by Dr. A. Wolf, and twelve lectures on the history of the biological and medical sciences from early time to the eighteenth century, by Dr. Charles Singer, on Tuesdays at 5.15 p.m., beginning October 12th.

The Services.

DEATHS IN THE SERVICES.

LIEUT.-COLONEL PERCY DE HAGA HAIG, Bengal Medical Service (retired), died on September 9th, aged 70, at Monte Carlo, where he had settled after his retirement. He was the son of the late William Haig, was educated at St. Bartholomew's, and took the M.R.C.S. and L.R.C.P.Lond. in 1875. Entering the I.M.S. on September 30th, 1875, he became surgeon-lieutenant-colonel in 1895, and retired on February 15th, 1901. He served in the second Afghan war of 1878-80, in the operations of the Peshawar Valley Field Force, and in the expedition to the Tonk frontier, receiving the medal; and in the Waziristan campaign on the North-West Frontier in 1894-95, when he was severely wounded in the action at Wana, and gained the Frontier medal with a clasp. His whole service was passed in military employment.

HONOURS.

THE following awards are announced for distinguished service in the field with the Waziristan Force, India:

Bar to D.S.O.

Captain Nilkanth Shriram Jatar, D.S.O., I.M.S., attached 2/76th Punjabis, Indian Army.

For gallantry near Kotkai, on 5th January, 1920, when, during a withdrawal under heavy fire, he rendered valuable assistance in bringing in wounded, and, whilst doing so, was himself severely wounded. (D.S.O. gazetted 4th June, 1917.)

Military Cross.

Temporary Lieutenant Ben Philip Athaide, I.M.S., attached 1/103rd Mahratta Light Infantry, Indian Army.

For gallantry at Palosina on the 19th December, 1919, when in charge of an outpost. He displayed great devotion in attending to the wounded under fire, and when the line was forced back he remained till almost surrounded by the enemy, and was the last to leave.

Temporary Captain Naval Maneckji Pestonji Dotivala, I.M.S., attached 2/5th Gurkha Rifles, Indian Army.

For most conspicuous gallantry in action at Sorarogha on 18th January, 1920, and at Makin on the [illegible] February, 1920. On both occasions he displayed the greatest gallantry and disregard for danger in his care of the wounded during the action. He set a very fine example to all.

A professor of anaesthesia has been appointed at the University of Maryland Medical School.

Owing to the great reduction in size of the German army the Kaiser Wilhelm Academy, which has been an army medical college for many years, is no longer required for this purpose, and will be converted into an institution for training medical men in social medicine.

A discussion on the physics and chemistry of colloids and their bearing on industrial questions, arranged jointly by the Faraday Society and the Physical Society of London, will take place on Monday, October 25th, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W. The discussion will be presided over by Sir W. H. Bragg, F.R.S., and Professor Svedberg of the University of Upsala, who will give a general survey of the subject before discussion is opened in its various branches. Non-members of the above societies may obtain tickets of admission from Mr. F. S. Spiers, 10, Essex Street, London, W.C.2.

Medical News.

THE usual series of monthly scientific demonstrations will be held during the forthcoming winter at Newcastle-on-Tyne, under the auspices of the North of England Branch of the British Medical Association. These demonstrations have had very considerable success; they were held for many years before the war, and again during last winter. The syllabus of the course is being circulated to all practitioners in the area of the North of England Branch, whether members of the Association or not. The honorary scientific secretary is Mr. R. J. Willan, M.V.O., O.B.E., 6, Kensington Terrace, Newcastle-on-Tyne.

THE new session of the Hunterian Society will open on Wednesday, October 13th, at 9 p.m., when Sir George Newman will deliver the first Hunterian lecture on "The Ministry of Health as an instrument in preventive medicine." The meeting will be held at Sion College, Victoria Embankment, close to Blackfriars Bridge, and all members of the medical profession are invited. We are asked to draw attention to this change of address. Subsequent meetings will be held there on the second and fourth Wednesdays of the month throughout the session. Particulars may be obtained from the honorary secretaries, Dr. Mackenzie Wallis, 24, Upper Berkeley Street, W.1, and Mr. M. W. B. Oliver, 128, Harley Street, W.1.

THE distribution of prizes at Charing Cross Hospital Medical School will take place on Monday, October 4th, at 3.30 o'clock in the Out-patients' Hall, and will be followed by a reception.

IN the Medical Unit of the London Hospital a course of lectures will be given during the winter session on Tuesdays and Thursdays, commencing October 5th, by Dr. John Parkinson, Dr. O. Leyton, Dr. George Riddoch, and Dr. A. W. M. Ellis. The lectures are open to senior students and post-graduates of the London Hospital and other medical schools; they will be given in the clinical theatre at 4 p.m.

THE dinner of the London School of Tropical Medicine will be held at the Royal Automobile Club, Pall Mall, on Tuesday, October 12th, under the presidency of Captain A. W. Clarke, C.B.E., Deputy Chairman of the Seamen's Hospital Society. The school will be glad to hear from past students who may desire to be present.

THE tenth London Medical Exhibition will be held in the Central Hall, Prince's Street, Westminster, S.W., from Monday, October 4th, to Friday, October 8th. It will be open from 12 noon to 6.30 p.m. each day. Tickets are issued to the medical profession only, and the public are not admitted.

A COURSE of twelve demonstrations to medical practitioners on the management and feeding of infants and young children will be given by Dr. Eric Pritchard at the St. Marylebone General Dispensary, 77, Welbeck Street, W., on Tuesdays and Thursdays, commencing Tuesday, October 5th. Visits will be paid on Saturday afternoons to the Nursery Training School, Golders Green, to see the methods there employed in dealing with infants. The fee for the course is two guineas.

A SERIES of post-graduate lectures and demonstrations will be held at the Salford Royal Hospital and Ancoats Hospital, Manchester, through the winter. The course is free, and commences on Thursday, October 7th. The first lecture will be given by Dr. Langley at Ancoats Hospital, on "Prognosis in aortic disease." Thereafter a lecture will be given every Thursday at the two hospitals alternately.

THE usual weekly lecture to post-graduates at the National Hospital for Diseases of the Heart, Westmoreland Street, W.1, will be resumed on Mondays at 5.30 p.m., commencing Monday, October 11th. Admission to the lectures is free to medical practitioners on presentation of their cards.

THE weekly free lectures to medical practitioners will be resumed at the Hospital for Sick Children, Great Ormond Street, London, W.C.1, on Thursdays, at 4 p.m., from October to December, beginning October 7th.

THE opening of the seventy-ninth session of the School of Pharmacy of the Pharmaceutical Society of Great Britain will be held on Wednesday, October 6th, at three o'clock, when the Pereira Medal will be presented, and the inaugural sessional address will be delivered by Mr. E. Saville Peck, M.A., President of the Pharmaceutical Conference.

THE post-graduate course at the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., will be resumed on Monday, October 4th.

AT a meeting of the Society for the Study of Inebriety, in the Rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1, on Tuesday, October 12th, at 4 p.m., Dr. James A. Davidson will open a discussion on special clinics for inebriates.

THE following lectures and practical courses of instruction for a diploma in psychological medicine have been arranged at the Maudsley Hospital, Denmark Hill, S.E. Sir F. W. Mott will give six lectures with demonstrations on "The pathology of mental diseases, including brain syphilis, its symptomatology and treatment," on Mondays, October 4th, 11th, and 18th, at 2.30 p.m., and Fridays, October 8th, 15th, and 22nd, at 4 p.m. Dr. C. Hubert Bond will give twelve lectures on "The diagnosis, prognosis, and treatment of mental diseases," on Fridays during October, November, and December, at 2.30 p.m. Dr. Bernard Hart will give six lectures on "The psychoneuroses," on Mondays during October, and on November 1st and 8th, at 5 p.m. Sir Bryan Donkin will give two lectures on "Mental defect and crime," on Mondays, October 25th and November 1st, at 2.30 p.m.; and Dr. F. C. Shrubsall six lectures, with demonstrations of cases, on "The practical aspect of mental deficiency," on Wednesdays during October, and on November 3rd and 10th.

THE inaugural meeting of the London Dermatological Society will be held at St. John's Hospital, 49, Leicester Square, at 5 o'clock on Tuesday, October 19th. Dr. Prosser White, physician to the Royal Albert Edward Infirmary, Wigan, will preside, and the address will be given by Sir William Collins, K.C.V.O., M.D. Members of the profession are invited to attend.

MESSRS. J. AND A. CHURCHILL announce for early publication an illustrated textbook on preventive medicine by Professor R. T. Hewlett and Dr. A. T. Nankivell.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. FRANK GRENIER (Senior Physician General Hospital, Colombo) writes in reply to "Parent" (September 18th, p. 456) that there is no malaria in the town of Kandy, and the climate is quite suitable for the case mentioned.

"P. W. M." desires information on the subject of South Africa as a resort for the tuberculous patient. He wishes to know particularly of places at a fair altitude, with a bracing climate without dust storms, where a man might obtain light outdoor occupation and not be deprived of all social amenities.

LIP READING.

DR. RENDLE (145, Sandgate Road, Folkestone) writes: A middle-aged man with increasing deafness has been recommended to learn "lip reading." I should be grateful for information whether the acquisition of the art is very difficult and where the necessary instruction may be obtained in or within the neighbourhood of London.

*** The acquisition of the art of lip reading is not usually difficult for anyone whose deafness is considerable and who has good sight and fair mental alertness. There are numerous teachers in and about London; inquiries may be directed to the National Association for the Oral Instruction of the Deaf, 11, Fitzroy Square, W.1, of which Mr. G. Sibley Haycock is the principal.

INCOME TAX.

"C. S.," a newly retired colonial surgeon, inquires whether any deductions are allowed on income derived solely from pension.

*** There are presumably no expenses which can be deducted, and the only deductions, therefore, are the statutory allowances for self and wife, children, dependent relatives, and life assurances, so far as they are applicable.

"DOUBTFUL" inquires whether he can include in his professional expenses the premiums on a sickness and accident policy.

*** Such premiums do not constitute professional expenses; they have reference to the individual practitioner, but are not necessary to the carrying on of his work. In so far as the payment relates to the risk of death by accident, it may be claimed for as a payment on a life assurance policy. As a corollary it follows that benefits received under the policy are not assessable to income tax.

"G. P." inquires whether, for assessment of income tax, it is now allowable for each member of a partnership to be assessed separately on his share of the partnership profits.

*** No; the partnership profits must be assessed as a whole. The recent Royal Commission on the Income Tax recommended a change in the statute law to permit of the separate assessment of each partner, but so far only one section of the general recommendations has been dealt with—in the Finance Act, 1920. It is understood that a Government bill will be introduced into Parliament during the autumn session for the purpose of giving statutory effect to other sections of the Commission's report, and possibly the point in question will be dealt with in that bill. In that event the change would presumably operate from 1920–21 onwards.

"S. J." bought a 9-h.p. Renault in 1914 for £230 and sold it for £200, buying a Ford in 1920 for £327. The inspector of taxes agrees to allow the net cost (£327 – £200 = £127) "if the cars are of the same make."

*** The make of car can have nothing to do with the merits of the question, which is whether, and if so to what extent, the £127 represented expenditure on improvement. The test question seems to be, What was the cost price of a 9-h.p. Renault car, or of a similar car, in 1920 when the Ford was purchased? If it was £327 or more, then our correspondent is entitled to deduct the £127; if, for instance, it was £300, then the deductible amount would be £100, and so on. In other words, the current price of a 9-h.p. Renault car is a sort of standard, and replacement expenditure is allowable so long as the new car does not cost more than a 9-h.p. Renault would at the same date.

"W. M. G." has left England, and is now residing in France; he inquires as to the effect on his liability to income tax in this country.

*** He is liable to tax on his three months' earnings in this country; the provision as to exemption in favour of temporary residents not being in the country for six months in the financial year applies only to income arising outside the United Kingdom. His colonial pension is apparently exempt from [illegible] not received in this country. New arrangements come into force this year with regard to income arising here and paid to British subjects resident abroad, [illegible] of income tax. The essence of the [illegible] the Act is divided [illegible] between the liable and non-liable incomes. We [illegible] that our correspondent should apply to the [illegible] Somerset House, W.C., next March for a copy of the appropriate form of claim.

"[illegible]" inquires [illegible] for income tax [illegible] during the [illegible]

*** [illegible] can carry his point before the local commissioners, and it would certainly be useful to have an authoritative opinion on the question. It may be suggested, however, that it might be possible to elicit from the authorities at Somerset House what is the official view of the central department; it might, for instance, be possible to obtain a statement as to whether they would acquiesce in the local commissioners' decision in the event of it being adverse to the inspector's contention. If our correspondent takes this course of action we should be glad to learn the result.

LETTERS, NOTES, ETC.

TENNIS ELBOW.

DR. E. OLIVER ASHE, F.R.C.S., Senior Surgeon, Kimberley Hospital, South Africa, writes, in answer to Dr. Havelock's query in the JOURNAL of July 31st, 1920, regarding descriptions of this injury: The best account of epicondylitis, or tennis elbow, is that by P. Cones in the *Boston Medical and Surgical Journal*, March 26th, p. 461, which was republished in the *Medical Review* in 1914 or 1915. I have the article before me at present, but cannot give the year of its original appearance or the exact date of the *Medical Review's* reprint. Having the bad luck to experience this disability in my own person about the time of the article's appearance, I can vouch for its accuracy. I was much struck by its emphasis of the facts that the external condyle is affected; that the pain may come on hours after the injury; that putting on a coat or gripping the hand firmly were very painful; that the proper adjective for the pain on pressure at the right spot was "exquisite," and that the pain took a long time—weeks—to disappear. In my case the cause was wrestling with a bad-starting motor car. This was at 3 p.m., and I felt no pain whatever until I got out of bed next morning. It was fully eight weeks before the elbow was comfortable, and the only treatment that gave any relief was antiphlogistine constantly applied.

A TEXTBOOK AS AN INDEX.

DR. ARTHUR G. WILKINS, Senior Medical Inspector, Stafford, writes with reference to the article "On Getting Rusty" in our last issue: As one who has spent just half his professional life in country practice, may I point out that the simplest way of keeping a "textbook as an index" is to have such books as *Taylor's Medicine* interleaved with alternate blank pages and rebound? I have done this for twenty-five years, and thus have my books not only kept up to date, by references to current literature, but a brief note of every rare case I have ever seen.

A HOSPITAL TRADE UNION.

A SOVIET missionary delegation, consisting of fifteen persons, recently reached Hamburg, and two of the delegates were allowed to go to Berlin to address meetings arranged by the Communist party. *The Times* correspondent in Berlin reports that Lossovsky, one of the delegates, explained the difficulties and backwardness of the trade union system in Soviet Russia. It was not at present possible to form a union for each trade, and the various workmen engaged in any one large factory were enrolled under the union to which the majority belonged. For example, in textile factories the metal workers and engineers were obliged to join the textile workers' union. They had protested, but their protests had been "broken." Lossovsky poured scorn, the correspondent continues, on the Petrograd doctors, who, he explained, had so far debased their high calling as to object to being enrolled in the union of the washerwomen of their hospitals, as being the most numerous.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 37, 38, 39, 40, 41, and 42 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 35, 36, and 37.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTIONS OF OBSTETRICS AND GYNAECOLOGY, AND ELECTRO-THERAPEUTICS.

Dr. A. E. BARCLAY, President of the Section of Electro-Therapeutics, in the Chair.

JOINT DISCUSSION ON THE TREATMENT OF UTERINE FIBROIDS.

TREATMENT BY RADIATION.

BY

ROBERT KNOX, M.D.Edin.,
Honorary Radiologist, King's College Hospital, Director of Electrical and Radio-Therapeutic Department, Cancer Hospital.

THE final word on the value of the treatment of uterine fibroids by x rays will rest largely with the gynaecologist, but the radiologist who pays attention to the clinical aspect of the cases and remains in touch with the patient will also attain a proficiency in the estimation of particular values. But the medical man in direct charge of the patient is frequently as competent to judge as either the radiologist or the gynaecologist, and he is indeed the best judge of the after-results of all treatment because of his more intimate association with the patient. The patient will always have a deciding vote on a matter which so intimately concerns herself. It behoves us therefore dispassionately to discuss the pros and cons before we pronounce a judgement the effects of which may be so far-reaching.

All cases of fibroid enlargement of the uterus where radiation treatment is proposed should be examined by a gynaecologist, who will report on the condition and express an opinion on the suitability of the case for this treatment. In this way a judicious selection of cases will be ensured, and the value of the method be accurately estimated. The converse also holds good; no case should be treated by radiations by anyone who is not an expert radiologist. The time is fast approaching when gynaecologists will adopt x ray treatment as a valuable adjunct, and it is imperative that they should take steps to become thoroughly familiar with the intricate subject of radiotherapy. Measures have been taken to meet the demand for thorough tuition in the subject, and it speaks volumes for the enterprise of Cambridge University that a special diploma has been established in radiology and electrology. Personally I have treated all cases in close touch with a gynaecologist, and it has also been my practice to send back to the gynaecologist all cases on completion of treatment for a final opinion; and also for further advice all cases which have failed to respond to x rays.

An illustration of the value of such collaboration is the case of a patient who was sent for x-ray treatment of menorrhagia which was supposed to be due to the presence of a fibroid. My request for an expert gynaecologist's opinion was refused by the patient, so I reluctantly undertook to give her a number of exposures. The result was not satisfactory, and, as I suspected from her symptoms that I was dealing with a mucous polypus, I insisted upon the expert opinion. The patient was examined, my opinion was confirmed, and surgical treatment relieved the condition.

On another occasion symptoms having arisen which called for an examination of the blood, the opinion of the clinical pathologist led to the services of a physician being called in.

A lady of middle age had suffered from exophthalmic goitre, and as a result of treatment at a health resort had improved, but had not quite recovered. Later she experienced severe floodings and consulted a gynaecologist, who treated her for some time; the haemorrhage, however, became more severe, and she was sent to me for x-ray treatment. The case was a complicated one to deal with, but under the circumstances I felt justified in treating her. The response to treatment was good at first, but in the middle period between the doses she began to show alarming symptoms. Before giving her a heavy dose which was expected to effect a cure of the menorrhagia I asked for a full blood count. The white cells were very low in number, so I determined to suspend x-ray treatment for a time and handed her over to a physician. A course of tonics combined with rest proved very successful—the blood count showed a marked improvement. The haemorrhage ceased for several months, and the general health improved greatly.

The lesson taught by this case is very important. In serious cases it is always well to check treatment by blood counts at regular intervals. Serious accidents will thus be avoided—and the radiologist will have a valuable guide for modification of technique. A drop in the total number of white cells is always an indication that treatment must be suspended or very cautiously continued. It will also be a guide for the actual dosage. Had I persisted in the case quoted and given the very large dose I had intended I have no doubt that I should soon have reduced the white cells to the danger point and would undoubtedly have seriously injured the patient.

History of Radiation Treatment of Fibroids.

Early in its history the extension of radiation treatment took in the diseases of the uterus, and attention was particularly directed to fibromyoma. The experimental work of Halberstädter in 1905 showed that atrophic changes in the ovaries of rabbits followed irradiation by x rays. Similar observations were made by Bergonié, Tribondeau, and Récamier. Reifferscheid described changes in the human ovary occurring after irradiation by x rays, observed in cases treated by x rays and subsequently operated upon. Many other observers have recorded changes produced in the ovary as a result of prolonged x-ray treatment. The majority of the results are presumably those produced by relatively small doses of x rays, and no details are given as to the penetrative quality of the ray or the filtration employed. Albers Schönberg, Haenish Bordier, and, later, Gauss and Lembcke, reported results obtained by the more intensive form of treatment; the latter worked out a very extensive technique, using filtered rays of moderate penetration, and improvement developing as the intensity of the dosage increased.

Later work in America and England on intensive lines has shown improvement in results altogether greater than was at one time thought possible. The advent of the Coolidge tube and apparatus capable of exciting it adequately have further improved the technique and put within our reach the possibility of administering fairly large doses at a considerable depth from the surface of the body. Further, the introduction of many ports of entry and the angling of the tube to focus the beam of rays upon a given part have rendered it possible to increase greatly the dose at a given spot. The ovary on either side is taken as the landmark upon which the rays should be focussed.

The Treatment of Fibromyoma of the Uterus and other Conditions of the Pelvic Organs.

With a modern installation the Coolidge tube offers advantages over any other. By using a high-tension transformer with the tube a uniform series of exposures can be readily and rapidly carried through. The heating current is adjusted to give the desired penetration, and the whole series of irradiations can be administered under precisely the same conditions. The dose should be measured by the Sabouraud and Noiré pastille or by a photographic paper, or by any method known to be reliable.

A filter of at least 3 mm. of aluminium is used, and it should be placed, if possible, midway between the tube and the patient's skin. The secondary filter, consisting of chamois leather, several layers of thick paper, and loofah sponge, enclosed in a linen bag for convenience, is placed upon the skin under the tube box. The time taken to produce the tint B varies with each installation and the current it is capable of passing through the tube. An average of about five minutes to each dose can easily be obtained, using 2 to 3 milliampères in the coil circuit. If the current is increased the time will be shortened proportionately to the amount of the increase in the intensity. A hard ray is necessary; between 8 and 9 on the Bauer qualimeter is a useful radiation to employ in these pelvic conditions.

The anterior abdominal wall is marked out into areas, the landmarks used being the level of the umbilicus and the pubic arch. As many as twenty ports of entry can be utilized in this way. In addition, the areas may be extended into the lateral wall of the abdomen and the posterior aspect. These extra areas are useful when it is necessary to get in a very large dose quickly in acute cases. Each area receives the same dose of radiations. This dose must be adjusted in each case to the requirements of the particular tissues; for example, one administration of a large dose from an *x*-ray tube or from radium suitably applied may be extremely satisfactory in one case, while in another it may be necessary to repeat the dose on several occasions. The same result could be obtained by one very large series of doses from an *x*-ray tube. In practice it is well to proceed cautiously. The first dose is such as to afford a knowledge of the reaction of the tissues to the rays, and subsequent doses, both in regard to quantity, quality and frequency of application, may be adjusted according to it. Some cases which respond actively and in which the symptoms have for a time been aggravated, in the end give fairly permanent results.

Mode of Action of the Radiation.

The action of the rays appears to be exerted primarily on the ovary and its blood supply, suppression of function leading to atrophy of the structure and cessation of the menstrual haemorrhage. The latter is the most troublesome symptom arising from fibromyoma, and the improvement in the patient's health may in fact be attributed to its cessation. The atrophy of the ovaries is, however, accompanied in a number of cases by a diminution in the size of the tumour. It is reasonable to assume that an action is exercised on the tumour itself. It is therefore advisable, when treating the ovarian areas, also to include the tumour. The tube is arranged in treating each area so that the beam of rays may be focussed upon a given spot. If each ovary gets the maximum effect from each of those ports of entry on the side in which it lies, the tumour also receives a very large proportion of the radiations passing through it, and changes occur in its structure.

Whatever the action may be and upon whichever structure the rays act most, there is no doubt whatever that in the treatment of those conditions many marked beneficial results can be obtained by carefully applied courses of radiations.

Dosage.

It is advisable when possible to begin the treatment just after the cessation of the menstrual period. The whole of the areas may be treated at one sitting if necessary, but it is better to divide the dose, giving a portion on two or three successive days. This diminishes the exhausting effect of continuous treatment for one or two hours or more, and lessens the after effects. The aim of treatment is to produce the result gradually. It is quite possible to produce a result in one or at the most two sittings, but the effect on the patient is often very injurious for a time, as severe reaction may be induced. In the average case a satisfactory result may be looked for in from three to six sittings, each consisting of treatment to ten to twelve areas. It is not at all uncommon for the period after the first sitting to be more excessive than those before the treatment, and so it is necessary to caution the patient on this point. Improvement is gradual, beginning as a rule after the second series of treatment. The menstruation or haemorrhage generally ceases after the third series, and may not be seen again. It is, however, advisable to administer one or two further series in order to keep up the action.

The dose administered can only be estimated by its effects upon the individual. The surface dose can readily be estimated, and that at a depth of 2 or 3 inches can be calculated from the initial skin dose. The radiations are absorbed by the intervening tissues in a ratio which is regular [illegible], but not in the living subject, as the tissues [illegible] offer varying resistance according to their density. The personal reaction in individuals is by no means constant, [illegible] vary in their power of resisting [illegible] the difficulty in estimating the dosage. The question of the [illegible] whether heavy doses at long intervals should be employed or the slight repetition of small doses at regular short intervals, say once a week, [illegible], be repeated in particular cases. Patients who have received the larger doses at long intervals have responded readily to the small doses at shorter periods, and vice versa. There are factors underlying the results of which our knowledge is as yet very imperfect.

Contraindications to Treatment by X Rays (or Radium).

There are certain conditions which if coexistent are direct contraindications to radiation treatment:

1. It is obvious that if a large portion of the fibroid has become converted into calcareous matter, and if the tumour is of large size, *x* rays can have no beneficial effect. In doubtful cases a radiographic examination will reveal the extent of the degenerative change.
2. Most forms of degeneration should be excluded before *x* rays are administered, though, if not very extensive, the treatment may be tried.
3. Malignant disease of the uterus calls for very careful consideration. Operative measures should be discussed. If it is impossible to remove the tumour, then there is no objection to a combined attack on the disease by *x* rays and radium. Very careful application of radium tubes is necessary, and for this a general anaesthetic is indicated.
4. Infective conditions of the uterus complicating fibroids.
5. Suppurative salpingitis or pelvic peritonitis.
6. Inflammatory conditions of other organs in the vicinity, namely, appendicitis, cystitis, etc., should be dealt with before attempting to treat the fibroid.
7. Submucous pedunculated fibroids.

Advantages and Disadvantages of X-ray Treatment.

The advantages are:

(1) The treatment is quite painless, and any ill effects are quite temporary.

(2) The patient can live her ordinary life, merely arranging for one or two days of rest after each treatment.

(3) No elaborate preparations are required.

(4) The resulting menopause is not usually attended by such severe nervous disturbances as those following operation.

(5) In patients whose general health is much impaired the recovery is very rapid when the haemorrhage has been arrested; moreover, the shock so often inseparable from hysterectomy is entirely obviated.

The disadvantages are:—

(1) It takes a considerable time to effect a result—treatments may have to be given at intervals for some months.

(2) The treatment is not invariably successful.

(3) The tumour, though as a rule much reduced in size, does not entirely disappear.

(4) Treatment may cause unfavourable changes in the blood.

Immediate and Later Effects.

There are certain conditions produced by the treatment of which the practitioner should be cognizant if he is to be in a position to advise his patients. Of these the most important is the so-called reaction induced by the radiation.

Of the *immediate effects* nausea is most common. This is probably due to the inhalation of highly ionized air, which is invariably found in the vicinity of high-tension electrical machinery, and possibly to the generation of ozone in the vicinity of the active *x*-ray tube. Headache is often met with, and is attributable to the same causes. Giddiness is a common symptom, and may be directly traced to change of posture, most patients suffering temporarily and briefly from this when they arise from the *x*-ray couch. Patients frequently go to sleep while being treated, owing, possibly, to the monotonous hum of the active electrical apparatus. For faintness a small dose of sal volatile will suffice. Eau de Cologne sprinkled on a towel and laid over the patient's face will serve to minimize the effects of the ozone and ionized air. An electrical fan in the near vicinity of the tube will promote free circulation and carry off some of the ionized air. In prolonged treatments a little oxygen in an inhaler will revive the patient.

The *later effects* come on several days after the treatment, and their appearance has a direct relation to the intensity of the dose. In large doses it comes on earlier, possibly the next day, but on the average not for two or three days. If the dosage has been very heavy, intense prostration may follow, with rapid pulse, headache, and feelings of malaise. The temperature has been known to rise and remain above normal for some time, and patients may feel really ill. The treatment consists of rest in bed and careful attention to diet, with such drug treatment as the symptoms indicate.

The patient generally recovers after a few days, and the next series of treatment, which is due as a rule in about a month, need not be postponed. Generally a degree of tolerance to the treatment develops and the patient shows hardly any reaction to subsequent doses, but a small number never acquire this tolerance and dread the repetition of the treatment on account of the distressing symptoms it produces. In these cases it is probable that the dosage has been too great for the patient's general resistance. The after-effects may in these cases be minimized by giving the treatment at longer intervals, or giving smaller doses and carrying the total amount over a longer period.

Dangers of X-Ray Treatment.

Indiscriminate treatment by *x* rays is very dangerous. The skin may be seriously damaged and severe burns induced. In one case—that of a patient who was treated for a supposed malignant growth of the pancreas for over a year—there was when I saw her a large, fairly deep *x*-ray ulcer, and around it a large area of inflammatory reaction. I watched the ulcer for over a year and only used palliative applications. In about eighteen months it healed. An accident such as this is avoidable and should never occur in cases where the technique is intelligently carried on.

Type of Case likely to Benefit from X-Ray Treatment.

Although it may be assumed that tissue changes may be induced in practically any form of pelvic disease, and that in a number of them the action will be beneficial, yet for practical guidance it is necessary to survey carefully the field of usefulness and indicate where radiation treatment is likely to give better results than other methods such as the operative, where it is likely to help towards a cure when combined with the operative and other forms of treatment, and particularly to indicate when it is wise to hold one's hand and decide against *x*-ray treatment.

While it has been admitted that up to the present the interstitial fibroid is the most suitable for radiation treatment, several writers have pointed out that practically all forms of fibroid respond favourably. The small tumour is more likely to become amenable to treatment than the very large tumour which fills the pelvis and the greater part of the abdomen. It is also worthy of note that the majority of the patients submitted to *x*-ray treatment have been for one reason or another unsuitable for operation. Hence the results secured in a number of cases have been obtained in patients who were too bad for operation, and therefore presumably not favourable subjects for any form of treatment from the curative point of view.

Sir John Phillips in a valuable paper states that he has used *x* rays in nearly all forms of fibroid with beneficial results. Any case of fibroid tumour will be benefited by radiation treatment if the symptoms are not urgent enough to call for immediate operation. The need for operation may be determined by (1) the amount and frequency of the haemorrhage and the secondary effects upon the patient; (2) the size of the tumour and rate of growth; (3) the pressure effects upon other structures. Even in this class of case radio-therapy may achieve results if the patient is willing to risk the effect of very intensive treatment and any other danger incident to its use.

There are other factors, such as the age of the patient, which may be taken as a guide to the practitioner in these cases. Till recently it has been said that patients under 40 years should not be treated by *x* rays or radium. More recently it has been found that at any age the patient may be beneficially influenced, and that if modified results are all that are required it is possible to produce them. Instances of this kind will be met with in severe dysmenorrhoea associated with an infantile type of uterus. Such patients should be warned of the probable complete cessation of menstruation if the treatment is pushed to its limit. There are other conditions than fibroids, such as menorrhagia from any cause and endometritis, which may be influenced by treatment. The following notes on two cases are illuminating:

Case 1.—A patient who suffered from a large fibroid with profuse and almost continuous haemorrhage, was in the first instance considered by the gynaecologist a suitable case for operation. She refused and continued to suffer seriously from the effects of the haemorrhage. When almost in extremis she at last consented to submit to operation. Her condition was now so serious that the surgeon did not feel justified in taking the risk. The patient was kept in bed and steadily got worse. As a very last resource she was taken in an ambulance to a colleague, who did the best he could by giving her a thorough course of irradiation. The response was very satisfactory. After a few weeks she began to improve, and ultimately made an excellent recovery. A case of this kind is best treated in a hospital or home where the apparatus can be brought to the bedside; or radium in fairly large quantities would be very helpful.

Case 2.—A lady, aged about 45, suffered from a very large fibroid, which was situated on the left side of the pelvis, and extended an inch or two above the level of the umbilicus. Haemorrhage was very profuse, amounting to severe flooding at each period, and the frequency was increased. A course of *x*-ray treatment extending over four months led to a complete cessation of the haemorrhage. The tumour diminished considerably in size, but when last seen, about a year ago, it was still palpable. Recently a communication was received from the patient to the effect that she was suffering from nervous symptoms. A physician who examined her reported that she was suffering from symptoms probably associated with the menopause artificially produced by the *x* rays, but that she would, no doubt, respond to medicinal treatment. The case was treated early in 1915, close on five years ago.

In discussing the treatment of fibroid by *x* rays the claims of radium as an alternative must be considered. The difference between the two is one of wave length, and it is possible that the gamma radiation from radium may produce as good or better therapeutic results. Radium has, therefore, strong claims which cannot be ignored. The advantages radium possesses over *x* rays are too obvious to require any discussion. The patient can be treated at home or in a hospital, the radium being brought to the bedside. The dosage can be more accurately estimated, since the output of radiation from a tube containing radium is constant. I consider that the two in combination are very useful—particularly when a rapid result is desirable.

ADVANTAGES AND DISADVANTAGES OF X-RAY TREATMENT.

BY

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I think that this combined meeting of gynaecologists and radiologists will prove helpful to both. It is important that the gynaecologist should have some knowledge of the difficulties of technique and of the problems which confront the radiologist; it is equally important that the radiologist should be familiar with the clinical aspects of the cases he treats, with the natural history of fibromyomata, with the changes which they undergo, and with the pathological conditions of the ovaries and tubes which often accompany them.

In entering upon this discussion we must consider, in the first place, the present position of the operation of hysterectomy for fibroids. I say, without hesitation, that it is one of the most satisfactory operations in the whole range of surgery; its mortality is low, and it may be safely undertaken even in intensely anaemic women after transfusion of blood from a suitable donor. The tumour is removed and ceases to be a source of danger. The doctrine that a fibroid is harmless after the menopause, whether occurring naturally or produced by *x* rays, is fallacious; we frequently find it necessary to remove fibroids years after the menopause for a variety of reasons, by no means the least important being the development of malignant disease. The operation does not deprive the patient of her ovaries, and this is an important consideration even in women who are within a few years of the time of the menopause.

We must remember, in the second place, that all fibromyomata are not suitable for *x*-ray treatment, and for my own part I recognize ten groups of cases in which the treatment should not be advised:

1. Where the patient is under 40 years of age.
2. Where the tumour can be removed by enucleation by either the abdominal or the vaginal route.
3. Where the fibroid shows evidence of degenerative changes.
4. Where the tumour is very large.
5. Where there is evidence of old or recent inflammatory lesions in the ovaries and tubes.
6. Where there is any suspicion of malignancy.
7. Where there are severe pressure symptoms upon the

bladder, the rectum, or the great nerve trunks or veins of the pelvis.

8. Where the fibroid is complicated by the presence of an ovarian cyst.
9. Where the fibroid is complicated by pregnancy.
10. Where the patient is gravely anaemic with a red blood cell count of less than two and a half million, and the haemoglobin is less than 35 per cent.

I have seen a number of instances in which *x*-ray treatment has proved disastrous because these limits have not been observed, and in my opinion it is not justifiable to treat uterine fibromyomata by *x* rays until a thorough investigation of the condition of the pelvic organs has been made by one skilled in such examinations. The treatment is undoubtedly of great value, and it will be unfortunate if it is brought into disrepute by its application in unsuitable cases.

What are the Disadvantages and Dangers of the Treatment?

I shall limit my remarks to those which I have seen myself. Whilst I do not deny that the rays may produce primary effects upon the tissues of the tumour itself I am convinced that their main action is through the destruction of the follicles and interstitial cells of the ovary. I have seen on several occasions distressing and prolonged vasomotor phenomena follow the treatment in women under 40, producing symptoms which were not relieved by administration of extracts of the endocrine glands. In three cases I have seen kraurosis vulvae develop, and cause such severe dyspareunia that marital relations had to be abandoned altogether.

I have three times operated upon patients at a considerable interval after *x*-ray treatment. I have found the pelvic tissues dense and fibrous, and very firm adhesions between the uterus and coils of intestine. In one of these cases I operated for intestinal obstruction, in one for carcinoma of the body of the uterus, and in the third for recurrent haemorrhage. It is, I think, well established that this condition of the tissues is not infrequently found after the application of *x* rays, and adds greatly to the difficulty and danger of any pelvic operation which may subsequently have to be undertaken. In two cases I have seen a dormant infection of the Fallopian tubes lighted up into fresh activity, and in one of these cases general peritonitis developed. I have twice operated for acute red degeneration developing during *x*-ray treatment, and on two occasions I have seen severe burns of the abdominal wall. I have twice operated for haemorrhage so severe and intractable that the treatment had to be abandoned.

This is a formidable list, and the study of these cases has led me to adopt the contraindications I have just given.

I believe that the treatment should be limited to women over 40 years of age with a small or moderate sized tumour, with no evidence of degeneration, with no inflammatory lesion of the uterine appendages, where the patient is not intensely anaemic, and where there are no symptoms of malignancy. My colleague, Dr. Finzi, has treated for me a number of cases selected on these lines with most happy results, and we have several under treatment at the present time. Radium has given equally good results and possesses an additional advantage in that the desired result is produced more quickly.

X rays are also of value in the treatment of that condition of the uterus known to gynaecologists by the name of "chronic metritis." These cases are distinguished clinically by a delayed and protracted menopause accompanied by profuse and prolonged haemorrhages. The uterus is enlarged generally, the walls are thickened, and there is frequently an associated overgrowth of the endometrium. The majority of these cases are the result of subinvolution, and on microscopical examination masses of elastic tissue, the remains of the hypertrophied internal elastic lamina of the arteries of former pregnancies, are found in the uterine wall. Before submitting these patients to *x* rays the uterus should be curetted, and the curettings examined microscopically to exclude carcinoma of the body. In this group of cases *x* rays bring about a permanent cure, and the patient is spared an abdominal operation.

In conclusion, I would appeal to radiologists to adopt a uniform standard of measurement in dosage, and when publishing results to state fully the method of application, the nature and thickness of the screen used, and the doses administered. The treatment cannot be placed upon a scientific basis until this is done, and we need further knowledge on these very important questions.

THE TREATMENT OF THIRTY-SEVEN CASES OF UTERINE FIBROMYOMATA BY INTENSIVE X-RAY THERAPY.

BY

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IN analysing a series of 118 of my own cases of fibroids of the uterus, from January 1st, 1914, until the present date, I find that I left 25 cases untreated. Of the remaining 93 cases I employed:

(*a*) Intensive *x*-ray therapy in 37 cases.
(*b*) Operative treatment: hysterectomy, 47 cases; myomectomy, 4 cases.
(*c*) Intensive *x*-ray therapy, followed by hysterectomy, in 5 cases.

That is to say, I have employed *x*-ray treatment in 39.7 per cent. of my cases in which there were symptoms necessitating treatment.

Of the 37 *x*-ray cases 21 were sent to me by other gynaecologists. The remaining 16 were cases that originally came to me for treatment, and in which I definitely chose *x*-ray instead of operative treatment.

I have tried as much as possible to let the physical signs and symptoms be the determining factor in the choice between operative or *x*-ray treatment. That is to say, in cases in which the size of the tumour did not exceed that of a six months pregnancy, where the fibroid was interstitial and menorrhagia the prominent symptom, I chose *x*-ray treatment for my patient. In cases, on the other hand, in which the fibroids were definitely pedunculated, or in cases in which I have suspected submucous fibroids, or where the tumour exceeded the size of a six months pregnancy, I have done a hysterectomy. Again, if the patient was suffering from a serious form of heart disease and profound anaemia the result of profuse menorrhagia, I have definitely chosen *x*-ray therapy, even if the uterus exceeded the size of a six months pregnancy.

To a certain extent I have been influenced by the profession of the patient. In a large proportion of my cases the patients were headmistresses who preferred to choose a treatment which did not interfere with their regular work, and one in which the menopause produced was freer from symptoms than the normal climacteric. And, lastly, expense is bound to influence both surgeon and patient. Intensive *x*-ray therapy is expensive for the very poor, who are content with hospital accommodation for their hysterectomies. Until the general hospitals provide cheap *x*-ray treatment these will naturally be forced to choose operation. In all cases, however, in my series in which the fibroid was small and causing no symptoms I have left them untreated.

Analysis of the 37 Cases treated by Intensive X-ray Therapy.

Age.—The youngest patient was 35, and the eldest 58. The average age was 47.

Occupation.	
Married (16 having had children)...	23
Unmarried	14
Headmistresses or matrons	10
Author	1
Government official	1
In business	4
Symptoms.—(*a*) Due to tumour:	
Profuse menorrhagia	33
Profuse metrorrhagia	9
Disturbances in micturition	4
(*b*) Due to general condition:	
Serious heart disease	2
Size of Tumour.	
Larger than a six months pregnancy	1
As large as or smaller than a six months pregnancy	36
Kinds of Fibroid.	
Subperitoneal and interstitial	14
Interstitial	19
Number of X-ray Treatments.	
Average number given	7
Number given before amenorrhoea was obtained (average)	4

Diminution in the size of the tumour comes on gradually, and continues long after the cessation of treatment. In 4 cases a fresh series of *x*-ray treatments had to be given after an interval of some months.

Hysterectomy following X-ray Treatment.

In five of my cases hysterectomy was performed after x ray treatment, either by some other surgeon or myself.

In one case appendicitis developed, and when I performed an interval appendicectomy, I did a hysterectomy, and took the opportunity to have sections cut.

In another case the pressure symptoms were so troublesome that I thought it better to lose no further time, and did a hysterectomy. The pathological findings included a recent corpus luteum, showing that the ovarian function had not been destroyed.

In another case symptoms of chronic intestinal obstruction developed one year after treatment had ceased. The surgeon who operated did a hysterectomy. The fibroid had undergone calcification. The patient died ten days after, and the necropsy showed malignant omentum, stomach and mesentery. The pathologist considered the malignant growth probably endothelial in origin, and apparently primary in omentum.

In a fourth case there was a mistake in diagnosis. Amenorrhoea was obtained after x-ray treatment, but one year after the patient consulted a surgeon, as the tumour had begun to grow rapidly, and in operating he found a large multilocular ovarian cyst.

In the fifth case the patient complained of metrorrhagia. I did a diagnostic curetting, and as there was no malignancy, and as I could not prevail upon the patient to let me do a hysterectomy, I gave her seven x-ray treatments. Amenorrhoea started after the fifth treatment, but as the pressure symptoms continued (incontinence of urine being the most troublesome) I at last prevailed upon the patient to let me do a subtotal hysterectomy. This I did, removing the left tube and ovary as well. The fibroid uterus weighed 5½ lb., and the bigger of the two subperitoneal tumours showed degeneration. The sections showed simple fibroid growth, no malignancy. She is now in excellent health.

Of the 37 cases there are two in which I have purposely not given more x rays than sufficient to check active menorrhagia.

One case in my series I consider unsatisfactory, and in this case I think there must be some condition other than fibrosis of uterus.

She is a very neurotic and anaemic woman of 42, who for years has complained of menorrhagia, dysmenorrhoea, and frequency and pain on micturition. In 1917 a London gynaecologist did a dilatation and curetting, but felt a hysterectomy was unjustifiable. The menorrhagia continued, the patient also suffering from dilatation of heart and attacks of tachycardia. Two specialists agreed that x-ray treatment should be tried, but after nine treatments the menorrhagia still continued, and the patient gave up treatment. I do not know her subsequent history, but she refused to undergo an operation, which I am sure is the only right course.

Effects of Treatment.

Immediate Effects.—In the majority of patients, beyond the fact that the treatment is rather long and monotonous, there are no unpleasant effects. In only five cases was there any "Röntgen-jammer," and that did not come on until the later treatments in three of the cases. In the remaining two it occurred after the first treatment. The patients tell me that they feel better and better in health as the weeks go on, but I suppose this is primarily due to the disappearance of the anaemia.

Later Results.—A short time ago I wrote to or saw all my patients, and, except in three cases I cannot trace, they all reiterate how well they feel and how improved their general health is, so much so that I have wondered whether any other factor besides the loss of anaemia was at work.

Dangers.—I feel myself, however, that as long as one's diagnosis necessarily remains faulty there is a danger in using intensive x-ray therapy for any but those cases in which we are fairly certain we are dealing with a straightforward uncomplicated case—for example, a fibroid uterus well under the size of a six months pregnancy, interstitial rather than subperitoneal, and in which the chief and only symptom is excessive menorrhagia. In such a case it seems to me to be the treatment *par excellence.* Also in cases of grave heart disease where no surgeon would like to operate, it seems to me to be the ideal treatment, and the improvement in general health of such patients is wonderful. In all cases that are at all doubtful in diagnosis I am certain that hysterectomy is the only right treatment.

Technique.

I use a 12 in. spark coil, large mercury gas interrupter, and a rhythmic interrupter (lately I have been able to dispense with this since I used a Coolidge tube). As long as I used the Müller rapid water-cooled tube I used Ernest Pohl's osmo-regenerator, which enabled my x-ray nurse to remain behind the screen during the whole of the exposure. I have used Kienboeck strips in all my cases.

Ports of Entry.—Cross-fire is employed, the abdomen being carefully mapped out into sixteen or eighteen square areas, and the area over the sacrum is divided into two or four.

Two L-shaped pieces of lead are placed on the abdomen in such a way as to expose the square area to be rayed. Then a Kienboeck strip is placed so that two-thirds of it lies directly over the skin of the patient and one-third over the lead. On the top of this is a small cube of aluminium 5 mm. thick (to simplify the accurate reading of the dose by the Kienboeck scale for over 10 X), so arranged that it covers half the part of the Kienboeck directly over the skin of the patient, and both the strip and the cube fit into a pocket in a linen bag containing sheets of stout photographic paper to absorb the secondary rays produced in the filter. Another linen bag containing loofah is placed on the top of this, and then the large sheet of Müller protective material which is of extra stout thickness, and out of the middle of which a round hole (diameter 4 in.) has been cut. The tube in the carefully lined lead and rubber box, with 3 mm. aluminium filter, is then adjusted over the round hole so that the distance between the anticathode and skin is about 18 cm.

A stop-watch is used for exposure; seven minutes with a good working tube (10 Wehnelt) for each area, eight minutes if lower than six milliampères (for Müller rapid tube); three minutes with Coolidge, hardness eight, and 4 milliampères. It takes three to four hours to irradiate all the eighteen to twenty fields, or two to three hours with a Coolidge, but I do this on two consecutive days. The treatment is repeated after an interval of seventeen to twenty-one days, and irrespective of the monthly period. In my own series I found that the total dosage was an average of 2971 X for each patient.

In conclusion, it seems to me that x ray treatment may be looked upon as the treatment *de luxe* for all small uterine fibroid tumours associated with haemorrhage. It improves the health of the patient without interfering with her usual mode of life, and causes a great reduction in the size of the tumour. It does away with the nervous shock of an abdominal operation, and, as I said before, it brings about a climacteric involving less disturbance even than a natural one, and lastly, and most important of all, it is a treatment eminently successful in suitable cases, and is one free from any mortality.

RADIOLOGY IN GYNAECOLOGICAL PRACTICE.

BY

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THE uses of radio-therapy in gynaecology were to have formed a subject for discussion at the Royal Society of Medicine in 1914, but the war prevented the meeting being held. In August, 1914, I wrote an article for the *Journal of Obstetrics and Gynaecology* entitled, "The future of Radiology in Gynaecological Practice," in which I stated my conviction that "radio-therapy promises a great advance in the treatment of female ailments." This was six years ago, and I endured a certain amount of opprobrium at that time in consequence of my expression of faith in the utility of x-ray treatment. It was said to me, "We have seen Apostoli's electrical treatment come and go, and the rays will share the same fate." Such a statement could not be justified to-day, and the events of the past six years have proved that my faith was well founded. We have learned in relation to fibroids what can be done and what cannot be done by radio-therapy. Enough material has been collected to enable us to formulate rules as to indications and contraindications for the use of radio-therapy in the treatment of these tumours. In my monograph on this subject, which appeared in *Fibroids and Allied Tumours*, published in 1918, I summarized my conclusions thus:

1. Radio-therapy acts mainly by destroying the ovaries, but x rays also have a destructive influence on the cells of the myoma, as evidenced by the coincident shrinkage under the treatment, which, when it is achieved, is too rapid to be explained by inhibited ovarian activity alone.
2. Radium and meosthorium used alone are not so suitable as x rays for cases of myoma, as no shrinkage of the growth can be expected.
3. X rays combined with radium or with mesothorium appear to effect more rapid haemostasis than do x rays when used alone.

4. The French cross-fire combined with the intensive technique promises the best results; only by cross-fire can topographical difficulties be overcome.
5. The treatment is of no avail for submucous growths.
6. Radio-therapy should only be employed in cases where the diagnosis of myoma is absolutely certain, and when the tumour is uncomplicated by adhesions, degeneration, and malignant new growth.
7. The gynaecologist must decide the indications for treatment and watch clinical developments.
8. Speaking of fibroids in general, the contraindications outweigh the indications for radio-therapy. As Gustav Klein said at Halle, "Myomectomy shall never be thrown into the lumber-room." When the pen has superseded the sword, the scalpel will still be needed for myoma.

I have shown coloured illustrations of the changes wrought in fibroids by x rays in the monograph *Fibroids and Allied Tumours*. They show what an extensive destruction of muscle fibres occurs, and in the case of the ovaries I find the rays are capable of destroying all the granulosa cells in the Graafian follicles, thereby preventing ovulation and, of course, drying up entirely the internal secretion.

Subsequent experience has caused me to modify my views as regards the use of radium for fibroids, for, encouraged by successes with cases of chronic metritis treated by radium, I have tried it for fibroids with very promising results. I am glad to find Dr. Knox is also in favour of employing the combined effects of radium and x rays, and that he employs multiple points at various angles, or what the French call "cross-fire," so as to overcome any topographical difficulties which may have been pointed out to him by the gynaecologist.

In one important matter I must join issue with Dr. Knox's remarks concerning the age of the patient. Like Gauss and Krinski, he would treat a fibroid patient regardless of what her age may be. In my opinion the technique is not sufficiently highly developed to justify the use of x rays in a young subject. When radiologists can regulate the dosage so as to ensure obtaining a normal "period" in the subject of menorrhagia and stopping at that, then, and only then, in my opinion, is it safe to employ radio-therapy. This leads me to a point which has anxiously exercised my mind for years, and my trouble on this question, that of dosage, is not [illegible] by what Dr. Knox has to say on the subject. We gather that he favours the intensive method, and that he measures his dose by the Sabouraud-Noiré pastille [illegible]. What we want to know is the number of the Sabouraud-Noiré units he employs to effect a certain purpose, both the number of units employed at one application and also the sum total used in the requisite number of applications necessary to produce the sought-for result. Again, it is reported that the Sabouraud-Noiré pastille measurement is unreliable for applications which last longer than ten minutes; it would therefore be interesting to know why Dr. Knox prefers this method to that of others such as the Holzknecht [illegible] or the [illegible] solution method of [illegible]. The [illegible] photographic plan, which was [illegible] to obtain the X unit, [illegible] although I note Dr. Knox does not mention it. At the [illegible] in Halle all the results which were [illegible] were expressed in multiples of the X [illegible] and H [illegible] Holzknecht units, thus giving the reader a complete idea of dosage, which, to my mind, is essential. [illegible]

[illegible]

employing. If this assurance were forthcoming in the use of x rays it might become safer to use them for younger subjects. At present I hesitate to employ x rays in a case where the conservation of ovarian activity is of prime importance, because I dread the risk of inducing what Dr. Knox has rightly termed "the resulting menopause, with its severe nervous disturbance." My feeling is that the x rays are not yet sufficiently well harnessed to make it sure that their employment will not completely spay a woman. This may be a secondary consideration at the end of the fertile period, but it is a disastrous mutilation in a subject of fewer years, and one which the surgeon when operating knows how to avoid and takes pains to do so.

In conclusion, let me say that Roentgen's discovery in 1896 has already done much for gynaecology, and I have sanguine hopes that from gynaecologists and radiologists working in union much more will be accomplished in the future.

DISCUSSION.

Mr. F. L. Provis said that he believed he was the only gynaecological surgeon in London who had himself undertaken the treatment of gynaecological cases by x rays. After eight years' experience he had come to the very definite conclusion that x rays was a therapeutic agent of the highest value in the treatment of properly selected cases. He did not think, however, that the use of the x rays should be advised in the case of young patients, certainly not to the length of producing amenorrhoea. Could the rays be administered in just sufficient doses to reduce the loss to normal proportions in excessive menstruation, or to cure dysmenorrhoea without stopping the monthly flow for certain, then the application of x rays to women under 38 years of age might be advantageously considered. Unfortunately this was what they could not accomplish, for they could never say exactly how any patient would respond to the effect of the rays upon the ovaries. If the treatment was carried to the length of producing amenorrhoea in young women, the question was whether this was done without upsetting the internal secretion arrangements of the ovary. He thought this could not be done without such a consequence, and therefore there was a clear and decided contraindication to the administration of Roentgen therapy in young women. He thought operation should be advised in all cases of fibromyomata in women under 38 years of age needing treatment. Another important point was the selection of suitable cases. The tackling of large tumours, subperitoneal fibromata, or cervical myomata, in his experience only ended in failure. The medium-sized soft interstitial fibroid with a rich blood supply was the variety of myoma with which the greatest success would be obtained. Such tumours would, clinically, practically disappear. He did not dispute Dr. Knox's statement that a considerable time (several months) might have to be taken in order to effect a result, but if the time were compared with the time it took a patient to get over the operation of supravaginal hysterectomy the x-ray treatment would not appear at such a disadvantage. Perhaps it took eighteen weeks to bring about the desired result with x-ray treatment, and at the end of that time and for some weeks previously, the patient felt better than she had felt for years (to quote an expression these patients often used), but could the same be truthfully said of a patient eighteen weeks after she had undergone supravaginal hysterectomy for fibromyomata? As a rule it took a patient anything from six months to a year to recover completely from a severe abdominal operation. Further, under x-ray treatment the patient was never laid up except for the remainder of the day after each treatment. He thought, therefore, that it must be admitted that x rays would cure the patient more quickly than surgery, and [illegible] of the [illegible] of radio-therapy. He [illegible] was the effect of the radiation upon the internal secretion of the ovaries. [illegible] there were menopausal symptoms, these in the [illegible] majority of his cases had not been severe, and were greatly [illegible] by the administration of small doses of [illegible], but it could not be denied that menopausal symptoms [illegible] after [illegible] amenorrhoea, whereas after hysterectomy with conservation of the ovaries these symptoms did not arise for some few years. It must also be remembered, however, that removal of the uterus tended to cause early atrophy of the ovaries, resulting in the early onset of the sensory symptoms of the menopause. Finally, Dr. Knox had said that in almost every case submitted to long exposure the patient complained of nausea; in one case the speaker had known actual vomiting to set in a few hours after treatment. Dr. Knox suggested that this might be due to the inhalation of ionized air and ozone. Might it not be due to peritoneal irritation caused by the rays?

Dr. Agnes Savill (London) spoke of the advisability of fewer exposures and shorter doses, so as to avoid x-ray sickness. She had employed the method advocated by Dr. Katherine Chapman of Glasgow, who gave a pastille dose through 3 mm. of aluminium and a layer of vulcanite, and used six portals of entry on the anterior abdominal wall on three consecutive days once a month, just after the period. Amenorrhoea resulted in three months. Dr. Béclère of Paris gave even fewer exposures, and not quite one pastille dose, through two portals of entry (10 cm. diameter) once a week; a 5 mm. aluminium filter was always used, and pressure on the skin was made by a thin plaque of wood placed in the lead cylinder.

Dr. William Mitchell (Bradford) considered that the criticisms by Dr. Williamson and Dr. Cuthbert Lockyer regarding the want of exactitude of statement as to dosage, its frequency and total amount, in papers dealing with x irradiation were well founded. In every case the exact method of measurement should be detailed, whether by Sabouraud's pastille, or by Holzknecht's or Kienboeck's method, and, in the case of the first, the position of the pastille in relation to filter and to patient should always be stated. He considered that the question of dosage and duration of treatment should rest with the radiologist, as obviously the gynaecologist was not the proper person to decide. A dose of x rays can be measured as accurately as a dose of strychnine, and the only two essentials in stating it are the filter and the dose as measured by the pastille *underneath* the filter.

Dr. S. Gilbert Scott (London Hospital) said that a discussion on any form of treatment usually produced two types of critics—those who overestimated and those who underestimated its value. Dr. Knox had steered a middle course—in fact, if anything, he had erred on the side of underestimation. This was as it should be, for the speaker did not think any of them, either radiologists or gynaecologists, were at present in a position to pass final judgement—this for two reasons: (1) sufficient material was not forthcoming, and (2) it was only since the advent of the Coolidge tube that it had been possible to give anything like consistent and effective dosage. The technique used in these cases was on similar lines to that employed in any deep-seated lesion. Most workers had their little variations, which probably did not alter the results. It was well to emphasize the fact that this class of work should only be undertaken by those proficient in deep-seated therapy, either radiologists or gynaecologists, as he was certain the results depended to a great extent upon correct dosage for each particular case. The same dose was not efficient for every patient, and only experience would indicate what variation would be most efficacious. Those who were uncertain about their dosage could be divided into two classes—those who played for safety, and over-filtered, probably with inefficient apparatus or unsuitable type of ray, in which case the tumour received a minimum dose; and those who feared nothing and gave an overdose to the skin and probably only a minute dose to the tumour. If this happened they became cautious, and then went probably to the other extreme of under-dosing. As Dr. Knox had stated, there was at present no accurate method of judging the dose received by a deep-seated tumour. The whole question was very complex. Dosage to each individual case should be decided by the radiologist, not by the gynaecologist, but the radiologist was dependent on the gynaecologist as to the suitability of the case. The effect of treatment might be summarized as follows: (1) The relief of symptoms; (2) permanent stoppage of growth; (3) reduction in size. This, to his mind, was the order of importance. The patient would not thank them for reducing size without relief of symptoms. He wished to emphasize another of Dr. Knox's points—namely, that the radiologist must work in conjunction with the gynaecologist. He (the speaker) refused to treat a patient unless she had been examined by a competent man. If this was not done, mistakes in diagnosis would be made, and the radiologist got the blame for not curing a case which was unsuitable from the first. No form of treatment was going to cure all cases, and the general practitioner was the one who could give the most reliable opinion as to the ultimate result of any method. He was certain that those of them who had had cases of fibroids in any number efficiently treated by x rays were well satisfied with the ultimate results. These satisfactory results were dependent on two factors—efficient dosage and careful investigation of the case before treatment. From his own experience he was convinced that the treatment was of great importance, but slipshod methods would result in disappointment. The estimation as to the true value of this treatment in this country was hampered by want of material, but this could be rectified by the gynaecologist. There was plenty of hospital material in which operation could be delayed for, say, six months in order to test the method. It was incumbent upon the radiologist to see that his apparatus and technique were efficient if he undertook the treatment, and it was essential that the gynaecologist and the radiologist should collaborate.

Dr. Florence A. Stoney, O.B.E., gave details of eight cases of fibroid cured by treatment with x rays. In all cases she used a filter of 3 mm. of aluminium, and measured the pastille dose (Sabouraud) after filtration. No evil results ensued in any of these cases, beyond slight nausea in one. Treatment was given to six or fewer areas below the umbilicus, and also through the sciatic notches. Twenty-one days intervened before a second dose was given to the same area. As a rule, three doses to each area were enough to bring about the menopause. Dr. Stoney added that among the advantages of x-ray treatment were the non-necessity of the nursing home or of confinement to bed, except during the monthly period, no serious or dangerous illness, no risk of embolus or sudden death, no severe nervous upset. The menopause was easy as a rule; partial menopause was obtainable at will, some uterine tissue was left which was natural, treatment was devoid of discomfort, though somewhat tiresome, and nausea was quite unnecessary. Dangers were at a minimum in competent hands, and for younger women partial atrophy by x rays was much to be preferred to the mutilation of hysterectomy. These were essentially cases where the gynaecologist and radiologist should work in unison, each recognizing the other as a specialist, and not dictating the course of treatment when they had not a command of the technique. If any bad results became known as a consequence of x-ray treatment, these should be substantiated and published as a help to everyone, but such results must be really shown to have been brought about by x rays; the x-ray treatment should not be challenged on vague inferences merely. *Post-mortem* findings after radiation would be of great value if they could be obtained, also operation findings subsequent to radiation.

Dr. Shillington Scales (Cambridge), who had read Dr. Knox's paper in his absence, replied upon the discussion. He agreed that our present methods of treatment were largely empirical, and that the methods of each worker, whilst arriving at the same result, differed so considerably in detail, both with regard to dosage and filtration, that it was not possible to lay down any accepted standard, such as was asked for by Dr. Cuthbert Lockyer. No worker, accustomed to his own methods, and feeling his personal responsibility, would consent to carry out unquestioningly a prescription of dosage and technique ordered by a physician, or even a gynaecologist, whose experience in this respect was less than his own. If the gynaecologist were really qualified to give such instructions he would have the wide practical experience which would entitle him to carry out the treatment himself. But Dr. Cuthbert Lockyer's disclaimer of the necessary knowledge gave the answer to this point. Dr. Shillington Scales cited examples of instructions which were given to the radiologist which were manifestly based on insufficient knowledge. He noted with satisfaction Dr. Williamson's explanation that adverse developments after x-ray treatment were not necessarily the results of such treatment, and suggested that a more formidable list could be cited as occurring after operative treatment. The fact was that our knowledge of the biological effect of x rays was still very vague, just as until comparatively recently we were ignorant of the very nature of x rays, and, moreover, our methods were subject to so much change and advance, to say nothing of improvement in tubes and other apparatus, that it was quite impossible at present to standardize technique.

A Post-Graduate Lecture

ON

CLINICAL MANIFESTATIONS OF THE MOBILE PROXIMAL COLON.

DELIVERED AT ANCOATS HOSPITAL, MANCHESTER.

BY

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IN any endeavour to elucidate the question of the clinical importance of abnormal mobility of the caecum and ascending colon, it is necessary briefly to recall the light thrown upon the subject from the different angles of human embryology and of comparative anatomy.

Embryological Evidence.

In early intrauterine life the mid-gut loop, extending from the duodenum at the opening of the common bile duct to the splenic flexure of the colon, is suspended from the middle of the spine by a single dorsal mesentery, of which the superior mesenteric artery forms the axis. (Fig. 1.) During the fourth and fifth months of development this U-shaped mid-gut loop undergoes a counter clockwise rotation round its axis. The caecum, originally a diverticulum on the posterior limb of the loop, swings round through three-fourths of a circle until it lies in the right hypochondrium under the liver. Here it may occasionally remain as an "undescended caecum," a condition that gives rise to those rare but puzzling cases in which an inflamed appendix is found in close relation with the gall bladder. Usually, however, during the later months before birth a gradual descent of the caecum into the right iliac fossa follows, and as a result the ascending colon and hepatic flexure become recognizable parts of the large intestine. (Fig. 2.) This process is contemporaneous with the descent of the testis or ovary, and probably results from the same mechanical causes.

Meanwhile a separate and very remarkable process of peritoneal fusion has been going on. First the great omentum grows down over the front of the transverse colon and adheres to it. Then the primitive mesenteries of the ascending and descending colon disappear. (Figs. 3 and 4.) These segments of the colon fall back against the posterior parietal peritoneum on the right and left sides of the abdomen, and become permanently fixed in position by fusion of the mesocolon and peritoneum covering the posterior surface of the bowel with the parietal peritoneum. The great omentum at this stage takes a far more active part in the posterior fixation of the ascending colon than has been generally recognized, and one reminder of the part it plays is often seen in the structure known as Jackson's pericolic membrane.

Evidence of Comparative Anatomy.

The significance of this phase of intestinal development is very evident from a study of comparative anatomy. If we examine a series of mammalian types, in which the mid-gut loop undergoes rotation closely analogous to that in man, we find a lack of this peritoneal fusion, and a consequent persistence of the original mobility of the ascending and descending colon in the pronograde animals only. Thus the dog and the lower monkeys have a colon that is completely mobile. But if we trace the series up through the higher pronograde monkeys to the higher anthropoids, we find the fixation of the colon progressing *pari passu* with the adoption of the erect posture, until, in an orthograde animal such as the chimpanzee, the fixation differs in no material degree from that in the normal human type.

We are thus led to the inevitable conclusion that fixation of the ascending and descending colon is evolved as a necessary adaptation to the upright posture.

In the course of evolution individuals with the more mobile type of ascending colon (for mobile descending colon is an excessively rare anomaly) have been in some way handicapped in the struggle for existence and have tended to succumb. Let me try to explain some of the various ways in which this lack of adaptation to the upright posture may show itself in man, for it is a very common and, I believe, a very important developmental defect. In some 20 per cent. of individuals of all ages you will find some degree of abnormal mobility of the caecum and ascending colon.

MANIFESTATIONS IN ACUTE ABDOMINAL EMERGENCIES.

1. *Ileo-caecal Volvulus.*

In October, 1918, I was asked to see a lady, aged 68, who had been suddenly taken ill three days before, with acute abdominal pain and vomiting. The pain had attacked her in intense spasms for the first twenty-four hours, but for the last two days it had been more continuous. She had absolute constipation and had passed no flatus, in spite of repeated enemata. She was a thin woman, with sunken features and a foul, dry tongue. The pulse was 110 and thin. In the mid-line of the lower abdomen was a large rounded tumour, standing out visibly through the thin abdominal wall. It was rather tense on palpation, and gave a deep tympanitic note on percussion. No caecum could be palpated in the right iliac fossa. A diagnosis of volvulus was made, and an operation performed. On opening the abdomen through a median incision below the umbilicus, a huge dilated caecum popped out. It was found that the distended parts consisted of the lower five inches of the ileum, the caecum, and the lower half of the ascending colon. They were extremely mobile, and mounted on a long mesentery continuous with that of the small intestine. They had undergone clockwise rotation to the extent of one and a half turns. There was no actual gangrene, but the tension of gas in the caecum was so great that the serous coat was beginning to split. The whole volvulus was uncoiled with ease, the appendix removed, and appendicostomy performed by stitching a rubber catheter into its stump and fixing the stump of the appendix to the parietal peritoneum. This procedure both relieved the enormous distension and fixed the caecum so as to prevent recurrence. Her recovery was uneventful. The catheter was removed on the seventh day, and the wound healed without any leaking of caecal contents.

Ileo-caecal volvulus is a rare condition as compared with volvulus of the pelvic colon, and it has a very high mortality. It is obvious that an essential predisposing cause is failure of the normal posterior fixation of the caecum and ascending colon, for without this abnormal mobility the rotation that obstructs the bowel could not take place.

2. *Intussusception.*

In all the discussions that have taken place on the etiology of intussusception attention has tended to be concentrated on the mechanism by which the process starts. Is the invagination started by a localized spasm of a segment of the bowel or by a localized paresis? It is an interesting pathological problem, and I believe the evidence is in favour of spasm as the exciting cause. But far too little attention has been given to a predisposing cause of intussusception that is almost always present. I refer, of course, to lack of peritoneal fixation of the proximal colon. It is obvious that this factor does not influence the rare enteric form of intussusception. But in the common form in which the ileo-caecal valve forms the apex, or the ileo-colic form in which the lower ileum first prolapses through the valve until it jams, and then the ileo-caecal region travels along the colon, we find, invariably in my experience, a definitely abnormal mobility of caecum and ascending colon, with persistence of the ascending mesocolon, and very often a definite Jackson's pericolic membrane. It is sufficiently plain that in the presence of firm fixation of the back of the caecum and ascending colon to the parietes, any extensive degree of intussusception could hardly take place. I believe that the much maligned ileal band of Lane (or genito-mesenteric fold of Douglas Reid) is also, when present, a very effective safeguard against the common forms of intussusception.

I need hardly remind you of the classic symptoms of acute intussusception—the abdominal pain, at first in intermittent spasms, with intervals of repose; the vomiting and constipation with the passage of blood and mucus by the rectum; and very often the typical sausage-shaped tumour in the abdomen. But it may be well to point out that the symptoms of intussusception are not always classical. I was recently asked to see a female child, aged 14 months, who had been perfectly well until seven days before, when she began to scream with pain for a few moments at intervals of thirty minutes or so, hyperextending her back and legs during the attacks. She had vomited once slightly on the first day, but not since. The bowels had been opened daily, and no blood had been seen in the motions. The spasms of pain had recurred day and night at fairly short and regular intervals during the whole seven days. The child was well nourished and in fair condition. The abdomen was held too rigidly for satisfactory palpation, but no caecum could be detected in the right iliac fossa. In some faecal material on a napkin there was an appreciable excess of mucus. A diagnosis of intussusception was made. At operation a large ileo-caecal intussusception was found with its apex as far down as the splenic flexure. It was reduced easily and completely. The proximal colon was not only extremely mobile, but very wide in diameter, and this accounted for the lack of complete obstruction. After reduction I sutured the caecum and ascending colon back into the right loin as a precaution against a possible recurrence. The child made a normal recovery.

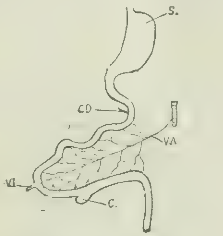

Fig. 1.—Diagram of U-shaped mid-gut loop before rotation. S., Stomach; C.D., common bile duct; V.A., vitelline (superior mesenteric) artery; V.I., vitello intestinal duct; C., caecum.

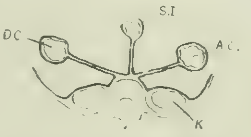

Fig. 3.—Diagram of transverse section through abdomen, showing peritoneal arrangement before fixation of colon (after Huntington). A.C., Ascending colon; S.I., small intestine; D.C., descending colon; K., kidney.

The operation of colopexy and caecopexy, anchoring the colon to the posterior parietal peritoneum, should, I consider, be performed as a routine after reduction of the intussusception, for a recurrence of the condition is by no means uncommon without it.

CHRONIC MANIFESTATIONS.

Far more common than these acute catastrophes are the chronic manifestations of the mobile proximal colon. In the more frequent type the patient complains of chronic constipation and pain in the right iliac fossa. The pain is usually worse after food, on exertion, and when the bowels are particularly constipated. It is described as a dull ache or a dragging pain, and the patient gives no history of a previous attack of acute appendicitis. There is often some associated sensation of flatulence and discomfort in the epigastrium, though this is more variable in its relation to the taking of food than in gastric or duodenal ulcer. Some tenderness on palpating the right iliac fossa is found on examination, and often palpable splashing and gurgling in a dilated caecum. X-ray examination after a barium meal and enema affords valuable confirmatory evidence of the condition. When screened in the upright position the caecum and ascending colon are prolapsed, so that the hepatic flexure lies down on the false pelvis, and the caecum may pass over the pelvic brim into the true pelvis. Screened in the left lateral position the loaded mobile proximal colon sags across the mid-line to the left, and the caecum may even be seen in the left iliac fossa. In this left lateral position the extent of attachment of the hepatic flexure can be most readily estimated.

On exploring the abdomen in such cases by an incision through the right rectus, the peritoneal attachments are found to be so lax that the caecum and the greater part of the ascending colon can be lifted out of the wound well above the level of the abdominal wall. More often than not the appendix shows no signs of inflammation. The attachments of the hepatic flexure vary. In some cases a firm, broad peritoneal band containing some fibrous tissue fixes it to the lower pole of the right kidney (the nephrocolic ligament) or to the parietes close to the kidney or to the gall bladder. In other cases the hepatic flexure is so singularly devoid of firm fixation that it can be readily drawn out of the wound along with the ascending colon. The doctrine that abnormal mobility of the right kidney is invariably associated with mobility of the proximal colon is by no means in conformity with my experience, though the association is undoubtedly frequent.

Less commonly the patient complains, in addition to the symptoms already described, of sudden acute attacks of pain in the right iliac fossa, with a sense of swelling in that region, and often nausea or actual vomiting. These attacks seldom last longer than an hour or two, and may subside in a few minutes. When seen during such an attack the caecum may be found greatly distended, and tender on palpation. The explanation of such sudden crises is to be found in a partial volvulus of the mobile ileo caecal region, or an acute kinking at the hepatic flexure.

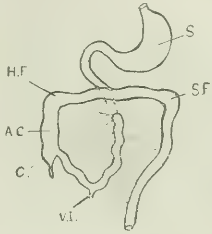

Fig. 2.—Mid-gut loop after rotation and partial descent of caecum. S., Stomach; V.I., vitello-intestinal duct; C., caecum; A.C., ascending colon; H.F., hepatic flexure; S.F., splenic flexure.

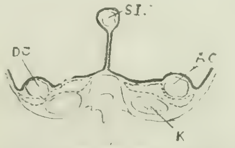

Fig. 4.—Transverse section showing peritoneal arrangement after fixation of ascending and descending colon (after Huntington). A.C., Ascending colon; S.I., small intestine; D.C., descending colon; K., kidney.

But how are we to explain the more chronic symptoms—the constipation and the aching pain in the right iliac fossa? It is one thing to affirm that the mobile proximal colon is ill adapted to the upright position. It is quite another to explain the precise mechanism by which the symptoms are produced. We must be willing to admit that there are large gaps in our knowledge of the physiology and pathology of the colon, and we must avoid an undue craving for a simplicity of explanation that may not be reconcilable with all the clinical and pathological data. The colon, as is now well known, propels its contents, not by unceasing peristaltic movements like those of the stomach and small intestines, but by strong short thrusts, lasting only a few seconds, and occurring in normal conditions only after the principal meals. In a normal individual this gastro-colic reflex works smoothly, and causes no subjective sensation. But in a patient with the developmental abnormality that we are considering the ascending colon is hampered, in its task of pushing on its semi-solid contents against gravity, by the lack of the purchase it should derive from firm fixation to the posterior abdominal wall. Ineffectual contractions fail to force all its contents round the hepatic flexure, but the ileum passes more fluid contents through the ileo-caecal valve despite this failure. Distension of the caecum results, and is responsible for the pain in the right iliac fossa. When fixity of the hepatic flexure is combined with a very mobile ascending colon there is probably a tendency, when the colon swings into certain positions allowed by its lax attachments, for an acute angulation at the flexure to occur, amounting to a transient intestinal obstruction.

The epigastric pain so often felt is probably referred from the downward drag of the overloaded caecum on the ascending mesocolon. When operating on cases under spinal anaesthesia I have often noticed that if any traction on the caecum was exerted the patient complained at once of sharp pain in the upper epigastrium, although the abdominal incision had been completely painless.

Putrefactive changes in the stagnant caecal contents and a chronic catarrhal inflammation of the mucosa no doubt play a part in producing both the local pain and the general toxaemia associated with the condition, and as a result of this inflammatory process one frequently sees a calcareous lymph gland along the ileo-colic artery in these cases.

It is a fact of some clinical importance that the more extreme degree of mobility, in which the hepatic flexure is so loosely attached that it drops on to the false pelvis in the erect posture and can be lifted well out of a right rectus incision, often produces less severe symptoms than those resulting from a mobile caecum and ascending colon, combined with a fixed hepatic flexure. The following case is a striking illustration of this:

Lieut.-Colonel D., aged 39, had suffered from an extreme degree of general enteroptosis for many years, with attacks of flatulent pain in the epigastrium, and sometimes in the right iliac fossa, which came on one to two hours after food. He had never been particularly constipated. In August, 1919, about an hour after lunch, he was suddenly seized with severe central abdominal pain and urgent vomiting, and presented every symptom of high intestinal obstruction. After eight hours the pain suddenly and spontaneously passed off, and when I saw him in consultation an hour later there was little to be made out beyond a very marked *habitus enteroptoticus*, with easily elicited splashing in both stomach and caecum. *X*-ray examination three days later showed a low-lying stomach and extremely mobile proximal colon, with the hepatic flexure lying down well below the iliac crest in the erect posture. No ulcer in the duodenum was detected by the radiologist. Exploratory operation confirmed the *x*-ray findings as regards the extreme enteroptosis, but revealed a chronic ulcer in the first part of the duodenum, with a flake of recently deposited fibrin on its peritoneal surface. I took the view that his previous symptoms had been due rather to the ulcer than to the enteroptosis. Accordingly, posterior gastro-enterostomy was done, the duodenal ulcer infolded, and the appendix removed. Nothing at all was done for the mobile proximal colon, in view of the very general splanchnoptosis associated with it. The soundness of the procedure adopted was [illegible] progress. [illegible] for many years attributed to his enteroptosis [illegible] left him, and he has lived an active life without restriction [illegible] ever since.

In such a case, where the whole proximal colon with the hepatic flexure lies down on the pelvis, the bowel has more chance of propelling its contents normally than if the ascending colon and caecum are mobile and the hepatic flexure are fixed and kinked. The case may be used also to point another moral. It should not too readily be assumed that a patient with a mobile proximal colon has no other lesion. Such patients are far more prone to develop appendicitis, gastric or duodenal ulcer, and gall stones than those whose alimentary canal has not had a lifelong struggle against gravity by reason of its abnormal mobility. We do not yet know the precise manner in which gastric or duodenal ulcer or gall stones result from the caecal stagnation and [illegible] with the mobile proximal colon. [illegible] understand how [illegible] result from [illegible] In both cases the [illegible] established, [illegible] by further pathological investigation. I think, however, that we [illegible] mechanical theory recently advanced by Waugh, who suggests that [illegible] common in the first part and relatively very uncommon in the second part of the duodenum. Mr. Waugh further remarks that "if the mode of formation of these ulcers has been rightly assumed . . . a mobile ascending colon should be present in all cases." To one who can recall, as I can, a large number of cases of both gastric and duodenal ulcer in which it has been most difficult to expose the appendix through the ordinary upper rectus incision owing to normal fixation of the ascending colon, it will hardly appear that the mode of formation has been rightly assumed by Mr. Waugh.

OPERATIVE TREATMENT.

The ideal method of dealing with the mobile proximal colon is to fix it back in the right loin in the position that we have seen is the normal one for the orthograde primate. This may be done by the method of Coffey,[3] or by the method recently described by Waugh.[2] A considerable experience of the former method has taught me that it is often very difficult through the ordinary right rectus incision to fix the colon in a way that approximates to the normal, and there is the further difficulty that fixation by firm and unyielding scar tissue is a poor substitute for the firm but elastic support afforded by the normal peritoneal fixation of the colon. Accordingly I have latterly adopted the alternative course of reducing the load of the overburdened caecum and ascending colon by the simpler method of plication. After removal of the appendix, a continuous suture of fine thread picks up the anterior and lateral longitudinal taeniae from the base of the appendix, and is carried as far up the ascending colon as the dilatation appears to require. By this method the lumen of the caecum and ascending colon is permanently narrowed without in any way hampering the contraction of the bowel, and the clinical results have been in my experience very satisfactory.

The drastic operation of colectomy, either partial or total, with its considerable mortality, is one that should be reserved for cases with the most extreme disability, and should only be undertaken when the procedures devoid of any appreciable danger have failed to give relief.

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Remarks

ON

A CASE OF HEPATIC CIRRHOSIS ALLIED TO HANOT'S DISEASE.

BY

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THIS case, though a single one, is perhaps worth publication on account of the failure to arrive at a correct diagnosis during life, the histological appearances of unilobular and intralobular cirrhosis, and the light recently thrown on such cases and on the problem of biliary cirrhosis by the experimental work of Peyton Rous and Larimore, of the Rockefeller Institute for Medical Research.

A boy aged 11 years had influenza in December, 1918, and since then had never been well. In April, 1919, he became drowsy, and in May came under observation at the Victoria Hospital for Children. On May 23rd he was shown at the [illegible] Children, Royal Society of Medicine [illegible] by Dr. E. A. Cockayne.[1] [illegible] with a trace of albumin [illegible] high [illegible] but [illegible] were normal in [illegible] showed [illegible] per [illegible] millimetre, 6,800 [illegible], with [illegible] The Wassermann reaction was negative. There [illegible] The liver was [illegible] which was free from [illegible] There were [illegible] The abdomen was distended, but there were no [illegible] tended veins visible, and no ascites. The liver was much enlarged, both lobes being smooth and free from tenderness, and the spleen was palpably enlarged. Dr. Cockayne considered that the condition was due to abdominal tuberculosis, and with this view other speakers agreed, though the possibility of lymphadenoma and of post-influenzal hepatitis was raised; but Hanot's hypertrophic biliary cirrhosis was not suggested. The boy then went to a convalescent home, and on October 10th was readmitted to the Victoria Hospital for Children, where he remained until his death on June 13th, 1920. On readmission it was noted that he had lost flesh, was still slightly jaundiced, ran an evening temperature of 101° F., had a rapid pulse rate, usually over 130 per minute, and a soft apical systolic murmur. A skiagram showed that the heart was purse-shaped, suggesting mitral disease, but there was no evidence of any intrathoracic growth. The leucocyte count of 6,200 per cubic millimetre showed 64 per cent. polymorphonuclears, 23.5 per cent. small lymphocytes, 7 per cent. large lymphocytes, 4 per cent. transitionals, and 1.5 per cent. hyalines. The Wassermann reaction was negative as before. The abdomen was distended by the enlarged liver, measuring from 27 to 29 inches according to varying flatulence, and showing enlarged veins over the surface. The urine often contained bile pigment. Ascites was not obvious until April, when the jaundice became much more marked, and the patient, who in the first quarter of the year had shown some general improvement, although the temperature and pulse-rate had remained much the same, went downhill. Early in June diarrhoea with incontinence supervened, and the ascites necessitated tapping on June 8th, 50 ounces of clear yellowish-green fluid being removed. He then became semi-comatose, and died on June 13th.

Necropsy.

The body is extremely emaciated and intensely jaundiced; the eyes are deeply sunken; the malar arches very prominent. There is no subcutaneous fat. No rigor mortis present. Tongue, fauces, pharynx, tonsils, trachea, and bronchi are all normal; the cervical and mediastinal glands also. The pleura on the left side is adherent by recent easily broken down bands. There is no fluid. The right is free and also without fluid. Both lungs are healthy. The pericardial sac contains about 2 oz. of clear fluid, but there is no pericarditis. The heart is normal; the peritoneum contains about a pint of clear fluid. There are no adhesions and no inflammation. Stomach and small and large gut healthy. Adrenals and kidneys normal. The spleen weighs 11½ oz. It is soft and pulpy; there is no fibrosis. It is densely adherent to the stomach. The pancreas forms an extremely hard nodular mass across the middle line. There is no evidence of new growth, but the organ appears extremely fibrotic.

The liver is much enlarged and weighs 3 lb. 6 oz. The surface is smooth, but the capsule wrinkled, as though the organ had recently undergone some shrinking in size. It is fairly but not extremely tough. The anterior edge is rounded, smooth, and regular. There is no perihepatitis, for the capsule is normal, without any thickening or opacity, and strips freely and cleanly. The surface, both externally and on section, is mottled with small green areas, each surrounded by strands of grey tissue, which similarly forms a zone about every vessel. The gall bladder is small and contains a little bile. Its mucosa is perfectly healthy. The cystic, hepatic, and common bile ducts are normal in appearance. The hepatic and portal vessels present no abnormality. The brain and meninges are healthy.

Microscopic Examination.—Sections of the liver under the microscope show a well marked unilobular, together with an even more prominent intralobular cirrhosis. All the lobules are surrounded and separated from each other by wide strands of connective tissue from which narrower strands are given off and penetrate the individual lobules. Occasionally an islet of three to six liver cells lying in intimate contact with each other may be found, but such a condition is very rare, and practically every cell is isolated from its fellows by intervening connective tissue fibres. The fibres are coarse and the cell nuclei small and deeply staining; there is no evidence of any very active proliferation of these elements. The cells of the parenchyma present all degrees of degeneration. As a rule, those in the outer zone of the lobule, in the neighbourhood of the portal vessels, show least change, then those about the central venules, while those in the intermediate zone are most affected. The last have in many cases undergone extreme fatty degeneration; often the cell body is distended and completely occupied by a large fat droplet; sometimes the fat occurs in minute droplets scattered throughout the cytoplasm. It stains readily with osmic acid or Scharlach R. Here and there an area is found in which the cells are filled with coarse granules of dark-green almost black pigment, which is certainly of biliary origin. These areas are situated about a branch of the portal vein, and are accompanied by a slight leucocytic infiltration of the connective tissue. Nowhere are the hepatic cells quite normal; many are completely destroyed, leaving nothing but a granular débris, others show some degree of karyolysis, while the rest vary much in size and shape, and the staining power of nucleus and cell body and the cytoplasm is finely granular. They have apparently passed into a state of exhaustion beyond the stage of irritation in which some proliferation may occur, for it is only in extremely few instances that any signs of mitosis can be discovered. The blood vessels do not show any changes, but are sometimes surrounded by a narrow zone of very mild leucocytic infiltration, and sometimes a more or less extensive (microscopically) extravasation of blood through one of the fibrous septa or amongst the parenchymal cells is found. It has been impossible to discover either mast cells or plasma cells. The bile canaliculi are patent and free from any inflammatory change; there is no cholangitis nor pericholangitis. Careful and prolonged search, however, reveals some evidence of bile stasis, in addition to the pigmentation already mentioned. Now and then a plug of inspissated bile is found occluding a bile capillary in its intralobular portion, either in the middle zone of the lobule or just as the capillary leaves the lobule and enters Glisson's capsule.

The indications of biliary stasis are thus by no means well marked. The areas of pigmentation are rarely met with; in them the pigmentation of individual cells is not extreme, and bile thrombi are very few in number. Pseudo-bile canaliculi are very numerous throughout the perilobular connective tissue. They are for the most part solid columns of cubical or columnar cells, and few if any of them present a lumen. The spleen shows some excess of fibrous tissue elements, but sections of the pancreas do not reveal any abnormality whatever.

REMARKS.

During the nine months of the boy's second stay in the hospital the diagnosis was uncertain; the rapid pulse rate (120 or over) and the mitral murmur at one time suggested that the large liver was cardiac, and that the condition might be that described by Hanot as hepatic asystole, in which the hepatic manifestations are more prominent than those of the primary cardiac lesion, as in the remarkable case recorded by one of us[2] of a child aged 3½ years, regarded during life as primary sarcoma of the liver, with well marked dilatation of the subcutaneous abdominal veins, pointing to a collateral circulation between the superior and inferior venae cavae; the necropsy showed chronic venous engorgement of the liver only. Digitalis was therefore given a full trial in our case, but without any beneficial effect. New growth was also seriously suspected, but as time went on this possibility was narrowed down to some rare and innocent condition such as an angioma or a simple cyst; though exploration was often considered, the diagnosis never justified this. Hypertrophic biliary cirrhosis was not suspected.

The main clinical features of the case—namely, the large liver and spleen, jaundice, fever, chronicity, and absence of ascites until late in the course of the disease—are, at any rate on paper, those of Hanot's hypertrophic biliary cirrhosis, and histologically the unilobular and intralobular cirrhosis approach the changes described as characteristic of that disease. But both clinically and histologically there is a want of prominence, if it may be so expressed, of the biliary element. The jaundice was slight until late in the course of the disease; but, as it was present throughout, the case cannot be regarded as one of the anicteric hypertrophic biliary cirrhosis described by the French. Then histologically evidence of biliary stasis, such as bile thrombi in the intralobular bile canaliculi or pigmentation of the hepatic cells, was extremely slight, and there was no inflammation of the small bile ducts. The type of cirrhosis corresponds fairly closely with that produced experimentally by Rous and Larimore.[3] By ligature of the bile channels of one lobe of a rabbit's liver and of the branch of the portal vein to the remainder of the organ, thus diverting all the portal blood into the lobe with biliary stasis, these workers succeeded in producing an intralobular cirrhosis which they regarded as due to biliary stasis at the level of the intralobular bile ducts. The presence of a few bile thrombi in these vessels in our case indicates some degree of stasis at this level. The unilobular cirrhosis, on the other hand, they regard as the outcome of stasis in the small bile ducts in Glisson's capsule at the margins of the lobule, where again a few bile thrombi existed in our case. Here also were situated those cells in which pigment had been deposited. The evidence of biliary stasis is thus most marked at the boundary between the lobules and Glisson's capsule, and it would consequently appear probable that the unilobular fibrosis was the first to make its appearance. Later, stasis was brought about further back within the lobules, and then the intralobular cirrhosis appeared. In our case the stasis was nowhere marked nor comparable in intensity with that produced in the extended and careful experimental research of Rous and Larimore, although the degree of fibrosis was practically the same. A possible explanation of this difference is afforded by the fact that in their rabbits the complicating factor of infection of the liver was always eliminated, whereas in our case this disturbing factor, though not proved, was rendered highly probable by the long-continued fever. It is noteworthy that the unilobular cirrhosis was that of Hanot's disease, but the intralobular was much more prominent than that regarded as characteristic of that condition.

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THE INFLUENCE OF OVERCOOKING VEGETABLES IN CAUSING SCURVY AMONG CHILDREN.

BY

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(Report to the Lister Institute and to the Medical Research Council, London.)

IN April, 1919, 40 cases of scurvy occurred among the 64 children from 6 to 14 years of age under treatment for tuberculosis in the University Kinderklinik, Vienna (Professor C. v. Pirquet).

The first case, observed on April 12th, had pain in the jaws, swollen, tender, and discoloured gums, and later swollen and tender knees. On April 14th two more cases were reported and developed symptoms of the same severity. Subsequently 37 fresh cases occurred, the last on April 28th; in all of these the symptoms were mild and confined to gums and jaws.

From April 18th to April 28th 45 lemons were provided daily for the 64 children in the section, and extra spinach, "Kraut," and raw onions were added to the diet. The scorbutic patients received also a preparation made by boiling pine tree needles in water. After April 28th extra supplies of fresh vegetables were obtained. In all cases the symptoms subsided in ten days, and in most in four or five days. In the majority of cases the weight charts show a temporary arrest in growth during the attack, but in no instance was there any evidence of a prolonged retardation.

The admirable arrangements of this hospital render the outbreak exceptionally favourable for study. A very accurate system of calculating food requirements has been elaborated by Professor v. Pirquet, and, as far as calories are concerned, each child has always received enough without any excess. The unusually complete records of diet which are kept as a routine measure permit of detailed analysis, and the average amount of each article of diet taken by each child can be accurately determined. Singularly full records are also kept of the growth in size and weight and the general condition of the patients, all of which were placed freely at our disposal by Professor v. Pirquet and his staff.

At the time of the outbreak there was no corresponding prevalence of scurvy in the general population, and the conditions which determined its onset have to be looked for inside the hospital and primarily in the food.

Analysis of Diet.

The articles of food consumed in the Tuberculosis Section of the Kinderklinik have been classified into:

(1) Those known to possess little or none for prevention of scurvy: flour, [illegible], barley, eggs, cheese, condensed milk, lard and other fats, dried beans and peas.

(2) Those possessing marked antiscorbutic properties: green vegetables, potatoes, other root vegetables, fresh meat, and fresh milk.

The comparative values of the food fall under (2) are given in Table I below. The figures are based on quantitative experimental work carried out at the Lister Institute on guinea pigs and monkeys.¹ In many cases the values have been confirmed by recent therapeutic trials in Vienna on infantile scurvy (Barlow's disease). The values of the fresh materials are, of course, much diminished by the ordinary procedure of cookery.

The possible influence of meat has been disregarded in the present investigation. Even when raw its antiscorbutic value is small and it must be consumed in very large amounts—for example, 500 grams and upwards per person daily²—if scurvy is to be prevented by its agency alone. During the six months preceding this outbreak the weekly average per patient was less than 300 grams. We do not consider either that fresh milk has played any important part as an antiscorbutic in the present instance. At the best its antiscorbutic value is low, and owing to disorganized transport it was almost certainly heated twice before reaching the children. Up to the end of January, 1919, the average daily ration was never more than 250 c.cm., and during February and March this steadily declined to about 30 c.cm. More condensed milk was then used, but the value of this product is even less than that of fresh unheated milk. No fruit was taken. The average consumption of green vegetables, potatoes, and other root vegetables is given in Table II. The outstanding feature of this analysis is the deprivation of the most effective antiscorbutics after the middle of February. During the autumn of 1918 there appears to have been a generous provision of green vegetables, potatoes, etc. This was on the whole maintained during January, 1919, but there was a great falling off in February, which became still more marked in March.

These data appear to show clearly that a daily ration of about 80 grams root vegetables is insufficient to protect from scurvy, and we are of opinion that the marked shortage of all vegetables during the eight weeks from the middle of February to the middle of April was the immediate precipitating cause of the outbreak. If, however, this were the whole explanation, it is remarkable that such a short period of deprivation should cause widespread recognizable scurvy. For adults the necessary period has been fixed at from four to eight months, and oftener perhaps nearer the longer time.³ For children there appears to be no definite information beyond the fact that symptoms are rarely seen in infants less than 6 months old.⁴ It is not unlikely that the period for children is less than that for adults in correspondence with their greater metabolism, but there do not seem to be any grounds for taking it as shorter than four months.

TABLE I. [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

TABLE II. *Average Daily Consumption by each Patient in Grams.*

Date.	Green Vegetables.	Potatoes.	Other Root Vegetables.	Total Vegetables.	Milk.	
					Fresh.	Condensed.
1918.						
September-October ...	102	114	15	231	188	30
November-December ..	62	110	62	234	225	16
1919.						
January	30	130	68	228	190	112
February (first half) ..	0	55	92	147	43	215
February (second half)	0	0	101	101		
March ...	0	0	77	77	28	105
April (first fortnight) .	12	1	[illegible]	[illegible]	0	80

In the present instance the allowance of vegetables up to two months before the first cases appeared was more than 200 grams daily, which is not less than is usual in many private households during the winter, and may be expected to prove adequate for prevention.⁵ A similar allowance, 250 grams daily fresh vegetables, is a common ration for soldiers on active service, and instances must be numerous in which this amount has failed temporarily without appearance of scurvy in so short a period as eight weeks. In the present case, therefore, the antiscorbutic taken in the previous months should have enabled these children to withstand eight weeks of comparative deficiency. It did not do so, and we are forced to conclude that while the supply of vegetables was adequate the supply of antiscorbutic was defective.

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* A [illegible] the *Zeitschrift für Kinderheilkunde*.

The explanation seems to lie in the method of cooking; this process destroys the antiscorbutic vitamine in proportion to the time and temperature of heating. The time of cooking is in general more important than the temperature, and it has been shown that quick heating at 100° C. entails less destruction than prolonged simmering at 70° to 90° C.[6] Outbreaks of scurvy in which excessive cooking of the vegetable ration has been considered an important contributory cause have been already placed on record.[7]

By the kindness of Professor v. Pirquet, and with the help of the sister in charge of the kitchen, we were enabled to study the methods of cooking employed in the kitchen of the Kinderklinik.

In cooking for institutions, where large numbers of people are concerned and large quantities of food have to be manipulated, the time taken in cooking must of necessity be much longer than is the case in small households. In Vienna, moreover, the usual method of preparing vegetables involves two separate cooking processes: they are first boiled till soft, and afterwards cooked again before serving, in an "Einbrenn" made from flour and fat. This double cooking involves a twofold destruction of antiscorbutic vitamine.

Similar methods of cooking vegetables have been employed in the kitchen of the Kinderklinik. Even potatoes are frequently twice cooked—first boiled or cooked in steam at 100° C., then sliced and cooked again with fried fat and onions. In the making of soups the root vegetables, tomatoes, green vegetables, etc., are subjected to a temperature of 90° to 100° C. for as long as three to four hours as a general rule. Following such methods of cooking, the loss of antiscorbutic value must be very extensive, if not almost complete. It is probable, therefore, that during the period (September, 1918, to February, 1919) when an adequate amount of fresh vegetables was provided, the diet nevertheless was a scurvy-producing one, due to loss of antiscorbutic vitamine during the cooking.

It would be easy to introduce slight modifications into the method of cooking which would avoid much loss of antiscorbutic material and would not alter seriously the present manner of preparing the food. The following are examples:

1. *Soups.* In the making of soups the vegetables are first cut in small pieces, placed in water, and the whole cooked together for three or four hours. If green vegetables are used, or fresh tomatoes, as in "Kohlsuppe" or "Paradeissuppe," these also are subjected to the whole period of cooking. An improved method would be to add the sliced cabbage or the tomatoes, etc., shortly before serving the soup, so that the cooking should take place for as short a time as possible. When fresh fruit and vegetables are scarce it would be an excellent plan to grate the root vegetables and press out the juice, and to boil the dry pulp with the other constituents of the soup for as long a time as is needed, reserving the raw juices to be added just before the soup is served.

2. *Green vegetables* [Kochsalat cos-lettuce; Kohl cabbage, etc.] are washed, placed in hot water, heated to boiling point and kept at 90° to 100° C. until soft (about 1½ hours). The water is then poured off, and only a little retained to add to the finished dish. The cooked greens are minced, heated a second time with an "Einbrenn" made of flour, bacon fat, onion, etc., water being added to make the right consistency. It would be better to steam the green leaves instead of cooking them in boiling water. The time of cooking could probably be shortened to twenty to thirty minutes, and the loss of antiscorbutic and other vitamines in the water (which is not consumed) would be avoided.

Germinated Seeds.—The use of germinated peas, beans, lentils, or other seeds as supplementary antiscorbutic materials where there is a shortage of fresh vegetables cannot be too strongly urged.

The method of preparation is as follows: The beans, peas, etc., are washed in water and left to soak for twenty-four hours at room temperature. They are placed in layers not exceeding 5 to 7 cm. in depth upon an ordinary kitchen sieve or other porous surface. They are kept moist by occasional sprinkling with water and with free access of air for 48 to 72 hours. At the end of this period rootlets varying from 0.5 to 1 cm. in length should be visible. The germinated seeds should not be allowed to become dry again, but should be cooked immediately. The cooking should be for as short a time as is necessary to render them soft and palatable. Placing in water for half an hour and then boiling for ten to fifteen minutes should suffice for small seeds such as peas and beans.

The antiscorbutic value of this germinated material has been determined by means of experiments with animals (guinea-pigs) and has been found, weight for weight, to possess about one-third the value of cabbage leaves in the raw condition.[8] It has also been successfully used in the prevention and cure of human scurvy.[9] It is interesting to note that dry peas, beans, and "czirok"* formed an important article of diet in the tuberculosis ward during the whole period under investigation. In the three months previous to the outbreak an average amount of 33.5 grams were consumed daily by each child. During the time of greatest dearth—that is, the eight weeks immediately preceding the outbreak—a daily average of 30 grams per head was consumed. When dry these pulses have a negligible antiscorbutic value, but had they been given in the germinated condition the ration of 30 grams would have represented the equivalent of about 60 grams of fresh vegetables, if not spoilt by overcooking. This extra allowance would have been of inestimable value in preventing the outbreak.

The incidence of scurvy in relation to the length of residence in hospital is of some interest, the children who had been in hospital for a longer period being affected a good deal more than the recent arrivals.

TABLE III.

Group.	Residence in Hospital.	Number.	Scurvy Symptoms.	Per Cent.
A	6 months or more ...	17	16	94
B	3 to 6 months	21	12	57
C	Less than 3 months ...	25	12	45

It has been pointed out above that the children in Group A had probably suffered long relative deprivation of antiscorbutic owing to the methods used in cooking their vegetables. The same conditions did not apply to Groups B and C, though it is certain that these children suffered deprivation in their homes before entering hospital, for the whole city was reduced to a food supply meagre in quantity and of the poorest quality during the winter 1918–1919, and fresh food was specially scanty. It is, indeed, remarkable that the conditions as regards scurvy were apparently less satisfactory in hospital than among the general population. Among the latter there was certainly no general outbreak of scurvy, and the children who had been but a short time in hospital were less disposed to develop the disease when the acute shortage of antiscorbutic came than those who had been in longer. The presumption is that during the six months or so preceding the outbreak the general population were getting more antiscorbutic than these hospital patients.

The possibility that admission to hospital precipitated the onset of the disease in Groups B and C is also worth consideration. There is considerable evidence that the demand of the body for antiscorbutic is in proportion to the rate of metabolism. In Group A the weight charts are very uniform and normal for seven months before the outbreak and show a normal rate of increase. Groups B and C, on the other hand, are composed of children who on admission were much below the normal age weight owing to general underfeeding. The diet of the Klinik, ample in calories, led to abnormally rapid growth, and this may well have had something to do with the onset of scurvy.

SUMMARY.

1. An outbreak of scurvy in April, 1919, affected forty children out of sixty-four aged between 6 and 14 years under treatment for tuberculosis.

2. From September, 1918, to February, 1919, a good supply of fresh vegetables and milk was available. From the middle of February to the middle of April the daily ration of fresh vegetables was reduced to about 80 grams per head; deprivation was never complete.

3. The eight weeks' period of shortage preceding the outbreak is a much shorter period than the four to six months noted by other observers as necessary for the development of scurvy.

4. It is concluded that though the supply of fresh food was adequate, the diet was nevertheless a scurvy producing one, and that the period of deprivation of antiscorbutic was longer than it appeared to be.

5. An explanation is found in the method for cooking food employed in the hospital which involves a serious

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* A sort of buckwheat.

destruction of antiscorbutic. Suggestions are made as to means of preventing this.

6. The germination of dry peas, beans, and lentils before cooking is strongly recommended as a means of providing extra antiscorbutic when fresh vegetables and fruit are scarce or absent.

7. It is suggested that abnormally rapid growth may promote the development of scurvy in children.

In conclusion, we desire to express our gratitude to Professor v. Pirquet, who placed all his valuable records freely at our disposal, and to the members of his nursing staff who assisted us in every way in our investigations.

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TWO CASES OF CARCINOMA ALIVE EIGHT YEARS AFTER RADIUM TREATMENT.

BY

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ONE hears a good deal about apparent cures of cases of carcinoma by radium, in reports written soon after the treatment has ended, but little of what happens to these patients afterwards. The following two cases were seen eight years and one month ago, and radium treatment was started almost immediately.

CASE I.

In July, 1912, a man of 61 who had previously enjoyed excellent health, but was a heavy smoker and took alcohol fairly freely, sent for me because he had noticed a swelling on the right side of his neck. He also complained that for some months he had had some irritation of the throat and was continually expectorating small amounts. A hard indurated mass, with ulcerated surface, of about the size of a shilling, could be seen and felt below the right tonsil. The swelling in the neck was a large mass of hard and fixed lymphatic glands. He was seen by various surgeons in London and the provinces, and all agreed in the diagnosis of carcinoma of the pharynx, quite beyond operative interference.

In spite of the poor results obtained by radium in cases of carcinoma of the pharynx, I determined to give it a trial. I started by giving two applications of radium a week from the outside of the neck, and continued till the skin could stand no more [illegible] ulceration, when I lessened the amount of radiation. The whole side of his neck was radiated as far down as the clavicle. At the end of a month there was a decided improvement, both of the primary growth and of the glands.

At the end of six months all signs of disease had completely disappeared. Notwithstanding this, I continued to apply radium about [illegible] at longer intervals when the patient [illegible] for another six months. He had his last application in July, 1913. Since then he has had no signs whatever of any recurrence, and to-day, eight years after, at the age of 69, he is in excellent health and able to lead a busy life.

CASE II.

A lady aged about 60 came to me in July, 1912, of a swelling in her right breast. It presented the usual signs of scirrhous carcinoma and was adherent to the pectoral fascia. There were hard glands in the right axilla, but the supraclavicular glands appeared normal. The right breast was amputated and the axilla cleared.

[illegible] of the growth from the breast and [illegible] of the [illegible] from the axilla were sent for pathological investigation. The report was that [illegible] carcinoma [illegible]. It was apparent [illegible] as soon as the wound had completely healed I started radium treatment. [illegible] of the chest was rayed [illegible]. Treatment was [illegible] July, 1913. During this time [illegible]. In November, 1913, a small [illegible] appeared [illegible] near the [illegible]. Radium [illegible] May, 1914.

She has remained free from symptoms till lately, when she complained of a cough, and I found rhonchi and râles over the chest, more marked on the right side, but no bronchial breathing. I also think I can detect some enlargement of the liver, but she is stout and the abdomen is difficult to examine. She is a sufferer from rheumatoid arthritis, and is too infirm from this to be willing to undertake a visit to have her chest x rayed, so the diagnosis remains in doubt, but the signs are very suspicious of a recurrence in the lungs and liver.

From the above notes I think it can be fairly claimed that Case I has probably been cured by radium, and Case II has to thank radium for eight years of life, though the chances are that she is after all going to succumb to carcinoma.

If more observers would publish the late results of similar cases that they have been able to follow, it would much help our knowledge of this important subject.

SODIUM BIBORATE IN THE TREATMENT OF EPILEPSY IN AN ASYLUM.

BY

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ON the male side of this institution there are about 60 epileptics, or 11 per cent. of the total number of male patients. The majority are chronic cases, and a large number of them have been resident for many years.

Formerly the routine treatment was a large dose of potassium bromide (gr. xxx) night and morning. Examination of the ward books, in which a record is kept of all fits in epileptic patients, shows that this has had little effect in reducing the number of fits or bringing about any mental improvement. The only change noticeable was a lessening of excitability and an increase of mental confusion.

Sodium biborate is mentioned in medical textbooks as an alternative to potassium bromide. Eight months ago I decided to try a mixture containing potassium bromide and sodium biborate. The treatment was commenced on December 27th, 1919, on the patient J. D. quoted below. The results were so striking in his case, after a fair trial, that it was decided to apply the treatment more widely. The benefit of the treatment has been very marked in all the wards; in two, where the treatment has been in use for four months, the fits have been reduced by 64 per cent., and in two other wards in which the treatment was commenced about six weeks ago there has been a reduction of 68 per cent., and that amongst patients who formerly had fits at regular intervals. It is interesting to note that in the male hospital four of the patients have had no fits since commencing treatment about July 20th. Previous to treatment, three of them never went longer than eight days without having fits, and the other averaged twelve days and then had a bout of from three to five fits.

The following three cases may be quoted as striking examples:

CASE I.

J. D., aged 40, admitted March, 1918; Wassermann negative. From admission until treatment was started the patient was subject to violent uncontrollable attacks of excitement at intervals ranging from three to five weeks. These attacks lasted from one to seven days; the more violent the outburst the shorter the duration. Sedatives had very little effect, and his violence was such that frequently at night attendants were on special duty at his bedside. He also suffered from auditory hallucinations and delusions of suspicion. Since the commencement of treatment, in December, 1919, these outbursts of epileptic furor have disappeared entirely. The fits have been reduced by about 65 per cent., and this in spite of lapses in the treatment of three weeks at one time and two weeks at another. These intervals without treatment were tried to see the effect of stoppage, and in each case the fits returned. His mental condition has improved. There is now no stupor after a fit, and the patient states that he now "feels his head clear."

CASE II.

J. F., aged 35, admitted May, 1917; Wassermann negative. The patient states that he started to "take turns" when he was 11 years of age. On admission he was irritable, quarrelsome, and very impulsive. He was a most troublesome patient, and had fits regularly and in bouts. Treatment was commenced on April 5th, 1920, and his fits have been reduced 86 per cent. He has had none since May 6th. Mentally he is clearer, his memory has improved, he gives no trouble and now expresses the desire to be allowed out to do some work.

CASE III.

A. B., aged 20, admitted October, 1919; Wassermann negative. This patient, epileptic since childhood, was always in a more or less stuporous state and had very severe "G." fits frequently, and mostly in bouts. Four months' treatment has reduced his fits by 62 per cent. Mentally he is much brighter, and the dazed condition after a fit has disappeared.

The total number of patients in whom the above treatment has been tried so far is forty-two; in all there is a marked improvement in the mental state of the patients, and in all except one the number of fits has been reduced. In addition to the marked mental change and lessening of the fits, other points noticeable are the great reduction in the amount of sedative used, and the marked diminution in the number of accidents which occur.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LABOUR COMPLICATED BY MARKED ELONGATION OF THE SUPRAVAGINAL CERVIX.

The following case presented such unusual clinical features as to justify recording it in detail.

Mrs. D., aged 31, when admitted to the gynaecological wards of the Royal Victoria Infirmary, Newcastle-on-Tyne, was within a few weeks of full term. There was a marked degree of cervical prolapse; the cervix projected 4 in. beyond the vulva, the lips being oedematous and ulcerated, and the external os patulous. The bladder also was completely prolapsed, so that she had great difficulty in emptying it. The cervical prolapse was associated with elongation of the supravaginal cervix. The condition had first attracted attention one year previously (one year after the birth of her second child), and had steadily progressed, especially since she had become pregnant. She had been confined to bed for six months before admission.

Treatment consisted of rest in bed till full term, cleansing of the cervix by suitable dressings, and urinary antiseptics for the associated cystitis. Replacement of the cervix in the vagina was invariably followed by prolapse, and attempts to retain it by means of gauze packing were not satisfactory, the pressure of the child's head and the bladder inflammation being the two chief obstacles. The relaxed condition of the ostium vaginae also favoured recurrence. Contrary to what occurs in non-pregnant cases, the cervical oedema did not appreciably lessen by rest in bed.

Labour: *First Stage.*—The membranes ruptured shortly after the onset of labour. The liquor amnii was turbid and somewhat offensive. The cervix was at once pushed into the vagina, and did not again spontaneously prolapse during this stage. The pains were frequent and strong; the cervix was slowly drawn up, and the external os dilated gradually. The child's head was in the pelvic cavity.

Second Stage.—Seventeen hours after the onset of labour the patient showed signs of exhaustion. At this stage the external os was almost fully dilated, but a distinct rim persisted round the periphery of the head. The patient was anaesthetized and forceps applied. On traction being made the head and cervix descended together, and it was quite impossible to push up the rim of the cervix past the head. The actual delivery of the head was identical in every way with delivery over a tight perineum. The external os at this period of labour projected fully an inch beyond the vulva. After delivery of the head the os closed slightly on the child's neck, and the shoulders were freed with some difficulty. The rest of the delivery was normal.

Third Stage.—Ample time was allowed for the placenta to separate naturally, but, owing to rather free haemorrhage, an attempt was made to express it. This resulted in complete prolapse of the cervix and bladder, even more exaggerated than that existing before the onset of labour. The parts were replaced, and a further period passed before a renewal of the bleeding made another attempt at expression imperative. This reproduced the state of affairs described above, and manual removal was decided upon. After thorough cleansing and liberal use of tincture of iodine the hand was inserted, and the cervix was found to consist of a long tube with a marked contraction ring at the internal os. This was slowly dilated and the placenta removed. There was no evidence of laceration of the cervix. A copious intrauterine douche completed the procedure.

Apart from a transitory febrile attack due to cystitis, convalescence was uneventful. The cervix remained exposed, and was carefully guarded by gauze dressings. The patient was discharged some weeks later with the cervix still protruding, but is returning in due course for radical treatment.

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VOLVULUS OF THE WHOLE OF THE SMALL INTESTINE.

The following case is of interest by reason of its rarity:

A weakly boy, aged 18, was admitted to hospital in a dying condition. He had only been at work three weeks after an attack of pneumonia and pleurisy. On the previous afternoon he had eaten fish, followed by an ice-cream, and had then played football. At 6 p.m. he complained of a dull ache in the epigastrium and of nausea; he went to stool, but with what result is unknown. He was never sick. Hot fomentations were given through the night, but the pain grew worse; he was moved to hospital at 8.30 a.m., and died half an hour later. On admission it was clear that he was dying of general peritonitis. A large left scrotal hernia was distended and tender, and the whole abdomen was distended, rigid, and tender; the liver dullness was normal. The boy was too ill for further examination. At the autopsy it was found that the whole of the small intestine from the first free loop of the jejunum to the ileo-caecal junction was strangulated by one and a half complete twists of the mesentery. There was collapse of the whole of the large bowel, and the small bowel was plum-coloured and distended; there was free blood in the lumen of the bowel and in the peritoneal cavity. The hernia, though filled with bowel by reason of the increase of abdominal pressure, was easily reducible through a very large ring. No Meckel's diverticulum nor other anomaly could be found as an exciting cause.

It is difficult to imagine any dietetic or athletic achievement capable of turning the whole of the small bowel through three half-turns. Probably the twist was of developmental origin, and was aggravated to strangulation by some sudden congestion (caused perhaps by injudicious dietary).

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Reviews.

MENTAL DEFICIENCY.

In the volume on *Mental Deficiency*[1] by Dr. A. F. Tredgold the medical practitioner will find a sound and trustworthy guide to a subject in respect to which it is now almost essential that he should have a more than superficial knowledge. The second edition was published in 1914; the text has been revised and brought up to date, and the new edition will undoubtedly maintain the position attained by its predecessors and become the standard work on mental deficiency. The book is the product of personal research, extensive clinical experience, wide acquaintance with the literature of the subject, and an intimate knowledge of the social problem which the presence of the mental defective in the community creates. On controversial questions the author develops his own personal views, which are based on experience, a ripe judgement, and a critical survey of current theories; but he is free from bias and dogmatism, and he approaches such questions as heredity, environmental influence and causation in a clear, balanced and scientific manner.

In the first chapter, which is concerned with the nature of mental deficiency, the author indicates clearly and convincingly that it can only be satisfactorily defined in terms of social behaviour. Throughout the book the point is emphasized that the disorder of mind is not merely in the sphere of intellect, but that it is a defect of the personality as a whole which prevents these congenital defectives from reacting efficiently and subsisting by their own unaided efforts. It is this treatment of the clinical aspect of the subject from the adaptive side that gives the book its great practical value. Those who are actually concerned with the problem of the mental defective will here find the greatest help in relation to those cases which present a real difficulty in practice. The difference between the dull or backward child and the high grade ament, the relation between vicious tendencies and mental deficiency, and, above all, the question of the moral imbecile, are subjects which are here dealt with in an exceptionally lucid and masterly fashion. In referring to the statutory definition of mental defect in relation to moral imbecility, Dr. Tredgold writes (p. 360):

> In my experience the failure to appreciate the meaning of the term (permanent mental defect) is the chief stumbling-block in the diagnosis and certification of these cases. It is necessary

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[1] *Mental Deficiency (Amentia)*. By A. F. Tredgold, M.D., F.R.S.Edin. Third edition. London: Baillière, Tindall, and Cox. 1920. (Demy 8vo, pp. 531; 67 figures.)

to point out that the definition says "mental" and not "intellectual," for there is a great difference between these as commonly understood. A person who has a good scholastic record . . . is commonly regarded as being free from any intellectual defect. Nevertheless, he may have a pronounced *mental* one. For . . . normal mind includes much more than mere intelligence of this kind. It includes the capacity to appreciate the difference between right and wrong—that is, moral sense; and it further includes that higher controlling faculty which enables a person to regulate his conduct and shape his life—that is, wisdom. A defect in either of these qualities is a real mental defect, and, if it is permanent, it comes within the terms of the definition.

Such observations as these will help the medical man to formulate impressions which he could otherwise only put in a vague fashion, and they will enable him to act with confidence and precision in cases which, without this help, would cause him much anxiety and lead to indecision.

Dr. Tredgold deals with the question of incidence, and while his statistics indicate a prevalence of mental defect which constitutes a serious social menace, there is no doubt that with an increasing activity on the part of local authorities a more accurate census will reveal a much greater prevalence than the present figures suggest. The author deals fully with pathology, classification, neurophysiology and psychology; he furnishes clinical descriptions of the various forms of mental defect; he describes the methods of examination and mental tests; he devotes attention to treatment, legal questions, certification, and criminal responsibility; and he concludes with a study of amentia from the sociological point of view.

We can thoroughly recommend this book, and it will probably find an even wider public than was won by previous editions in so far as there are signs that the social impulse in the direction of mental hygiene is finding increasing expression in this and other countries.

GREEK SCIENCE AND MODERN SCIENCE.

THE eagerness with which many varying theories of education are accepted, and the vehemence, often intolerant, with which they are defended, are proof that we have lost the old orientation, and have not yet found the true bearings for the new course. The uncertainty affects all kinds of education—elementary, secondary, and higher—with the one exception of the classical system, the old humanities. Medical education has not escaped the general unrest and uncertainty, as our pages have recently borne witness; it is, however, only a particular case of a general condition of mind. Dr. CHARLES SINGER has an explanation and a remedy; they were propounded in the lecture with which, last May, he inaugurated the first experiment made at University College, London, for the institution of systematic instruction in the history of scientific thought. His lecture dealt with *Greek Science and Modern Science*,[2] and his thesis was somewhat as follows: The function of education, perhaps its main function, is, he thinks, to provide each generation with a working theory of how it came to be what it is. Such a working theory was provided by the old humanities from the period of the revival of learning until a generation or two ago. It is admitted that the whole scheme of education is now undergoing rapid transformation; the discipline of science is largely replacing the training afforded by the older humanities and, in the near future, the staple education will be increasingly vocational. But though science may displace the humanities, it is not in itself, as commonly taught and studied, capable of replacing them, for it cannot give us a working theory of how we have developed mentally.

The remedy Dr. Singer has to offer is the study of the history of man's thoughts, not the history of events, [illegible] but of the phases through which man has passed in his attempt to read the riddle of the universe, which includes the mystery of his own being. [illegible] but the endeavour to solve it is an innate quality of the human mind, and some answer has been given by every race and in every epoch. Dr. Singer believes that in history so regarded we shall find a discipline and an [illegible] which will give unity to the discrete sciences of the day. He turns, as every one who embarks on this [illegible] to the Greeks and compares and contrasts their methods in science, or rather their attitude to external nature. The Greek was self-centred. He began with his own mind and its workings, and moved outwards to the synthesis of natural phenomena; the modern method is almost the converse. Greek science had a basis in philosophy which modern science lacks; the Greek philosopher, it is true, ventured to make large generalizations on a very slender bundle of facts; his gift to the development of scientific thought was his conviction of order, his faith that order reigns in nature. This Dr. Singer truly calls a great and most vital contribution to scientific thought. But it is not the whole matter; modern science shares with the Greeks a faith in order, but it asks for proofs where its great predecessors were satisfied to trust to intuition, and demands details of methods where they were satisfied to be given conclusions. Dr. Singer concluded his lecture by pleading that while records should be complete, they should likewise be clear and succinct, so that our successors may not waste time in repeating work already done, but be able to begin where we leave off.

DISEASES OF THE LIVER AND PANCREAS.

THE new *Traité de pathologie médicale et de thérapeutique appliquée*, edited by Émile Sergent, Ribadeau-Dumas and Babonneix, is advertised to consist of thirty-two volumes. This extensive series on the theory and practice of medicine is designed to deal mainly with the clinical and therapeutic aspects and to contain but little historical matter and only so much pathology as is necessary to explain the symptoms. The first volume to reach us is that on the liver and pancreas, by CASTAIGNE, BRULÉ, FIESSINGER, GARBAN and FAROY,[3] and is a useful summary of the views of the French school which has done so much to advance our knowledge of hepatic disease. Thus Brulé, whose monograph *Recherches récentes sur les ictères* was noticed at some length in our issue of September 27th, 1919, writes in conjunction with Garban on jaundice, and insists on the importance of disordered action of the liver cells, as opposed to obstruction in the intrahepatic ducts, as the cause of jaundice in many conditions. In his account of haemolytic jaundice Brulé does full justice to Chauffard's observations on the characteristic fragility of the red blood corpuscles, and makes an interesting reference to the transitions and relations between haemolytic jaundice and pernicious anaemia. More than half the space devoted to the liver is contributed by Brulé, who also writes on inflammation of the gall bladder and bile ducts, hydatid cysts, malignant disease of the liver and biliary tract, hepatic abscess, perihepatitis and degenerations of the liver. Hepatic cirrhosis is broadly divided by Fiessinger, who has done a large amount of histological work on this subject, into two clinical categories, the ascitogenic and the icterogenic, the former being further subdivided into chronic atrophic and chronic hypertrophic ascitogenic hepatitis and pigmentary cirrhosis. Hanot's cirrhosis, the existence of which as a condition distinct from portal cirrhosis has been often doubted by English speaking authorities, is fully described and the varieties detailed, a syphilitic form being recognized. The article on cholelithiasis, also by Fiessinger, is largely based on Chauffard's numerous contributions to the subject. The diseases of the pancreas are dealt with by Dr. Faroy in an up to date manner.

INDIAN MEDICAL JURISPRUDENCE.

THE *Textbook of Medical Jurisprudence and Toxicology*,[4] which has been written by RAI BAHADUR JAISING P. MODI, is intended for the use of students in medical colleges and schools. It is admirably adapted for this purpose, and also supplies a well ordered and indexed manual for reference and guidance to medical and legal practitioners. As might be expected, the peculiarities of law and procedure affecting criminal deeds in India and their detection are dealt with throughout the book, and a series of useful appendices record the various Acts and Regulations, questions and forms, which are prescribed and employed in cases which call for the aid and expert knowledge of the medical jurist.

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[2] *Greek Science and Modern Science.* [illegible]

[3] *Foie et Pancréas.* Par J. Castaigne, M. Brulé, N. Fiessinger, H. Garban, et C. Faroy. [illegible] *Traité de pathologie médicale et de thérapeutique appliquée*, publié sous la direction de Émile Sergent, L. Ribadeau-Dumas et L. Babonneix. Paris: A. Maloine et Fils. [illegible]

[4] *A Textbook of Medical Jurisprudence and Toxicology.* By Rai Bahadur Jaising P. Modi, [illegible] Medical College, [illegible] Butterworth and Co. 1920. [illegible] illustrated. [illegible]

Special difficulties arise in India as regards medico-legal work, among them early decomposition, methods of disposal of the dead, concealment and false testimony, faking and imputation for purposes of revenge; on the other hand, the dominance of *dustoor* (habit) and the prevalence of traditional criminal practices facilitate detection. As regards the latter, such customs as widow burning, leper burial, infanticide, road poisoning, dacoity, and human sacrifice are almost obsolete, and the raising of the age of consent and discouragement of premature marriages have diminished the rape of children and other sexual offences. These matters are dealt with, and the author's experiences of actual cases are occasionally inserted. The arrangement of material is systematic and lucid, and a copious index renders access to the contents of the volume easy. A feature in the composition of the book is the printing of subjects intended for more advanced students and practitioners in small type. This is specially manifest in the section on toxicology. The diction employed is clear and idiomatic, with some few exceptions. The misuse of the definite article is, however, obtrusive throughout the book. On the whole, the work is most creditable to the author, and constitutes an excellent example of the good results of general and medical education among the natives of India.

NOTES ON BOOKS.

DR. WALTER E. MASTERS has written for the use of students of tropical medicine and practitioners in the tropics a bulky volume, entitled *Essentials of Tropical Medicine*.[5] An attempt is made to traverse the whole field of the subject, but this has become practically impossible for any one man, and if an author has not full first-hand information on the subject on which he is writing he is apt to fall into errors. We have noted a number in this book, but will mention only a few: on page 42 it is said that amoebic dysentery frequently attacks the small intestine, but in truth the infection hardly ever occurs in the small bowel. On page 413 ponos is described as a special disease; the reader ought to have been told that it is a term used in Greece for a form of leishmaniasis occurring in the Mediterranean. There are also several omissions, which, in so extensive a subject, is not surprising. The idea of the book is excellent, and with a certain amount of pruning down and correction of error, the work should become of use to those for whom it is intended. At present we fear that it cannot be called a safe guide for candidates at examinations.

Practical Tropical Sanitation[6] is a small book written by Dr. E. P. MINETT as a *vade mecum* for sanitary inspectors in tropical countries. It contains nine chapters on living abroad and on tropical diseases, on sewage and water supplies, on food and markets, on buildings and construction, on port sanitary work, and other subjects, all shortly but carefully dealt with. It is well written and should answer its purpose admirably. Much information, both interesting and valuable, is contained in its pages. The examples of by-laws for bakery and provision shops in British Guiana will be found useful for comparison and reference in other colonies. The book can be thoroughly recommended.

We have received a copy of a slender volume with the provocative title, *Gorgeous Poetry, 1911–20*,[7] by "J. B. M." It is printed in the approved style on thick paper with wide margins, and, as might be supposed, it is an elaborate parody of certain modern phases of verse making. We are at a loss to know why it should be sent for review in a medical journal; but, since it has given us a good deal of amusement, we feel constrained to introduce it to our readers. The author in his preface explains clearly enough why "this little book of absurdities" has been written: "Some of them are at least as funny as the more serious work of our English cliques." We agree. So far as we can judge from a limited knowledge of the writers whom he burlesques, he has succeeded in touching off most of their mannerisms and affectations and in showing them up for what they are. "I hate their work," he says, "not because they write of ugly things, but because they write so badly." It is a clever skit, though somewhat overlong, and perhaps it may do a little good. Far too much formless stuff, without metre or grace or rhythm, gets into print because of the present-day tenderness towards *vers libre*.

The Michelin Company is publishing a series of illustrated guides to the battlefields in France. One volume is given to the first battle of the Somme[8]; we find first a short statement of the objective of that offensive, and this is followed by a description of the battlefield, with its chalk downs overlooking the marshy valley of the river. The remainder of the book consists of an itinerary filling some hundred pages. It is copiously illustrated by photographs of ruined towns and villages of familiar name. A number of sketch maps will be very helpful to the motorist; the only criticism we have is that the whole tour is rather too much for two days.

APPLIANCES AND PREPARATIONS.

Nutresco Products.

IN our issue of December 14th, 1912, a notice was published of several meat extracts and other food products manufactured by a South African firm, the Nutresco Company, Maritzburg, Natal; they were then found to contain unusually large amounts of soluble proteins, such as albumoses and peptones. Since that time the firm has extended its operations, and now manufactures a series of articles the main feature of which is stated to be the presence of considerable proportions of soluble and easily assimilable proteins, obtained by digesting beef by a special patented process. Samples of a number of the products in question have been submitted for examination and comment, and the results obtained are as follows:

Bovesco.—This is a semi-fluid meat extract intended for the preparation of beef-tea by dilution with water. The sample submitted is found by analysis to contain:

Real protein (almost wholly albumoses and peptones)	32.5	per cent.
Meat bases	10.7	,,
Mineral matter	16.2	,,

These results show that the article has a higher nutritive value than ordinary meat extracts, which often contain comparatively small proportions of real protein; it is almost wholly soluble in water, and the beef-tea prepared by following the directions has an agreeable flavour.

Neuresco. This is a "nerve food" stated to contain soluble beef proteins in combination with milk proteins, flour, sugar, and mineral glycerophosphates, while it is also claimed that appreciable amounts of vitamines are present. Our examination shows it to contain:

Real protein	22.4	per cent.
Nitrogenous bases	0.3	,,
Organically combined phosphorus, calculated as phosphoric anhydride (P_2O_5)	1.16	,,

Qualitative examination shows the presence of flour and sugar. The proportions of protein and organic phosphorus are high. It is agreeably flavoured, and is readily prepared for use by mixing with milk and heating to boiling point.

Vinesco Invalid Port.—As its name implies, this wine is claimed to be especially suitable for sickness and convalescence owing to its content of soluble protein. Our analysis shows the sample supplied to contain:

Total nitrogen, calculated as protein	2.85	per cent.
Alcohol (by volume)	17.2	,,

The flavour is agreeable.

Nutresco Invalid Food. This preparation is somewhat like "Neuresco," and is prepared for use in the same manner. Analysis shows it to contain:

Total nitrogen, calculated as protein	28.5	per cent.
Fat	3.5	,,

Qualitative examination shows that the other principal constituents are flour and sugar. The proportion of protein is high.

Carnesco Caramels. These are chocolate coated sweets of agreeable flavour; it is claimed that they contain digested beef-protein, in addition to butter and sugar. We find that the sample supplied contains:

Total nitrogen, calculated as protein	6.3	per cent.
Fat	25.4	,,

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[5] *Essentials of Tropical Medicine.* By Walter E. Masters, M.D., M.R.C.S., L.R.C.P. London: John Bale, Sons, and Danielsson, Ltd. 1920. (Roy. 8vo, pp. 708; illustrated. 42s. net.)

[6] *Practical Tropical Sanitation.* By E. P. Minett, M.D., D.P.H., etc. London: Baillière, Tindall, and Cox. 1920. (Cr. 8vo, pp. 136; 48 figures. 4s. 6d. net.)

[7] *Gorgeous Poetry, 1911–20.* By "J. B. M." First series. London: Philip Allan and Co. 1920. (Cr. 8vo. pp. 63. 2s. net.)

[8] *The Somme.* Volume I: *The First Battle of the Somme (1916–1917) Albert, Bapaume, Peronne.* Clermont-Ferrand: Michelin et Cie.; London: The Michelin Tyre Co., Ltd. 1920. (Demy 8vo, pp. 136; 200 illustrations. 4s. net.)

Maltesco Preparations.—These are preparations of malt extract made in several brands.

Maltesco No. I is stated to contain 10 per cent. of digested "meat principles" in combination with a malt extract of high diastatic power. Our analysis gives:

Total nitrogen, calculated as protein	11.6 per cent.
Sugars, calculated as maltose	65.5 ,,

The high figure for nitrogen shows that the preparation contains about twice as much protein as ordinary malt extract. The flavour is agreeable.

Maltesco No. II. This is similar to No. I, but contains a much higher proportion of "meat principles." Analysis of the sample supplied gave the following figures:

Total nitrogen, calculated as protein	20.3 per cent.
Sugars, calculated as maltose	54.0 ,,

The very high proportion of nitrogenous matter should render this a valuable preparation when it is desired to combine readily digested protein with malt extract.

Maltesco No. IV. This is claimed to be a pure malt extract of high diastatic power. We find it to contain:

Total nitrogen, calculated as protein	5.75 per cent.
Diastatic number by the method of the *British Pharmaceutical Codex*	49
Total sugars, calculated as maltose ...	70.5 per cent.
Mineral matter	1.39 ,,

The flavour is pleasant, while the above figures show good proportions of protein and diastase.

THE MUNICIPALIZATION OF HOSPITALS.

THE BRADFORD EXPERIMENT.

(Concluded from page [illegible].)

BY

CHARLES BUTTAR, M.D.

II.

THE site of the Bradford Poor Law Infirmary, which has now been leased to the City Council as a municipal hospital for five years, is bounded, except at one corner, by roads which will prevent extension of the hospital. The Council proposes to purchase the cottages at the corner of the area, and to close a small road leading to them. In this way the limit of expansion of an area already somewhat overcrowded with buildings, and defective in open space, will be reached. A certain amount of re-building will be undertaken, and it is proposed to leave an open space at one point. Generally speaking the old Poor Law infirmary buildings will be used, though some of the wards would appear to be deficient in cubic space. A hospital of 1,148 beds is contemplated in ten pavilions. The medical wards will accommodate 502 patients, the surgical 324. To maternity cases 90 beds are allotted, to children 84, and to infants 40. The remaining 108 are for venereal cases. It is proposed to equip an out-patient department in the administrative block, so that four physicians or surgeons may attend at one time. This is regarded as sufficient accommodation at the moment.

In the medical officer's report on suggested administration of the hospital there are phrases which recall to mind the Dawson Report, although the conclusions reached seem widely different. Thus it is stated that "in this institution there should be brought together a highly specialized staff dealing with different aspects of disease." It is advised that in order to build up the hospital personnel on modern lines and to make available to the city the best known treatment the institution should consist of a conglomeration of smaller units. Each unit, it is proposed, should consist of a senior part-time officer, physician or surgeon, an assistant, also part-time, and a resident officer. For the present it is thought that two medical, two surgical, and one obstetrical and gynaecological unit will suffice. In the future [illegible] medical, three surgical, one [illegible], and several minor special departments are contemplated.

It seems therefore that the hospital will be organized and managed in the following way. The City Council, which is responsible for the whole management of the city, will delegate the control of the hospital to the Public Health Committee. This committee may perhaps work through a hospital sub-committee. The medical officer primarily responsible to the Public Health Committee will be the medical officer of health. The direction of the hospital will be in the hands of the medical superintendent of the old Poor Law infirmary, who has become a whole-time officer of the City Council. As he is a most efficient surgeon, he is to be made the senior of one of the surgical units, and, in addition to the whole hospital being under his administrative control, it is suggested that the medical staff, both resident and visiting, should be under his charge. Hence the position of this officer will be very similar to that of the officer in charge of a hospital in the army, only more so. He will perform the functions usually entrusted to the lay administration in a voluntary hospital—namely, the provisioning and equipping of the hospital and the control of the nursing and lay personnel. He will also be the administrator on the professional side, taking the place of the committee of the staff in voluntary hospitals, and, in addition, he will be one of the active surgeons on the staff.

The medical staff under the charge of the medical superintendent of the hospital will consist of part-time senior and assistant medical, surgical, and gynaecological officers, and of the residents attached to the units. With the five units at present contemplated there will be five senior officers, and five assistants; but four residents are considered sufficient. It is proposed that the senior officers shall be consultants or specialists employed for two hours each on four days a week. The remuneration suggested for this eight-hour week is £500 a year. The assistant medical officers may be general practitioners, would be employed for six hours a week, and would be paid £300 a year. The residents will be whole-time officers as in voluntary hospitals. No suggestion seems to have been made as to the rate of remuneration to be paid them. Patients will be admitted normally through the out-patient department, which is to be open apparently to any inhabitant of Bradford who may choose to avail himself of it. At the same time it is hoped that the out-patient department will also be fed from the following sources: From the various clinics now carried on for the City Council by whole-time medical officers, possibly by the outdoor Poor Law medical officers, and by the general practitioners of Bradford.

The number of hours' attendance each week required of the medical officers is regarded as a minimum. It is hoped that persons taking the appointments will be sufficiently interested in their work to spend, if need be, more than the required time. It may be pointed out, however, that the surgical consultants are unlikely to expose themselves to an unknown liability of this nature. No mention whatever is made of emergency operations, which not infrequently occur in the middle of the night. It is not probable that the resident superintendent, whose extensive duties have already been described, will undertake these emergencies; many of them cannot be left to the young resident. Will the consulting surgeon, who is paid the same remuneration as the physician who is not so liable for emergencies, face the possibility of these night calls?

There remains one interesting proposal in connexion with the senior medical officers in charge of units. After stating that they should have a university degree or be Fellows of one of the Royal Colleges, and should not be in general medical practice, the report goes on to say that they should not hold any other hospital appointment save with the consent of the committee (presumably Public Health Committee). Now this committee of the Bradford City Council proposes to purchase eight hours a week of a consultant's time for the sum of £500 a year. These eight hours are to be distributed over four days a week, presumably at specified hours. It is a little difficult to see why the City Council should be anxious to know what the consultant does with the remainder of his time. In what way do the councillors suppose that holding another appointment, say at a voluntary hospital, with different days and different times of visiting, is going to affect their service? On the other hand, is not the Council possibly depriving itself of the services of some of the more distinguished consultants of Bradford? May it not be found that a consultant at the Royal Infirmary, faced with the possibility that the City Council may order him to resign his association with that institution, will refrain from applying for appointment to the municipal hospital? It might be well for the Council to offer some explanation for this singular provision.

It would be interesting to know how the proposals with regard to the municipal hospital appeal to the general practitioner of Bradford. It has been pointed out that he may apply for the post of assistant medical officer to a unit, and that ultimately there will be seven of these appointments, and possibly in addition some minor special posts. Also some general practitioners may have outdoor appointments similar to those of the Poor Law outdoor medical officers. Further, the general practitioner may be able to make use of the out-patient department for cases he would like to transfer thither. And, lastly, it is suggested that access to the hospital should freely be given to all medical practitioners, whether on the corporation staff or otherwise, who send in cases, and that they should be encouraged to follow up their cases and their treatment. But it is not contemplated that they should continue to treat the patient when he is in hospital. The proposal seems rather to be of the nature of post-graduate clinical instruction, derived from observation of the treatment adopted by the medical officers of the units. The general practitioner in many parts of the country, under the influence of the Dawson Report, has been inclined to imagine municipal hospitals wherein he will treat his own patients, call in a municipal consultant when required, have a voice in the organization through representatives on a medical advisory committee, and eliminate anything of the nature of an out-patient department, except possibly for purposes of consultation. Under the Bradford scheme it does not seem likely that these aspirations will be realized.

The whole community at Bradford, so far as I can gather, will be eligible for out-patient treatment in the municipal hospital, and for admission to the wards, if thought desirable for their treatment. The attitude of the population of the city to municipal health enterprises is interesting. Thus stories are told of people who are quite well off sending their infants to the child welfare clinic. It has been stated that the health visitors sometimes say to parents, "Your child is ill, it must be taken to the clinic"; and that the parents take the word "must" literally. Some doctors assert that their practice amongst children has almost ceased, except for those *in articulo mortis*. One doctor regarded Bradford as so municipalized that the City Council now takes charge of the whole population "from conception to cremation." Bearing in mind the statement of a city councillor, that "If they were to have a new hospital, let it be provided out of the rates, so that every man could regard it as his right and not as a charity," it seems clear that very extensive use will be made of the municipal hospital in the future. At any rate, the existence of a number of full-time officers, stated to exceed twenty, for the purpose of carrying on the communal services in Bradford justifies the assumption that municipal institutions are, and will be, well patronized.

It is proposed, apparently, that charges shall be made to patients admitted to the hospital according to the means of each. But no special amenities will be provided for those who pay the larger sums. All will be treated, warded, and fed in the same way. This proposal simply carries on the method of the Poor Law, and seems a reasonable proposition; and in any case the present and fixed limits of the hospital do not permit of any extension to more or less privileged paying patients. But in some quarters it is felt that the municipal idea is so ingrained in Bradford that it is not unlikely that in course of time the City Council may erect or acquire nursing homes to which such members of the community as prefer a measure of privacy may resort.

An endeavour has here been made to set forth as clearly as possible the proposals with regard to the future of Bradford's municipal hospital, which is already in existence. In conclusion, I may perhaps be allowed to indicate my own feelings on some of the proposals, and the lines on which I think those involved or interested in the scheme might reach a better understanding.

As regards the community of Bradford their attitude would seem to be such that nothing is likely to alter their determination to avail themselves of their municipal hospital, though many, even of the Poor Law patients, are anxious to pay their contribution towards their maintenance. Rate-supported hospitals have come and will come in increasing numbers. To the City Fathers of Bradford, however, certain suggestions may be made. Are they sure that they are wise in their endeavour to stamp out voluntary effort? Is it not possible that the Bradford Royal Infirmary, even if it has fallen on evil days, is something that they might reasonably be proud of? Again, may there not be many things in the management of voluntary hospitals which are worthy of adoption in hospitals under municipal control? Of such a nature, it may be suggested, is the system by which a committee of the staff is responsible for what may be called professional administration, rather than the method of placing a consulting staff under the charge of a whole-time medical superintendent. Again, it would seem well, in organizing a hospital, to enlist the sympathy and assistance of as wide a circle of the local medical profession as possible, rather than to proceed by methods of "secret diplomacy." Lastly, why should attempts be made to fetter part-time medical officers in the use they make of time which is not paid for by the City Council?

So far as the consultant in Bradford is concerned, it would seem that his right course is to take care that the conditions under which he accepts service in the municipal hospital are consonant with his position in the profession. And herein he should be helped by the powerful bodies with which he is associated. It should not be beyond the power of the Royal Colleges and of the British Medical Association to arrive at an amicable understanding with the City Council, seeing that only on such an understanding will the Council make its hospital a success. As regards the general practitioner, I feel that he is inclined to make claims with regard to his position *vis-à-vis* the hospital which can hardly be described as workable. Some modification is required; but mainly he should concentrate on obtaining a voice in the organization of such a venture as Bradford's by means of medical representatives or a medical advisory committee. Finally, may it not be well that the Minister of Health should withhold approval of a scheme embodying such principles as that of Bradford until some measure of consultation with the medical profession has been achieved?

WAR PROBLEMS IN CIVIL LIFE.

THE aftermath of war has left many problems of treatment to be solved by practitioners and the medical officers of the Ministry of Pensions, many of whom have not had the opportunity of seeing the early and acute stages of the various diseases, and hence are handicapped in dealing with the chronic conditions which have supervened. The tropical diseases, trench fever, and gas poisoning, are instances of the new problems now facing the general practitioner, and to assist him by supplying in compact form information on these conditions the Ministry of Pensions has, in consultation with the Ministry of Health, issued a small handbook,[1] which should be in the hands of every medical man who may be called upon to deal with ex-service men. It has been prepared for the Ministry by Dr. G. S. Buchanan, Lieut.-Colonel S. P. James, Dr. G. Basil Price, and Dr. A. Bertram Soltau, each of whom has had special experience in dealing with these particular infections, and therefore it may be regarded as an authoritative presentation of established knowledge.

In the introduction attention is called to the tropical diseases clinics, which are now established by the Ministry of Pensions in all large centres, where consultative advice by specialists and, if necessary, treatment are available for all pensioners suffering from such infections. We understand that similar clinics for cardiac and for neurasthenic conditions are also being set up, and perhaps the Ministry will consider the advisability of issuing a handbook on these conditions like that now under review. The frank statement as to the misinterpretation of cardiac signs and symptoms which Dr. Thomas Lewis recently made at Cardiff[2] would suggest that the profession needs a good deal of further information on this subject. The more such knowledge can be disseminated the better it will be, for there is no inherent reason why the great bulk of the after-war conditions should not be treated by the general practitioners, thus obviating the necessity for the further extension of another specialized branch of State medicine. The Minister of Pensions recently stated that one-fifth of the medical men in the country were now engaged by his department either in whole-time or part-time work, an indication of the rapid extension which has been called for to cope with the existing need. Much of the work performed by these officials may well revert to the fully informed private practitioner.

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[1] *Notes and Suggestions on 1) Dysentery and certain other Tropical Diseases, 2) Trench Fever, 3) Gas Poisoning and its Sequelae, in Relation to Disabled Ex Service Officers and Men.* H.M. Stationery Office. 6d. net.

[2] BRITISH MEDICAL JOURNAL, September 25th, 1920.

Tropical Diseases.

As regards tropical diseases, the aid of laboratory workers is essential, and is emphasized in the handbook. For the diagnosis of malaria arrangements for the examination of blood films are in existence, and should be utilized whenever necessary. The treatment of malarial cases has already been outlined by the Ministry in a pamphlet, *Suggestions for the Care of Malaria Patients.* Special attention is now called to the diagnosis and treatment of blackwater fever, which has occurred in a certain number of men returned from the Balkan and Eastern fronts. The value of the spectroscope in diagnosis is pointed out, for haemoglobinuria is almost pathognomonic of the condition, and on its presence or not depends the use of quinine, which must be withheld immediately the blood destruction of this very serious complication of malaria is recognized.

The varieties of dysentery are fully described both in the acute and the chronic stages. The admission to special hospitals of all cases of chronic diarrhoea from whom a history of dysentery is obtained is strongly advocated; this is a wise measure both to prevent spread of infection and to facilitate diagnosis and cure. The laboratory can with certainty diagnose an amoebic infection, but in the later stages of bacillary dysentery a positive result from bacteriological examination will rarely be obtained. The instructions for the care of convalescents and the general rules as to clothing and diet will be found especially helpful.

Bilharziosis is the other tropical disease mentioned. This infection is one which will be met with occasionally in this country, though a large proportion of the cases occurred in the Australian Expeditionary Force, and their detection and care will require great vigilance in the Australian Commonwealth. The recent work on the complement deviation diagnostic test and the valuable remedy made available by Christopherson, who showed that tartar emetic given intravenously is a specific,[1] are referred to. This disease has the distinction, probably unique, of having attained a specific cure as a result of the concentrated investigation carried out as a result of the war.

Trench Fever.

Trench fever, which was so frequently described in our columns, was the "surprise" disease of the war, and was undoubtedly the cause of a large proportion of the sickness on the Western front, amounting, so the handbook states, to over one-tenth of the total sick wastage. The disease is almost protean in its manifestations and varieties, and the way in which these different aspects were correlated by experiment and proved to be of single origin is a striking example of successful investigation. The work of the Commission established by the War Office and the American Red Cross is briefly referred to, and the outstanding proofs of the disease being louse-borne, and, so far as is known, not being spread in any other way.

There are three common types of the disease—the short, lasting for a week, the prolonged with an onset resembling infection with the enteric group, and the relapsing. These types were all common in France, the proportional incidence varying in different years. Probably few if any cases resembling these early infections will now be seen, but the chronic infection is still present. It is stated that some 8 per cent. of the acute trench fever infections, instead of clearing up after a shorter or longer period, ran on into a chronic stage, characterized by debility and depression, irregularity of temperature, not necessarily rising above the normal, but showing a marked diurnal swing, tremor, nocturnal pain in the limbs, and the well known cardiac condition known as the "effort syndrome." The latter is regarded as being due to a [illegible] of toxic origin. It is probably, therefore, one of the causes for the large number of cases of disordered action of the heart—"D.A.H."—which originated in the army, for it is pointed out that the chronic form of trench fever did not necessarily originate in an acute attack, but may have started in an insidious form with debility, pain, etc. No fresh information as to diagnosis is given, and this must therefore rest largely on a consideration of the history. Nor are we told how trench fever may be cured, for, unfortunately, no specific has been found. The essential importance of rest in bed in all cases where the temperature is oscillating is emphasized, and for the late after-effects—the effort syndrome or the neurasthenic manifestations—treatment in a pensions centre is advocated. We are glad to note the emphasis laid on the Ministry of Health's instructions as to notification and disinfestation, which are framed to prevent any spread of the disease in this country.

Gas Poisoning.

The last article in the handbook deals with gas poisoning, and will probably be read with the most general interest, because for the first time an authoritative account of the varieties of gas employed by the Germans and the resulting lesions is made available for the information of civil practitioners. However necessary secrecy may have been during the war, the effect has been to invest the whole subject with a mystery which has caused gas casualties to be regarded as cases apart, in whom unknown complications might arise, and this has been prejudicial to the recovery of patients and a frequent cause of prolonged invalidism.

A brief survey of the periods into which gas warfare fell, and a classified table of the gases employed by the enemy, furnish the reader with the essential points to remember. The action of the different groups is then described in some detail, and the late effects to be expected are recounted. In each group the similarity of the late lesion to conditions met with in civil practice is pointed out, and thus treatment on familiar lines naturally follows. Consequent on gassing with phosgene and chlorine, the majority of the late effects will be the results of bronchitis or bronchopneumonia and emphysema. One class, numerically small, must be mentioned—that is, those with polycythaemia and nocturnal dyspnoea resulting from the initial acute oxygen want experienced in the stage of pulmonary oedema, and for which an entirely satisfactory explanation is not forthcoming.

The late results of "mustard gas" are largely of the chronic bronchitic type with winter exacerbation.

The effects of being gassed are not confined to organic lesions, but also set up many functional conditions, which need to be diagnosed with care, in the interests both of the patients and the taxpayers.

It is estimated that over 50 per cent. of men drawing pensions following gassing are suffering from "functional conditions," as the following table shows:

	Per Cent.	
The Functional Group:		
Neurasthenia, etc.	30	
D.A.H.	18.6	
Debility	6	
		54.6
The Organic Group:		
Bronchitis, etc.	34.8	
Tubercle	4.5	
		39.3
Intercurrent disease		6
		99.9

That tuberculosis should figure so prominently is a matter for serious consideration. It suggests that exposure to lethal gas may be responsible for lighting up quiet foci of pre-existing disease, which is more probable than that it should actually initiate a tuberculous process. French observers have recently been commenting on the incidence of phthisis following gassing, and their experience appears to be very similar to that of the writer of this section of the handbook.

The more widely the information now made available can be disseminated and acted on, the sounder will be the treatment carried out, for in conditions met with in gassed cases it will be based on knowledge of the early conditions, and in cases of tropical disease it will be in accordance with the experience of those whose opportunities for observing treatment in all stages have been extensive.

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[1] British Medical Journal, 1918, ii, and 1919, i.

British Medical Journal.

SATURDAY, OCTOBER 9TH, 1920.

THE MEDICAL SERVICES IN INDIA.

The position of the Indian Medical Service as the pioneer in the teaching and practice of Western medicine in India had interested the British Medical Association long before the fresh crisis brought about by the war led it to take the matter up again with the Secretary of State for India. In consequence of the representations made to him by the Association, Mr. Montagu, in a dispatch of October 11th, 1918, asked the Government of India to examine into the whole mechanism by which the medical needs of India, and especially medical education, are to be satisfied in future. The Government of India thereupon appointed a committee, with Sir Verney Lovett as president, to report on the reorganization of the medical services in India, both civil and military.

It was a body of experts, and took evidence in various parts of India. Its report is a very able state paper, clearly argued from abundance of knowledge, and written with a sense of responsibility that goes far to carry conviction. It very definitely recommends that the only satisfactory scheme in the circumstances is the unification of the medical services in India. It proposes the formation of an Indian Medical Corps, to take the place of the Indian Medical Service, doing the civil and military work now done by it, and also the work now done for the British army in India by the R.A.M.C.; this new corps would, in fact, recruit for and include the higher civil medical service of India. It would comprise commissioned officers, the military assistant and sub-assistant surgeons, with improved training and better terms of service, the Indian Army Hospital Corps, and the Indian Army Bearer Corps. The Corps would be started by transferring to it a large number of officers of the A.M.S. and R.A.M.C. under specially favourable conditions. There is, the Committee states, at the present day not only a certain degree of friction between the two services, but a considerable amount of overlapping and reduplication of effort. The plan proposed would lead to economy in personnel and hospital buildings; at present the authorized ratio of officers R.A.M.C. to strength is 4 per mille, of I.M.S. 1.28 per mille; it is considered that the military cadre of officers for the Indian Medical Corps should provide a ratio of 3 per mille of the total strength of British and Indian troops and followers in the army in India. It is laid down that the training of the R.A.M.C. and I.M.C. should be parallel, so that it would be easy for officers and men of the two corps to work together when they meet outside the boundaries of India. Further, the two services should be so alike that if in the future an Imperial Medical Service for the whole of the British Empire were established, the Indian Medical Corps would fit into it with the least possible disturbance in its constitution.

This is in brief the Lovett Committee's solution of a problem full of difficulty. It has neither shirked that difficulty, nor minimized it; it has dealt with the matter with a mastery of detail, a breadth of knowledge, and a clarity of vision that command respect. The solution offered is logical and the reasoning plain to understand, for it is clear that the unification proposed would eliminate much waste, overlapping, jealousy, and schism. It has failed to win the approval of the Army. It is perhaps for this reason that its report, though it has been in the hands of the Government since April, 1919, was only issued on the same day last week as the report of the Esher Committee on the administration and organization of the army in India. That committee also was impressed by the desirability of unification, and admits that the Lovett report puts forward the only feasible scheme for a unified military and civil medical service; it would be reasonable to expect such a statement to be followed by an endorsement of the scheme, but it is not. The Esher Committee is "unable to support" that scheme because it would, after the first selection had been made, permanently exclude the R.A.M.C. from India. This, it is considered, would seriously diminish its opportunities for gaining clinical experience and be disadvantageous to British troops in India. These arguments are not very impressive so far as the welfare of British troops is concerned; administrative difficulties must always arise during a period when alterations are being made in the constitution of a Government service, but they could, in this instance, be overcome with comparative ease.

The British Medical Association will, we do not doubt, look at the proposals from the broadest point of view, being interested in the matter as it affects the progress of Western medicine in India and the welfare of the British army and civil services in that country. The really important thing is to get the best possible medical service for India, a service which will attract the right class of man and will give the Indian Empire the fullest possible value—military, civil, and educational. There must be no question of rival interests of the I.M.S. and of the R.A.M.C., the welfare of the empire must stand first. The opinions conveyed to the Secretary of State by the British Medical Association in the past have been formed after full inquiry, and have been pressed in measured terms. There is now, we hope, a great chance of getting the whole question settled in a large way, and silencing for ever petty jealousies that have disfigured the past. The Lovett scheme would go a long way towards the attainment of the desired end. There are objections to it, but there are objections to every plan, even the Esher Committee's plan of doing nothing. The Lovett scheme has the conspicuous merit also of showing how the legitimate aspirations of Indians for a share in the service appointments may be met under conditions which would eventually allow them to attain to a large measure of participation in both executive and administrative appointments.

HEPATIC CIRRHOSIS OF BILIARY ORIGIN.

The existence of hypertrophic cirrhosis of the liver starting from the bile ducts as a disease distinct from the ordinary cirrhosis spreading out from the branches of the portal vein has been much discussed since it was first propounded in detail by Victor Hanot in 1875, and opinion, at any rate among English-speaking medical men, may with fair accuracy be described as one of philosophic doubt. Probably Fiessinger's clinical classification of cirrhosis into ascitogenic and icterogenic (see p. 550) would be generally admitted; but it has been urged that the morbid lesions are not so constantly different in the two groups as to justify the recognition of hypertrophic biliary cirrhosis as a real disease rather than as a symptom-group. On the other hand, it has been suggested that this anatomical confusion can be explained by a morbid change which originating in the bile ducts subsequently becomes complicated and thus obscured by fibrosis of the portal type, due to poisons conveyed from the enlarged spleen; so that by the time the disease proves fatal, it is difficult to unravel the two processes. It might also be pointed out that such a sequence of events occurs in renal disease, a nephritis primarily tubal, and so corresponding to hypertrophic biliary cirrhosis, eventually showing some of the changes characteristic of the arteriosclerotic granular kidney, which may be regarded as homologous with portal cirrhosis.

A paper on "the biliary factor in liver lesions," based on a series of ingenious experiments, by Drs. Rous and Larimore,¹ of the Rockefeller Institute for Medical Research, throws considerable light on the difficult problem of biliary cirrhosis. Rabbits were employed, as in them the liver consists of two separate masses, a smaller one or "lobe mass" and the main liver, each with its own bile ducts and blood vessels, and so is singularly well fitted for experiments involving their ligature. Further, ligature of the ducts sets up changes much more rapidly in rabbits than in cats, and than does biliary obstruction in man; in addition the complication of infection can be readily eliminated. The following series of experiments were carried out: Ligature of the common bile duct, ligature of the duct to the main liver, ligature of the bile duct and in addition of the portal vein to the main liver, ligature of the bile ducts to the small lobe mass and of the portal vein to the main liver so as to convey all the portal blood to the lobe mass, and repetition of the last procedure with ligature of the bile duct to the main liver. Ligature of the common bile duct was followed by great dilatation of all the ducts, pericholangitis, and a cirrhosis at once stellar, unilobular, and intralobular, the liver becoming hobnailed in three weeks. There is, therefore, hepatic injury throughout the whole course of the biliary tract, from the main duct to the intralobular canaliculi inclusive; and, as no human lesion exactly resembles this, it was thought that more insight into human biliary cirrhosis would be obtained by localizing the biliary stasis to different levels of the biliary tract.

This was accomplished in the other series of experiments. Ligature of the bile duct to the main liver caused unilobular cirrhosis with some pericholangitic fibrosis and dilatation of the larger ducts and atrophy of the liver cells, the tissue eventually becoming completely [illegible]. The cirrhosis, which was due to the irritation of bile escaping from the ruptured fine ducts, and the distended state of the bile passages probably interfered with the portal blood supply, and so caused atrophy of the hepatic cells and diminished secretion of bile. It is noteworthy that the small lobe mass is able to secrete all the bile and prevent any jaundice. This is contrary to the view commonly held that in man obstruction of one hepatic duct will cause jaundice, and is described as "the factor of safety in bile elimination." The importance of the deflection of the portal blood from the area of biliary stasis was further proved by experimental ligature of the portal vein and of the bile ducts to the main liver, which then underwent a pure unilobular cirrhosis due to the irritating effect of bile escaping continually through the walls of the fine bile ducts in Glisson's capsule without their rupture; the large bile ducts were but slightly dilated, ligature of the portal branch to this area having reduced the secretion and pressure of bile. In this case the biliary stasis was limited to the level of the fine bile ducts in Glisson's capsule between the lobules, and gave rise to a pure unilobular cirrhosis, such as is characteristic of uncomplicated cases of Hanot's hypertrophic biliary cirrhosis. In another series of rabbits, by ligaturing the bile ducts to the lobar mass, and the portal vein to the main liver, thus diverting all the portal blood into the area of biliary stasis, and keeping up the secretion of bile, a diffuse intralobular cirrhosis was produced in the lobar mass. There was remarkably little dilatation of the large bile ducts to the lobe, and still less of its branches, the brunt of the biliary stasis falling on the fine ducts of Glisson's capsule, and most of all on the canaliculi within the lobules, as was shown by the bile thrombi and numerous necroses of the liver cells. This diffuse intralobular fibrosis, due to the irritation of bile at the level of the intralobular canaliculi, resembles that present in the form of biliary cirrhosis so fatal to infants in parts of India.

These experimental observations strongly support the existence of biliary cirrhosis, and in addition bring out the difference in the lesions caused by biliary stasis at various levels of the biliary tract, and the importance of the interrelations between biliary stasis and secretion on the one hand and the supply of portal blood on the other. It must further be remembered that these experimental results were all proved to be independent of infection, whereas a low grade infection very probably plays a part in human biliary cirrhosis, and may thereby induce some changes additional to those produced by aseptic biliary stasis. This point is also referred to in the account of the case reported on p. 544 by Sir Humphry Rolleston and Dr. Stanley Wyard.

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MOORFIELDS HOSPITAL.

The Royal London Ophthalmic Hospital, better known as Moorfields Eye Hospital, or more commonly as Moorfields, is one of the most famous medical institutions in Great Britain. It was founded in Charterhouse Square in 1804; it was removed to Moorfields in 1821, and there remained until 1899, when the new building in City Road which it now occupies was taken into use. It claims to be the parent of all similar institutions throughout the English-speaking world. It has always been in fact, if not in name, a post graduate school. In 1811 two young graduates of the College of Physicians and Surgeons in New York, Dr. Edward Delafield and Dr. J. Kearney Rodgers, studied at the hospital under Dr. Farre and Mr. Benjamin Travers, and when they returned to their own country in 1818 set about establishing a similar institution in America. Two years later (in 1820) the New York Eye and Ear Infirmary commenced its great and beneficent work. In 1816 Dr. Edward Reynolds travelled from Boston to London to attend the practice of the hospital and the lectures given by Mr. Travers and Sir William Lawrence. When Dr. Reynolds returned home he found his father blind from cataract in both eyes; fortified by his recent experience in London he operated, with complete success. The operation for cataract had not, it is said, been performed in Boston before. Not only did the result establish Dr. Reynolds's reputation, but it led to the foundation, in 1824, of the Massachusetts Charitable Eye and Ear Infirmary. The facts with regard to Canada are somewhat similar although the dates are much later. At the time when Reynolds and his colleagues from New York were working at the hospital there was also attending Mr. R. Richardson, who entered the medical service of the East India Company, when, in 1819, the directors resolved to establish an eye hospital in Madras, he was appointed its first superintendent. The Madras Eye Infirmary, now known as the Madras Government Ophthalmic Hospital, is one of the most important institutions of its kind in the

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¹ [illegible] D. Larimore, *Journ. Exper. Med.*, Baltimore, [illegible]

world. Its foundation was followed in 1824 by the establishment of eye hospitals in Calcutta and Bombay, each under the direction of surgeons who had studied at Moorfields. The teaching and instruction to be obtained at the hospital attracts not only British doctors going to India or on leave from that country, but also native Indian doctors. The teaching is open to women as well as men, and a number of women doctors, both British and Indian, have availed themselves of it. It is true to say that much of the great progress in ophthalmology since the hospital was established has been effected by the researches of the many distinguished surgeons who have served on its staff. Many more subjects are ripe for investigation in many directions, and will be of benefit not to one class, one community, or one nationality, but to the whole human race. The hospital therefore makes an appeal to a very wide public, including those who have benefited, directly or indirectly, from the teaching given there. It is asking its old pupils to help it now by using their influence in favour of a fund for the extension of its laboratory accommodation for clinical and pathological research, and to supply adequately paid assistants to the honorary staff, so that they may be liberated from much routine work and enabled to devote more of their time to clinical instruction and research. It is hoped also to obtain funds to provide adequate accommodation for nurses, not only for those on the regular staff, but also for those who go to the hospital to obtain a special training in the nursing of diseases of the eye.

THE MICRO-ORGANISM OF TYPHUS.

NICOLLE showed in 1909 that monkeys could be infected with typhus fever by the injection of blood from a patient suffering from that disease, and Ricketts and Wilder, among others, inoculated monkeys with the expressed contents or the faeces of infected lice. Despite much experimental work, however, there has been no general agreement as to the nature of the virus. Rocha Lima and others regard the so-called *Rickettsia prowazeki* as the cause; specific bacilli or cocci have been reported by Plotz, Zeiss, Wilson, Danielopolu, and others; some have attributed the disease to a spirochaete or to a filtrable virus. In a preliminary report from the Typhus Research Commission of the League of Red Cross Societies to Poland, Wolbach, Todd, and Palfrey[1] recount a series of experiments made with the purpose of determining the nature and specificity of the micro-organisms acquired by lice fed on typhus patients. Thirteen attempts to cultivate the organisms described by Plotz, and named by him *Bacillus typhi exanthematici*, were unsuccessful. Autopsies were made on 39 cases of clinically well-established typhus; in 21 cases dying before convalescence, the constant gross findings were rash, enlarged spleen, and engorgement of the smaller vessels of the central nervous system. Secondary bronchitis and bronchopneumonia were present in 37, and in 8 cases were the immediate cause of death. The characteristic microscopical lesions were seen in the smaller blood vessels, most often those of the skin and of the central nervous system. Proliferation of the endothelial cells was followed by degeneration and necrosis, leading in the larger vessels to thrombus formations, and in the smaller to destruction of continuity, followed by extravasation of blood. A perivascular accumulation of large mononuclear (endothelial) cells and of polymorphonuclear leucocytes occurred earlier in the disease, and was most pronounced about the blood vessels supplying the sweat glands. In the endothelial cells of thrombosed vessels a micro-organism was found resembling that described in Rocky Mountain spotted fever[2] and in the typhus fever of Mexico; it was seen in thirteen samples of skin excised from living patients, and in twenty-two samples of tissue obtained at autopsy. The most easily demonstrable form of the organism occurred in clumps composed of pairs of slightly elongated bodies, 1 to 1.5 μ in length, with tapering ends, and surrounded by an unstained area. A second and rarer form was a minute paired granule, filling the endothelial cells while they were still *in situ*. What was possibly a third form was found in minute granules, just within the limit of visibility, which were demonstrable in certain peculiar swollen and vacuolated endothelial cells of the skin excised during life and of the tissues examined at autopsy. Typhus was transmitted to guinea-pigs by inoculation with infected lice; the gross changes produced were splenomegaly and slight enlargement of the inguinal and axillary lymph nodes. In fourteen of the infected guinea-pigs the most constant and obvious lesions were in the brain; they resembled closely those described in human subjects. The testis and epididymis often showed a few characteristic vascular lesions; in the cerebral vessels the larger forms of the organism as seen in man could be demonstrated. Lice were taken to Warsaw from North America and from Great Britain. The American stock remained free from micro-organisms throughout the investigation; certain of the British lice had a Gram-negative diplococcus in the genital tract, but no intracellular organisms were detected. Large numbers of intracellular organisms appeared in lice fed for one hour, twice daily, during a fortnight or more, on typhus patients who had had the disease for ten days or less. The organisms correspond to those described by da Rocha Lima as *Rickettsia prowazeki*.[3] Exceedingly pleomorphic, they varied in shape from a minute paired body to a bacilliform organism several microns in length; both forms occurred in chains. In some of the infected lice vast numbers were present; every epithelial cell lining the gut was distended by myriads of organisms, and these bloated cells could be seen with a $\frac{1}{2}$ in. objective.

THE HISTORY OF SCIENCE.

LAST spring a beginning was made at University College, London, with the foundation of a school of the history of science. Dr. A. Wolf, Reader in Logic, then made a first attempt at some organized presentation of the history of scientific ideas by arranging for a series of lectures; the course was inaugurated by Dr. Charles Singer last May in a lecture in which Greek science and modern science were compared and contrasted. This autumn much fuller arrangements have been made, and a series of courses of lectures will be given. The field to be covered is wide, ranging from Egyptian science to the most important developments of physical science in the nineteenth century, and from biology to mathematics in the eighteenth century. An introductory public lecture will be given on Thursday, October 7th, at 5 p.m., by Professor Sir William H. Bragg, F.R.S., and on October 13th Dr. Wolf will begin an introductory course of lectures on the general history and development of science; this course will be illustrated by lantern slides, and visits will be made to museums. On October 12th, at 5.15 p.m., Dr. Charles Singer will begin a course of twelve lectures on the history of the biological and medical sciences from early times till the eighteenth century. Dr. Singer's intention is to make his course a history of medical science, for down to a certain date the biological sciences are inseparable from medicine; he will omit all discussion of social phenomena and personalities. The history of the biological sciences since the eighteenth century will be dealt with by Professor J. B. Hill, F.R.S., in a course of six lectures, beginning next May. The full programme of all the courses, with particulars as to fees, can be obtained by sending a stamped envelope to Dr. W. W. Seton, Secretary of the College, Gower Street, W.C.1.

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[1] *Internat. Journ. of Public Health*, September, 1920.

[2] BRITISH MEDICAL JOURNAL, September 25th, 1920, p. 485.

[3] *Deut. med. Woch.*, July 3rd, 1919.

“THE RIGHT TO STRIKE.”

Mr. Ernest Hutchinson's four-act drama, *The Right to Strike*, at the Garrick Theatre, is frankly intended to be “a play of to-day.” It raises the issue of a counter strike by doctors in the face of a strike *à outrance* by the workmen of a local railway company serving an isolated town in Lancashire. The medical men of Valleyhead, aghast at the murder of one of their number, undertake a rigorous medical boycott of the railwaymen and their families. The murdered man is Dr. Miller the younger, just demobilized from the R.A.M.C., and returning home with his bride in the expectation of peace and comfort after the war. He is killed by the strikers while acting as an emergency transport driver. His great friend, Dr. Wrigley, the principal surgeon of the town, is the leading spirit first of the transport service and then of the doctors' strike. Nearly all the protagonists in this local tragedy are well known to one another from youth up, and two of the acts take place in the board room at the Valleyhead Infirmary. From the dramatic and topical standpoints the problem is highly interesting, though every doctor knows that a thorough-going medical reprisal of this kind would never really happen. The medical tradition is too strong, even with such extreme provocation as the playwright here deliberately introduces. Indeed, through all the action of the drama this is plainly meant to be the feeling of Dr. Miller the elder—a well-drawn character, portrayed with fine sympathy, restraint, and sincerity by a most accomplished actor. The leader of the railwaymen has a young wife who is expecting her first child, and news of the gravity of her condition is brought to him at the height of the struggle, during a conference between the various parties under the chairmanship of the local M.P. This meeting of leaders of the opposing camps is attended by a comic person described in the programme as “Mr. James, Solicitor to Medical Association.” In real life one would expect to find a medical official on the spot at such a moment; but they do things differently in stageland, and a lawyer is sent down from London to try to settle the dispute. (This gentleman seems, by the way, to have very wide powers, for we learn in the last act that he has suspended the obdurate Wrigley from the *Medical Register*!) The father of the murdered man withdraws from the medical embargo and resumes his professional care of the young woman. The case, however, turns out to be beyond his powers, and the patient's life can only be saved if Wrigley will operate. By this time the strike is over and the trains are running again. Most of the characters reassemble in the sitting room of the railwayman's cottage in the small hours of the morning. The patient is at death's door in the next room; everything is ready for the operation if only Wrigley can be found and persuaded to perform it. He comes at length, but he will not operate, declaring that duty to the murdered friend forbids him to save the wife of a man who cared nothing for the lives of men, women, and children in a community paralysed by an inexorable strike. Of course the doctor gives way in the end, and the curtain falls as he is taking off his coat. And so the audience leaves with [illegible] feelings as to the rights and wrongs of the trouble, but confident at least of a happy issue for the railwayman's family. It should be added that the acting throughout is excellent.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

The twenty-first annual general meeting of the National Association for the Prevention of Tuberculosis takes place on October 8th, during the conference at Liverpool. In the annual report the honorary secretary, Dr. J. J. Perkins, gives a list of 81 public lectures delivered by officials of the society, and of 23 leaflets, cards, and so forth published under its auspices. A new branch has been formed for the county of Essex, and the syllabus has been drawn up of a training scheme in tuberculosis for voluntary workers. The council has been seriously hampered for want of funds; neither the Ministry of Health nor the London County Council has been able to allocate grants, and as the expenditure exceeds the income by a thousand pounds it is possible that the work will have to be curtailed. The report contains further information regarding the association's scheme for establishing a training colony for discharged sailors and soldiers at Burrow Hill, in Surrey. Water has been laid on, roads have been made, and the construction of the farmsteading has been completed. Of £50,000 asked for in the appeal of 1917 a total of £36,568 had been received on July 31st, 1920. Terms have been arranged with the Ministry of Health for the extension of the training colony scheme by amalgamation with the Brompton Hospital sanatorium at Frimley. The Minister of Health has agreed to meet the total cost of increased sanatorium accommodation, provided that it is available for tuberculous ex-service men from any part of the country, and that the plans meet with the approval of the Ministry. The sanatorium authorities are to have the option of taking over the buildings and equipment thus provided at any time within a period of five years in consideration of a payment—subject to certain modifications—equivalent to two-fifths of the then value of the property. It is hoped that before the end of the year a training colony, for the provision of which the association is working in conjunction with the Royal Victoria Hospital Tuberculosis Trust, will shortly be opened at Southfield, near Edinburgh. The object of the society is the prevention of tuberculosis; the methods employed are: (1) the education of public opinion and the stimulation of individual initiative; (2) the influencing of Parliament and other public bodies; (3) the establishment of local branches. This year's conference is being held in St. George's Hall, Liverpool, during the last three days of the present week.

THE LONDON MEDICAL EXHIBITION.

The tenth London Medical Exhibition has been open during the current week at the Central Hall, Westminster. It is the second of these exhibitions to be held since the close of the war, and is much larger than its predecessor, occupying two floors instead of one, and displaying the products of about ninety firms. The inclusion of a dental section, to which several manufacturers of dental outfits and dental preparations contributed, was a new departure. To a large extent the exhibition was a reproduction for the benefit of London medical men of the very successful exhibition of drugs and surgical appliances held at Cambridge at the end of June, on the occasion of the annual meeting of the British Medical Association. If anything, the show of fine chemicals was larger on this more recent occasion, and some of the manufacturers along this line aimed not only at an attractive but at an educative display. One well-known house, for example, showed a large frame containing a set of tubes with connecting diagrams and explanatory text to illustrate the derivatives and alkaloids of opium. On the same stand was a mountain of sodium salicylate—a beautiful exhibit, and, like many other things of the same order, a clear tribute to the British chemist. Liquid paraffin, in preparations which could be taken by the most fastidious, was a feature at several stands. The visitor was enabled also to see the most recent advances in organotherapy, and here again the processes of manufacture were illustrated, from the raw glands to the finished products. Perhaps the side of medical work least represented was medical electricity, but a fair amount of apparatus was on view, including portable x ray equipments worked from one switch. Radiographs taken with a special x ray film, which enables single flash exposures to be made even when two intensifying screens are used, formed another exhibit of interest. Then there was a great range of surgical instruments, orthopaedic appliances, such things as elastic hosiery, sanitary wools, toilet preparations, surgical soaps, and various foods whose names are household words. A number of bookstalls with many interesting publications were scattered about the exhibition; but it is evident that if these exhibitions go on increasing their area some system of sectioning will have to be devised, for to have artificial limbs, tonic foods, laboratory apparatus, and the waters of English spas all pressing upon his attention within almost the same square yard is bewildering to the visitor and not quite fair to the exhibits.

MEDICAL EDUCATION AT ST. MARY'S HOSPITAL.

The authorities of St. Mary's Hospital Medical School have issued an appeal for public subscription of at least £150,000. Of this sum, £30,000 is required for the rebuilding of the school, and £40,000 for the construction of a new block providing accommodation for a new pathological institute, and for laboratories for certain special subjects. At present the pathological institute, with its seven departments, is housed, not in modern well-equipped laboratories, but in converted wards originally intended for midwifery. Lack of funds, besides causing the pathological work to be conducted in conditions of considerable difficulty, has impeded the provision of in-patient clinical instruction in midwifery at a time when this is urgently required. An appeal is also made for £20,000 to endow a chair of hygiene, public health, and preventive medicine, and for an equal sum to endow a chair of pharmacology. The facts are made public that the teacher of preventive medicine at St. Mary's is paid only £10 a year; that there are not half a dozen whole-time teachers of pharmacology in this country; and that there is in London only one complete pharmacological institute—and that is dissociated from any hospital. It is from the heads of industry that aid is chiefly sought for the endowment of the chair in industrial medicine. The detection and prevention of "dope" and T.N.T. industrial poisoning during the war, and Dr. Llewellyn's researches on miners' nystagmus are given as instances of the value of industrial medicine. Good may ensue, both to the employers and employed, from investigation of the problems connected with fatigue, efficiency, and output, with occupational diseases, and with the psychology of industrial unrest; already in America there are departments of industrial medicine in connexion with six medical schools or universities. The appeal committee has issued a booklet in which are pointed out both the national importance of medical education, and its present handicaps; the extension and alterations which are proposed in the teaching of St. Mary's are summarized in an appeal which is "not based on sentiment but on grounds of investigation and education." Contributions are also asked for towards a fund of £20,000 with which to endow four research fellowships, each yielding £250 yearly, two in medicine and two in surgery.

THE FINSEN INSTITUTE IN COPENHAGEN.

In the annual report for 1919 the directors of the Finsen Institute in Copenhagen give a comprehensive survey of its multifarious activities. Altogether 3,957 patients attended the Institute, but only 1,587 were new-comers. The number of old cases of lupus carried over from earlier years is a sad commentary on the refractoriness of this disease even to the most modern treatment; of 507 cases of lupus vulgaris treated in 1919, only 131 were new-comers in 1919. It is, however, pointed out that these chronic cases largely represent the failure on the part of practitioners to send their patients to the Institute early in the disease. The adoption of universal light baths, in addition to strictly local exposures, is regarded as a distinct advance, both the duration of treatment and the frequency of relapses being considerably reduced. But some years must still pass before the influence of this factor can be demonstrated by statistics. This use of universal actino-therapy applies to surgical tuberculosis as well as to lupus vulgaris, and for the purpose of universal exposures the quartz-mercury lamp has been almost completely superseded by the carbon arc lamp. Only when the subjects of laryngeal tuberculosis cannot tolerate the heat generated by the carbon arc lamp is the quartz-mercury lamp found more satisfactory. The *x* rays were used on 1,365 patients, partly in conjunction with light baths for various forms of tuberculosis, and partly as the principal remedy in various diseases of the skin. Altogether 98 patients were treated with radium, but the report does not say with what result. Carbon dioxide snow continues to be used with satisfactory results in various diseases of the skin, and altogether 166 patients received this treatment. Diathermy has also been introduced, but no opinion is expressed as to the value attached to it at the Institute. The galvano-cautery is occasionally used when electrolysis, diathermy, or operation is impracticable. In the oto-laryngological department Reyn's electrolysis is still practised when the localization or the extent of the disease contraindicates operation, and it is invariably practised when the disease is situated on the septum nasi and in certain parts of the mouth, provided the patient's general condition is suitable. In this department the introduction of universal light baths in the treatment of chronic bone disease and tuberculosis of the larynx is hailed as an important advance, and even in severe cases of laryngeal tuberculosis universal exposures to the carbon arc lamp have been found to banish pain and dysphagia.

We regret to record the death of Dr. William Murray, consulting physician to the Newcastle-on-Tyne Hospital for Sick Children. An obituary notice will appear in an early issue.

The Minister of Health has appointed a Committee, with Mr. Neville Chamberlain, M.P., as chairman, to inquire into the practice of living-in on canal boats in England and Wales, and to report whether any alteration in the practice is desirable. The Committee has no medical member.

The Minister of Health has appointed to be a medical officer of the Ministry, Dr. Alexander Macphail, formally Professor of Anatomy in St. Mungo's College, Glasgow, Lecturer in Anatomy at St. Bartholomew's Hospital, and Secretary of the Anatomical Supplies Committee of Great Britain. His first duties in the Ministry of Health will relate to the administration of the Anatomy Acts, which has been transferred to the Ministry from the Home Office.

PRESENTATION TO DR. J. A. MACDONALD.

The following further subscriptions have been received from September 21st to October 2nd, in response to the appeal published in the Journal of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

Eighth List of Subscribers.

	£	s.	d.
Brought forward from last list of subscribers	730	1	0
Charles, Dr. J. R., Clifton, Bristol	2	2	0
Douglas, Dr. W., London.	2	2	0
Frier, Dr. C., Grantham .	1	1	0
Goodbody, Dr. F. W., London	2	2	0
Haig, Dr. William, D.S.O., Crieff	0	10	6
Jacob, Dr. H. W., Great Malvern	1	1	0
Pollock, Dr. G., London ..	1	1	0
	£740	0	6

WESTERN MEDICINE IN INDIA.

PROPOSED INDIAN MEDICAL CORPS.

Two reports of great consequence to the Indian Medical Service and to the progress of Western medicine in India were published at the end of last week. One is the report of the Medical Services Committee appointed by the Government of India in January, 1919, under the presidency of Sir Verney Lovett, to examine the question of the reorganization of the medical services in India, both civil and military. The other is the report of the Committee appointed, later in the same year, under the presidency of Lord Esher, by the Secretary of State to inquire into the administration and organization of the army in India.

THE LOVETT REPORT.

The Lovett Committee met in Delhi, and visited Lucknow, Patna, Calcutta, Madras and Bombay, and at each place examined witnesses, including representatives of the I.M.S., the R.A.M.C., the Indian Medical Department, independent private practitioners, civil assistant and subassistant surgeons, medical missionaries, and some non-official Indian gentlemen not connected with the medical profession. The Committee framed a scheme for a unified medical service for the British and Indian armies, and for the higher civil medical appointments in India. They hoped it would be accepted by the War Office, since if a unified service be not introduced many present difficulties must continue.

The report, after a historical introduction, points out that the war dislocated the domestic and financial arrangements of many I.M.S. officers, and quotes the statement made by Colonel Elliot to the Secretary of State on behalf of the British Medical Association, to the effect that many letters received showed the unfortunate financial position of the writers, inasmuch as they had been living on their savings and on other sources of private income for several years during the war or were heavily in debt. He stated also that complaints were made that the services of I.M.S. officers had not been used to the best advantage, and that they had been constantly superseded by officers junior to them in other branches of the medical organization. The Secretary of State and the Government of India took steps in the hope of remedying these grievances; staff pay in the field was improved, and promotion accelerated so as to prevent supersession of I.M.S. officers by R.A.M.C. officers.

In March, 1918, Indian members of the Legislative Council moved for the constitution of a civil medical service, wholly independent of the Indian army, and in October, 1918, after further discussion with the British Medical Association Mr. Montagu asked the Government of India to inquire into the whole mechanism by which the medical needs of India and especially medical education are to be satisfied in future. The appointment of the Lovett Commission was the result. The Committee consisted largely of experts and included two Indian officers I.M.S. and a civil practitioner.

Proposed Indian Medical Corps.

On the main problem the Committee expresses the clear opinion that if a good class of British candidate is to be attracted to the medical service in India, that service must partake of the nature of a mixed career—military, civil, professional, sanitary, and research—and must offer the varied opportunities which will appeal to practical men of action as well as to men skilled in the different branches of the medical profession. "The conclusion is that one Indian Medical Service should compete in London for candidates who desire a career of mixed opportunities, military and civil." The Committee recommends the formation of an Indian Medical Corps which would take the place of the Indian Medical Service and, in addition, do the work now done by the R.A.M.C. in India. Reference is made to the inconveniences and friction which arose between officers I.M.S. and officers R.A.M.C. in India, and the opinion is strongly expressed that the present is a suitable time to attempt to remove these inconveniences and sources of friction. This could be achieved within three or four years, the period within which the Committee considers the new Indian Medical Corps would have become sufficiently organized to take over the whole of the military medical work in India, and at the same time be able to assist provincial medical services. It is also pointed out that if in the future an Imperial Medical Service for the whole of the British Empire should be established, the Indian Medical Corps would fit into it with the least possible disturbance or modification in its constitution.

The new Corps should have its own leave and casualty reserve of 25 per cent. and study reserve of 4 per cent., besides a war reserve calculated on the numbers necessary to meet the medical requirements of the field army of India on mobilization. At the present day the cadre of the R.A.M.C. is a ratio of 4 per mille of the total strength of British troops, and of the I.M.S. in military employ 1.28 per mille for Indian troops. It is recommended that the cadre for the new Indian Medical Corps should be calculated at the rate of 3 per mille of the total strength of the British troops and followers in the army in India. It is considered that the formation of one Indian Medical Corps to take over the care of both British and Indian troops will lead to economy not only in personnel but also in hospital buildings. Proposals are made also for the improvement of the status of assistant surgeons; this would render it possible to reduce the ratio of commissioned officers in proportion to the extent to which such officers were replaced by assistant surgeons, who, it is proposed, should in future be called assistant medical officers. The Committee considered but rejected the proposal to meet the situation by making over the care of the entire army in India to the R.A.M.C., making the I.M.S. a purely civil service.

The Committee again and again expresses its strong opinion that unification is the only satisfactory policy, and more than once quotes the words used by the deputation from the British Medical Association to the Secretary of State, and adopted by him, that the medical service is "the pivot upon which all other imperial services in India depend." The Committee considers that Indian medical talent should be attracted, and proposes increased facilities for such candidates in the hope that the Corps may contain a strong and high-class Indian element, and that the Governments of the various provinces may, with the help of officers from that Corps, be able to develop their own medical administration, and appoint their own officers as the occasion arises.

Constitution of Proposed New Corps.

The new Corps, it is recommended, should include commissioned officers, military assistant surgeons and subassistant surgeons, the Army Hospital Corps, the Army Bearer Corps, and other hospital establishments. As the cadre of the Indian Corps would be much larger on the military side of the I.M.S., the Committee judges it of great importance that the increase should not be confined to the junior ranks, but that a large number of officers of the Army Medical Service and the R.A.M.C. should transfer to the new Corps on equitable terms.

The Corps should have its own dépôt and school of instruction, and junior officers shortly after their arrival in India should be attached to a large civil hospital or school of tropical medicine for practical instruction in tropical diseases. In order to secure a sufficiency of candidates for the new Corps a system of optional retirement on gratuity before pension is earned should be instituted on the lines of the plans already existing in the R.A.M.C. and Medical Department R.N.

The Committee recommended that admission to the Corps should be through the portal of a single examination held in London twice a year, selected Indian students from the five Indian universities being assisted by scholarships to compete in this examination; at the beginning admission must be by transfer and nomination. The Committee also recommended that special opportunities should be provided for research work in scientific medicine, and that certain posts in the sanitary and other departments should be reserved to officers of the new Corps. Such officers would be debarred from private practice and should receive instead monthly allowances; officers holding clinical posts should be allowed consulting and operating practice in their own subjects, as should also chemical examiners and analysts.

THE ESHER REPORT.

The Committee over which Lord Esher presided was appointed at the end of 1919 to inquire into the administration and organization of the army in India, including its relation with the War Office and the India Office, and of these two offices to one another. The report bears the final date June 22nd, 1920. The general principle governing the representations of the Committee is expressed in the following paragraph:

> India has now been admitted into partnership with the Empire, and the Indian Army has fought, alongside troops from other parts of the Empire, in every theatre of war. Its responsibilities have thus been greatly widened, and it can no longer be regarded as a local force whose sphere of activity is limited to India and the surrounding frontier territories. It must rather be treated as a part of an Imperial Army, ready to serve in any part of the world. It follows that the organization of its auxiliary services should, if confusion is to be avoided, conform closely to that of the rest of the forces of the Empire.

In consequence it is recommended that the Commander-in-Chief in India should be the sole military adviser of the Government in India, and that the Secretary in the Military Department of the India Office should be a deputy chief of the Imperial General Staff, and, acting under the Chief of the Imperial General Staff, be the sole military adviser of the Secretary of State. It is desired to establish closer relations between the British and Indian armies, and proposals for the amalgamation of various services are put forward, but it is thought that the amalgamation of the R.A.M.C. and I.M.S. would present great difficulties.

The I.M.S. and the R.A.M.C. in India.

It is pointed out that the term "unification" is used in different senses; for the Government of India, the Lovett Committee, and the Secretary of State it meant the unification of the superior military and civil medical services, but for the military authorities it meant the unification of the two military medical services only. Three schemes considered by the Committee are summarized as follows:

(1) That of the Verney Lovett Committee, viz., the elimination of the Royal Army Medical Corps from India, and the creation of a unified Indian Medical Corps, to serve both the army and the civil population.

(2) The proposal to entrust the medical charge of the Indian Army, as well as of the British Army, to the Royal Army Medical Corps, thus making the Indian Medical Service a purely civil medical service.

(3) The proposal to retain both the Royal Army Medical Corps and the Indian Medical Service, but to split the latter up into two separate services, the one serving the Indian Army and the other the civil population.

The Esher Committee expressed the opinion that the Lovett report put forward the only feasible scheme for a united military and civil service, but in the same paragraph rejected it on the ground that after the first selection had been made it would permanently exclude the R.A.M.C. from India; this, it is considered, would be disadvantageous both to the British troops and the officers of the R.A.M.C., depriving them of the wide field of medical experience that India affords. It is also contended that the proposed Indian Medical Corps would for some years be unable to provide the full establishment of officers required for British as well as for Indian troops, because it does not now attract candidates, and in the opinion of the Esher Committee would not obtain any large number of volunteers from the R.A.M.C. This is, of course, a matter of opinion, and it is equally open to others to believe that many R.A.M.C. officers would be willing to transfer provided suitable conditions were offered.

If the proposal to entrust the medical charge of the Indian as well as of the British army to the R.A.M.C. were carried out it would, the Committee estimates, involve an increase of the number of officers R.A.M.C. in India to a thousand, and in order to encourage them to gain knowledge of Indian languages and conditions it would be necessary to allow a certain proportion to elect for continuous service, or at least successive tours. It is noted also that an essential condition of this scheme would be to open the R.A.M.C. to Indians. The Committee does not recommend the scheme, the main reason given being that complete separation of the civil from the military medical service would lead to undesirable consequences—among others, the loss of a reserve of three or four hundred medical officers, with military training, whom the local governments would otherwise be in a position to furnish from the civil side in an emergency.

Separate Civil I.M.S. Condemned.

The proposal to form a separate civil medical service is condemned for various reasons, including increased cost, the risk that a purely civil medical service would become provincial and thereby deteriorate in quality, and the loss of efficiency on a purely medical military side, owing to lack of the wide experience afforded by civil practice. Therefore, the opinion is expressed that it would be increasingly difficult to obtain a reasonable proportion of well qualified Europeans in such a service, though a strong European element is essential:

(*a*) For medical attendance on the European servants of Government and their families, who have been led to expect that they will be treated by men of their own race, and whose expectations it is particularly desirable not to disappoint at the present time.

(*b*) For the maintenance of Western standards of research, efficiency and discipline in the civil medical services of Government.

It is added that both the Government of India and local governments are opposed to the creation of a separate civil medical service, and the Committee agrees that it would be unwise to break up a service which has such fine traditions and has rendered such services to India as the Indian Medical Service.

Recommendations.

The Esher Committee, while rejecting the plan of the Lovett Committee, has nothing to put in its place. Having started, the members state, with the hope of devising a scheme for the amalgamation of the two services (R.A.M.C. and I.M.S.) "we have been reluctantly forced to the conclusion that such amalgamation is impracticable, at least in present conditions." While aiming at closer co-operation, assimilation of conditions, and interchange of officers between other branches of the British and Indian armies, the Committee did not think it desirable to aim at complete unification or amalgamation. It therefore sees no objection to the continuance of separate medical services for the two armies, but desires to eliminate friction and jealousy and to secure as nearly as possible uniformity of training of methods and of ideals. The Committee considers that the following proposals, if accepted, will maintain the Indian Medical Service in its position as the premier civil medical service in India:

(1) There should be a joint examination, as was formerly the case, for both services in medicine and surgery, the subjects common to both. Candidates for the Indian Medical Service should take in addition the extra subjects, indicated in the syllabus to the Verney Lovett report, which are considered necessary for that service.

(2) The commissions for successful candidates should in both cases bear the same date, which might be that either of their joining, or passing out from, the Royal Army Medical Corps College, Millbank.

(3) There should be joint preliminary training, as at present, at Millbank; but Indian Medical Service officers between five and ten years' service should, like Royal Army Medical Corps officers, return to Millbank for subsequent courses, till such time as adequate facilities for such training are provided in India. We agree with the Verney Lovett Committee as to the need of providing such facilities.

(4) The rules and the periods of service for promotion up to the rank of major should be similar for both services.

(5) No Indian Medical Service officer should be eligible for civil employ till he has completed at least two years' service on the military side, and has been certified by the Director Medical Services as fully qualified on that side.

(6) The selection of officers for civil employ should be made by a Board, consisting of the Director-General Indian Medical Service as President, the Director Medical Services, and not more than two lay members to be nominated by the Government of India.

(7) An Indian Medical Service officer should select finally between military and civil employ in his 16th year of service; and if he elects for, and is finally posted to, civil employ, he should be debarred from further military employ, except as in (9) (*c*) below, and from higher rank than that of lieutenant-colonel, to which he would rise automatically under the time scale for the time being in force.

(8) Promotion to lieutenant-colonel for Indian Medical Service officers in military employ should be subject to selection, as in the case of the Royal Army Medical Corps.

(9) Officers in civil employ shall be classified as:—

- (*a*) Ordinary war reserve—up to ten years' total service.
- (*b*) Special war reserve—up to sixteen years' total service.
- (*c*) All others.

Officers in category (a) would be liable to recall to military duty in an ordinary emergency, and those in (b) only in a greater emergency.

Officers in category (a) and (b) should be required to keep up their military training by periodical return to duty with troops; a period of three months every three years is suggested. Officers in class (c) should only be recalled in a very serious emergency, for work as specialists and consultants, subject to the sanction of the administrations under which they are serving and to the extent agreed upon. They should, on recall, be given suitable temporary rank, on the analogy of the private practitioners employed by the War Office during the war.

(10) Officers of the Royal Army Medical Corps should be posted to India in the various grades for tours of duty as at present, and should be entitled to a reasonable share in the higher military administrative appointments.

(11) In view of the fact that the Director Medical Services is the head of both the military medical services, the post should be held by an officer of the Army Medical Service and the Indian Medical Service alternately.

(12) Exchange of officers between the Royal Army Medical Corps and the Indian Medical Service should be allowed, as at present.

(13) Interchange of duties between officers of both services, e.g., charge of British and Indian station hospitals, field ambulances on manœuvres, etc., should be encouraged.

(14) If a fixed proportion of Indians be recruited for the Indian Medical Service, that proportion should be maintained in the military and civil branches.

(15) On the analogy of other Indian services, the pay of the Indian Medical Service should be substantially higher than that of the Royal Army Medical Corps when employed in India. This is necessary in order to attract recruits to the Indian Medical Service. Similarly, the Indian Medical Service pensions should be on a higher scale.

OPENING OF THE WINTER SESSION.

MEDICAL RESEARCH AND EDUCATION.[1]

BY

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In delivering an opening address it is fitting that I should speak upon a topic in which we are all profoundly interested. I have therefore chosen medical research and education. My own justification for speaking on this subject is that I have for more than a quarter of a century been intimately associated with medical research and education in different parts of Great Britain and in Canada, and have also had opportunities of studying the methods employed in the United States of America and the continent of Europe.

It is frequently urged that our medical education should be more "practical." In advocating or opposing this change we must understand precisely what is meant by the term "practical." If by it we mean "applied" or "professional," then the proposal to make our education and our research more practical is fraught with danger. On this point I should like to quote a passage from an address by Professor Pearce of the University of Pennsylvania:

"It is presumptuous [illegible] to you that as practitioners, you keep [illegible] point of view of the [illegible]. I realize fully that [illegible] "practical" doctors [illegible] will find many who sneer at what they term the "scientific" [illegible]. [illegible] of which we hear less and less each year, [illegible] to the development of the sciences of bacteriology and physiological chemistry, which [illegible] by their practical application to everyday medicine have perhaps done more to dispel it than [illegible]. I [illegible] quote from the words of a past and present [illegible] to illustrate this change in attitude. [illegible] of 1887 [illegible] the question of whether or not the young [illegible] should take an active interest in [illegible]. He expressed his disapproval in the words, 'Take [illegible] pick up,' thus implying that at that time practice and investigation were considered incompatible. This same disapproval we find also in the frequently quoted [illegible]. 'If a man can [illegible] of good common sense [illegible] for his patient.' Thirty years later we find [illegible] of [illegible] the matter in the statement, 'So far as I know the most important difference between a "practical" doctor and the truly scientific is that the patients of the former are more likely to die.'"

Even from the narrowest utilitarian standpoint it is a short-sighted policy to be too "practical." By limiting too rigorously the scope of investigation, one runs a serious risk of checking discovery altogether. The whole of the subject of electricity, which now plays such an important part in our daily life, has been evolved not by the "inventor" or by the "practical man," but by the patient and disinterested studies of such men as Faraday and Clerk Maxwell. Our knowledge of disease has been advanced in recent years not only by medical men, but by botanists, zoologists, and chemists. It behoves us not to regard too anxiously the immediate practical value of research. Most of the epoch-making discoveries have had for some time little or no direct application to medical practice. To our grandfathers nothing could have been thought more improbable or even absurd than that a study of the different species of mosquitos and their life-history could lead to the discovery of a means of abolishing yellow fever. We must even beware of undue haste in putting discoveries to use. Even in the laboratory itself it is possible, by a too close concentration to one's particular line of work, to miss great opportunities of enlarging the bounds of knowledge. I have heard of a physicist who was interested in scientific photography and who noticed many years ago that his photographic plates always became fogged in presence of Crookes's tubes, but who, being a "practical man," simply took special care to keep his plates away from the tubes! This is an exquisite example of a too practical man who just missed (through failure to keep his mind alert) one of the greatest discoveries of modern times, a discovery made some few years later by Roentgen of Wuerzburg.

It is my opinion that it is not desirable to emphasize in a student's course the more purely professional part of his life's work. Throughout his after-life he will have ample opportunity for making himself familiar with these matters, but he will probably never again have the chance of carrying out a chemical analysis, a physiological experiment, or a careful histological *post-mortem* examination.

If by a "practical man" we mean a doctor who is equipped by his training to apply promptly and efficiently such treatment as may be the best for his patient, then, of course, "the practical man" is the best kind of man. But it is my firm conviction that such practitioners can only be turned out by our medical schools if the education given is of the broadest and most generous type, and if we aim above all to instil into our students the true scientific spirit, so that they shall always regard their cases as problems, to the solution of which they are to give their utmost skill and energy, employing their mental tools as they have been trained to use them in their scientific studies.

As for the methods of our teaching, I fear there is need for great improvement. The formal lecture without demonstrations is a pitiable anachronism. It is a survival from the days when there were no textbooks. Students nowadays hear so many lectures that they become almost immune to any influence in this direction. In the majority of subjects in the curriculum a short introductory course of about forty lectures is all that is necessary or desirable. Advanced students should have the privilege of attending short special courses delivered by the staff or investigators on subjects to which the lecturers have devoted special attention.

On the other hand, the time devoted to laboratory work should be considerably increased, and the lectures ought to be, to a large extent, explanatory of the laboratory courses. Heads of departments would do well not to look upon practical classes as matters beneath their notice, and not to leave them entirely in the hands of assistants.

Teaching and Examinations.

A student recently told me that his idea of a good teacher was one who would make his life a hell until such time as he knew enough to pass his examination. Now the student who holds such views is not entirely to blame for his state of mind. The medical schools have done much to foster a belief in the minds of students that their teachers are called upon to hold innumerable classes of the "grinding," "coaching," or "cramming" variety, and the schools have been tempted to do this out of a spirit of rivalry and competition with other schools, which it is impossible to justify. Tutorial or viva voce classes are not in themselves bad, but so frequently are the topics of discussion those with which the students have no actual first-hand knowledge, and so frequently do they deal with phenomena of which they can call up no definite mental images, that this method of spoon-feeding becomes a serious evil. The more so since students are tempted to neglect the systematic laboratory courses and trust to the help of the tutorial classes held just prior to each examination. Great improvement would result if medical teachers could be induced to study more carefully their educational methods. For example, students should be induced to see for themselves, and not always told what they are to see; they ought to be made to find out for themselves, and not told what they must find.

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[1] [illegible] at the opening of the eighty-sixth winter session of the Middlesex Hospital Medical School, on October 1st, 1920. [illegible] Med. [illegible] Part of an address to a students' society [illegible].

Dr. Thomas Lewis very reasonably insists that much more attention should be paid to human physiology in class work. The normal should be thoroughly known before the student passes on to the study of the abnormal. A large part of the trouble arises from our examinations. The evil reactions of excessive and at the same time defective examinations upon learning are nowhere more manifest than in medical education. The teaching is too frequently interrupted by tests. No sooner have the students settled fairly down to work than they begin to inquire, "Will this work pay?" "Shall I get this in the examination?" This spirit is fatal to all sound learning.

But if examinations are an evil, albeit a necessary evil, how can this be mitigated? What are the alternative methods suggested of securing the ostensible objects of examination — namely, efficient study and competent teaching? In the first place, the external examiner must be abolished and the teachers must be the examiners for their own students. A system of daily marking for observations made and for practical work done might with great advantage be substituted for the ordinary practical examination. Such examinations are of necessity very unsatisfactory. The tests to be employed are, from the nature of the case, very few, and must be well known beforehand. If a student be asked in an examination to conduct an experiment, even of the simplest nature, which he has not had the opportunity of rehearsing, then complaints and protests arise both from candidate and university authorities. The majority of our tests in laboratory work have not to be directed towards estimating a candidate's power of solving a problem, but rather utilized as a means of judging his power of remembering how to repeat proceedings which he has carried out several times before. From an educational standpoint such tests are valueless.

It is a source of infinite confusion that the students in a medical college are divided up into several groups, with aspirations not to learn different branches of a subject, but to pass different kinds of examinations. It frequently happens that a large part of their energy and ingenuity is directed towards studying the idiosyncrasies of the various examiners and in reading their textbooks. When this kind of "preparing for examinations" extends to the teachers themselves, the limit of educational depravity has been reached.

The Place of Research.

One of the functions of a medical school is to train competent practitioners of medicine. But it cannot be too strongly urged that this is not its only function. A medical school worth the name must add to our stock of medical knowledge and must rear a number of young men to become teachers in the medical departments of our universities. Teaching, in my opinion, should not be divorced from research. Every teacher should be also an investigator. "To engage conscientiously in teaching is a form of research." Lecturing is a valuable means of arranging one's ideas, and in facing a keen and critical group of students the lecturer is frequently impelled to a more careful and discriminating treatment of his subject. It has been pointed out also "that in the stimulus of talking very often new and useful points of view present themselves." I have heard it recommended that the lecture hour be regarded as an agreeable relaxation for the lecturer and a period of refreshing sleep for the students. But I venture to think that if the lectures be not too many and if they are of the character I have suggested, even these laudable purposes fall into a secondary position. If the teacher be also an investigator it will make a great difference to the nature of the teaching. The best students are invariably turned out by men actively engaged in research. Such men are constantly on the alert for new methods, both in their investigations and their teaching; they inspire the same alertness in their students. The younger men who act as lecturers and demonstrators in university departments deserve special consideration. Rarely can such young men succeed in carrying on fruitful scientific work unless the head of the department sets the example and lends his encouragement and advice. I have known several instances where a professor has in the course of years had numerous assistants with enthusiasm and capability for research, but it has been urged that "there was no time" for research, and that "teaching was so much more important," and the suggestion of investigation on the part of the assistants was discouraged, or the attempt forbidden. The young teachers trained in such departments frequently obtain a reputation for being "good teachers," which too often means that they develop a marvellous capability of pushing bad students through worse examinations.

The best teaching can only be carried out in an atmosphere of research. The view has sometimes been expressed that a really efficient teacher should confine his attention to teaching. A moment's consideration will show how vain a thing and how fondly imagined is this. Examine a modern textbook in any subject and investigate the method of its compilation. The portions which treat of recent advances must consist largely of extracts from recent monographs or contributions to the scientific journals. Surely it is well if the lecturer has himself obtained first-hand knowledge of some of these advances, and better still if he has made some of them by his own investigations. The only satisfactory method of gaining a clear comprehension of any subject is to study the original sources of information and patiently strive to add to the sum of knowledge. It has been very truly said[3] that "a teacher who devotes an inconsiderable part or none of his best hours to research cannot long hold his place as a fertile and effective teacher." Every teacher knows that his lectures are infinitely more inspiring when he is speaking upon these branches of his subject on which he has worked than when he is talking of matters with which he has only second-hand knowledge, for no one can personally verify all the facts of his science. There is a vast difference in treatment in the two cases, and students are not slow to detect it. A student who knows that he is receiving his instruction in an active research department receives an inspiration which takes him on into his everyday practice with a true scientific spirit. The student in the other kind of department has no impetus but to learn enough to pass his examinations. It follows from what I have said that the medical school which encourages research in all its departments will always attract the best students.

Separate research chairs and research departments or institutions are, in my opinion, except in quite exceptional cases, undesirable. Even in purely technical or applied science it is now being generally recognized that the best original research is to be looked for in teaching institutions. The establishment of research institutions by the Government and by private munificence is likely to draw away the best men and the highest class of work, and to leave research in the universities in a deplorable condition. Let us consider for a moment how the necessity of such research posts has arisen. There can be no doubt that in the past heads of departments have been appointed who had no capability or no desire for original investigation, and to obviate the disagreeable necessity of getting rid of such men, new chairs, departments, or even institutions have had to be created in order to ensure that some adequate investigation may be carried out. This is, in my opinion, a thoroughly bad policy. By such an arrangement the students lack the proper inspiration which is derived from an active worker who is also an enthusiastic teacher, and the pure investigator misses the opportunity of formulating his rapidly acquired new views. It is of the greatest profit to students to be kept in constant contact with the growing edge of the subject. It is often possible to utilize the advanced class work as a means of investigation. I therefore strongly advocate that every department in a medical school should unite teaching with original investigation. In order that this may be achieved it is all-important that the teacher should have abundance of free time for thought, for reading, and for experiment. If his time be filled up by endless elementary classes or administrative work, he cannot be expected to contribute to the advance of knowledge. There are two ways in which more free time may be found for the prosecution of research—namely, the increase in the teaching staff and the creation of new departments. Research in our medical schools will be considerably advanced with increased recognition of the hospital as the homologue of the research laboratory in general science. It has been pointed out over and over again that the essential, fundamental methods of experimentation have not yet been diffused to a sufficient extent into the regions of practical medicine.

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[3] Sir Clifford Allbutt, BRITISH MEDICAL JOURNAL, October 14th, 1905.

Perhaps the quality most essential for successful investigation is enthusiasm. This must constitute a stimulus powerful enough to sustain the worker through long periods of laborious drudgery, when apparatus will not work, when all goes wrong, and the outlook seems hopeless. Every director of a scientific laboratory must have realized that the qualities of enthusiasm and dogged perseverance are just as valuable in scientific work as those of "brilliance" or "cleverness." The educational value of original research is immense. A new man is created whenever a student, free from the terrors of examinations, has devoted himself to an experimental problem and has carried it to a successful issue. Such a man is better able to attack the problems of his everyday medical life, and to cope with emergencies, than many of his fellows who may have read more books or passed severer examinations.

I am persuaded that nothing but good could come of a greater freedom and elasticity in the medical courses. Students should have a greater latitude of choice in subjects to be pursued, though, of course, certain fundamental subjects must always remain obligatory. It is generally recognized that the curriculum is sadly overburdened, and the elective system is, to my mind, the only practicable method of relieving the strain. This system would have the additional advantage of permitting every student to do some kind of research, and so to increase materially his mental calibre and equipment. As an example of the elective system applied to the subject of physiology, we might suggest that all students should attend a general course of forty lectures. Then, in addition, the department should provide short courses of eight to ten lectures, with laboratory work (by people specially competent to deal with the particular subjects), in general physiology, physiology of the circulation, the nervous system, and so on. No student should be required to take all these courses, but only a certain number. The same arrangement might well be applied to other subjects and to groups of subjects.

The Need for Government Aid.

Perhaps the greatest hindrance to progress in medical education has always been, and still continues to be, the difficulty in finding money to defray the expense of buildings and laboratory equipment, to say nothing of the salaries of teachers. Although we must record a debt of great gratitude to the few generous and high-minded men who have endowed chairs and even institutions, yet we have every reason to be ashamed of the lack of wide public support for our universities. Successive Governments have left our educational institutions on the verge of starvation. The universities are not the offspring of our Government, but, since they have been left on its doorstep without proper means of nutrition, it will be compelled in common decency to take them in and adopt them. No university can be self-supporting, and private munificence is too precarious to be relied upon.

I wonder if it has ever occurred to any of you, or if it has ever been laid before you, that a scientific man is the only servant of the nation who is expected to do his work without proper appliances. A business man has suitable apparatus and fittings adapted for saving of time and perfection of technique, but a scientific man has in many cases to be content with the most miserable makeshifts. Within the last few years the conditions have somewhat improved in respect of those subjects which are recognized as valuable in the pursuit of war and the amassing of wealth. In medicine our Government has preferred to endow separate research institutions rather than to support the medical departments of universities. The director of a university laboratory is indeed supremely lucky if his place of work is as well adapted for its purposes as a bank, a departmental store, or a hotel kitchen. This deficiency is painful enough in many of our larger universities, but what is the state of affairs in our smaller institutions can only be left to the imagination of those who do not know by bitter experience. The reason of this deplorable condition is clearly to be sought in the lack of interest in and appreciation of scientific work on the part of the general public and the reflection of this state of affairs in the attitude of our Governments. In regard to medical education the public has never realized that efficient training of doctors is absolutely dependent upon a sound scientific education. And this is perhaps not to be wondered at, since medical men themselves have not always held the most enlightened views on the subject. This is, of course, only an expression of the British suspicion and scepticism as to the value of science. There has been a partial awakening, but our poverty-stricken universities still stand as a sign that everything has yet to be done. State support to the universities should be generous and complete. Teachers should be well paid and laboratories well endowed. Here in London all our schemes and proposals are baffled and defeated by lack of funds, by ancient tradition and the weight of great vested interests, combined with the evils of our examination system.

ST. MARY'S HOSPITAL.

The opening of the session at St. Mary's Hospital, Paddington, on October 1st, was attended by Dr. Russell Wells, Vice-Chancellor of the University of London, and Dr. J. G. Adami, F.R.S., Vice-Chancellor of the University of Liverpool. After distributing the prizes and certificates for 1919–20, Dr. Adami delivered an address dealing with recent developments in medical education. He said that words of warning were needed lest, in consequence of the financial difficulties by which they were beset, the universities and medical schools should lose their power of initiative and their independence. In accordance with the advice of the Chancellor of the Exchequer, students' fees, which before the war covered from one quarter to one-third of the cost of education, had been increased; but in both universities and training colleges the Government had declined to augment the subsidy granted towards the education of ex-service students already on the roll. Dr. Adami hoped that this decision would be reconsidered; he pointed out that grants of this kind did not connote such rights of Government control as would be established, for example, by the provision of pensions for university teachers. He expressed considerable doubt as to the value of the movement for full-time professorships in medical subjects, according to the "unit" system. This movement, he said, had reached us more directly from America, a country which during the last ten years had presented instances both of the most inadequate and of the most elaborate equipment for medical education—on the one hand, the unsatisfactory conditions shown in the report of the 1910 Commission, and exemplified by medical schools without dissecting rooms or without laboratories; on the other hand the lavish equipment of the Johns Hopkins, Harvard, and many other schools. Whole-time professorships were first instituted at Johns Hopkins, and other hospitals had followed; one modification popular in America was that the teacher should enjoy at the hospital limited opportunities for private consultations or operations. More remotely the system was of German origin. In the United States satisfaction with its working was not unalloyed, even among those who had accepted whole-time teaching posts. In Germany, where for generations there had been full-time State-paid professors, the results, Dr. Adami believed, were significant and sinister. Much industrious and intense study, much prolific publication, and much involved classification had ensued; but if the hall-mark of success lay in the establishment of principles rather than in mastery and classification of detail, the significant advances in medicine had been forthcoming from other than German sources. He cited as examples the additions lately made in neurology and cardiology and in the knowledge of the internal secretions and of antiseptics. The most significant names of German investigators were those of laboratory workers, not of units in the hidebound professorial system. The unit system was apt to have the disadvantage that it concentrated on the most promising pupil, to the detriment of "all-round" instruction. The ideal physician made it his duty to treat patients, not disease; the teacher who was entirely cut off from private practice might be tempted to regard patients as "material"—the students of such a teacher would not come into association with the highest ideals of medicine. Dr. Adami foresaw, too, that the young man of 30 might be tempted, after a period of years spent in whole-time teaching, to leave this work for private practice. On the other hand, the lecturer recognized that the two great disadvantages of the system at present obtaining in London were: first, that competition was so intense as to make the graduate afraid temporarily to leave his hospital, lest he should lose his seniority; and secondly, that our existing system made for solitary leaders and not for great schools. Pathological laboratories must not be placed away from the hospitals; it was by association with clinical work that pathology was kept alive. Although himself a "laboratory man," he felt very doubtful of the wisdom and practicability of adopting in England the whole-time system of professorial appointments; it was preferable, he thought, before extending the system in this country, to make further observation of the results obtained elsewhere.

KING'S COLLEGE HOSPITAL.

MR. F. RICHARDSON CROSS, LL.D., F.R.C.S., lecturer on ophthalmology in the University of Bristol, in his introductory address at the opening of the new session at King's College Hospital, on October 1st, alluded to the advantages of resident collegiate life, and expressed his satisfaction that the new hospital at Denmark Hill included a hall of residence for medical students. Mr. Cross, in his interesting survey of progress, described the investigations, conducted in the middle of the last century by Spencer Wells and others, into the excessive mortality following surgical operations; a description was given of Pasteur's and of Lister's work and their results. Just as Lister and his colleagues aimed at the prevention of suppuration rather than its cure after being established, so it was now the aim of the physician to prevent disease, and to watch and follow its very early beginnings. Students should develop to its highest degree the power of accurate observation by sight, touch, and hearing. Aristotle had said: "Men who desire to learn must first learn to doubt, for science is only the solution of doubt"; the true method of science was that of observation and experiment. At present the work of the general practitioner gave him but little time for study and recreation, and many were overworked and underpaid. The State, through the Ministry of Health, was making much use of medical services, and would more and more extend them. No doubt the medical profession would continue willingly to give its best services, both of time and knowledge, towards treatment in voluntary hospitals; but where the State undertook the responsibility of dealing with the sick, a proper payment would be expected for the services rendered by medical men. It was important that the profession should continue as far as possible to be self-governing.

WESTMINSTER HOSPITAL.

THE inaugural address at the opening of the winter session at the Westminster Hospital Medical School on September 30th, was delivered by Dr. A. M. Gossage, C.B.E., senior physician to the hospital. Dr. Gossage called attention to the great increase in the number and complexity of the subjects that had to be taught to the medical student since he was himself a student. This meant an ever-increasing expense, and medical education, like other forms of secondary education, was no longer self-supporting. In the lack of endowment the schools had to look to the Government for assistance, and it was probable that the Government would insist on economy both in the medical schools and in the hospitals. One of the obvious measures of economy was the concentration of the various schools into a few centres, so that amalgamation, whether voluntary or forced, must be expected in the near future. It was hoped that this would result in the use for teaching of the wasted material to be found in special hospitals and infirmaries.

MEDICAL SCHOOL DINNERS.

ST. BARTHOLOMEW'S HOSPITAL.

THE annual old students' dinner was held after an interval of seven years on October 1st, with Sir Anthony Bowlby, K.C.B., K.C.V.O., K.C.M.G., President of the Royal College of Surgeons of England, in the chair. The number of those present (350) far exceeded all previous records. The Great Hall of the Hospital being unable to accommodate so large a company, the Lord Mayor offered the Guildhall of the City of London for the dinner, and in the Guildhall it was held. The Chairman, after the loyal toasts had been honoured, submitted the toast of the "Imperial Forces of the Crown," and spoke of the debt owed by the Empire to each branch of the services. He claimed that in the great war which had come and gone since the last dinner, Bart's men had upheld the old tradition in every theatre of war. Of 20,000 officers who served in the R.A.M.C. 2,000 were St. Bartholomew's men, and more than a hundred had given their lives. The toast was responded to by General Lord Horne, who remarked that Henry VIII, in the Charter he gave to St. Bartholomew's, enjoined it to take special care of those broken by war. That this duty had been faithfully observed in recent times the speaker could testify from his own knowledge. Lord Horne ended with a warm appreciation of the value to England of the great voluntary hospital system. The President of the Royal College of Physicians of London proposed the toast of "Prosperity to the Hospital and the Medical School." Passing lightly down the centuries—from Rahere's first visit to the city in the twelfth century in search of a lost book, to the reorganization of clinical teaching at the hospital during the past year—Sir Norman Moore suggested to Sir Archibald Garrod and his colleague, the Professor of Poetry at Oxford, that a better word than "unit" might be found. Sir D'Arcy Power, in a short reply, spoke of the present flourishing condition of the medical school with its 650 students. "The Health of the Visitors" was proposed by Dr. Howard Tooth, the senior physician, who briefly mentioned the many distinguished guests. Sir Arthur Lawley, Commissioner for the British Red Cross Society in France during the war, responded in an eloquent speech. The Chairman's health was proposed in very warm and intimate terms by Sir Charles Gordon Watson, who voiced the feelings of all present in his tribute to Sir Anthony Bowlby as a surgeon in peace and war, as a man, and, above all, as the students' friend. The Chairman, in his reply, asked all present to join with him in sending a message of thanks to the Lord Mayor and Corporation of the City of London for their courtesy in lending them the accommodation of the historic Guildhall for that unique occasion.

ST. THOMAS'S HOSPITAL.

THE old students' dinner at St. Thomas's Hospital was held at the Connaught Rooms, under the chairmanship of Dr. F. Foord Caiger, on October 1st, when some 160 past and present members of the school met together. The loyal toast having been duly honoured, the Chairman proposed that of "St. Thomas's Hospital and Medical School." He sketched the changes and improvements which had taken place in the hospital and medical school during recent years, and, in referring to the old physicians and surgeons of the past who had helped to bring the hospital and medical school to its present high position, related some interesting reminiscences. Sir Arthur Stanley, treasurer of the hospital, in responding, said that great honour was due to his predecessor, Sir James Wainwright, without whose able assistance the hospital could not have attained its present position. He said that when a representative in the House of Commons he used to look over the water and admire the architecture of St. Thomas's Hospital, and since he had become associated with the institution he liked it more and more. Unfortunately the revenue of the hospital was not increasing in proportion to the expenditure, and as many former subscribers had become poor the hospital could not expect to get money from them now, so they had to look to the working class, who were better off, for support. The London Hospital was in favour of making a charge to patients in a position to pay, but he was still in favour of the voluntary system, and he was sure the patients would subscribe as much as possible to help maintain the hospital. Sir Cuthbert Wallace, Dean of the Medical School, who also replied to the toast, referred to the different new departments introduced into the hospital in late years, and recalled the names of men of distinction in the profession who had been connected with it. The school, he said, was in a flourishing condition, and the entries were increasing. The sum of nearly £5,000 had been collected towards the St. Thomas's War Memorial, and it was hoped that further subscriptions would be forthcoming; they could, if necessary, be spread over a number of years. The toast of the Chairman was proposed by Dr. Turney and acknowledged by Dr. Caiger.

THE MIDDLESEX HOSPITAL.

The past and present students of Middlesex Hospital Medical School gathered at dinner at the Wharnecliffe Rooms on October 1st under the chairmanship of Dr. R. A. Young, C.B.E. The company included the Earl of Athlone, treasurer of the hospital, and Admiral of the Fleet Earl Beatty, who had distributed the prizes earlier in the day. In proposing the toast of "The Hospital and School," the Chairman claimed that Middlesex had been justified in preserving its self-contained character against the apostles of partial fusion for London medical schools; a self-contained school, in his opinion, was able to command a more complete *esprit de corps*. The Earl of Athlone, who responded, said that highly important and necessary as was the treatment of the sick in hospital, such service was second to the wider purpose which, in combination with the school, the hospital sought to achieve. Treatment in hospital brought relief to the comparatively few; medical [illegible] and research restored the health of many more, and would, if encouraged, procure immunity for the rest. It was a common error to suppose that voluntary teaching hospitals existed merely for the benefit of the sick poor. There was no man or woman who did not owe these institutions a debt of gratitude. But to commend this aspect of their work to the public involved explanation and instruction, and sometimes even argument, and he was afraid that in the past those of them who had championed the cause of the voluntary hospitals had [illegible] the [illegible] to the easier path, and had based their appeals on grounds more immediately understood. This, however, had meant leaving the public in ignorance of the true mission of these centres of healing, and the task of enlightenment must be faced. Mr. A. E. Webb-Johnson, dean of the school, also responded. Sir [illegible] returned thanks for the past students; and, in accordance with tradition, the senior Brodrib scholar, Mr. Wise Howorth, for the present students. Sir Alfred Pearce Gould proposed the health of the guests, to which Earl Beatty responded. The admiral laid stress upon the spirit of comradeship, which, he believed, existed in the medical profession as it existed in the navy, and in the one calling as in the other it involved the principle of loyalty not only of junior to senior, but what was equally important, of senior to junior. Dr. [illegible] proposed the health of the Chairman, Dr. Young, and the company separated after the singing of "Auld lang syne."

CHARING CROSS HOSPITAL.

The annual dinner of past and present students of Charing Cross Hospital took place on October 1st, with Dr. J. Mitchell Bruce, C.V.O., in the chair. The toast of "The Hospital and Medical School" was proposed by Dr. T. W. Eden, who reported an [illegible] activity in the affairs of the hospital. It had completely recovered from the [illegible] which obtained ten years ago, when half the beds were closed and [illegible]. The [illegible] was due to the [illegible] of Mr. George Verity, chairman of the House Committee, and to the [illegible] by three [illegible], Dr. Addison, Dr. Harvey, and Dr. [illegible]. During the last ten years the number of students had doubled; the admission of women to the school had been abundantly justified. Dr. Eden believed that the face of medicine would be changed in the coming decade; its rewards and its opportunities would be increased, but there were new responsibilities to be shouldered by the present students. The real rewards of the profession would always lie in the work. In his reply, the dean of the school, Dr. W. J. Fenton, alluded to the success which had attended the founding, in 1919, of a pathological institute, with a whole-time staff. It was a mistake, he believed, to divorce research and teaching, and the presence of students acted as an incentive both in hospital instruction and in research work. The type of men suitable for whole-time appointments under the "unit" system would have to be trained; in the end whole-time and half-time teachers would work side by side, and the change on the whole would be beneficial. Dr. Fenton alluded to the difficulties experienced at present in securing the services of biochemists. Sir Herbert Waterhouse, F.R.C.S., proposed the health of the guests, and reply was made by Mr. J. F. Tower, chairman of the Nursing Committee, and by Sir James Cantlie. Mr. George Verity voiced the feeling of affection with which the Chairman was regarded by all connected with Charing Cross Hospital, and Dr. Mitchell Bruce replied in suitable terms.

England and Wales.

The Manchester Medical War Committee.

We have recently received the final report of the Manchester Medical War Committee, which was constituted on October 14th, 1915, as part of the organization then being developed by the Central Medical War Committee. The first chairman of the Committee was Dr. T. A. Helme, who was succeeded by Dr. T. A. Goodfellow. Dr. W. F. Dearden was honorary secretary to the Committee throughout its existence.

The Manchester Committee was one of the most energetic and successful of the local medical war committees, and in its final report we have a record of the successive pieces of work, some instigated by the Central Committee, and some promoted by Manchester itself. Beginning with the registration of all practitioners, with information as to the kind of war work they could undertake, and voluntary enrolment, the response to which was extraordinarily good, the report proceeds to describe the method of selection for service. There is a brief note of the difficulty experienced in getting some Government departments to part with their young medical officers, and of misunderstandings which occurred over calling up of men by the Central Committee and by the Army Council. But these difficulties were satisfactorily dealt with. The work on which the Manchester Committee may chiefly pride itself is probably its scheme for the conservation of practices. Few local committees undertook this matter so thoroughly, and a statement of receipts and payments appended to the report demonstrates the success of the scheme. The Committee is to be congratulated on the assistance it obtained from Messrs. Jones, Crewdson, and Youatt, who generously undertook all the book-keeping and accountancy free of cost to the Committee and the practitioners concerned. Mention is made to the incident of the displacing of civil medical practitioners in hospitals by American army doctors, and the eventual replacement of the dispossessed Manchester practitioners. A description of the examination of recruits and pensioners follows; and in this matter also the Manchester Committee was able, after some argument, to gain recognition from the Ministry of National Service for the system it advocated. Towards the end of the report mention is made of mobilization of the profession for which Manchester was prepared to work out a scheme. It is remarked that "owing to the somewhat rapid termination of the war these regulations, which would have been somewhat troublesome to work, were never put into operation." Probably this was fortunate for Manchester as well as for everyone else.

The Manchester Committee is to be congratulated on the way it carried out its work. Though on not a few occasions the Committee found itself at loggerheads with higher powers, yet this may be regarded as a sign of its energy and enthusiasm. And it is certain that not infrequently Manchester proved in the end that the decisions it had reached were right.

Training of Blind Students.

The necessity for fuller and better training of the blind was strongly urged by the Departmental Committee of the Local Government Board on the Welfare of the Blind appointed in 1918. Paragraph 118 of their report expressed their view:

> "We are not sure that it is always sufficiently recognized that a considerable period of training is essential. A blind child on leaving school at 16 is not an efficient worker, and cannot be expected to be a wage earner. Not only must the pupil receive a thorough training in all branches of the industry he is to pursue, but a considerable period is necessary to enable him to acquire the speed essential to a successful worker."

The idea in the mind of the Committee appears to be the arrangement of a "college course"—a period of work in a training institution which would become an essential link between the special school for the blind and the workshop. Something on these lines has been already brought into being by some of the more energetic of the local education committees; promising children have been awarded "scholarships," whereby they have been enabled to take out an extended course of technical instruction at the more advanced blind schools. Practical experience of the working of these schemes shows that they are entirely beneficial. These trained blind youths are able to take up work at 18 years of age in a manner which is impossible for the very best of them at the age of 16 years, and the results of their better ability for skilled work is shown in the pay sheets of the institutions to which they have been attached. The Board of Education proposals give further sanction to this educational work, and promises higher grants to meet the cost.[1] Ophthalmic surgeons to blind schools might bring these regulations tactfully to the notice of the authorities of the institutions to which they are attached.

Scotland.

Notification of Varicella.

The Scottish Board of Health has issued regulations, dated September 28th, 1920, requiring every medical practitioner who may be in attendance on a person suffering from chicken-pox to notify forthwith the case to the medical officer of health of the district. If the case has already been notified, the practitioner will not be required to notify it afresh. Local authorities are required to pay to every practitioner a fee of half a crown for each notification made under these regulations if the case occurs in his private practice, and of one shilling if the case occurs in his practice as medical officer of any public body or institution. To this, however, there is the significant proviso that during such period as Section 5 of the Local Government (Emergency Provisions) Act, 1916, remains in force the fee for each notification of a case occurring in private practice shall be one shilling and no more. In every case the fee will be deemed to cover all expenses, including the cost of transmission. At the end of last April the Scottish Board of Health recommended local authorities to consider the advisability of applying the Infectious Disease (Notification) Act, 1889, to chicken-pox, in view of the prevalence of small-pox in the Glasgow district. About one-third of the local authorities in Scotland have since acted on this recommendation.

> "But cases have occurred in other areas which through non-notification have to some extent stultified the action of the local authorities who have extended notification to chicken-pox, and small-pox continues to prevail in Glasgow, and to extend there and in other districts. Its dissemination is believed to be largely due to the movement of mild and undetected cases of small-pox."

While the intention of the new regulations is to correct as far as possible diagnoses of acute chicken-pox in cases of small-pox, it is pointed out that mild cases of small-pox are also sometimes confused with infections other than chicken-pox. Accordingly, practitioners are asked to seek the co-operation of the medical officer of health in any case of doubtful illness that has even a remote resemblance to small-pox.

Correspondence.

CLINICAL TEACHING UNITS.

Sir,—I am asked by the Medical Committee of St. Mary's Hospital to write to you in case you had decided to print any account of the address given by Professor Adami at the opening of the winter session. The remarks with regard to the grants to the school are not in accordance with the facts, and the views expressed with regard to clinical units, which in Professor Adami's address give the impression of an announcement made with the knowledge of the school authorities, are in open conflict with the policy of the school. The school receives a grant from the Treasury, and the Medical Committee are reluctant that anything should be published which might give the impression that they are opposed to the principle of such grants, or that they are not prepared to give the clinical unit system a thorough trial. At those schools where the unit system is on trial and still *sub judice*, an attack on the principle, if delivered with the school's knowledge, must raise suspicions of the fairness of the trial extended to the system. The committee, therefore, feel that such an attack made in these circumstances was unfortunate, and is liable to lead to misapprehension, and I am asked by them accordingly to place these facts before you.—I am, etc.,

C. M. Wilson,
Vice-Dean of the Medical School

London, W.1, Oct. 4th.

TREATMENT OF CALCULI IMPACTED IN THE PELVIC PORTION OF THE URETER.

Sir,—The phenomena noted by Mr. Clifford Morson as occurring at the ureteral orifice may be variously explained. It may be that the tone of the bladder fibres in the neighbourhood of the ureteral orifice, aided by the oblique direction of the lower end of the ureter, is sufficient to hold back the stream of urine until a certain head of pressure is attained and that then a rhythmic contraction passing down the ureter expels the urine; or it may be, as Mr. Benians suggests in a letter which I have recently received from him, that the bladder, like other organs provided with involuntary muscular fibres, has a systolic and diastolic period, and it is only during the diastolic period, when the fibres of the bladder are relaxed, that the urine is enabled to pass into the bladder.

I wish, however, to confine my statement as far as possible to the anatomical side of the question, and to say that my sole reason for venturing to interpose in the discussion was that I did not wish Mr. Clifford Morson or others to hesitate from enlarging the ureteral orifice by cutting in an upward direction through fear of injuring what Mr. Benians and I believe to be a purely hypothetical structure. The operation as described appears to be anatomically sound; in fact, if the view which Mr. Benians and I put forward in 1913 is correct—that the trigone is formed by the laying open of the distal portions of the ureter—the operation is merely an extension of one of Nature's own procedures.—I am, etc.,

William Wright.

The Medical College,
The London Hospital, E 1, Oct. 4th.

CHRONIC POST-NASAL CATARRH, ACIDOSIS, AND VOMITING.

Sir,—I read with interest in the current issue of the Journal the experts' discussion upon the sad results of allowing Psyche to interfere with healthy digestion. One aspect of the question as regards the causation of acidosis in some of these cases does not seem to be noticed, and that is the occasional association of the syndrome of symptoms—chronic post-nasal catarrh, acidosis, and vomiting. Whether or no Psyche has any hand in the matter I shall leave others to determine. I shall merely detail the facts. Having suffered at intervals for many years from this trouble, I have had special opportunities of investigation. The trouble in my case usually begins five or six hours after an evening meal. I awake with a sensation of nausea, weight at the pit of stomach, eructations, and finally vomiting of an intensely acid and stringy mucus, evidently the backslidings of chronic mucous catarrh of the posterior nares. Shortly after vomiting I feel quite comfortable. My maternal grandfather suffered from a similar trouble.—I am, etc.,

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[1] Regulations for the Training of Blind, etc., Students. Higher Education. Issued by the Board of Education. 1920. Cmd. 852. Price 1d. net.

[illegible] W. Ainslie Hollis.

MENSTRUATION DURING SCHOOL LIFE.

Sir,—Having read with great interest Dr. Alice E. Sanderson Clow's paper on "Menstruation during school life" (October 2nd, p. 511), I should like to make a few brief criticisms, as I am working on the subject also.

Much of what she says is excellent, especially with regard to personal cleanliness, but from my own experience and observation she does not emphasize the possible dangers which may occur in later life due to over-activity in the periods during school or early life. No school-girl desires to make much of her poorly times, and most of them are most anxious to appear normal and quite well. Especially is this true of the athletic type of girl who will sacrifice anything rather than lose her place in a tennis or hockey team. It is afterwards, not at the time, when the mischief will appear. Here is an illustration first hand:

> A [illegible] country girl passed through her schooldays and [illegible] without a single day of menstrual pain, and never [illegible] any games, however strenuous, at such times. She [illegible] played a great deal of cricket, hockey, and tennis; [illegible] very long walks, never making the slightest [illegible] during her period. She laughed at those who rested. [illegible] she entered college life as a medical student, [illegible] as before. After two years she complained [illegible] pain during the period, which made the long [illegible] at these times. However, she never [illegible] a student had ample exercise, usually [illegible] five miles a day. The last few years she has [illegible] incapacitated for forty-eight hours during each period [illegible] week often to walk half a mile. The least [illegible] brings on a large flooding even after the period [illegible]. She now greatly regrets the folly of her [illegible] at these times.

These and other cases fully convince me that no great physical strain should be made on a girl's system during menstruation. Hockey, tennis, and especially riding and cycling, should be strongly discouraged for the first two days, without a thought of "molly-coddling." Though a natural function, menstruation is a temporary drain on a girl's vital energy, and it calls for special care. I am, etc.,

Mary [illegible] M.R.C.S., L.R.C.P.

[illegible]

MORTALITY OF VENEREAL DISEASES.

Sir,—I [illegible] Dr. Jane Hawthorne's letter on the [illegible]

Dr. [illegible] letter of July 27th challenged Sir J. Crichton-Browne's [illegible] that venereal disease [illegible] of death, on the ground that [illegible] returns only, [illegible] William Osler [illegible] London Hospital [illegible] Wassermann reaction [illegible] over 80 per cent. as

the proportion in Berlin, but his method, although ingenious, was, I think, unsound. I believe all medical statisticians would agree that, upon the basis of existing data, we simply cannot tell what *is* the precise share of the venereal diseases in the gross mortality of England and Wales.

Now, if Dr. Russ intended to point this out, as I suppose he did, why should he be made the target of so much indignant rhetoric? Perhaps his fault was to describe Sir J. Crichton-Browne's remark as a "serious misstatement of fact"; he should rather have termed it an unverifiable conjecture.

I should not have troubled you with these remarks had it not been for the concluding sentences of Dr. Jane Hawthorne's letter. It seems to me a breach of scientific decorum for one member of our profession to accuse another, who has merely called attention to fairly obvious statistical facts, of anxiety "to disprove the malignancy" of a disease, and dangerous to hint that we should combine in asserting that to be true which, whether true or false, we cannot demonstrate.—I am, etc.,

Loughton, Oct. 2nd. Major Greenwood.

Sir,—The Final Report of the Royal Commission on Venereal Diseases, page 6, quotes Dr. Stevenson, Superintendent of Statistics to the Registrar-General, as saying in his memorandum on the mortality from venereal diseases in England and Wales:

> "The worthlessness of the returns as an absolute statement of the number of deaths from venereal disease scarcely requires demonstration."

Dr. Stevenson's memorandum appears as Appendix I to the Report, and opens with the following sentence:

> "The statistics tabulated from the death registers by the Registrar-General cannot be claimed to afford any measure of the absolute amount of mortality properly ascribable to venereal disease."

Dr. Hawthorne, therefore, is perfectly correct in presuming that the Registrar-General "would be the first to acknowledge that his evidence" as to the mortality of venereal diseases "was certainly inconclusive."

As a member of the staff of the London Male Lock Hospital Dr. Russ is naturally familiar with the Report of the Royal Commission, and it is unfortunate that he should have supported his argument in his letter of July 27th by quoting the Registrar-General's figures, without at the same time referring to the Registrar's disclaimer as to their value.—I am, etc.,

Weston-super-Mare, Oct. [illegible] A. E. Remmett Weaver.

Sir,—With regard to whether venereal is the third killing disease or not, I fancy not even Mr. Russ will have any doubt that syphilis is the *first* in infants under a year. It kills *in utero*, and, indirectly, it kills during birth, as all doing ante-natal work know if they take the trouble to trace the histories or observe the teeth of pregnant women with contracted pelves. I have no doubt that the so-called rickets has been specific in origin, just as now the worst cases of rickets occur in congenital syphilitics who show marked "rickety" rosaries, etc. The signs of syphilis in babies are usually short-lived if we exclude marasmus, the most deadly of any. Time and again one sees cases of marasmus with none of the orthodox signs—perhaps merely either a widely open sagittal suture or posterior fontanelle, or, later, bossing of the cranium, then a side-light is thrown on to the case, say, by finding the mother's ante-natal chart and discovering that a Wassermann test was found to be positive, after which she defaulted. Such a case occurred only a couple of weeks ago, since when the patient has not returned nor come to the venereal diseases clinic. The baby will probably die and be signed up, by someone not knowing the history, as marasmus simply, but it may live long enough to get pneumonia, as so many syphilitic babies do, or bronchitis, and be signed up as dying of it. But, apart from the many cases that are missed and those that are not signed up as syphilitic for obvious reasons, there is plenty of evidence to prove that in babies it is the first killing disease. Take the causes of death classified in the

Bradford Infant Clinic report of 1917 of medical death certificates of 179 babies who died in that year:

	No. of Cases	Per Cent.
1. Congenital syphilis	58	32.4
2. Respiratory diseases	33	18.42
3. Marasmus and atrophy	26	14.53
4. Gastro-intestinal diseases	13	7.26
5. Convulsions	12	6.0
6. Tuberculosis	8	4.47
7. Measles	7	3.91
8. Pertussis	6	3.35
9. Congenital defect and debility	6	3.35
10. Meningitis	2	1.12
11. Prematurity	2	1.12
12. Congenital heart	1	0.56
13. Cleft palate	1	0.56
14. Cerebral haemorrhage	1	0.56
15. Hydrocephalus	1	0.56
16. Accidental suffocation	1	0.56
17. Acute hepatitis	1	0.55

Here congenital syphilis is shown to be the *first* killing disease, even by the death certificates, but, as everyone knows, it may have been the actual cause in those classified as 3, 5, 9, 10, 11, and 12, and the predisposing cause in some of the rest.—I am, etc.,

Leeds, Oct. 2nd. MARION E. MACKENZIE.

DEATH AFTER TONSILLECTOMY.

SIR,—For those who are interested in Dr. A. F. Sladden's note (BRITISH MEDICAL JOURNAL, September 18th, 1920, p. 438) it might be not unimportant if the author would be so kind as to state what kind of anaesthesia was used in his case, and whether there were symptoms before the operation that pointed in the direction of hyperthyroidism—for instance, an exaggerated pulse rate.—I am, etc.,

Rucphen, Holland, Sept. 20th. H. KOCH.

SIR,—With reference to Dr. Koch's questions, which you have kindly shown me in advance, the anaesthetic used was chloroform; no abnormality of pulse rate or other sign of hyperthyroidism was observed, although some enlargement of the thyroid had been noted.—I am, etc.,

Swansea, Sept. 27th. A. F. SLADDEN.

Obituary.

DAVID LLOYD ROBERTS, M.D., F.R.C.P.,

Honorary Physician, St. Mary's Hospital, Manchester.

WE regret to announce the death of Dr. D. Lloyd Roberts, which took place on September 27th at his residence, Ravenswood, Broughton Park, Manchester.

David Lloyd Roberts was in his 85th year, and until his fatal illness, which commenced about six weeks ago, he was still carrying on active consulting practice in Manchester, for long after the commonly allotted span he retained his acute mental faculties and his bodily activity. In Manchester he was the last of the physicians of the old school. Of short stature and sturdy build, with kindly, old-fashioned courteous manners, clean-shaven face and very keen eyes, he was a well known and noticeable figure of other times, driving in the narrow streets crowded with motor lorries and limousines in his simple one-horse brougham. Years after he had given up operating his opinion was sought for and valued in gynaecological cases.

Born in humble circumstances in Stockport in 1835, he early showed signs of unusual ability, so that he was taken from the chemist's shop where he worked as a boy and sent to school at Making Place Hall, near Ripponden in Yorkshire. His schooling over, he entered the old Manchester Royal School of Medicine as a student, and afterwards, on an exiguous income, he studied in the hospitals of London and of Paris. He was an articled pupil to William Smith, F.R.C.S., the first professor of physiology in Owens College. In 1857 he obtained the diplomas of M.R.C.S.Eng. and L.S.A., two years later graduating M.D. of St. Andrews; he became F.R.C.P.London in 1878.

After qualifying, Dr. Lloyd Roberts commenced in general practice in Manchester, and in 1858 he began his lengthy and distinguished association with St. Mary's Hospital for Women and Children by being appointed one of the district surgeons-in-ordinary. In 1868 he was elected honorary physician to the hospital, a post which he retained until his death; he gave up regular attendance at the hospital only a few years ago. He took a great part in the amalgamation of hospitals which produced the present two St. Mary's Hospitals, the maternity hospital, and the gynaecological and children's hospital, and he was a prominent member of the building committees. In 1885 he was appointed honorary gynaecological surgeon to Manchester Royal Infirmary, retiring in 1895 on reaching the age limit; at the same time he was Lecturer on Clinical Midwifery and Diseases of Women at Owens College, Manchester (now the Victoria University). He was a F.R.S. of Edinburgh, a former President of the North of England Obstetrical Society and of Manchester Medical Society. At the British Medical Association annual meeting in 1902 he was President of the Section of Obstetrics, and gave an introductory address on the Manchester School of Obstetrics and Gynaecology, a historical outline which was afterwards printed, with portraits, in this JOURNAL.

He was the author of a *Practice of Midwifery*, which went into several editions, of a work on *The Scientific Knowledge of Dante*, and of numerous clinical papers. In obstetrical and gynaecological operative surgery he was a pioneer, his first Caesarean section, in 1867, being one of the earliest recorded of the modern operation.

Dr. Lloyd Roberts was fortunate enough to have made a considerable fortune in the practice of his profession, and he spent large sums on forming what has been described as a "miniature Wallace collection." Mezzotints were what chiefly occupied his interest, and he had a very valuable collection of early and choice specimens of the best masters. Included also among his art treasures, however, were much valuable glass, particularly Jacobean glass, modern French book-bindings, old silver, china, water-colour drawings, old furniture, and old books, among them incunabula, printed before 1500. He had many rare early editions of the works of Sir Thomas Browne, and he himself edited, with an introduction, Sir Thomas Browne's *Religio Medici*.

Dr. Lloyd Roberts married the daughter of Mr. W. H. Occleshaw of Manchester; but his wife died in 1910, and he leaves no children.

RAYMOND VÉREL, O.B.E., M.B., CH.B., F.R.C.S.ED.,

Aberdeen.

DR. RAYMOND VÉREL died in a nursing home in Aberdeen in the early hours of September 29th. His death adds another to the list of younger surgeons who have lost their lives through acute infective disease contracted in the course of their professional duties. His illness commenced with a simple whitlow, which appeared at first of slight consequence, and gave promise of being cured by the simple remedies that he applied, but unfortunately some days later acute streptococcal septicaemia supervened. The intimation of his early death will deeply grieve his many friends, for it was his nature to make friendship wherever he went.

Raymond Vérel was a Glen Almond boy, and afterwards a medical student at Edinburgh, where he qualified with honours in 1908. After graduation he received a training in general surgery, but the influence of Dr. Logan Turner decided him to adopt the career of a specialist in diseases of the ear, nose and throat, and after further study in Vienna and on the Continent he commenced practice in Aberdeen shortly before the outbreak of war. Although a member of the 1st Scottish General Hospital he applied for and obtained a transfer to the Scottish Horse Mounted Brigade Field Ambulance, and served with it at Suvla on the Gallipoli peninsula. When there he contracted dysentery and was invalided to Alexandria, where at one time his recovery was almost despaired of, but ultimately his health was restored and he was sent home. After a few weeks, however, he again rejoined his unit, now serving in the Desert of Sinai, and remained with it until after the battle of Romani, when he was transferred to Egypt to practise his own special branch of medicine in the hospitals in Cairo. His duties included the training of selected officers in diseases of the ear, nose and throat, after which they were posted to hospitals in other places. His work was marked by great thoroughness, and his numerous patients were deeply appreciative of the skill and kindly care he bestowed on them. He continued to serve at this special work until the end of the war, and in the Chapel of the Citadel of Cairo he was married. In the summer of 1919 he resumed his practice again in Aberdeen.

By his death a surgeon has been lost to Scotland who would in time have made for himself a position in the front rank of his profession; but his many friends will most frequently think of him as they so often met him—free and wandering through the country lanes he loved so much, pointing out the features of the bird life of the district, the haunts and habits of which were to him a never-ending source of pleasure and satisfaction. One could not but feel that in addition to his many human friends he had also in his heart a keen love of all bird and animal life, and wished all well. The keen sympathy of all goes out to the members of his family in the loss they have sustained, and to his widow, who is left with her young fatherless son.

H. W.

ANOTHER colleague writes: The medical profession and medical school of Aberdeen have sustained a great loss by the tragic death of Dr. Raymond Vérel, who was held in highest esteem both professionally and personally. Vérel was an Edinburgh graduate of distinction who had hardly settled in Aberdeen when war broke out. No one who knew him was surprised when in the early days of the war he decided for the more strenuous side of field medical service, and a long period of distinguished service in the East brought him well-merited recognition. Returning to Aberdeen last year on demobilization he was early appointed aural surgeon to the Dispensary and Royal Hospital for Sick Children, and was also retained by the City Fever Hospital and Tuberculosis Institute, and lectured on diseases of the ear, nose and throat for the university. He was a man of strong character, quiet, unassuming and genuine. Thoroughly equipped in his special branch of surgery, he was a skilful operator with an excellent technique and sound judgement, and a teacher of no ordinary parts. During the past summer term, in the absence of the senior lecturer in diseases of the ear, nose and throat, he conducted a very large class with great success. As a teacher he was enthusiastic, interesting, lucid, and most conscientious in his preparation for the day's work. His attractive personality was nowhere more evident than in the handling of children, for whom he appeared to possess a special charm. His death has cast a gloom over the profession in these parts, and the deepest sympathy goes out to his widow and child from all who knew him and worked with him.

WE regret to record the death of Dr. THOMAS FAIR JOHNSTON, which took place at Blyth, Northumberland, on August 29th. Dr. Johnston was born at Ormiston, East Lothian, in 1875; he was educated at the Edinburgh High School and the University of Edinburgh, where he graduated M.B., C.M. in 1896 and M.D. in 1904. He had practised at Willington Quay, Silksworth, Cambois, [illegible] Lane and Broomhill, all in the north of England, and during the last eight years had enjoyed an extensive practice in Blyth. During 1918 and 1919 he was honorary secretary of the Blyth Division of the British Medical Association. Dr. Johnston was an ardent Freemason and at the time of his death held high Provincial offices. He had only recently returned from a four months' voyage to the East, undertaken for the purpose of re-establishing his health, which for some time had been impaired. He is survived by a widow and two children.

DR. ROBERT J. COLLIER of Manor Park died on September 22nd. He was educated at Queen's College, Belfast, and took the triple qualification of the Conjoint Board of Scotland in [illegible]. He joined the late Dr. R. J. [illegible] of Forest Gate and subsequently succeeded to his practice. He was surgeon to the Post Office and Education Board and an honorary surgeon of the St. John Ambulance Brigade. His genial personality and bright outlook on life inspired confidence among a large circle of patients. Dr. Collier, who had been in practice at Manor Park for twenty-five years, was a prominent and active member of the Wanstead Park Golf Club.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following scheme of intercollegiate advanced work in physiology has been approved for the Honours B.Sc. Examination. Students of the participating colleges are free to attend all the courses:

University College (1st term): Professor W. M. Bayliss: Physical Chemistry in relation to Physiology.

King's College (2nd term): Professor W. D. Halliburton and Dr. O. Rosenheim: Advanced Chemical Physiology.

Bedford College (3rd term): Dr. J. S. Edkins: Advanced Practical Histology.

St. Bartholomew's Hospital (3rd term): Professor F. A. Bainbridge: Electrical Changes in Skeletal and Cardiac Muscle.

Guy's Hospital (2nd term): Professor M. S. Pembrey: Practical Work on Respiration.

Additional second examinations for medical degrees, Parts I and II, will begin on December 1st and 7th respectively. Forms of entry, to be obtained from the Academic Registrar by October 15th, must be sent in by Monday, October 25th.

Applications for the university Chair of Chemistry (salary £800 a year) and the university Readership in Pharmacology (salary £400 a year), tenable at Guy's Hospital Medical School, must be received by the Academic Registrar at the university not later than the first post on October 23rd.

KING'S COLLEGE.

Lectures and demonstrations in psychology will be given as follows by Dr. William Brown, Dr. J. A. Hadfield, and Mr. R. J. Bartlett during the session 1920-21:

Day classes (ordinary course): General elementary psychology, Tuesday, 11 to 12 a.m.; advanced psychology, Monday, 4 to 5 p.m.; experimental psychology, Friday, 2 to 5 p.m. (lecture 2 to 3, practical work, 3 to 5). *Evening classes* (ordinary course): General elementary psychology, Friday, 5.30 to 6.30 p.m.; advanced psychology, Monday, 6.30 to 7.30 p.m.; conversational, Monday, 5.30 to 6.30 p.m.; experimental psychology, Thursday, 5.30 to 8.30 p.m. (lecture 5.30 to 6.30, practical work, 6.30 to 8.30). *Special courses of lectures*: Advanced practical psychology, at times to be arranged; pathological psychology, ten lectures in the Lent term; mental measurement, ten lectures in the Easter term; tuition course for diploma in psychological medicine, etc., at times to be arranged.

A course of eight lectures on the histology of the nervous system will be given by Dr. G. da Fano, at King's College, Strand, W.C.2, at 4.30 p.m. on Wednesdays, October 13th, 20th, and 27th; November 3rd, 10th, 17th, and 24th; December 1st, 1920. The lectures are addressed to advanced students of the university and to others interested in the subject. Admission is free, without ticket.

GUY'S HOSPITAL MEDICAL SCHOOL.

The following entrance scholarships have been awarded:

Senior Science Scholarship for University Students: War Memorial Scholarship: Nils Lövold Eckhoff (£75). Harold Charles Beecle (£80). George Thompson Henderson (£50). Junior Science Scholarships: Reginald Albert Nash (£150). Alfred Beresford Faunt (£60). War Memorial Scholarship providing a free medical education for five years, annual value about £50: Kenric Charles Billingham. Entrance Scholarship in Arts: Edward Ian Ransford Marsden (£100).

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

The Goldsmid Entrance Exhibitions of 112 guineas each have been awarded to F. Hudson and M. Robinson.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B. (*Materia Medica, Pharmacology, and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology*): F. J. Armstrong, J. C. Boyde, R. A. Brown, R. H. Burnett, Mary Douglas, Anne Fairweather, I. Knopp, Mary Menzies, H. Manners, G. A. Mason, H. L. Mercer, S. J. C. Smith, Evelina M. Walker, R. P. Wanless.

The Services.

HONOURS.

FOREIGN DECORATIONS.

THE following decorations and medals have been awarded by the Allied Powers for distinguished services rendered during the course of the campaign:

Bestowed by the President of the French Republic.

Légion d'Honneur, Chevalier.—Honorary Captain (temporary Major) [illegible], O.B.E., R.A.M.C. *Médaille des Epidémies en Argent.*—Major William Allen Thompson, R.A.M.C. (T.F.).

[illegible]

Order of [illegible].—Major (temporary Lieutenant-Colonel) G. R. S. Baker, [illegible] R.A.M.C. (S.R.).

A congress of internal medicine will be held at Strasbourg in September, 1921, under the presidency of Dr. L. Bard, when the following subjects will be discussed: (1) Anatomical and functional adaptations of the heart to pathological conditions of the circulation, (2) glycaemia, (3) antianaphylaxis.

Medical News.

MR. E. B. TURNER, F.R.C.S., is leaving London this week for Germany in order to give lectures on venereal disease to the Army of Occupation.

THE Drew Lecture before the Hackney College Divinity School will be given by Dr. J. A. Hadfield, at 6.30 p.m. on October 12th, at the Memorial Hall, Farringdon Street.

THE National Baby Week Council has removed to 5, Tavistock Square, W.C.1 (Telephone: Museum 6353).

AT a meeting of the Society of Medical Officers of Maternity and Child Welfare Centres on Friday, October 15th, at 5.30, at the Royal Society of Medicine, 1, Wimpole Street, W., Dr. Harold Waller will open a discussion upon dental disease in the mother as an adverse factor in infant welfare.

MEETINGS of the Royal Society of Tropical Medicine and Hygiene will be held during the ensuing session at 11, Chandos Street, Cavendish Square, W.1, at 8.30 p.m. on the third Friday of each month from October to June, with the exception of April.

THE Child-Study Society, London, has arranged an interesting programme for the present session. The meetings are held on Thursdays at 6 p.m. at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1. On October 21st Dr. A. R. Abelson will describe "A Psychological Study of the Delinquent Child;" on November 4th there will be a discussion on "Vocational Tests"; on November 18th Dr. F. G. Crookshank will discuss "The Anthropological Study of the Feeble-minded, of Imbeciles, and Apes"; and on December 2nd Dr. William Brown will discuss "The Value of Suggestion in Education."

THE general council of King George's Fund for Sailors has made an interim grant of £2,500 towards the capital expenditure for the current year of the King George V Merchant Seamen's Hospital at Malta.

A COURSE of ten lectures on elementary psychotherapy will be given by Dr. H. Crichton Miller at 51, Tavistock Square, W.C., at 5.15 p.m. on Mondays, beginning October 11th.

DR. S. RUTHERFORD MACPHAIL, who recently resigned the posts of medical superintendent of the Derby Mental Hospital and medical adviser to the Committee for the Care of Mental Defectives, was entertained on September 23rd to dinner at the Midland Hotel by his medical colleagues in Derby. The chair was taken by Sir Richard Luce, and Dr. Macphail's health was proposed by Dr. Sidney Barwise and seconded by Dr. Robert Laurie. Dr. Macphail has also received a presentation of furniture from the committee and staff of the Mental Hospital.

THE next congress of the Royal Sanitary Institute will be held at Folkestone towards the end of June, 1921.

THREE Chadwick Public Lectures, illustrated by lantern slides, will be given this month by Professor F. F. Roget, of the University of Geneva, on "Health, the Red Cross, and the League of Nations." The lectures will be given at the Surveyors' Institution, 12, Great George Street, Westminster, on Mondays, October 18th and 25th, and Friday, October 29th, at 5 p.m. The third lecture will deal particularly with the programme of the Medical Department of the League of Red Cross Societies.

THE following lectures will be given during the present session at the Post-Graduate College, West London Hospital, on Thursdays, at 5 p.m.: October 14th, Dr. W. Langdon Brown, "Principles of internal secretion"; October 21st, Mr. H. Tilley, "Treatment of foreign bodies in the lower air passages and oesophagus, by direct endoscopy"; October 28th, Sir James Galloway, "External manifestations of visceral disease" (at 3.45 p.m.); November 4th, Dr. J. Walter Carr, "Tuberculous meningitis"; November 11th, Dr. E. W. G. Masterman, "Tropical diseases of Palestine"; November 18th, Mr. Swinford Edwards, "Points in rectal surgery"; November 25th, Dr. T. M. Legge, "Anthrax"; December 2nd, Sir J. Dundas Grant, "Functional aphonia and allied disorders"; December 9th, Dr. F. J. Poynton, "The study of heart disease"; December 16th, Lady Barrett, "Puerperal sepsis." These lectures are open without fee to medical practitioners, who will be welcomed.

DR. H. SCURFIELD, M.O.H. Sheffield, will open a discussion on "Some Aspects of the Housing Question" at a meeting of the Royal Sanitary Institute to be held at the Mansion House, Doncaster, on October 15th. The chair will be taken at 7.30 p.m. by Professor H. R. Kenwood, C.M.G.

DR. F. J. WALDO, coroner for the City of London and Southwark, has been elected Master of the Plumbers' Company.

AT a meeting of the elected members of council on September 30th Sir Charles Ballance, K.C.M.G., C.B., M.V.O., was unanimously elected President of the Medical Defence Union, in the place of Sir John Tweedy, LL.D., F.R.C.S., resigned.

ON the occasion of Dr. G. K. Smiley's departure from Derby to take up a position under the Ministry of Health, his colleagues on the Derby Panel have presented him with several pieces of Crown Derby china as a recognition of his devoted and arduous work as secretary of the Panel Committee. Dr. Smiley was also honorary secretary of the local Division of the British Medical Association, and his departure from Derby is regretted by all his friends.

THE following lectures and practical courses of instruction for a diploma of psychological medicine (Part I—2nd course) will be given at the Maudsley Hospital, Denmark Hill, S.E. Sir Frederick Mott will give eight lectures on the anatomy of the nervous system on Tuesdays, at 2.30 p.m., commencing October 12th; Dr. H. Devine will deliver eight lectures on psychology on Thursdays, at 2.30 p.m., commencing October 14th; and Dr. P. L. Golla will give eight lectures on the physiology of the nervous system on Fridays, at 3 p.m., commencing October 22nd. Part II of the second course will follow in January.

A MEETING on behalf of the special appeal of the Royal National Orthopaedic Hospital will be held at the Mansion House on Friday, October 15th, at 3 p.m. The Lord Mayor will be in the chair and H.R.H. Prince Henry has promised to speak.

THE biennial conference of the British Spa Federation was held on September 30th at Harrogate, when representatives from Bath, Buxton, Cheltenham, Droitwich, Harrogate, Llandrindod Wells, Woodhall, and New Zealand were present. Leamington was admitted to the federation and matters important to the welfare of the British spas were discussed. A presentation was made to Mr. F. J. C. Broome, general manager of Harrogate Spa, in appreciation of his work as honorary secretary of the federation.

THE Fifteenth International Congress against Alcoholism will be held, by invitation of the United States Government, in Washington, D.C., from October 21st to 26th. The British correspondent is Mr. J. T. Rae, National Temperance League, Paternoster House, London, E.C.4.

THE University of London Press, Ltd., announces for early publication *Mind and Work: The Psychological Factors in Industry and Commerce*, by Dr. C. S. Myers, F.R.S.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. D. M. MACDONALD (Arnside) wishes to know where it is possible to procure small warming pans, or warm water jackets, to be applied to fingers attacked by Raynaud's disease.

INCOME TAX.

"DERMIENSIS," to whose previous inquiry a reply was published on September 18th, p. 457, sends further particulars as to the special expenditure incurred by him.

** The root of the difficulty lies in deciding how far the purchase of the *x* ray apparatus and the cost of installing it was capital outlay. Our correspondent explains that he had a "Cox's 10-in. coil and batteries," which was replaced by the [illegible] apparatus. Probably other articles were dis[illegible] modern ones substituted when the repairs and [illegible] were executed. We suggest that "Dermatosis" [illegible] what would have been the cost of purchasing [illegible] a "Cox's 10 in. coil and batteries," and any [illegible] replaced, as at the time when the new x-ray apparatus was installed, and that that amount should be [illegible] by the inspector, the excess being regarded as capital outlay incurred on improvements.

"R. T. S." has bought out his partner, but has not taken over the book debts as a whole. The old partnership was assessed on the basis of the cash receipts of the practice, but these receipts have been swollen by payments being made on account of the departure of the outgoing partner.

*** It is desirable to bear in mind that the basis of cash receipts is admittedly incorrect in theory, but is so convenient in practice that it is adopted by mutual agreement unless there is some cause operating to render it unfair as a reasonable index to the real profits of the practice. From the date of the dissolution of the partnership the partner of "R. T. S." ceased to be liable to tax on any future profits, and what he now receives in cash is on account of past profits already assessed. The alternative to bringing into the computation of present profits the whole of the past cash receipts is, as "R. T. S." says, to throw over the cash receipt basis and put the calculation on the footing of the value of the work done by both partners over the past three years—that is, to revert to the correct legal basis. The valuation of the bookings generally raises considerable practical difficulty, and presumably the revenue authorities will hold "R. T. S." to that basis for some years at least. Whether the ultimate net result will be worth while depends, of course, on the degree by which last year's receipts were swollen, and whether the practice profits are likely to increase or not.

Climate in Rheumatoid Arthritis.

Dr. A. T. Middleton (Bournemouth) writes: In reply to "Rheumatoid" (Sept. 25th, p. 497), I would suggest that before [illegible] his patient to Egypt or elsewhere he should give [illegible] counter-irritation a trial. Quite recently patients have come to me stating they have derived little benefit from [illegible] vaccines, radiant heat baths, tincture of iodine internally, thyroid medication, etc. Nevertheless they have improved in every way under continuous counter-irritation. They consented readily and found nothing to object to [illegible].

LETTERS, NOTES, ETC.

Medical Teaching at Cambridge in the Seventies.

A [illegible] in India sends us an interesting letter [illegible] Dr. [illegible] article in the Journal of May 8th [illegible] of the Cambridge Medical School." The [illegible] revived memories of early strenuous [illegible].

"I [illegible] privilege and delight of learning from Pro[illegible] not mentioned in [illegible] between October 187[illegible], and Decem[illegible] admitted a few women to his [illegible] to the viva voce [illegible] allowed to be present [illegible] [illegible] been able to [illegible] elementary work among the ignorant sufferers of this country, and I am deeply grateful for the foundations of knowledge so well and truly laid in those Cambridge days of long ago."

Public Health in Egypt in 1918.

In the annual report for 1918 of the Egyptian Public Health Department a history is given of the severe influenza epidemic of that year, during which there were 138,000 deaths; the age group most seriously affected was that from 10 to 20 years. A prophylactic vaccine was prepared, but its use was not recommended. Cases of relapsing fever numbered 12,642; the incidence was slightly increased, but the mortality rate fell to 6.6 per cent., as compared with 9.3 per cent. for the preceding year. There were approximately 25,000 cases of typhus, as against 18,500 in 1917; the mortality rate was 26.4 per cent., compared with 22.4 per cent. in the previous year. There was a marked fall both in the number of cases of plague and in the death rate. Considerable anxiety was felt lest cholera infection should be introduced from Palestine, but as a result of the detention of "suspects" and of the tracing and subsequent observation of passengers, together with the necessary measures of disinfection and control, no case of infection occurred in the interior of the country. Fifteen cases in all were detected, and six terminated lethally. Of 280,000 men who returned, only 8,579 escaped observation; all cases of diarrhoea were detained at the frontier and subjected to bacteriological examination.

Electrical Apparatus.

We have received from Siemens Brothers and Company, Limited, of Caxton House, Westminster, a new catalogue illustrating the dry cells and batteries manufactured by them. These dry cells and batteries have been made in several hundred shapes and sizes, but the fifty or sixty described in these pages should meet ordinary requirements, and among them some are extremely well suited for electro-medical purposes. A section of the catalogue is devoted to the "inert" series of cells and batteries, which contain the exciting agent in a dry and inactive condition until they are required for use, when they are charged with water according to instructions. They may be stored for an indefinite time even in hot climates without deterioration.

Two pamphlets which have just been issued by Watson and Sons (Electro-Medical) Limited, of Sunic House, Parker Street, London, W.C.2, will prove of interest to workers in x rays and medical electricity. One of them furnishes detailed estimates of cost for all parts of an x-ray equipment and for all installations to suit various conditions of electrical supply and the requirements of hospital or general practice. We note that the cost of an x-ray outfit ranges from considerably less than £200 to well over £1,200. The other booklet is a catalogue of diathermy apparatus, and includes a brief explanation of the principle of this method of heat application to the body.

The Secretary of the Department of Scientific and Industrial Research informs us that a licence has been issued by the Board of Trade to the British Electrical and Allied Industries Research Association, which has been approved by the department as complying with the conditions laid down in the Government scheme for the encouragement of industrial research.

We are informed that X Rays, Limited, of 11, Torrington Place, London, W.C.1, has purchased the x ray and electro-medical business of the High Tension Company and that Mr. Mortimer Codd, the author of several works of reference on electrical subjects, will be director of research in the laboratory of the enlarged firm.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 48, 49, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 46, 47, and 48.

The appointment of certifying factory surgeon at Penmachno (Carnarvon) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
[illegible]	0	1	3
[illegible] ...	6	0	0
W[illegible] page	16	0	0

[illegible]

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The First Murphy Memorial Oration.

DELIVERED BEFORE THE AMERICAN COLLEGE OF SURGEONS, IN MONTREAL, OCTOBER 11TH, 1920.

BY

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> "The moral of the whole story is this: that we should do all that we can to partake of virtue and wisdom in this life." (Socrates is speaking.)

THIS is a day of remembrance. We have come together to do honour to one of the founders of this College, a great surgeon whose loss we mourn. You have laid upon me the duty and the high privilege of offering in your name and in my own, and if I may for the moment assume a wider responsibility, in the name of all the surgeons of his time, a tribute to the illustrious memory of Dr. J. B. Murphy.

John Benjamin Murphy was an arresting personality. Even after the briefest intercourse with him there were few people who did not realize that he possessed a curious and subtle power of impressing a sense of his character upon them. His very handsome face, his tall, spare, almost gaunt figure, his high-pitched and vibrant voice, his burning and quenchless enthusiasm for life in all its manifold activities, his power of complete self-expression, all clamoured for notice, and caught and held the most eager attention. His outlook was grave and serious; he seemed always in earnest. The little quips and sallies, the friendly taunts, the provocations to repartee, the illuminating anecdote, which in the United States distinguish the cordial intimacies of daily life, did not seem to play around him as freely as around other men. Even in a crowded room of busy men, or when a debate was keen, he would steal a few moments for a whispered conversation, held aloof, on some topic that for the moment filled his thoughts. Among those who knew him well he was admired and deeply respected, rather than loved. Except to a very few he was not genial or responsive in friendship. His intellectual attainments were so considerable, and his position in the judgement of his contemporaries so secure, that jealousy hardly touched him, except perhaps in his earlier years and from a few among his seniors whose supremacy he challenged. Such jealousy is, perhaps, the tribute paid to youth for successful enterprise in thought or in action, by minds which suffer from the atheroma of advancing years. We are reminded of the aphorism of Sir Walter Raleigh:

> For whoso reaps renown above the rest
> With heaps of hate shall surely be opprest.

Murphy was beyond question the greatest clinical teacher of his day. No one who listened to him can ever forget the experience. Before his audience arrived he had everything very carefully prepared—diagrams in order, microscopes ready, the patients examined, and all relevant literature at his finger-ends. There he stood in the middle of the circle, in the theatre, with his assistants and friends in the first row and the other benches packed to the roof with eager students, or with medical men, who came again and again to learn from him afresh. As he began to speak one felt a strange sense of disappointment, and even of dismay. For while the handsome face and upright figure were things of real beauty, the voice in which he began to speak was quite unpleasant. It was harsh, even raucous, high-pitched, shrill, apt to wander into other keys. It seemed strange that a man of Irish descent, and of so gracious and commanding a presence, should have a voice so lacking in softness, one which not only did not appeal, but actually displeased and almost repelled every listener. But as he continued speaking the voice gradually ceased to distract, it became smoother, quieter, and more evenly pitched, and all thought of it was now lost in rapt attention to the matter. For things were happening even while one's first emotions were roused. Questions were being asked and answered, often with great rapidity; then would come a pause, in which with marvellous directness and power the lesson to be learnt therefrom was driven home. The rally began again. A poor answer came, or an assistant responsible for the clinical notes had omitted to inquire upon some relevant point; raillery came in torrents, never ill-natured, never rancorous, but with just sufficient sting to leave a memory which would stimulate all future work.

The discussion warmed imperceptibly; gradually the chain of argument lengthened as link after link, forged under our eyes, newly appeared; slowly there came a sense of excitement, of impending revelation; all inquiry, all disclosure, all argument, was leading up to something that we now ached to learn. Old observations and ancient truths were taking on a new complexion; relations hitherto unsuspected were here declared and explained. The whole intellectual mechanism underlying a great subject was being shown both in detail and in all the majesty of many moving parts. Perhaps, as we drew near to the end, when the whole story would be laid bare, a question barked at one of his audience would fail to be answered. With voice more clamorous, and menacing almost, with face strained and eager, with figure reaching forward and arm outstretched, he would hurl the question at others. Hearts beat faster; the spiritual anguish could hardly be borne. At last the answer would come, and after a final swift induction or brief summary; when the clinical journey was over we sank back in happiness and mental repletion to wonder if Stevenson could really have been right when he said, "It is a better thing to travel hopefully than to arrive," for this journey had been happy, though anxious enough, but the haven was a rest of tranquillity and wonder and contentment.

And then Murphy would operate. Now, of operators there are many types, and, like every other work of art, an operation is the expression of a man's temperament and character. There are still among us "brilliant" operators, from whom I pray to be spared when my hour has come. For them it is the mere quality of effort that counts. Their ideal of operative surgery is something swift and infinitely dexterous, something to dazzle the beholder and excite his wonder that such things can so be done by human hands. The body of a man is the plastic material in which an artist works, and no art is worthy of such a medium unless it has in it something of a sacrament. Surgery of the "brilliant" kind is a desecration. Such art finds its proper scope in tricks with cards, in juggling with billiard balls, and nimble encounters with bowls of vanishing goldfish. But Murphy was of the true faith. He believed in safe and thorough work rather than in specious and hazardous brilliance. He was infinitely careful in preparation, and compared with many was inclined to be slow; but every step in every operation which I ever saw him do was completed deliberately, accurately, once for all. It led inevitably to the next step, without pause, without haste; that step completed, another followed. "In sequent toil all forwards did contend." And so when the end came a review of the operation showed no false move, no part left incomplete, no chance of disaster; all was honest, safe, simple; it was modest rather than brilliant. During the whole operation Murphy talked; not wasting time, but expressing and explaining aloud the quiet, gentle, dexterous movements of his hands and the purposeful working of his mind. The operation over, he would draw his stool near to the front row of the benches, cross one leg over another, rest his elbow on his knee, and talk, as only he in all the world could talk, of surgery in general, of this case in particular, of his faults, of any experiment made to clear a doubtful issue. In these quiet talks there was none of the earlier passion which had gleamed through him, and which, caught up by his audience, had made them throb and tremble with suspense or joy. In them all his former experience, all that he had learnt by contact with men and books, all his native ingenuity of mind, were now bountifully displayed; the vast resources of the keenest surgical intellect of his day were now displayed, not with ostentation or with florid pride, but in such a quiet manner as to show that he rejoiced in the privilege of sharing with others so many fascinating and wonderful things. If, in answer to a request, a little intellectual gift were made to him, it was welcomed with frank, almost boyish, enthusiasm, and with a delight and a humility obviously genuine.

Murphy as a writer and as a speaker was prolific. Whenever he spoke men made haste to hear him. His audience, or so it always seemed to me, were often held back from quick appreciation. He was not like other men instantly attractive as an orator. Yet, as he developed his argument little by little and step by step, the audience warmed to him; he interested them, he intrigued them, he dominated them, he fired them: intellectually he roused them to breathless interest; emotionally they were at times at the limit of self-control. No one could bear to miss a word, and while Murphy spoke no man left his seat. For his meaning was conveyed in pellucid language, and though he might speak with the vehemence of raging conviction, his thought was never obscured in a smoke of words. Such an intellectual loadstone was he that appointments were missed and hunger and thirst and fatigue were forgotten. For while Murphy expounded his gospel everything else seemed to fade in importance, overshadowed by the lessons which were now being learned so eagerly.

I often wondered, as I listened, in what degree he resembled Lincoln. The tall, gaunt frame, and the harsh and meagre and strident voice were the same. Murphy must have been one of the handsomest men of the day; Lincoln's features were haggard, plain and homely, but his deep and glowing, sad and tender eyes no man could forget. Murphy had no such command of language as Lincoln, certainly one of the greatest orators who has ever spoken our language. But in effect they must have been alike. For they made everything else seem commonplace when they spoke, and they seemed to be delivering a message charged with truth and pregnant with confidence and hope. Lord Charnwood, in his most excellent work on *Abraham Lincoln*, writes of him: "His voice, when he first opened his mouth, surprised and jarred upon the hearers with a harsh note of curiously high pitch. But it was the sort of oddity that arrests attention, and people's attention once caught was apt to be held by the man's transparent earnestness." How exactly was this the case with Murphy also! No one who heard Murphy speak ever doubted his sincerity. One might not agree; one might, indeed, profoundly and confidently disagree with some statement he made, perhaps as though to provoke a challenge, for there was much in Murphy which justified his patronymic, and which discovered his ancestry; but there was never a thought that Murphy himself was speaking other than his deep and tried convictions. He never looked on truth askance and strangely. One who heard Lincoln speak at Peoria wrote: "Beyond and above all skill was the overwhelming conviction imposed upon the audience that the speaker himself was charged with an irresistible and inspiring duty to his fellow men." Such an impression was often felt by audiences while Murphy was addressing them.

One thing Murphy lacked; in one respect he grievously failed. If we consider the qualities which go to the making of the greatest surgeons, a foremost place must always be conceded to the capacity to train great disciples. The teaching, the diligence, the general outlook upon surgery, and a finished technical skill can all be drilled into the minds and imposed upon the methods of an earnest student. But it is the inspiration, the lofty sense of a [illegible] mission worthy of all the best that is in you, the dedication with humblest and fullest devotion to the cause of scientific truth, and of loyal service to mankind, that are awakened with a thrill in great men by great teachers. It was here that Murphy fell short. He trained no one worthy to be his successor; no evangelist who could carry into other climes or to other countries some of his zeal, his fervour, his complete devotion, or the full meaning of his gospel. For this great omission there were [illegible] [illegible] compensations. There were few clinics in any part of the world in which something taught by Murphy or inspired by him had not crept in and found a home. His name was often on the lips of surgeons in all lands. His words impressed themselves on men's minds. His [illegible] were [illegible] copied. But when Murphy laid his mantle down there was no one ready and worthy to take it up. When we remember how the pupils of [illegible] of [illegible] [illegible] professors, [illegible] the Chairs of Anatomy throughout the English Empire, how many men [illegible] [illegible] to occupy with great distinction the Chairs of Surgery in Western Europe, how Welch is the happy [illegible] of a great school of pathologists trained by him, [illegible] [illegible] [illegible] [illegible] to him with reverent affection, we [illegible] [illegible] regret that none of the [illegible] of Murphy [illegible] grown to the stature of high [illegible].

[illegible] [illegible] Murphy grew in intellectual power and in the [illegible] he acquired over the minds of men. A problem took on a different aspect if Murphy were engaged in it. He touched the common currency of surgical thought and changed it into gold. For no effort of his was meaningless or sterile, and all the powers of his mind and of his frail body were spent ungrudgingly in all his work. His well-stocked library, and all new literature were searched for him, and dispatches made for his assimilation. He worked as all great men should work, with a clean desk. His great powers were used for worthy purposes and in due season, nothing was wasted in mere hack work, for all that could be equally well done by others was left for them to do. Yet all his life he overworked. He had an inner restless spirit, which drove him at full speed. He must work, and while at work there was only one speed, the highest he could command. "I do not wish to linger after my work is done," he said, and it was exactly what might have been expected from him.

It is useless to wish that men possessed of his qualities and capacities should use themselves differently. A man must do as he must do. If we think that Murphy by spending himself with less lavish extravagance might have prolonged his life another ten years and so have achieved even greater results, to the benefit of all mankind, we are pondering over one who was not Murphy, and who could not in those early fruitful years have been so avaricious for work, or so generously have poured forth the new truths of which he was at once both parent and missionary. Our designs for another man's life are but futile exercises of an imagination lacking in full understanding.

Such, then, was Murphy as I knew him. It is easy now to see how great a figure he was in the world of surgery of his day. When all his work is reviewed, when not only its range but the wonderful sincerity and the permanent and piercing accuracy of so large a part of it are considered; when we remember his unequalled gifts as teacher, his power of lucid exposition and of persuasive or coercive argument, his devotion for many years at least to experimental research, it is no exaggeration, I think, to say of him that he was the greatest surgeon of his time. Great men are fitted to their times, and in many respects are a reflex of them. But as their times pass their work is seen in far perspective, and may appear to shrink in significance. It may then seem to have lost all its originality and boldness and force, and we who stand afar off, untouched by the magnetism of a great personality, marvel at its influence in its own day. For there are few indeed who enjoy both celebrity and fame, both glory and immortality. "Mere talents are dry leaves, tossed up and down by gusts of passion and scattered and swept away; but genius lies on the bosom of memory." How, then, will it be with Murphy? Judged by the standard of his contemporaries he was an intellectual giant, but of what stature will he be when judged by the standard of history? May I ask you to bear with me while I pass briefly in review some of the main features of the progress of surgery as science and art and tell the tale of some of the great men who have laboured in it from earliest days up to the present time, so that at last we may see how Murphy stands and what figure he will make in the Great Procession?

EPOCHS IN SURGERY.

The earliest remains of man known to exist show that the art of the surgeon was practised upon him. Wherever skulls of the Neolithic period have been discovered the openings made in them by the trepan are seen. Dr. Marcel Baudouin, in 1908, found within a tomb discovered by accident at Belleville the remains of 120 human beings. Eight of the skulls had been trepanned, and the edges of the cut bones are smoothly healed over, showing beyond doubt that the patients survived the operation for periods long enough for this to be fully accomplished. The disc of bone removed is supposed to have been worn as an amulet. The operation of trepanning during the Neolithic period was also performed in England, in Northern Africa, the Canary Islands, Mexico, and in Peru. It is performed to-day by the natives of New Ireland, to the east of New Guinea, by methods and with results apparently similar to those of the Neolithic age. Dr. [illegible] has presented to the Royal College of Surgeons of England a group of five skulls showing the effects of the operation, the instruments by which it is there performed, and the dressings applied to the wound. And travellers tell us that the operation is still practised in the ancient way, so far as can be judged, by the Quichuas of Peru. Surgery is therefore as old an art as any.

Hippocrates.

Hippocrates was the first to give form and spirit to the practice of surgery. His observations, even when considered with the fuller knowledge of to-day, often bewilder us by their accuracy, insight, and sagacity. His clinical methods, judged by our modern standards, were broad-based and structurally sound. He recognized not only the nobility of the art of surgery and the worthiness of its practitioners, but was well aware of the powerful influence which the craft must exert upon the science of medicine. The divorce of hand from brain which modern custom has worked hard to effect derived neither sanction nor authority from any words of his. As he deals with the outward showing diseases his clinical method is everywhere the same. He observes, reflects, weighs, and judges, considers his former experience of the like or analogous conditions; he suggests or discovers a general truth, he lays down principles for action, and he tells how the craftsman shall work. If the power of wide and accurate generalization be, as I believe it to be, among the supremest accomplishments of the human mind, then Hippocrates may in truth be said to have had few rivals—if, indeed, he has had any—among all those who in later times and in all countries have devoted themselves to the science of medicine. For by his injunctions as to the method of inquiry into the conditions of a patient suffering from any disease he lays down for the first time the principles upon which inductive research is founded. He is the parent, not of medicine alone, but of the inductive method as applicable to all branches of natural science. It is a proud claim that the method found its first application in the science of medicine.

His observations upon cerebral injuries were hardly bettered until our own day, and many of his instructions as to their treatment cannot be neglected even now. He notes the effect of brain injuries upon the limbs of the opposite side. His work on fractures and dislocations has received praise from the greatest of critics. Littré spoke of it as "the grandest surgical monument of antiquity," and considered that the truth of its principles was eternal. A century ago the most eminent of French surgeons, Dupuytren, published a work on "Dislocations." Malgaigne, whose familiar name justly carries great weight, judged that, in respect of its discussion of congenital dislocations, the work of Hippocrates was the richer and more accurate. The discourse of Hippocrates on wounds, which I read once again in the early weeks of the war, seems to have, in more relations than one, a bearing upon our bitter experience of those most grievous times. Certain it is that for 1,500 years afterwards nothing so apt was written; by no one were the essential problems of wound treatment so well understood. The dressings applied to wounds, he tells us, were to be of new materials; water, if not clean and sweet, was to be boiled and strained before use; care of the surgeon's hands and nails was thought most necessary. Oil and wine were the balsam for a bruised or dirty wound, or for one long neglected. The accurate apposition of the wound surfaces and the exclusion of air were means to secure rapid healing by primary intention, which was clearly distinguished from second intention. He dreaded amputation of the limb, especially near the trunk; these operations to-day are in respect of their mortality still among the most lethal of all. As Sir John Tweedy has said, "The directions which Hippocrates gives concerning the arrangements of the operating room, the placing of the patient, the position of the assistants, the disposition of the lighting, the care to be taken of the surgeon's hands, the need of ambidexterity, all indicate a careful and experienced practitioner." Hippocrates may count among his greatest glories that he recognized the essential unity of medicine and surgery, or rather that he did not distinguish between them; that he urged and practised the use of all means for the examination of the patient; that he saw no degradation, as did so many later ages, in the use of a physician's hands in the service of the individual patient, for whose welfare, as Aristotle said, all medicine exists. And his system, which embodied observation, reflection, judgement, all multiplied to make experience which shall decide right action, stands firm until this day. He knew its difficulties, for he tells us that "experience is difficult, verification fallible, observation long and costly, and occasion fleeting." There is one gap, however—a significant one in view of my later contention—in his method: he did not put matters to the proof by way of experiment. The experimental verification or denial of a suggested truth, or the new adventures in thought and action opened up by this method, were not for him.

Celsus.

After Hippocrates we may take a long stride in point of time to the days of Celsus, who lived in the reign of Augustus Caesar. It is interesting to remember that Celsus, the manuscript of whose work *De Re Medicina*, written about 30 A.D., was discovered in 1443 in the Church of St. Ambrose at Milan by Thomas of Sezanne, afterwards Pope Nicolas V, was almost certainly not a physician. He was a noble of the family of Cornelii, who wrote works on medicine, agriculture, philosophy, law, and the art of war, in the spirit of an interested amateur. The deep prejudice of the patricians against the adoption by one of their class of medicine as a profession was unconquerable; and the internal evidence in all his writings is opposed to the view that he could have practised as a physician. He mocks at the value of medicine, and esteems the empirical methods of folk medicine as of equal interest and value to the academic methods of his time. He tells us that the true art of medicine lies in the correlation of theory and practice, the one guiding and controlling the other; speculation should guide thought but not determine practice. References to surgical matters are found in all the books, but Books VII and VIII are devoted exclusively to the consideration of surgical matters. The great feature of these is that they record all the changes which had occurred in our art from the time of Hippocrates, and especially informs us of the greatest attainments of the Alexandrian school in anatomy and surgery. He describes wound treatment in detail: arrest of haemorrhage in a wound may be effected by packing and pressure, or by the ligature, which finds its first mention in his work. Sutures are to be used to secure apposition of wound surfaces and edges, and, as a dressing, linen bandages are to be soaked in wine, water, or vinegar. He gives in sufficient detail a description of operations for the radical cure of inguinal and umbilical hernia, and for the first time he refers to the removal of the testis as allowing a firmer and more secure closure of the inguinal canal. He mentions translucency as a test for hydrocele, and describes the tapping of dropsies. He quotes a large number of surgical authors, but among them all only Hippocrates is known to us.

It is evident that by the time of Celsus the boundaries of surgery had been sensibly enlarged, that old procedures had been bettered, as in amputations, and that many new ones had been devised. But progress had been along the old lines and was achieved by the old methods. He recorded the multiplication and the magnification of old experiences rather than the revelation of new discoveries. He it was who gave us the fulfilment of the promise of the Hippocratic methods.

Galen.

But great as were these methods, and considerable as was the success attending their application, there had been a slumber of the intellectual and philosophical aspects of medicine. Hippocrates had united in his own person many divergent and opposing tendencies; after his death there was an acceptance of his teaching by various sects, each adopting a part only, and dogmatism with its cramping tendencies crept in and the spirit of investigation died away. There was need now of a philosopher with new vision, and the need was supplied in Galen. Of Galen's life and character we know much, for he was vain and ambitious, garrulous and verbose. He was trained and deeply versed in all the current philosophies. A dream of his father, Nikon, interpreted as a vision from the God of Medicine, decided his choice of a profession. After the death of his father he wandered for nine years, studying in Corinth, Smyrna, and especially Alexandria, which then attracted commerce and patients from all parts of the world. His opportunities were great and his use of them unwearying. He wrote works on anatomical and physiological matters, and attained even in his early years a reputation for wisdom and sagacity. For four years he lived in Rome. His learning, his industry, his friendship with the great and the noble, brought him high repute. But the envy of his colleagues, which he did much to provoke, was his downfall, and he fled in fear of his life, to return on the invitation of Marcus Aurelius some twelve years later.

But Galen's chief claim to honour, an imperishable one, is that he was the first of physicians to bring experiment to the aid of medicine. As Hippocrates was the parent of inductive method, so was Galen of the deductive. He was the first experimental physiologist. It was he who first discovered and described the cranial nerves, and the sympathetic nervous system; he divided the spinal cord and produced paraplegia; he severed the recurrent laryngeal nerve, and produced the hoarseness and aphonia which are the constant results of this injury. He discovered the function of a muscle by studying the loss of power which followed its division. He demonstrated the flow of urine from the kidney to the bladder along the ureters by a series of experiments than which nothing to-day could be more conclusive. And he trembled at the very edge of a great discovery when he wrote, "If you would kill an animal by cutting through a number of its large arteries you will find the veins becoming empty along with the arteries; now this could never occur if there were not anastomoses between them." Unhappily, experiment alone did not content him, nor experiment in close alliance with clinical observation. His knowledge of anatomy, unsurpassed by any of his time, did not keep him aloof from the wildest speculations in natural philosophy. It is interesting to learn from him that the art of dissection was mainly, if not wholly, confined to certain families, among whom tradition and instruction gave rise to a *caste* of dissectors. The members of a family were, from their childhood, exercised by their parents in dissecting, just as familiarly as in writing and reading, so that "there was no more fear of their forgetting their anatomy than of forgetting their alphabet."

Galen's dissections were confined to the bodies of animals, and the facts so discovered were applied by analogy only to the bodies of men. If a physiological hypothesis charmed him, his anatomical observations had to give way to it. His mind ran riot in speculation, often fantastic and far-fetched, but occasionally showing a gleam of real insight, as, for example, in his belief that there was a close primary correspondence between the sexual organs of the male and female. But the evils were great and lasting. It was his rash conceits rather than the facts of his experiments, or his sound anatomical knowledge and broad scientific purpose, which were remembered, and indeed almost sanctified, by all men for a period of almost 1,500 years. Though he was the first of experimenters, he asserted that speculation should lead to experience, and he exalted a debased metaphysics to a height exceeding that of strict and sober observation. In the times of intellectual stagnation in the dark ages, the writings of Galen had an unequalled authority, and it was only by a notable independence that Abdollatif dared to assert that anatomy was not to be learnt from books, and that even Galen's observations were less to be trusted than the evidence of one's own senses. The result was the sterility and the abasement of medicine, until the experimental methods were revived by his direct intellectual descendant William Harvey.

AVICENNA.

In a rather different sense and in a different scene, the great traditions of medicine were handed on by Avicenna, who was born in Bokhara about 980 A.D. It was through him that the works of Hippocrates and Galen became widely known throughout the East, and finally filtered back into Europe through the Arabs and Moors at a time when learning and culture had almost vanished. The Arabian mind was essentially concerned with compiling knowledge from all sources rather than in initiating inquiry, and a great and useful work in this direction was carried out by them during the brightest days of the Saracen Empire. The modern world, indeed, owes much to their careful preservation of knowledge and their multiplication of copies of standard medical works before the era of printing, even though the science and art of medicine in itself did not, through their efforts, advance one step. In Avicenna we find a mind as keen as that of his great predecessors, viewing the human body and its ailments in his own way, although numerous points of resemblance to the works of Galen and Hippocrates are everywhere evident. He was not an experimenter so much as a philosopher, and the power of his mind over so many later centuries is probably to be attributed to his masterly grasp of all sciences, as well as of medicine and surgery. In the art of surgery he can hardly have attained the skill of the great founder, as far as can be judged by the records in the Canon. We do not find all those evidences of mastership in technique which shine so strongly through the writings of Hippocrates. As is characteristic of the Eastern to day, the knowledge which he possessed and, to judge by the records of his successes, utilized with great practical effect, was of a different order, both intuitive and logical, but intuitive before logical. His skill in dealing with fundamental mathematical problems is hardly surpassed at the present day, and in this respect he has been almost the only instance of a great mind applying mathematical concepts to medicine and surgery up till the present era.

Of other writers before the sixteenth century it is not unfair to say that they all, or almost all, were merely recorders, encyclopaedists it may be, but devoid of any spark of new thought or of wise generalization. They preserved with reverence the old tradition, and the ancient knowledge, they discussed every device, and, at interminable length, the meanings of the old scriptures; they tortured new meanings out of old phrases, they were diligent in dressing old words new, and their scholarship was judged by their ingenuity, or infinite prolixity, in so doing.

THE ANATOMISTS OF THE RENAISSANCE.

The anatomists of the Middle Ages prepared the way for new enlightenment. The oldest treatise on anatomy comes from Egypt. The papyrus dates probably from the reign of Thutmosis I—that is, from before the crossing of the Red Sea by the Israelites. It shows the heart with vessels proceeding from it, the liver, spleen, kidneys, ureters and bladder. The first of comparative anatomists was Aristotle. The expedition of his pupil Alexander into Asia, which he accompanied, gave him unprecedented opportunities for the study of many animals; the result of his work is contained in several books. The first dissections of the *human* body were made by Erasistratus and Herophilus of Alexandria. Under the Ptolemies in Egypt were garnered all the fading philosophies and sciences which amid the dissensions and distractions of life in Greece could no longer flourish there. Alexandria then became the guardian and the host of all the sciences and the literatures of the world. It was here, as we have seen, that Galen learnt much of this anatomy.

After the darkness of succeeding centuries the first gleam of dawn was seen in the University of Bologna. For over one hundred years it had been renowned as a centre of scholastic knowledge, of literature, and of law. Mondinus, the father of anatomy as he is always acclaimed, lectured there between 1315 and 1325, and publicly demonstrated the structures of the body as disclosed by dissection. His descriptions are remarkable alike for their extent and their accuracy. The claim has been made for him that he went near to the discovery of the circulation of the blood, for he says that the heart drives or transmits the blood to the lungs. Two centuries later (1514-1564) was born the greatest of all anatomists, Andreas Vesalius, a native of Brussels, a student at Louvain. The difficulties of performing dissections were so great in France that he went to Italy for freer and larger opportunities. "My study of anatomy," he says, "would never have succeeded had I, when working at medicine in Paris, been willing that the viscera should be merely shown to me and to my fellow students at one or another public dissection, by wholly unskilled barbers, and that in the most superficial way. I had to put my own hand to the business." When 24 years of age he was asked to lecture at the University of Padua. His original additions to the science of anatomy were numerous and of the highest importance. He swept away much of the old "analogical" anatomy, the surmises and the errors, hoary with age, and sanctified by their free acceptance by a multitude of authors in the centuries after Galen formulated them. His work on anatomy is adorned with illustrations which for beauty of design and accuracy of execution have never been surpassed, indeed I think not equalled, since they were published. It is said that the figures were drawn by Titian. Cuvier remarks that if this be not true they must at least be the work of one of his most distinguished pupils. But Vesalius did something more than all this. He was the first imitator of Galen in experimental work, and though he did little enough it sufficed to show that the method was not utterly forgotten. He was the forerunner of those distinguished Italian anatomists who may share with him the credit for the creation of the science of anatomy—of Eustachius, of Fallopius who in his short life laboured to great ends, and of Fabricius, his successor in the chair of anatomy and surgery of Padua, among whose pupils was William Harvey. The presence of folds in the interior of some veins had been noted by Sylvius and Vesalius and others, and those of the vena azygos were particularly described by Canani in 1547, but it was Fabricius who recognized the existence of valves throughout the venous system and who observed that they were all turned towards the heart.

Harvey.

Harvey had been attracted by the fame of Fabricius to Padua, at a time when Galileo was teaching, and was engaging in those methodical researches whose influences have lasted to our own day. Harvey said of himself that he felt it in some sort criminal to call in question doctrines that had descended through a long succession of ages and carried the authority of the ancients, but he "appealed unto Nature that bowed to no antiquity, and was of still higher authority than the Ancients." It was at the instigation of Fabricius that Harvey undertook by experiment to discover the function of the valve in the venous system, and in the year of Shakespeare's death those experiments, whose end was to bring about the greatest discovery in the history of medicine, were begun. The discovery had almost been made by half a dozen of his predecessors, who appeared to have stood upon its very brink. As Cuvier says, we are often on the edge of discovery without suspecting it. There can be little doubt that the pulmonary circulation had been recognized by the unhappy Servetus, who, with his works, was burnt as a heretic at Geneva in 1553 by Calvin.

In 1559 a pupil of Vesalius at Padua, Realdus Columbus, may be said to have suggested the existence of this circulation by inductive reasoning, but to ingenious speculation the minds of men were hardened. It was open demonstration and proof that were needed to press home an opinion so contrary to all accepted teaching.

A discovery is rarely if ever a sudden achievement, nor is it the work of one man; a long series of observations, each in turn received in doubt and discussed in hostility, are familiarized by time, and lead at last to the gradual disclosure of the truth. Harvey's discovery was finally due to his application of the experimental method of Archimedes and Galen to a problem of which many of the factors were already known; or, as he himself tells us, the circulation of the blood was held to be completely demonstrated by experiment, observation, and ocular inspection against all force and array of argument. He writes:

> "When I first gave my mind to vivisections, as a means of discovering the motions and uses of the heart, and sought to discover these from actual inspection and not from the writings of others, I found the task so truly arduous, so full of difficulties, that I was almost tempted to think with Frascatorius, that the motion of the heart was only to be comprehended by God. . . . At length and by using greater and daily diligence, having frequent recourse to vivisections, employing a variety of animals for the purpose, and collecting numerous observations, I thought that I had attained to the truth."

The reception of this discovery was generous at home, tardy and reluctant or openly hostile abroad; but it was everywhere eagerly and hotly discussed. Harvey says:

> "But scarce an hour has passed since the birthday of the circulation of the blood that I have not heard something for good and for evil said of this my discovery. Some abuse it as a feeble infant, and yet unworthy to have seen the light; others again think the bantling deserves to be cherished and cared for. These oppose it with much ado, those patronize it with abundant commendation."

Riolan, distinguished as an anatomist, and professor at the Collège de France, denied and derided it. What Harvey felt of the opposition may be learnt from his reply to a friend (Ent.), who urged upon him the publication of his later work, *De Generatione Animalium*:

> "And would you then advise me to quit the tranquility of this haven, wherein I now calmly spend my days and again commit myself to the unfaithful ocean? You are not ignorant how great troubles my lucubrations formerly published have raised. Better it is certainly at some time to endeavour to grow wise at home in private than by the hasty divulgation of such things to the knowledge whereof you have attained with vast labour, to stir up tempests that may deprive you of your leisure and quiet for the future."

Nevertheless, compensations and rewards came to him in full measure, and he had the satisfaction of living to see the general acceptance of his discoveries. This discovery, as Whewell said, implied the usual conditions, distinct general notions, careful observation of many facts, and the mental act of bringing together these elements of truth. Boyle wrote:

> "I remember that when I asked our famous Harvey what were the things that induced him to think of a circulation of the blood, he answered me that when he took notice that the valves in the veins of so many parts of the body were so placed that they gave a free passage to the blood towards the heart, but opposed the passage of the venal blood the contrary way, he was incited to imagine that so provident a cause as Nature had not placed so many valves without design; and no design seemed more probable than that the blood should be sent through the arteries and return through the veins whose valves did not oppose its course that way. That supposition his experiments confirmed."

Wiseman and Paré.

But the experimental method of Galen, revived by Gilbert, physician to Queen Elizabeth and the father of modern experimental science, and practised with such supreme effect by Harvey, was to find as yet no place in scientific surgery. That art, it is true, was practised with wider scope, with confidence bred of generations of experience, and with a risk that was perhaps steadily though almost negligibly diminishing. Safety was rather dependent upon the individual capacity of the surgeon than a quality common to the work of all. Richard Wiseman, who was born three years after the publication of Harvey's discovery, is generally granted the proud title of the father of English surgery. He was a man "given to the observation of Nature," and became Sergeant Surgeon to Charles II and to James II (who when Prince of Wales and Duke of York were withdrawn under a hedge, on October 23rd, 1642, during the battle of Edgehill, when Harvey distracted their thoughts by reading to them), and among his contributions to the craft of surgery may be mentioned his operations for hernia, and his advocacy of primary amputation in cases of injury, by gunshot or otherwise, of the limbs.

Ambroise Paré was to French surgery what Wiseman was to British. The life of Paré is one of the greatest romances in the history of our profession; it tells the story of the progress of the son of a joiner, who was groom, gardener, barber's apprentice, until he became the surgeon to four kings of France, and was concealed and spared from death by special order of Charles IX at the massacre of the Huguenots on the day of St. Bartholomew. For the king said it was not reasonable that a man who was worth a whole world of men should be murdered. He is the outstanding medical figure in the Renaissance. He was free from the trammels of ancient lore. When at last he read Hippocrates and Galen he surpassed them both in the number and variety of the conditions he had been called upon to treat; and he was therefore the better fitted to approach their teaching in the spirit of an informed and practised critic. "We must not be drugged by the work of the ancients as if they had known all things or spoken all," he writes. Yet he was said by Thomas Johnson, who translated and edited his works, to be "a man very well versed in the writings of the Ancient and Modern Physicians and Surgeons." He was one of the greatest original minds our art has known, fearless, independent, alert and inventive, and not without a good conceit. "There be few men of this profession," he writes, "which can bring so much authority to their writings, either with Reason or Experience as I can"; and again, "I have so certainly touched the mark whereat I aimed, that Antiquity may seem to have nothing wherein it may exceed us beside the Glory of Invention, nor Posterity anything left but a certain small hope to add some things as it is easy to add to former inventions." He won for surgery in France a place it had never before attained.

MORGAGNI AND HUNTER.

Surgery was still lacking its firm foundation in pathological anatomy. This was to be built by Morgagni and John Hunter and by many others taught and inspired by them. The tireless industry, unwearying care, and profound sagacity of John Hunter gave to an art that was largely empirical a warrant based upon a sound knowledge of morbid processes in all tissues. He was observer, investigator, collector, in each capacity without a rival. He was unceasing in his search for truth by way of experiment. "Don't think, try the experiment," he urged his pupil Jenner. In his own person he did both, supremely well. His disregard of the written word was deplorable no doubt, but refreshing after so much barren speculation among his forerunners. "I am not a reader of books," he said; and again, "I believe nothing I have not seen and observed myself." His rebuff to one who accused him of ignorance of the classics is famous: "Jesse Foot accuses me of not understanding the dead languages; but I could teach him that on the dead body which he never knew in any language, dead or living." Often he recounts the details of an experiment, but leaves us to draw the conclusion. He changed the whole spirit of practice and placed knowledge on the throne of authority. The day was gone for ever when a pure and dangerous empiricism could be practised; surgery became a science, and its craft a rational procedure. The museum which he founded, and which still bears his name, in the Royal College of Surgeons of England, is unsurpassed in all the world, and his own specimens are still to be seen to bear witness to his incomparable services to pathological anatomy. For Morgagni no praise can be too high. His letters may be read to-day with delight; though his knowledge of disease is, in the modern view, often steeped in mediaevalism, his long array of facts and of relevant instances, his description of morbid parts, his accurate and searching generalizations are among the greatest contributions to medical literature in all the ages.

LISTER.

Such was the progress of surgery up to the early years of the nineteenth century. The discovery of the anaesthetic properties of ether and choloroform completely changed the possibilities of the range of application of surgery to morbid conditions, and enlarged also the scope of experimental work upon animals. But in every direction the surgeon's work was hampered and frustrated by the occurrence of infection and all its dire consequences in the majority of the wounds inflicted. It was for Lister that the world was waiting.

Lister, as everyone knows, introduced the antiseptic system into surgery. Before his time the wounds inflicted by the surgeon, or those received in civil life as in cases of compound fracture, became septic almost as a matter of course. The decomposition of the wound discharges was formerly held to be due to contact with the oxygen of the air. Lister recognized that the investigation of many observers, notably with Pasteur, which showed that fermentative and putrefactive processes depended upon minute organisms, were applicable in surgical work also. In the year 18[illegible], a French observer, C. Latour, had pointed out that the tiny particles of which yeast was composed were capable of multiplication, that they were [illegible] that it was by their propagation that the [illegible] was produced. Both Latour and T. Schwann showed that the process could be suppressed by the application of heat to the yeast. Schwann especially called attention to the fact that the [illegible] and that putrefaction and fermentation were [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Lister had long been working on the problem of inflammation and of the decomposition of wound discharges. When, therefore, early in 18[illegible], he read of the work of Pasteur, his mind was prepared to receive the new evidence, and to put it to the proof in the treatment of surgical cases. It is impossible for us now to realize the horrors and the mortality attached to surgical work at the period when Pasteur's papers were written. In almost every case the discharge from a wound underwent putrefaction; inflammation of varying degrees of severity attacked the wounds, pus poured from their surfaces, and hospital gangrene, erysipelas, and pyaemia, the most desperate form of blood poisoning, occurred with terrible frequency. The clean healing of a wound by "first intention" rarely occurred. A surgeon was more than content—he was eager and gratified to see a thick creamy discharge of "laudable pus" from the surfaces of a wound. Very few operations were performed, and then as a general rule only in cases where death or extreme disability was otherwise certain. Limbs were amputated when smashed or so diseased as to be worthless and dangerous; the mortality from amputations varied from 40 to 50 per cent. In Lister's hands, up to the year 1865, in 15 cases of excision of the wrist-joint by his own method, 6 patients suffered from hospital gangrene and one died from pyaemia. Volkmann, one of the earliest of Lister's disciples, had results so ghastly that he decided to close his hospital altogether for some months. Lister's own account of his wards at Glasgow is disturbing and distressing even to-day. The most vigorous and robust patients were swept away after the most trifling injuries or operations, and septic diseases were so frequent and so deadly that the very name of hospital was dreaded by every sufferer. John Bell, a great surgeon, spoke of the hospital as a "house of death."

In the paper which Lister had read Pasteur asserted that "the most far-reaching of my researches is simple enough; it is that putrefaction is produced by living ferments." He asserted that the oxygen of the air was not the cause of putrefaction, as everyone hitherto had supposed; that, indeed, some of the causes of decomposition could thrive only in the absence of oxygen. This observation, which distinguishes "aërobic" from "anaërobic" organisms, is of the first importance. Lister at once realized the significance of this work in connexion with the changes occurring in wound discharges and on wound surfaces. In 1867 he wrote:

> "When it had been shown by the researches of Pasteur that the septic property of the atmosphere depended, not on the oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided, without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles."

He proceeded to make trial of the hypothesis in his own work. At this time he had heard also of the experiments made at Carlisle with the disinfection and deodorization of sewage by German creosote, a crude form of carbolic acid. The administration of a very small proportion of this substance not only prevented all odour from the lands irrigated, but destroyed the entozoa which usually infest cattle fed upon such pastures. This was the preparation he decided, after trying chloride of zinc and the sulphites, to rely upon in his early trials.

Among surgical cases then, as now, the sharpest distinction was drawn between simple and compound fractures—between fractures, that is, where the soft parts are almost unhurt and the skin unwounded, and fractures in which a wound through the skin and soft tissues reaches the broken ends of bone. In simple fractures life was rarely or never in jeopardy; in compound fractures putrefaction of wound discharges occurred, septic processes became rampant, and the mortality was high. "The frequency of disastrous consequences in compound fractures, contrasted with the complete immunity from danger to life or limb in simple fracture, is one of the most striking as well as melancholy facts in surgical practice." These were the opening words of Lister's first paper on the "new method," in the *Lancet* of 1867. The first trial of this method proved disastrous, owing to improper management, but the second attempt, on August 12th, 1865, proved perfectly satisfactory, and was followed by others which more than realized Lister's most sanguine expectations. Compound fractures healed and united as easily and quickly, and almost as safely, as simple fractures. The method proved by so stern a trial was soon applied to cases of chronic abscess and by degrees to operation wounds. In one of his earlier papers Lister wrote: "Admitting, then, the truth of the germ theory, and proceeding in accordance with it, we must, when dealing with any case, destroy in the first instance, once for all, any septic organisms which may exist within the parts concerned; and after this is done, our efforts must be directed to the prevention of the entrance of others into it." This statement shows that Lister laid down the two essential principles of the antiseptic system—the prophylactic and the therapeutic.

Lister's work, it is evident, was the result of research carried out both by the inductive and by the deductive method, and tested and confirmed by many experiments. He combined in full measure the wide, patient, penetrating inquiry, the comprehensive generalization, and the sound wisdom of the method of Hippocrates with the demand for experimental illumination or proof afforded by the method of Galen, of Bacon, and of Harvey. He combined in his own work the best of all the schools, and it was no accident that the greatest of all discoveries relating to the science and the art of surgery was made by him.

If a man's services to humanity are the standard by which we measure his value, then Lister may be counted as perhaps the greatest man the world has ever produced. For he has been the means of abolishing, or assuaging, the sufferings of men and women to a degree which is quite incalculable, and, as I said of him years ago, he has been the means of saving more lives than all the wars of all the ages have thrown away.

Clinical Research in Surgery.

As the result of Lister's work the way was cleared for an immense and immediate advance in surgical practice and for an extension into regions that before had been denied even to the most intrepid surgical adventurer. The result is known to all the world. Diseases which were beyond the reach of any are now within the grasp of all surgeons. Operations whose mortality even twenty-five years ago was so heavy as to be almost prohibitive are now performed with a frequency and with a degree of safety which never cease to excite our wonder. But Lister's work did something else: it showed how research for the future must be conducted if our progress were to be both enterprising and safe; it showed that clinical research and experiment must for ever run together.

The achievements of clinical research have been gigantic since Lister's day. The safety which he brought into all our work resulted in an advancement, little by little, of the attack upon the diseases of internal organs, and it exercised in consequence a very powerful germinal influence upon internal medicine. If our knowledge of the diseases of the abdominal viscera of thirty years ago is compared with that of to-day the truth of this statement will appear. In connexion with the diseases of the gall bladder and bile ducts the work of Courvoisier, published in 1890, is a complete record; it is, indeed, one of the most monumental works ever produced in surgical literature. What was known then in comparison with now? Nothing of the early symptoms of gall stones, of the relation between them and visceral and other infections; nothing of the symptoms due to the impaction of stones in one or other of the ducts; almost nothing of the possibilities of safe relief by surgery. Lister's work has not only been the means of relief to the patient in his agony, but has been the instrument by which our own most prolific inquiries into the symptomatology, etiology, and in no insignificant degree the pathology of this disease has been made. Of gastric ulcer, as distinguished from cancer of the stomach, our knowledge thirty years ago was trivial compared with what it is to-day. Much of the teaching of those days is not confirmed by the surgical inquiries of to-day; and it is now, I suppose, admitted universally that unless the physician is guided by the principles of diagnosis discovered by the surgeon and the radiographer he will stray wide from the path of truth. So, too, of duodenal ulcer, our present knowledge of which is due entirely to the clinical research made possible by safe surgery. And the list might be greatly extended. Much more remains to be done. We are only on the threshold of our inquiries as to the complementary actions of one organ upon another; of the relations, for example, of the pancreas, spleen, and liver to each other; and of all or any of these to parts or to the whole of the alimentary canal and to the organs possessed only of an internal secretion.

Clinical research involves and implies the fullest inquiry into the detailed character of all present symptoms; the most searching pursuit after those earliest departures from smooth and normal action which observation can discover, the correlation of all these with the manifest changes observed at all stages in the several organs during operations upon any of them. When all this knowledge has slowly and patiently been garnered, then the method of experiment must be used to carry our inquiries still further, and to help us to answer the question, "How do these things happen?" Clinical research will tell us of the changes in other organs associated with the one to which our main inquiry is directed, but a process of deduction and an inquiry by experiment are necessary before we can disclose the sequence of events which culminate at last in the disease we set out to study.

The clinical research is beyond question the more arduous. The factors which enter into it are so many, so variable, so impressed by the changing conditions and moods and circumstances of the patient, that only the most indefatigable patience and the most trained capacity can help to resolve the matter into simple terms, to dissociate what may be an infinitely complex grouping of many facts before we can rearrange them in appropriate sequence of process or of time. We must discover the "usual conditions," obtain our general notions, observe carefully a multitude of facts, arrange them in orderly fashion, and employ the mental act which will bring them together as elements in a great truth. When this is done, and only when this is done, can the deductive method of Galen be employed to fullest advantage. Experimental research is not so baffling a task. Great ingenuity in the devising of experiments may be found in the supreme masters, Pavlov, Almroth Wright, and a very few others. But each experiment often contains only the one question to which the answer is sought. The answer is "Yes" or "No," or is expressed in simple terms, and it is free from those infinite perplexities and changing proportions which distinguish the answer given to any inquiry, even the simplest, in the method of clinical research. When in a simple experiment the answer is given, a new problem may arise suggesting a further experiment. Thus a chain of experiments may develop each of which answers, not only its own question, but contributes in its own degree to the final answer embracing the entire sequence of experiments. The single experiment may be simple. But in respect of a series, each member of which is dependent upon its predecessor, and provokes its successor, and all of which illuminate or decide some problem suggested by clinical research, nothing has been done in surgery comparable to that which in chemistry has been achieved by Fisher and by Abderhalden.

These brief glimpses at the progress of surgery show that its past epochs may be considered as three in number.

I.—In the first and longest the writings of Hippocrates and Galen were regarded as an inspired gospel. By them the minds of men were held captive and their imagination enslaved, and every new adventure in thought or action suppressed or cramped. To seek in them for knowledge was all the effort of every man. What was written in them was truth, what was outside them rank heresy. Where the meaning was not as plain as day the most endless inquiry and discussion ensued. The controversies which then shook the intellectual world to its very foundation are seen now to be only laughable both in their methods and in their quaint decisions. In later ages to challenge the truth or the final revelation of any teaching of Galen's was almost blasphemous, and it required a rare and reckless courage to say, as did Henry of Mondeville, "God did not surely exhaust all His creative power in making Galen." The prophets and seers, who little by little and with very needful caution led the world through this black night, death's second self, into the dawn, were the anatomists, Mondinus, Vesalius, Fabricius, Fallopius, and others. By their work the assertions of the old scriptures could be openly gauged. In gross anatomy a structure stands out for all to see. If Galen's teaching denied the truth disclosed by dissection, it was most gently and tentatively refuted, heretical and perilous as such a work might be.

II.—As normal anatomy grew it was joined by morbid anatomy, and at last came Morgagni and Hunter. They established the second great era, in which the pathology of the dead was studied with a wealth of care and inexhaustible patience. The gross lesions of morbid anatomy, and even many that were recondite and remote, were examined, described, discussed, and arranged in due order by a mighty succession of able men whose work to-day we too lightly neglect. Clinical medicine and surgery were dominated by the knowledge of the morbid processes discovered in this time. Symptoms were correlated with the signs found upon the *post-mortem* table and upon the shelves of museums. Clinical histories were largely devoted to terminal conditions, for it was only these that brought a patient to a hospital, where he died and where an autopsy could be made. But patients do not die in hospital from the diseases from which they suffer long during life. And in consequence severe limitations were set to our knowledge of disease of all kinds.

III.—Lister's work made possible the third era, which depended for its swift and notable advance upon a study of the pathology of the living—upon a study, that is, of morbid processes in their course rather than when their race was fully run. By multiplying observations made during operations we learnt, little by little, how to capture a general truth from a series of individual examples. By slow degrees, and grudgingly, it was admitted that terminal manifestations of disease and the advanced ravages of morbid anatomy did not constitute all medicine; that earlier symptoms were to be referred to earlier changes in organs exposed during the course of operations. And these changes and symptoms we now realize are themselves but late; still earlier manifestations of aberrant action are being sought patiently and with a success that holds increasing hope for future work.

EXPERIMENTAL RESEARCH IN SURGERY.

During all these three periods, through Galen, Vesalius, Harvey, Bacon, Hunter, Lister, there has run a vein of experimental work, testing hypotheses and discovering new truths. Since Lister's day there has been a steadily increasing recognition of the value of such work and of the urgent necessity of continuing it, of enlarging its field so that it may be coterminous with medicine itself. We are, indeed, newly entered upon another stage—the stage of combined research—in which clinical observation, inductive and deductive processes of reasoning, and experimental inquiry are linked together. In its progress, so far, the work of a few men stands out as of the utmost significance: Horsley's work upon myxoedema, cretinism, and on the functions of the thyroid gland; Ferrier's, Macewen's, and Horsley's researches upon cerebral affections and cerebral localization; Senn's work upon the pancreas and upon the intestines; Kocher's work upon cerebral compression and upon the thyroid gland; Crile's work upon shock and upon blood transfusion; and Harvey Cushing's work upon diseases of the brain and the pituitary gland. Since Lister rid all operations upon man and upon animals of their former terrors many surgeons have turned to experiment in order to perfect and to illustrate their own work, to test a hypothesis, to search for new procedures, or to discover an explanation of clinical phenomena whose meaning was difficult to unravel. In recent days few men have displayed so vast a range of clinical interests, so keen a zest for relevant experimental inquiry, so logical a mind, such frank intellectual honesty as Murphy. He may justly be ranked as one of the earliest and one of the greatest exponents of the method of combined research.

MURPHY'S COMBINED RESEARCH.

Murphy's first work to attract the attention of all surgeons was that which led him to devise and to perfect the most exquisite surgical implement that has ever been invented—"Murphy's button." Up to the time at which experimental work on the anastomoses of hollow abdominal viscera was begun by Senn, Murphy, and others, the method of securing union was difficult, tedious, and unsafe. I well remember to have seen the operation of "pylorectomy" done in the year 1889. A very niggardly removal of a small "pyloric" carcinoma was made, and the cut end of the duodenum was united to a part of the divided end of the stomach after the first method of Billroth. We counted over two hundred sutures used to effect the junction. Each suture was of silk; for each the needle was separately threaded, the suture passed, tied, and cut—a wearisome total of movements of the surgeon and his assistants, involving a great expenditure of time. No wonder the surgeons searched for simpler methods. Senn's bone plates, the first mechanical apparatus to assist in an anastomosis, were ingenious instruments not very easy to use, requiring a not inconsiderable degree of skill and patience to secure that the threads holding them were well and truly tied, and calling also for the introduction of a number of additional sutures. The results following the use of these instruments were sometimes very good and sometimes very bad. While surgeons were struggling with this tiresome and unsatisfactory implement Murphy introduced his "button." It was the result of a great deal of experimental work done upon dogs, in the early hours of the morning, and in the lean years of his early married life. In this work Mrs. Murphy took her share, giving chloroform to the animals. A few people were privileged to know of the boundless help and inspiration which Mrs. Murphy gave to her husband in those hard but happy days when he was struggling for his place in the world of surgery. His wonderful success was in no small way due to her sympathy, encouragement, and unfaltering belief in him, and to the eager enthusiasm which she showed in all his works. With the help of Murphy's button operations which had been difficult and perilous at once became so simple that the merest tyro could perform them, and the risk of all operations fell with amazing rapidity. The button was used in every clinic, and upon all occasions where visceral anastomoses had to be effected; and the name and the fame of Murphy travelled round the world.

But I still think that the great virtue of the button was not in its own direct use, but in the convincing demonstration it gave to us of the essential simplicity of the process of visceral union. By using the button we learnt how safely and how rapidly the peritoneal junction took place; there was no need, it was now perfectly evident, for the hundreds of stitches that all surgeons were using. Firm even approximation for a very few days would, the button proved, lead beyond a doubt to a permanent and secure fusion of the apposed viscera. The button itself was occasionally a danger. After the operation of gastroenterostomy it sometimes remained for many months in the stomach; when it passed on to the lower intestine it might cause obstruction, or it might ulcerate its way through the intestinal wall. We learnt from the use of the button, not that the button itself should be used, but all the secrets of the principles of entero-anastomosis. It is not the least exaggeration to say that Murphy revolutionized the methods of visceral anastomosis, and was partly responsible for giving that impulse to abdominal surgery which in later years has carried it so far.

A characteristic example of his method of approaching a surgical subject to which he desired to contribute is shown in his work on *Ankylosis*, which he began in 1901. Up to that time the treatment of stiff joints was unsatisfactory, and in cases of severe ankylosis, whether bony or densely fibrous, was almost hopeless. Murphy says he proposes to begin the study of his subject by asking some questions:

> "What are joints? What is the embryology of joint formation? What is the pathological histology of acquired arthroses of false joints? What is the pathology of hygromata—acquired endothelial lined sacs? Can they be produced artificially? What is ankylosis? What are the pathologic and anatomic changes included in the term? What tissues are involved? From a practical standpoint into what classes may it be divided? When ankylosis has formed, what are the limitations of surgery for its relief? Can we re-establish a movable, functionating joint with synovial lining? Can we restore motion, and to what degree? In what class of cases can the best results be secured? Can we for the future promise better than the flexible fibrous union that we have secured in the past?"

He then discusses the development of joints in the embryo, and the method of bursa formation in early and in adult life, shows that hygromata and ganglia are the products of the liquefaction of hypertrophied connective tissue, and indicates that in an artificial development of joints all the facts relative to these processes should be utilized. The formation of "false joints" as a result of non-union in fractures of the long bones led to the recognition of the pathological condition whose counterpart was provoked in the operation of arthroplasty, in which a foreign body was inserted between the ends of bones separated at an ankylosed joint, to prevent reunion and to cause the development of a new joint. He then investigates the matter by experiments upon dogs, and proceeds to demonstrate its efficacy upon men afflicted by bony ankylosis of their joints. The whole piece of work is an exemplary instance of the combination of clinical experience and of experimental research leading to the establishment of a new method of treatment in a severe and most disabling condition.

In 1897 Murphy published his article, "Resection of arteries and veins injured in continuity: end-to-end suture: experimental and clinical research," in which, for the first time, he established the principles and described one of the methods of arterial suture and anastomosis. As in other articles, clinical needs indicate the lines of his experimental inquiries, and a widening of the bounds of surgical endeavour and practice is the result. In 1898 he delivered at Denver the oration on surgery before the American Medical Association, and chose as his subject the "Surgery of the lungs." Independently of Forlanini he suggested the injection of nitrogen into the pleural cavity in cases of hopeless unilateral disease of the lung. No enthusiastic acceptance greeted the suggestion. Murphy himself extended the method in his later work to cases of incipient tuberculous disease; and recent experience has fully justified all his claims and has given sanction to his methods. He again combined clinical experience and research by experiment in his work on *Surgery of the Spinal Cord*, published in 1907, and his final summary on neurological surgery, in *Surgery, Gynaecology, and Obstetrics* [1907, iv, 385], was the most accurate and concise survey of our knowledge of this subject which had then been published.

Wherever we turn we find his method to be the same: A wide survey of the subject to be discussed made interesting by the personal magic that he was able to throw into it; a disclosure of the gaps in our knowledge; a suggestion as to the means by which that knowledge or a want in our technical methods can be made good; a record of experiment to elucidate or to solve a difficult point; a wealth of clinical observation and a formidable array of arguments, lead to an inevitable conclusion stated in terms that none could fail to comprehend. In every article of his that we read we can see the working of an orderly mind, of a mind most eager for new truths and expectant of them. For every subject he seems to have a mental scaffolding by which he guides and arranges the truths as they are fashioned and duly laid in place. He had a zeal for classifications which looked complex but when carefully considered tended to simplicity and to easy and ready remembrance. Of his other surgical work and of his high-minded endeavour to seek for and to secure the purity and advancement of his own profession I need say nothing. It is a record of sincere and honest devotion to his duty as he saw it before him. Great deeds are born of great zeal and high resolve, and he was lacking in neither. All that he did is within the recent memory of his colleagues here. My immediate purpose has been fulfilled if I have sketched, however roughly, the giant figure of the man and the surgeon, whose work was done among you and whose fame has spread out into all lands.

Our calling, by common consent the noblest of any, dignifies all who join its ranks. The honour of the profession is the cumulative honour of all who, both in days gone by and in our own time, have worthily and honestly laboured in it. In every generation there are a chosen happy few who shed a special lustre upon it by their character, their scientific attainments, or the great glory of their record of service to their fellow men, for it is, as Ambroise Paré said, "beautiful and the best of all things to work for the relief and cure of suffering." In our generation Murphy was one who by his full devotion, his complete surrender to its ideals, and by his loyal, earnest, and unceasing work added distinction to our profession, which in return showered upon him the rewards with which no others can compare—the approbation of his fellow workers, and the friendship and trust of the best among his contemporaries in every country.

> The mightier man, the mightier is the thing
> That makes him honoured.

As we look backward upon the long history of the science and the art of medicine we seem to see a great procession of famous and heroic figures, each one standing not only as a witness of his own authentic achievements, but also as a symbol of the traditions, ideals, and aims of the age which he adorns. The procession is sometimes thinly stretched out, or even rudely broken here and there, but in happier ages it is thronged by an eager and exultant crowd. In medicine the whole pageant is as noble and splendid as in any of the sciences or arts, and it reveals the collective and continuous genius of a band of men inspired by the loftiest purpose and lavish in labour and sacrifice for the welfare of mankind. They have come throughout the ages from every land. They now belong not to one country but to every country, for they are the common possession and the pride of all the world. They have lost their nationality in death. They are men whose deeds will not be forgotten, and whose names will live to all generations. In that great order of men, small in numbers, supreme in achievement, the unerring justice of Time will reserve an assured place for John Benjamin Murphy.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor J. LORRAIN SMITH, M.D., F.R.S., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

PROFESSOR LORRAIN SMITH outlined the scope of the discussions in the Section. Pathology was, he said, becoming more and more divided into special branches, and one person was not able to devote himself to every branch. At the same time the subject was essentially one. Morbid anatomy, bacteriology, and experimental pathology supplemented each other, and complete solution of a problem was not possible by investigating it along one line alone. Morbid anatomy laid the foundation, bacteriology followed, demonstrating the cause of the lesions, and experimental pathology would complete the other two and define the principles of the rational treatment of the disease. In many diseases studies made from all three points of view dovetailed into each other, so that a complete picture of the condition was obtained. In others, as for instance encephalitis lethargica, morbid anatomy had been worked out, but the bacteriological investigations were still incomplete. Laboratories were too often equipped only to assist the clinician. When a diagnosis had been established, too often the matter was dropped. The pathologist should aim not only at establishing a diagnosis by bacteriological or *post-mortem* examination: he needed to study the fundamental conditions which produced the disease. For instance, if he found a tuberculous lesion in the suprarenal, he should not rest content with a diagnosis of Addison's disease. He wanted to know why the tubercle bacillus selected a particular organ in any given case, and why the individual was vulnerable to its attack. He should be in a position to make a complete investigation of disease. The reconstruction of pathological departments should be attempted along lines that would enable this ideal to be fulfilled.

DISCUSSION ON ATROPHY OF THE LIVER.

OPENING PAPER

BY

JAMES MILLER, M.D., F.R.C.P.Edin.,

AND

ANDREW RUTHERFORD, M.B., Ch.B.Edin.

THE material which forms the basis of this communication consists in a series of fifteen cases of liver atrophy as yet unpublished. They have occurred partly in our own experience (two of the cases occurred in India); in large part they are cases which have been under treatment at the Edinburgh Royal Infirmary and Sick Children's Hospital, and which have been incorporated in the teaching material of the pathological department of the University. We have much pleasure in recording our indebtedness to Professor Lorrain Smith and to several members of the medical staff of the two hospitals for permission to utilize the cases.

Types of Liver Atrophy.

They form a fairly complete series, illustrating, as we think, the various stages of a disease which, although it may have no constant etiological factor, represents a well-defined pathological entity. Although gradations between the stages are met with, three more or less distinct types of the disease occur, and these are as follows:

1. The acute type, characterized by more or less complete destruction of the liver parenchyma and with the minimum of reaction. The liver is small, shrunken, and yellow or yellow-brown in colour. This represents the old "acute yellow atrophy." Of this type we have two cases, and there is a third case which is intermediate between this and the next type.

2. The subacute type, in which there is a well-marked vascular and inflammatory cell reaction and a proliferation of the smaller bile channels. There is also an early connective tissue reaction spreading from the portal tracts. The liver in this type is still atrophic, but is red or reddish-brown in colour. Inasmuch as there are usually patches of the more acute stage left, the organ presents a parti-coloured appearance, being a mixture of red or brown and yellow or green areas. Of this type we have three cases, and we have had an opportunity of referring to three others already published.

3. Thirdly, there is the type in which regeneration is the predominant feature, and the organ, which shows adenomatous nodules of liver tissue in a stroma of fibrous tissue, is small or large according to the degree and extent of this regeneration. Between the most advanced and long-standing examples of this type and common so-called alcoholic cirrhosis of the liver there is no hard-and-fast line [illegible] from the point of view of pathogenesis or of the final clinical picture. As, however, the age incidence is different, and possibly the causation, a separate term seems justified. We have adopted for this type a term which was first suggested, we believe, by Johannes Orth and used by [illegible], Robert Muir, and, more recently, by a number of Continental and Japanese writers. The term is "multiple nodular hyperplasia." There is always an objection to the introduction of a new term, but this is already in use; it is descriptive of a fairly well-defined morbid entity, and the time-honoured term cirrhosis has led to confusion rather than simplification.

It would appear that in the past there has been much confusion, especially in children and adolescents, as between ordinary atrophic cirrhosis and the so-called "subacute liver atrophy," for which we now propose the term "multiple nodular hyperplasia." Cases of this kind met with in children have frequently been referred to and regarded as [illegible] of the same variety as is considered as common alcoholic cirrhosis in elderly adults. We are prepared to concede the great difficulty in distinguishing the [illegible] cases of this nodular hyperplasia from those of [illegible] atrophic cirrhosis, but in the former the nodules are larger, having a smooth [illegible], and the intervening fibrous tissue is more vascular and in [illegible] action. It also varies in amount in different parts of the organ, due to the mode of regeneration.

As between the term "subacute liver atrophy," the name [illegible] generally employed in this country, and the term which we suggest, the former must be, as already indicated, [illegible] applied to those cases of liver atrophy where the main [illegible] change is diffuse destruction of parenchyma, and where the duration of [illegible] is somewhat longer than in the acute fulminant type [illegible] only a very few days. In what we would term "multiple nodular hyperplasia" the most striking element is the hyperplastic and regenerative rather than the atrophic and destructive one, and the clinical course is chronic.

In considering the cases from the etiological standpoint we must distinguish clearly between conditions which may be responsible for the liver atrophy and those which are complications of the disease. For instance, two cases in the series had scarlet fever some considerable time previous to their death which might conceivably have been the cause of the initial liver atrophy. Another case died of scarlet fever, her liver being in the condition of multiple nodular hyperplasia. The scarlet fever could therefore have had no bearing upon the liver atrophy there. On the other hand, the finding of a tuberculous lesion may always have some bearing upon the causation even when occurring as a concomitant of the later stages.

As is well recognized, there is no single etiological factor in acute atrophy. Several conditions have been suggested as possible causes: such as tuberculosis, syphilis, typhoid, and influenza. A striking point is the frequency with which one is presented in the history with a number of options. For example, in a case published by one of us in 1908 the patient had had scarlet fever seven years previously, acute rheumatism shortly after this, syphilis six months before death, and influenza two months before death. There was also active pulmonary tuberculosis found *post mortem*.

One of our present series had syphilis as a possible element (there being a history of repeated miscarriages in the mother), measles seven years previously, tuberculosis of cervical glands six years previously, and influenza a year before death.

It would seem that in some cases we may have a single virulent poison causing complete destruction of the liver; in others, a whole series of repeated attacks on the liver parenchyma.

Etiological Factors.

Analysing our series from the point of view of possible etiological factors we get the following:

Tuberculosis.—There is *post mortem* evidence or a history of tuberculosis in 9 out of the 15 cases. Of the 9 cases, 5 showed active tubercle present at the autopsy; one of these was renal, the other four mesenteric gland infections. In a case of "subacute liver atrophy" recorded by Dingwall Fordyce in 1909 there was tuberculous ulceration of the large bowel.

Syphilis.—Definite evidence was obtained in two acute cases. In two others there were in the history points which suggested syphilis. In one of the definitely syphilitic cases a course of five injections of an arsenical compound had been administered.

Influenza.—This was a fatal complication in two cases, and there was a history of a slight attack in one other.

Typhoid or paratyphoid infection was associated with two cases; in one the attack had been nineteen years previously, in the other the association was quite recent.

Scarlet Fever.—A history of this disease was obtained in two cases, and in another case it was a terminal complication.

In one case there had been three attacks of chorea.

Amoebic dysentery was present in one acute case.

In every instance a history of some infective disease was obtained except in circumstances where, for some reason or other, a full history could not be obtained.

Distribution of the Degenerative Change.

The changes by which the liver parenchyma disappears show no special tendency to occur in any particular part of the lobule. Any area or areas of the lobule may be the seat of selection. It should be noted, however, that in certain of the subacute cases, as seen by the naked eye, the peripheral portions of the organ—those in relation to capsule and stroma—seem to escape. Attention has been drawn to this distribution in a case published in 1914 by F. C. Dickson.[1] The evidences of reaction, vascular dilatation and haemorrhage as well as inflammatory infiltration and bile-duct proliferation, show a similar relationship to fibrous stroma. Further, regenerative nodular formations in cases of longer duration seem in certain instances to be similarly disposed, as indicated by staphyloid grouping of the adenomatous nodules in proximity to portal tracts.

Results, etc.

Liver atrophy or its results may prove fatal either in the acute, subacute, or chronic stages. In the two former the fatal element is probably destruction of liver tissue. In the last it is usually an intercurrent infection. We consider it possible for patients to survive very extensive destruction of liver tissue. One of our series supports this view, showing as it does widespread destruction of liver tissue with very limited regeneration. They may not, however, survive very long. Once a well marked nodular hyperplasia has been established it would appear that the patient can live for an indefinite period provided no severe intercurrent infection occurs. He may or may not exhibit hepatic symptoms while he survives.

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[1] *Amer. Journ. of Diseases of Children*, vol. viii, p. 357.

In answer to the question whether the cases of multiple nodular hyperplasia go through a stage of acute or subacute atrophy, we would say that the previous histories of several of our series makes it appear doubtful as to whether they have ever passed through an initial preceding stage of acute widespread liver destruction. The suggestion is rather that of a repeated series of limited attacks of subacute intensity on the liver parenchyma.

Mode of Regeneration.

The series investigated indicates this as occurring from two aspects: firstly, from surviving liver cells, which we consider is the usual process; secondly, from the small bile duct like structures which have proliferated. This latter method probably rarely results in nodular formation of any significance; but we have frequently observed a process of linking up of bile canaliculi with liver cell columns. It would appear possibly to be an effort to supply to the new liver tissue a channel of excretion.

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IT is not uncommon to meet with cases of infective or toxic processes where recovery from the immediate effects occurs, but the patient afterwards succumbs, it may be in a few weeks or months or many years later, from the effects of the damage produced by the active process.

Among the disabilities which accrue, that which results from the formation of scar tissue is the first in importance. The property which such tissue possesses of contracting gradually and for a long time after its formation leads to very varying results—such as stricture formation in passages and ducts, interference with the functions of contractile organs, such as the intestines, by peritoneal adhesions, the production of post-meningitic hydrocephalus, and the compression atrophy of solid viscera when they are penetrated or surrounded by scar tissue.

On investigation of the morbid processes in the liver many conditions are found in which atrophy of the parenchyma results from the contraction of scar tissue formed in the course of an inflammatory or toxic process. When the contracting tissue involves a large part of the organ, disturbance of the function of the liver may be responsible for a fatal issue.

One of the common morbid processes is multilobular cirrhosis of the liver arising generally from prolonged alcoholic excess. In the atrophic form the liver may be reduced to less than a half of its normal size and of that fraction a part consists of fibrous tissue. This tissue contracts and slowly compresses the liver parenchyma enclosed in its meshes, producing progressive atrophy of the liver cells. Microscopical examination may fail to show any active inflammation in the organ, or such slight reaction as occurs when the compressed liver cells pass from atrophy to necrosis.

Occasionally pressure atrophy is produced by chronic perihepatitis—as in this specimen—in which the organ is completely encased in a thick layer of dense fibrous tissue which can be partly stripped from the original capsule and which has produced by its contraction some pressure atrophy in the organ.

In congenital syphilis atrophy of the liver cells is a constant and marked feature of the active disease in infancy. When the disease is arrested or cured the effects of previous inflammation may still be evident. When some parts of the organ have been severely damaged, other large areas having escaped, the contraction of the fibrous tissue formed in the damaged parts brings about pressure atrophy of the included liver cells and leads to the production of areas of puckered scarring, the undamaged areas showing a great capacity for compensatory hypertrophy. Some of the very misshapen livers seen occasionally in the *post-mortem* room may be accounted for in this way.

When the active disease causes severe damage to the greater part of the organ, the contraction of the resulting scar tissue, if the child recovers, may result in a fairly uniform cirrhosis of the liver with atrophy of the cells.

This specimen of cirrhosis of the liver from a child aged 15 years, showing, as is often the case, a very coarse form of the disease, is probably a late manifestation of congenital syphilis.

In acute yellow atrophy of the liver—so called—the process is essentially a toxic degeneration of the liver cells with areas of necrosis, and it is seldom that the patient survives for a sufficient time for fibrosis to occur in the organ. Fibrosis has been found, however, in the subacute form of the disease, and the contraction of scar tissue, compressing the liver parenchyma and leading to atrophy the cells, may in part account for the fatal result in such of cases.

Allied to acute yellow atrophy are the industrial diseases which produce their effects chiefly upon the liver. I refer to poisoning by tetrachlorethane, trinitrotoluene or T.N.T., and dinitrobenzene, and other allied substances. Much has been learnt of the effects of these poisons on those who were exposed to their action in munition factories during the recent war. All these poisons produce rapid necrosis of the liver cells where their action is most intense, and fatty degeneration, which may end in necrosis of the cells, where the action is less marked. Poisoning by these substances may prove fatal so rapidly that microscopical examination will show only degeneration and necrosis of the liver cells.

Cases in which death occurred after a longer period of illness showed the production of fibrous tissue in the liver, and in a few of the most prolonged of the fatal cases compression atrophy by fibrous tissue of the liver substance which remained was evident on microscopical examination.

This atrophic change was very pronounced in the first case described in this country of poisoning by tetrachlorethane, brought about by the inhalation of the vapour from the "dope" used in the varnishing of aeroplane wings, which contained this substance as one of its ingredients. No cases of dope poisoning occurred after the exclusion of tetrachlorethane from the varnish.

The duration of the illness in this case was about two months. The liver was much reduced in size, and weighed 32 oz. On microscopical examination of the organ the remaining liver tissue, which had either been unaffected by the poison or had recovered from the effects, showed an attempt at compensatory hypertrophy, restricted by a new formation of fibrous tissue which traversed the organ, and which had produced marked pressure atrophy of the liver cells.

In four other cases of poisoning by tetrachlorethane which I had an opportunity of examining the course of the illness was more rapid. These livers were even more reduced in size than in the first case, but they showed only the destructive effects of the poison on microscopical examination.

In a case of fatal poisoning by dinitrobenzene the liver showed a coarse cirrhosis not unlike the common variety of multilobular cirrhosis, but differing from it in the irregular distribution of the fibrous tissue. There was much pressure atrophy of the liver cells in this case.

I have examined seven fatal cases of poisoning by T.N.T., in all of which the illness was of short duration. The liver was reduced in size in all the cases, very markedly so in some of them, but on microscopical examination the predominant change was a fatty degeneration and necrosis of the liver cells; only in two of the cases was fibrosis commencing in the organ. Other observers who have investigated cases which ran a more prolonged course have described extensive fibrosis in the liver.

It is probable that many persons who had a severe attack of T.N.T. poisoning and who recovered have received permanent damage to the liver from the production of scar tissue, interfering with processes of compensatory hypertrophy and bringing about further atrophy of the liver tissue by its contraction.

We shall probably see in the *post-mortem* room for some time to come irregularly scarred livers in cases where there is a history of a previous attack of T.N.T. poisoning, and cases may even occur in which a more widely distributed fibrosis of the organ has brought about a progressive atrophy by its contraction, a condition comparable to atrophic cirrhosis, and in which death is the result of an attack of T.N.T. poisoning which occurred a long time previously.

Finally, I have two plate specimens of another toxic process in the liver, namely, salvarsan poisoning. For the loan of these specimens I am indebted to Dr. T. H. G. Shore, Curator of the Museum at St. Bartholomew's Hospital, who obtained them at a base hospital in France.

The patients from whom these specimens were obtained had received very concentrated treatment, one having had eight doses of neo salvarsan within three weeks. They survived the treatment for several weeks, and at autopsy the livers were much reduced in size and weighed only 25 oz. and 28 oz. respectively.

In these preparations liver tissue is present only in the dark green areas which are coloured by retained bile pigment. The areas of liver tissue are surrounded by fibrous tissue, and the rest of the preparations, which show variations in colour from light green to a greenish-brown and a fawn colour, consists of fibrous tissue which encloses and here and there replaces the blood capillaries of the lobules from which all liver cells have disappeared. Atrophic changes are present in the remains of the liver tissue as a result of the contraction taking place in the surrounding scar tissue.

In these remarks attention is directed to the processes of atrophy occurring in the liver as a secondary process in cases where the primary disease was an inflammation or a degeneration.

I have referred only to one group of atrophies of the liver in which the immediate causative agent is the pressure of contracting scar tissue. I have not dealt exhaustively even with this group, but the examples which I have given show how frequently atrophy is encountered in the liver, and how the function of the organ may be impaired, with serious and in some cases fatal results under such conditions.

I am indebted to the authorities of St. Bartholomew's Hospital for the loan of the museum specimens which have illustrated my remarks.

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For the purposes of this discussion I have reinvestigated all the cases of atrophy of the liver which I have seen *post mortem* in Leeds during the past ten years. They number 16 in all—namely, 4 idiopathic atrophies, 11 due to trinitrotoluene poisoning, and one occurring in a case of syphilis which had been treated with galyl. The four idiopathic cases were met with in the course of 4,770 consecutive *post-mortem* examinations—an incidence rate of barely 0.1 per cent. I have also traced the after-history of 17 cases of toxic jaundice due to trinitrotoluene which were treated in the wards of the General Infirmary at Leeds in the years 1916 and 1917.

Etiology.

Of the four idiopathic cases, a possible etiological factor was definitely present in one only—a woman of 53, who had gall stones and acute cholecystitis, for which she was operated on three days before death. Her symptoms—abdominal pain, vomiting, and jaundice—had commenced four weeks previously. The other three cases were in boys aged 6, 8, and 13 years respectively. One was an acute case, with jaundice of only two weeks' duration, whilst the others were of subacute or chronic type. In one of them the severe jaundice had been thirty weeks previously, and at the time of his death, which was due to an intercurrent pneumonia, only a slightly icteric tint of skin remained. In all four the previous state of health had apparently been good, and in none was there any evidence of syphilis.

In the eleven cases occurring among workers in trinitrotoluene the etiological connexion with that substance seems clear, although the actual mechanism of production may be in doubt. Benjamin Moore[1] considers that the liver changes are probably always secondary to changes in the blood (production of methaemoglobin, increased haemoglobin metabolism, greatly increased demand for functional activity of liver and bone marrow), but does not deny the possibility of a direct hepatotoxic action. In my own series of fatal cases profound red cell changes were certainly present in several, but in three there was a normal red cell and haemoglobin picture up to the time of death. I am therefore disposed to lay considerable stress on a direct toxic action on the liver cell. The chief difficulty is to explain why only a very limited number of the workers employed were attacked. This may be partly due to the fact established by Moore and Wyon ([illegible]), that some people, probably a considerable proportion, absorb trinitrotoluene readily through the skin, others only very slightly, but it is insufficient to explain the difference altogether. Two alternatives remain: either there is an additional unknown factor or factors, or we must assume that in certain people there is a natural intolerance or susceptibility to trinitrotoluene on the part of the liver cell. In respect of the former I was unable to arrive at any conclusion, although pregnancy and syphilis could apparently be ruled out.

The remaining case in this series, that which followed galyl treatment of syphilis, has already been discussed elsewhere (Stewart, Vining, and Bibby[2]), and the opinion then expressed was that the liver atrophy was due to the drug rather than to the syphilis. The suggestion was also made that considering the close resemblance to trinitrotoluene atrophy the benzene fraction and not the arsenic was possibly responsible. Foulerton[3] had previously suggested that "the toxic effects of certain organic arsenic compounds may be influenced materially by the benzene constituent."

Morbid Anatomy.

Further study of the material at my disposal, as well as of the literature of the subject, has only served to impress me the more with the essential similarity of the lesion in cases of idiopathic atrophy, and in those due to poisoning by trinitrotoluene. In both there are the red areas of complete, or almost complete, destruction of liver cells, and the yellow areas of persistent liver tissue, which, in subacute and chronic cases, often show well marked regenerative hyperplasia. The colour of the red areas is due in part to intense vascular engorgement, in part to free haemorrhage into the interstices of the persisting supporting framework; that of the yellow areas partly to fatty changes, much more to biliary stasis and staining. The differentiation of the red and yellow areas is best seen in subacute and chronic cases.

It is exceptional to find cases of trinitrotoluene atrophy running the rapid clinical course which is familiar in idiopathic acute yellow atrophy; they are more often of subacute type, and consequently show *post mortem* the well-marked differentiation of the red and yellow areas referred to above. In my trinitrotoluene series there was but one really acute case, that of a young woman of 21, who only lived a week from the first onset of symptoms. The liver weighed 13½ oz. and was mainly composed of red tissue.

In general the more acute the case the smaller is the liver found to be on *post mortem* examination.

Table I. (*Cases of Trinitrotoluene Atrophy (Adult Female Workers only).*

Duration of Jaundice. Weeks.	Weight of Liver. oz.
1	13½
3	20
3	24
7	24
7	29
8	32

This is probably merely an index of the fact that in the most acute and rapidly fatal cases very large areas of the liver undergo cytolytic disintegration ("red" atrophy), while in those which survive for a few weeks the size of the liver is doubtless increased by regenerative hyperplasia of the yellow areas.

I have noticed that as a rule very little free fat is to be seen in the red areas, where the liver cells appear to undergo a rapid autolysis. If fatty changes take place at all it must be at a very early stage, and it is probably at most quite a minor phenomenon. In the acute trinitrotoluene case above mentioned, for example, it is difficult to conceive of the small red liver of 13½ oz. weight having within a week gone through a preliminary fatty stage. Fatty changes develop, however, in those liver cells which have been less severely damaged by the original intoxication, and are best seen in some of the less acute cases. Even here the fatty changes are by no means extreme. This is contrary to what is seen in, for example, the extreme fatty liver of phosphorus poisoning, where fatty changes of degenerative type are strikingly present throughout the whole organ from a very early stage, and where widespread cellular disintegration develops subsequently. These variations are associated with notable differences in size of the organ—namely, great reduction in cases of atrophy, definite enlargement in most cases of phosphorus poisoning. Wells[4] has compared the fat content of the liver as given by different observers (1) in the healthy organ, (2) in acute atrophy, and (3) in phosphorus poisoning, with the result shown in Table II.

Table II. *Fat Content of Liver in Various Conditions.*

	Percentage of Fat.
Normal liver	3 to 5
Acute atrophy	[illegible] to 8.7
Phosphorus poisoning	[illegible]

In cases which survive the acute stage—that is, in which the toxic action on the liver has been less severe, so that considerable areas escape complete autolysis—a further series of changes take place. The red areas become the seat of an active fibroblastic proliferation, with much plasma cell and lymphocyte infiltration, so that they become quite pale from devascularization and absorption of effused blood. At the same time there is usually great proliferation of bile canaliculi, spreading outwards from the portal tracts. In one instance there is, I think, definite evidence that this process has gone on to the formation of actual functioning hepatic cells. This is the chronic case in a boy, already referred to, where the initial lesion occurred thirty weeks before death.

Subsequent History in Cases which Recover.

In cases which ultimately recover, the regenerative changes presumably result in the formation of sufficient active liver tissue to restore, more or less, the functional integrity of the organ.

I have followed up seventeen patients who were in the Leeds General Infirmary in the years 1916 and 1917 suffering from toxic jaundice due to trinitrotoluene. Eight of these were very deeply jaundiced, and three of them were so seriously ill, with well-marked cerebral symptoms, haemorrhages or other grave manifestations, that for a time their recovery was despaired of. All are alive and in reasonably good health at the present time; at least all are able to carry on their daily work without difficulty. Practically all of them suffer from a certain amount of epigastric pain and a few have occasional bilious attacks. None have been jaundiced at any time since they recovered from their original illness.

That the more seriously ill of these patients had a similar hepatic lesion to that found in patients who died, there can, I think, be no reasonable doubt. I would go farther and suggest that in all cases of definite toxic jaundice due to trinitrotoluene the liver was the seat of comparable atrophic changes, though possibly, as regards the more advanced destructive lesion, of quite limited extent. In the present series the case of atrophy following galyl treatment of syphilis may be cited in support of this hypothesis. There the attack of jaundice, following a course of galyl, was quite transient, but ten weeks later, on the death of the patient under an anaesthetic, a typical red atrophy of limited extent was found. The rest of the liver showed only fatty changes and some round-cell infiltration of the portal tracts. This patient was almost certainly making a good recovery from the hepatic atrophy when the administration of a general anaesthetic led to a fatal issue. If this view is correct, it follows that quite mild grades of acute yellow atrophy occur in which clinical symptoms are slight and recovery the rule. Possibly even certain cases of so-called simple catarrhal jaundice are really of this nature.

Summary.

1. Atrophy of the liver is a toxic lesion in which the whole organ is more or less seriously injured. Certain portions are damaged so severely that the hepatic parenchyma undergoes more or less complete cytolytic disintegration while other parts survive, and the stage at which death takes place depends on the amount of tissue so surviving.

2. Fatty changes are not a prominent feature in the areas which undergo necrosis, but are often present in the areas which survive. They are best seen in the so-called subacute cases—that is, after an interval of a few weeks or months.

3. In cases which recover, whether partially or completely, the persisting parenchymatous areas undergo regenerative hyperplasia, while often showing a certain amount of intervening portal cirrhosis and round-cell infiltration. The red areas of cytolysis and haemorrhage, on the other hand, become the seat of marked fibroblastic proliferation and round-cell infiltration, so that in course of time they become pale, firm, and sclerotic. They often show well marked proliferation of bile canaliculi along the old portal tracts, and in chronic cases true functioning hepatic cells may be formed therefrom.

4. The acute, subacute, and chronic atrophies of the liver so-called constitute a single morbid entity, and the different appearances seen *post mortem* are dependent on the stage of the disease at which death takes place, this in turn depending on the severity of the initial lesion.

5. The lesions in the idiopathic atrophies and in those due to poisoning by trinitrotoluene and arsenobenzene are apparently identical. The lesions in phosphorus poisoning are of a different order, and are characterized primarily by extreme fatty degeneration, which may subsequently go on to widespread cytolysis.

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J. W. McNEE, D.S.O., M.D.Glas.

WHAT I have to say deals with the subject under discussion in an indirect way, but brings out some points of interest in the light of previous contributions to this discussion. For a considerable time I have been interested in the method of production of one of the chief signs of acute liver atrophy, namely, jaundice. This work has been chiefly carried out by experimental methods. During the war I was also able to examine the liver in human cases of a special form of toxic jaundice, due to spirochaetal infection—namely, spirochaetal jaundice, or Weil's disease. In this disease the jaundice is not due to any biliary obstruction, nor is it of haemolytic type. It is due to toxic damage to the liver cells themselves, so that their function is deranged. The histological changes found vary greatly, and the severity of the jaundice seems to bear no direct relation to the intensity of the changes found in the liver lobules. In some cases, where jaundice is very striking in degree, hardly any gross changes are to be found in the liver lobule. In other cases there is great dissociation of the liver cells, which come to lie in all directions, and have no longer the appearance of columns. Many of the cells under such circumstances are necrotic.

In other cases again, following the necrosis, great proliferative changes occur in the liver cells which survive, and mitotic figures are very numerous in the sections.

It is important to note, in comparing these changes with those of the various types of liver atrophy described, that no fat can be found in any part of the lobule, even in cases where necrosis is extreme.

Before concluding I wish to emphasize the fact that we know really very little about some of the normal functional activities of the hepatic cells. Even the finer anatomical structure of the liver lobule is far from clear. Some important work on disordered function of the liver, which may have a bearing on various hepatic diseases, has been done recently by French workers (Brulé, etc.) on so-called "dissociated jaundice." It has been found, for instance, that in some cases bile pigments may circulate in the blood and produce jaundice, while the bile acids and salts continue to be excreted in the normal way. On the other hand, the bile acids and salts may enter the blood stream without the bile pigments, so that the colour changes of jaundice are absent.

Colonel WILLIAM HUNTER, C.B. (London), said that he had not prepared a paper, but he had had experience of acute yellow atrophy in epidemic jaundice among troops. After his return to England he had opportunities of investigating the condition as it occurred in salvarsan and delayed chloroform poisoning. He would like to say a few words on the subject of fatty degeneration in acute yellow atrophy. He did not agree with Dr. Foulerton that the fatty changes were due to infiltration. In his opinion the fat was a product of cell degeneration, and due to the unmasking of fat which was previously present in a soluble form. What had struck him most forcibly in his experiments on animals and in *post-mortem* examinations performed on cases of delayed chloroform and T.N.T. poisoning was the sudden simultaneous action of the poison on the parenchyma of the heart, liver, and kidneys, and indeed of every cell in the body. These simultaneous fatty changes could not be explained by any theory of infiltration. The continuation of life was dependent on the proper functioning of the brain, heart, and liver. The lesion, if severe enough, would prevent the liver cells from carrying out their function. They would then undergo digestion by their own ferments, and this would account for their universal destruction. Portal blood would pass unchanged into the general circulation, carrying with it toxins which should have been metabolized by the liver, and this, along with the products of liver degeneration, caused the toxic symptoms of the disease.

Openers' Replies.

Dr. **RUTHERFORD** said that Dr. Spilsbury had referred to atrophy from contraction of fibrous tissue in atrophic cirrhosis with failure of reaction. In the cases of multiple nodular hyperplasia, on the other hand, reaction was prominent both in parenchyma and interstitium. The intense fatty infiltration in the kidney in Dr. Foulerton's animal experiments appeared striking: as in idiopathic cases of acute liver atrophy, the change usually met with was an intense degree of cloudy swelling, visible fat as demonstrable by the ordinary fat stains not being greatly in evidence. Professor Stewart's cases illustrated well the morphological continuity of the process, and also the very varying etiology of a condition which appeared from the morbid anatomy point of view to be a single morbid entity. Possibly light might be thrown on the etiology of "idiopathic" cases, especially those more prolonged and with recurrent attacks of jaundice, by a study of the intestinal flora other than the well recognized pathogenic bowel organisms.

Recurring attacks on the liver of subacute intensity, such as occurred in some of the multiple nodular hyperplasic cases, might be related to a bacterial cause varying in pathogenic capability under the varying conditions that obtained in the bowel. As regards distribution and the sparing of parts in relation to the capsule, the question arose, in those showing a surviving zone immediately subjacent to the peritoneal investment, as to whether this were related to the peritoneal secretion. It might also indicate infection proceeding from the hilum outwards, and in some of the chronic cases the arrangement of hyperplasic nodules in clusters in relation to the larger portal tracts supported the latter hypothesis.

Dr. **JAMES MILLER**, in replying, expressed regret that there had not been more criticism regarding some controversial points which had been purposely raised. The question of nomenclature was an important one. Were the more chronic cases to be known as cirrhosis, or was the term multiple nodular hyperplasia to be used? He was inclined to think that cirrhosis did not properly suggest the real nature of the pathological process. While the term multiple nodular hyperplasia was probably not the best, it was in actual use and did describe the appearance and the predominant underlying change. Another point upon which he would have wished to hear the views of those present was the mode by which the liver regenerated itself. Did the large number of bile-duct-like structures indicate regenerative change? If so, was it effective? Did the bile ducts produce liver tissue or did they merely link up with liver columns developing from parenchyma cells which survived the general destructive process? Speaking for himself, he was quite clear that the duct represented an attempt to form liver substance, but there could be little doubt that most of the functioning liver tissue came from the liver cells themselves. In the cases which manifested the earlier regenerative changes all gradations between liver cells and bile ducts could be made out, and it was almost impossible to decide the relationship which they bore to one another.

DEMONSTRATION

THE LIBERATION OF ENERGY DURING THE INTERACTION OF HYPOCHLOROUS ACID AND LIVING AND DEAD ORGANIC MATTER.

BY

SIR G. SIMS WOODHEAD, K.B.E., M.D., V.D.,

[illegible]

[illegible]

DURING a prolonged investigation bearing on the sterilization of water by means of hypochlorite solutions I was early struck by the remarkably selective activity of the hypochlorites as bactericidal agents. Of the suggested explanations of this activity none appeared to me to be satisfactory. I arranged, therefore, to carry out a series of experiments, devised with the object of determining the mode of action of this group of powerful bactericidal agents. The outcome of these I hope to publish shortly.

Liveing and Dewar, in their records of spectroscopic investigations on the flame of the electric arc, draw attention to the fact that though the mean (measurable) temperature of the flame is comparatively low there are, as determined by spectroscopic indications, individual molecules in the flame in which the temperature is probably very much higher than the mean temperature recorded.[1] May we not have some similar "energy evolution" and distribution or localization in mixtures and solutions in which we are unable to record high temperatures?

Energy in the form of heat is set free when bleaching powder in solution is mixed with certain organic nitrogenous substances and micro-organisms in concentrated solution and emulsions. Can any relation between these be demonstrated and is the process comparable in all cases?

Demonstration.

The bleaching powder solution was mixed in turn with, amongst many other substances—

(*a*) Urea solution,
(*b*) A protein—egg albumen in solution,
(*c*) Yeast in emulsion.

The mixture was in each case made in a Thermos flask, kept in constant motion by a small glass agitator electrically driven. Into this flask was fitted an "electrical resistance" thermometer,[2] by means of which the heat evolved was determined, approximately at any rate, and recorded on a Darwin's thread recorder (see Chart).[3] It was not possible, of course, by these means to measure the whole of the energy evolved—some of it being used up in doing work—but a fairly accurate record of the amount of heat set free and remaining after energy had been used up in doing work was obtained by noting the rate and extent of the rise of temperature (mean).

If the analogy with the mean and localized temperature in spectroscopic work holds good, it may be accepted that the mean temperature attained when the hypochlorite acts on urea in a concentrated solution will be higher than if the urea be in dilute solution, the volume of water to be heated being less. Moreover, we should expect the liberation of energy to be almost instantaneous, the energy being liberated at every point where the urea is brought into contact with the hypochlorite in solution; this should be immediate; such is found to be the case (see E, F, and G, chart and table).

In this chart are given the curves from which the accompanying table has been drawn up. Here the horizontal line under each curve represents the temperature at which the experiment starts. Each dot of the upper curve represents a point at which a record of the temperature attained is marked on the chart. Where the dots are wide apart, each being separated from the other by a space representing a period of one minute, the rise of temperature is rapid. As the intervals become less, a slower rise is indicated. Finally, as seen in many of the curves, we have a continuous line indicating a very slow rise or commencing fall owing to some slight loss of heat by radiation. Some allowance being made for lag of the thermometer it is obvious that the development of heat and its distribution throughout the 500 c.cm. of water must go on very rapidly. In the experiments with yeasts, where the protein can be attacked but slowly, the rise of temperature is considerably lower than in the egg albumen experiments, in which the protein is more accessible, and lower still than in the urea experiments in which the nitrogen can be attacked instantaneously. In experiment A there is a rise of mean temperature of nearly [illegible] in the first minute, [illegible] in the second, [illegible] in the third. After that a very gentle curve up to [illegible]. In experiment C, there is a rise of [illegible] during the first minute, [illegible] in the second minute, [illegible] in the third minute; then the curve corresponds very closely to the latter portion of curve A and B. Curve D corresponds very closely to curve C except that there is a [illegible] [illegible] [illegible] portion of the line, from which it may be inferred that [illegible] [illegible] [illegible]. In curves E, F and G, [illegible] [illegible] [illegible] [illegible] line [illegible] after the [illegible] temperature.

When white of egg is acted upon the reaction is slower, as the breaking down of the protein must first take place, but the energy eventually set free and transferred to the water is greater in amount (see C and D, chart and table). Similarly, when yeast is acted upon by the hypochlorite (see A and B, chart and table) [illegible] [illegible] [illegible] either of the other series of experiments.[illegible] In all

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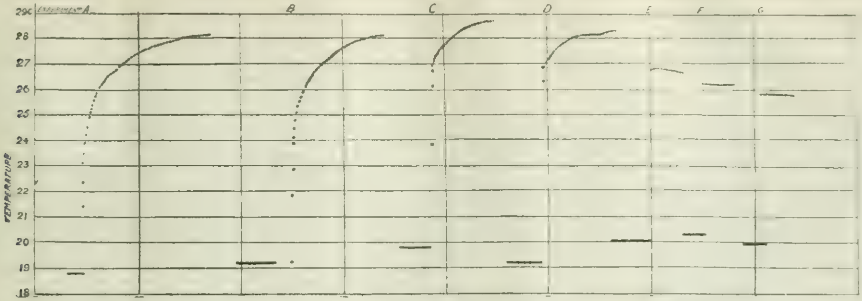
[illegible]



Temperature reactions obtained on the addition of 1 per cent. hypochlorite (bleaching powder) to yeast, white of egg, and urea. The mixture was in each case made up to 300 c cm.

Experiment.	A.	B.	C.	D.	E.	F.	G.
Organic matter used in experiment	Yeast 5 per cent.	Yeast 5 per cent.	White of one egg	White of two eggs	Urea 6 per cent.	Urea 1 per cent.	Urea 1 per cent.
Maximum temperature in (°C.) attained	28.1	28 1	28.7	28.4	26 8	26.2	25.8
Rise of temperature (°C.) during experiment ...	9.5	9.0	9.0	9.0	6.8	6.0	5.8
Number of minutes in which maximum temperature was reached	46	46	26	26	[illegible]	2	2
Calories per gram available Cl	950	900	900	900	680	600	580

three sets of experiments, but especially in the urea experiments, some of the energy is used up in doing work of recombination, but a large proportion manifests itself in the form of heat capable of raising the temperature of the considerable volume of water in which the reaction takes place. This, however, provides no measure of the temperature attained at certain points, especially where ferment-producing organisms, such as yeasts, are present. It gives a general indication as to the energy set free, but little direct information as to the amount or concentration of energy liberated and acting in the fields in which the most active processes are going on—that is, with yeasts, *Bacillus coli communis*, etc.—in the organisms or at their surface in the presence of the enzymes formed; or, again, in connexion with certain protein or nitrogen-containing molecules.

As we now know, the amount of hypochlorite required for the sterilization of water depends directly upon the amount of oxidizable organic matter, dead and living, present[4]—that is, upon the amount of the sterilizing agent that ultimately can come into direct contact with, and react upon, the living organisms. Only when, but as soon as, a sufficient amount of hypochlorite can act upon the intestinal organisms (*Bacillus coli communis*, typhoid bacillus, cholera bacillus, etc.) are these organisms killed.

The micro-organisms, when present in water in small numbers, are scattered relatively wide apart, and it is obvious that the energy evolved from the small amount of hypochlorite added is not sufficient to raise the temperature appreciably of the large volume of water in which it acts, though developed locally in contact with the above non-spore-bearing organisms it is sufficient to ensure their death almost instantaneously.[5]

Through what phase or transformations the energy may have gone before it manifested its presence in the form of heat I am not yet in a position to demonstrate, but it may be pointed out that if in a darkened room a solution of bleaching powder be run into a flask containing urine a distinct phosphorescence may be seen, if care be taken to rest the retina for twenty minutes or half an hour in the dark room before attempting to make the observation. In this, a reaction we anticipated from our other observations and from those made on pyrogallol by E. Newton Harvey,[6] we have evidence of a rapid transformation of ultra-violet light wave energy through energy of visible wave lengths to the non-visible heat rays, the hypochlorite acting on the organic nitrogenous matter contained in the urine and setting free energy of different types or energy passing through different phases.

Into the question as to which of these phases of energy we owe the sterilization in any specific case I cannot enter at present, but it appears probable that in each instance the action is of greater intensity because so localized, and that the energy of shortest wave length of those examined is the most active bactericidal agent. Reading the accounts of Professor J. M. Beattie and Dr. Lewis's experiments on the sterilization of milk by means of the passage through it of an electric current,[7] I am led to the conclusion that here, as in my own experiments, it is not general or mean temperature that decides sterilization, but the energy set free and acting *in situ* on the micro-organisms contained in the milk.

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A CASE OF OSTEOMALACIA TREATED BY OÖPHORECTOMY.

BY

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THE curative effect of the removal of the ovaries in osteomalacia was discovered by Fehling by observations made on patients who had undergone Porro-hysterectomy for contracted pelvis, but the opportunity of treating this disease is so rare in this country that it is of interest to record individual experiences.

Mrs. A. S., aged 38, has always lived in the West Riding of Yorkshire and has always had good and sufficient food and average healthy surroundings. Her sister, who is a well-developed florid woman, says that the patient used to be in as good condition as herself. A. S. weighed 10 st. 4 lb. and her height was 5 ft. 5 in. She worked as a weaver from 14 to 31, and had no serious illness. She married at 31 and has had four pregnancies. The second child was born five and a half years ago without any dystocia; eighteen months ago she had an abortion in the second month of gestation. After the birth of her second child she did not regain her strength properly. She lost weight and had pains all over her, which she thought were rheumatic, and she was able to walk only with difficulty. After a time she got much better and at Christmas, 1916, could walk well. Then she fell off again. About Easter, 1919, one collar bone broke spontaneously and the other at Whitsuntide. At this time also she fell downstairs, and has never walked properly since.

She became pregnant about the end of 1918, and in February, 1919, her left leg began to swell. She had to take to her bed in June, her back being swollen and painful. She seems to have developed albuminuria and anasarca. In July she was admitted to the Maternity Hospital under the care of Dr. Rhoda Adamson. At that time the urine was nearly solid on boiling. There was a mitral systolic bruit and anasarca up to the scapulae. There was a bedsore over the sacrum, and the left leg was very painful. She had spinal curvature, and the contraction of the pelvis and the rostration of the symphysis were very marked. Labour was induced, but craniotomy was needed on account of the lateral contraction of the pelvis.

Condition on Admission.

On August 8th, 1919, she was admitted to the Leeds Infirmary under Dr. G. Watson, who kindly transferred her to my care. The albumin had disappeared, but she was in a weak, distressing, and most miserable condition. The osseous system showed many anomalies. The pelvis was rostrated (distance of anterior superior spines, 8½ in.; intercristal distance, 9 in.; external conjugate, 6¾ in., P.V.). There was marked approximation of the pubic rami, the promontory was reached with difficulty, and examination was painful. There was kyphosis in the upper part of the spine and lordosis in the lower. There was angular displacement in both clavicles at the seat of fracture. The chest was deformed. There was fracture of the upper part of the left femur with about 2 in. shortening.

The results of x-ray examination were especially interesting. The bones were so little opaque to the rays that it was impossible to obtain a good skiagram. The shape of the osteomalacic pelvis was obvious. There was a well marked fracture of the upper end of the left femur with upward displacement of the lower fragment. Several fractures could be made out in the pelvic bones and another in the right tibia.

Operation.

On September 15th, 1919, I removed the ovaries. They were normal in appearance, and the uterus had undergone normal involution. On October 15th she was very much better; she was bright and cheerful; all pain had gone, and she was able to rise from bed and hobble a short distance with a stick. The urine was normal.

Condition Twelve Months later.

The patient attended at the infirmary on September 15th, 1920. She seemed very much better in all respects. She was bright and cheerful, and had gained fifteen pounds since operation. She was free from pain, and able to walk some distance without crutches, although the shortening of the leg makes her lame. The skiagram shows that the bones are certainly more opaque than at the last examination, and there seems to be some new bone formation at the iliac crest.

I am indebted to Miss Wheatley for assistance in the clinical records of this case.

It is said that 80 per cent. of osteomalacia cases recover under this treatment. Left to themselves the women, who are as a rule very prolific, grow worse with each succeeding pregnancy, and ultimately die from exhaustion, bedsores, and so on, or from phthisis or other intercurrent disease. It is said that occasionally the disease affects males, but I have never heard of such a case in this country.

A CONTRIBUTION ON BLOOD PRESSURE IN GRAVES'S DISEASE.

BY

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LATE R.N.V.R.

Owing largely to the results of such workers as Berry in England, Dunhill in Australia, and the Mayos in America, the surgical treatment of Graves's disease is coming more and more into prominence.

The question of the operative risk in Graves's disease is one that requires most careful consideration, as operations on exophthalmic goitres are usually regarded as particularly dangerous; though with increasing experience actual figures show that the mortality is little, if at all, above that of any [illegible] operation. Every case must be judged on its merits, and, in addition to such general considerations as the type, stage, and the severity of the disease, it is important to gauge accurately the condition of the heart and the blood pressure. The cardio-vascular condition very largely assists one in determining [illegible] whether an operation can be undertaken without undue risk, [illegible] the nature of the operation—for example, whether preliminary ligation should be performed or immediate excision of part of the gland be undertaken.

In referring to the literature one is impressed with the great diversity in the records of different observers, some regarding a high tension as typical, others a low, while still others consider the condition to be inconstant at any one period of the disease. The apparent divergence is probably explained by the stage at which the observations are recorded, and curves showing the tension over long periods are conspicuously wanting.

Henry Plummer[2] finds an increased pulse pressure in hyperplastic toxic goitres. Hirschfelder[3] in his most recent work quotes Pressaft that the maximum pressure is usually high, the minimum normal, the pulse pressure consequently raised, and he publishes a table from Krause and Friedenthal,[4] showing readings in ten cases of Basedow's disease in which the maximal pressures ranged between 106 and 158 mm. mercury, the minimal between 62 and 66. Bain[5] states the blood pressure is usually high. Scott[6] finds it varies from hour to hour and day to day, and is often slightly raised, though it may be nearly normal or even much below. W. H. Cowing[7] points out the difference in opinion, some claiming high, others low pressures as prevailing, but in such cases as have come under his observation there has been but little variation from the normal pressure shown. Janeway[8] has, however, found that a moderately high blood pressure exists, but is inclined to think the extreme nervousness of exophthalmic goitre cases may account for it. Percival Nicholson[9] states that the pressure is variable, but as the disease is often accompanied by a hypertrophied heart, the systolic pressure is often raised; he quotes as typical a systolic from 140–160 mm. mercury with a diastolic from 90–110 mm. and a pulse rate of 120 or more.

Spiethoff[10] is very emphatic in saying no constant changes in blood pressure show in lighter forms of Graves's disease, but in severe cases both high and low pressures occur. Donath also records varying pressures. Eve[11] has recorded a case, terminating in acute thyroid atrophy, in a woman aged 40, with a very variable blood pressure, rising from about normal to 240 mm. mercury, when its measurement became painful and caused petechial escape of blood from the tissues of the forearm. Professor W. T. Halstead[12] says that those cases associated with "thymus persistans" show vagotonic symptoms, among which low blood pressure may be mentioned. Herbert French[13] states that an abnormally low blood pressure of moderate degree is apt to accompany Graves's disease. Hensen, Gross, Bing, Feldern, and Jackson consider the systolic pressure high, and are supported by Taussig,[14] who finds an increased pulse pressure, and draws an analogy between the cardio-vascular phenomena in Graves's disease and those of aortic regurgitation. He finds the systolic pressure greater in the leg than in the arm in both diseases.

Turning to the experimental side of the question, we find certain observers recording a fall in tension produced by injecting thyroid.

Hale-White[15] finds that the blood pressure falls when a decoction of the gland is injected, and states that the fall is vasomotor, for the heart is not affected. G. Oliver[16] has shown that thyroid juice or other preparations of thyroid "seem to possess a special tendency to increase the calibre of the radial artery" in the human subject. Hutchinson,[17] on the other hand, found no depression from injecting colloid alone, but a decided fall upon injecting extractives; upon separating these latter into the organic and mineral constituents he found the fall in the main produced by the former. Further, it has recently been shown that the therapeutic effects of the iodides in reducing arterial tension are probably the result of an increased output of thyroid substance produced by an increase in autolysis in the gland, consequent upon removal of the inhibitory effect of unsaturated fatty acids by their saturation with iodides.[18] In this connexion it is interesting to note a case of hyperthyroidism described by Rendle Short,[19] and produced by iodoform poisoning following application of this substance to an absorbing surface.

The foregoing all refer to normal thyroid secretion. What is the condition in exophthalmic goitre, however?

R. McCarrison,[20] believing that changes in the thyroid secretion are both quantitative and qualitative, considers that a substance is produced in the gland in Graves's disease which has a powerful action in reducing blood pressure.

[illegible][21] showed that the essential difference between the action of extracts of simple and exophthalmic goitres was that extracts of the latter produced a more marked fall in blood pressure. These results were confirmed by [illegible], and important observations were made by Blackford and Sanford.[22] Experimenting on dogs and using forty-six exophthalmic goitres, these authorities found that from quarter to half a minute after injecting saline extractives of the [illegible] a [illegible] fall in blood pressure, averaging about [illegible], occurred; that this drop was greater than that caused by [illegible] the extract of [illegible]; that the [illegible] pressure recovered usually two or three minutes after, [illegible] was delayed for [illegible] in some cases, and that a [illegible] to a second injection was established in each case. They found that simple goitres, for example, and normal [illegible] had no such [illegible] effect on the tension, and stated that normal thyroid [illegible] much larger dose than that from the [illegible] to produce depression, [illegible] the injection of extracts of [illegible] the suggestion that the depressor action of extracts of exophthalmic goitre [illegible] "was not [illegible]." They have further demonstrated that atropine did not abolish the action of the depressor substance from the exophthalmic glands, and that the extract did not behave physiologically like cholin, a well-known blood pressure reducing substance, nor did it increase vagus irritability, the depression being caused chiefly through vaso-dilatation, aided by some diminution of the output. Blackford and Sandford have further found a powerful depressor substance in the blood serum of patients with Graves's disease, and, finding a "crossed tolerance" existing between extracts of hyperplastic goitres and this substance, assumed it to be identical with the depressor substance from the gland.

It would appear, therefore, that the thyroid activity in Graves's disease results in production of a depressor body.

From the observations of one of us (J. S. G.), in some cases extending over twenty years, and including more particularly those cases operated on by Berry and Joll, it would appear that the blood pressure during the greater part of the disease was low. The following table of ten cases occurring in women between the ages of 23 and 48 serves to illustrate this. In each case the blood pressure is below the physiological value we should expect, this latter figure being obtained from the formula (Age + 100) —5 per cent. It must be insisted that these cases are not in any way selected, but taken at random from records including cases of all types of severity, from the "formes frustes" to the most toxic types.

Patient.	Age.	Blood Pressure.	Blood Pressure Expected in Health (approx.).*	Difference.
		Mm. Mercury.	Mm. Mercury.	Mm. Mercury.
1	23	110	117	− 7
2	27	90	121	−31
3	27	80	121	−41
4	30	94	124	−30
5	31	94	124	−30
6	34	120	127	− 7
7	35	100	128	−28
8	36	125	129	− 4
9	37	80	130	−50
10	48	125	141	−16

* Obtained by formula (Age + 100) − 5 per cent.

In these cases the fall in blood pressure will be seen to vary between 4 and 50 mm. The disease was well established, and the histories showed that the onset had been gradual; we believe that in each case the pressures shown were taken in the second stage of what we consider to be a typical triphasic variation occurring in the course of Graves's disease. It might be stated that in Case 2 the onset was gradual, but accelerated by the birth of a child. In Case 3 there was a family history, and the onset was gradual subsequent to shock. Case 8 was chronic but characterized by a marked exacerbation.

In our male series we find the incidence to be only one-tenth that in women, the onset to be often of a more acute nature associated with some violent shock, and, further, among the male cases it was more common to find evidence of pre-existing cardio-vascular degeneration.

Concerning male cases, it is interesting to note that while many cases of acute onset occurred in the armies during the war, inquiries by one of us (L. C. R.) at R.N. hospitals at Queensferry, Chatham, and elsewhere failed to reveal a single case after the battle of Jutland or other naval action, and Graves's disease even of insidious onset seems to be extremely rare among sailors. A search through the literature, moreover, has only revealed four cases of doubtful hyperthyroidism.[24]

The male cases show more variation in the state of the tension than do women patients. In the ten cases of the latter, the blood pressure was in each case below normal to an extent varying between 4 and 50 mm. mercury. In the male series, however, one case shows no alteration from the physiological tension we should expect, three show a depression of 7 mm., while the remaining six an increase of tension between 2 and 30 mm. This increase was in practically every case to be explained by complications such as pre-existing arterio-sclerosis or ventricular hypertrophy—for example, in the table Cases 8, 9, and 10 all had definite arterio-sclerosis of older standing.

Patient.	Age.	Blood Pressure.	Blood Pressure Expected in Health (approx.).*	Difference.
		Mm. Mercury.	Mm. Mercury.	Mm. Mercury.
1	23	123	123	0
2	25	118	125	− 7
3	26	150	126	+ 24
4	28	130	128	+ 2
5	31	124	131	− 7
6	33	140	133	+ 7
7	38	150	138	+ 12
8	47	140	147	− 7
9	52	160	152	+ 8
10	70	200	170	+ 30

* Age + 100.

As mentioned previously, the histories of the male cases were frequently of different type from those among women, and six out of ten shown in the table gave a history of acute onset, which may be exemplified in Cases 4 and 7. Acute Graves's disease developed in the latter case after an army action, while patient 4 was a farmer and developed acute symptoms after a fire. He received a severe shock by seeing from a distance his house burning where his wife was lying ill with her young child.

Our conclusions that blood pressure is lowered during the greater part of the course of Graves's disease are reconcilable with the vaso-dilatation as evidenced by the well known and characteristic flushings, feelings of heat, and the moistness and increased electrical conductivity of the skin, and with the secretion by the gland of the previously mentioned depressor substance. The significance of this lowered pressure as the great saving factor in the cardiac condition is obvious, for the overworked and insufficiently rested heart would exhaust itself more readily against an elevated pressure.

It will be noticed that we have shown only the systolic pressures; the diastolic readings we found to be practically unaltered from those occurring in health in people of the same age and sex. Although we believe that in the great majority of cases that come under observation for treatment the blood pressure is low, evidence is accumulating to show that it actually passes through three phases:

1. *A Preliminary Stage of Hypertension.*—This is relatively short, associated with the onset of the disease, and is probably due to peripheral vaso-constriction induced by the action of the exciting stimulus on the suprarenal. It is most easily demonstrated in cases that come on after shock, acute anxiety, or fright.
2. *A Stage of Hypotension.*—This is relatively long, lasting for months or often years. The blood pressure is below the physiological value, the lowered tension being due to vaso-dilatation induced by a depressor substance secreted by the hyper-active thyroid. It is during this stage that the majority of patients seek advice. It may be regarded as the safe operation stage. The heart is usually soft, atonic, and more or less dilated, with reflux at one or perhaps both auriculo-ventricular valves.
3. *A Stage of Secondary Hypertension.*—This is a period of gradually rising pressure which succeeds the second stage after a varying length of time, usually some years, and appears to be associated with two conditions, namely: (1) A reduction of thyroid superactivity, with a consequent relative increase in that of the suprarenal; (2) some secondary change in the cardio-vascular system, such as cardiac hypertrophy.

In each phase, and more particularly the second, diurnal variations are considerable. Our observations have been recorded systematically over varying periods, both before and after surgical treatment, and have shown that after operation an immediate and definite, but temporary, rise in blood pressure occurs. This post-operative rise may be so marked that the pre-operative pressure is doubled; this, we believe, to be caused by the relatively increased action of the suprarenals after removal of a greater or smaller part of the thyroid and the consequent reduction in the supply of the depressor substance poured into the blood, augmented by the great ingestion of fluid which is administered by some surgeons after operation, ostensibly with a view to lowering the toxaemia reputed to result from liberated colloid.* The effect of this post-operative rise in perhaps enormously increasing the work of an already partly exhausted myocardium must be borne in mind before advising operation. It is well known that some cases die suddenly from cardiac failure after operation. Death is probably due to ventricular fibrillation, a condition shown by Levy[25] to occur when large doses of adrenalin are injected into the blood stream of animals. Thus it appears to us that, the other factors remaining the same, those cases with the lower pressures will be most suited for operation, since the post-operative pressure will not be sufficiently excessive to seriously embarrass a partly exhausted myocardium, and we may say that this procedure in using the blood pressure as an important indication in selecting cases for operation has been fully justified by results.

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* This is not borne out by the writers' experience.

We would summarize our more important conclusions as follows:

(a) In typical and uncomplicated cases of Graves's disease the systolic blood pressure is usually lower than normal, the diastolic pressure approximately normal, and the pulse pressure consequently low.

(b) The systolic blood pressure passes through three phases:

1. *A Short Stage of Primary Hypertension.*—This is associated with the onset of the disease, and due to vasoconstriction owing to suprarenal stimulation.
2. *A Prolonged Stage of Hypotension.*—This is due to peripheral dilatation caused by a depressor substance secreted by the thyroid, and is of variable duration, but usually lasts for years.
3. *A Stage of Secondary Hypertension.*—This comes on late in the disease, and is associated with secondary changes in the cardio-vascular system and reduced thyroid activity.

(c) After operation on the thyroid the systolic blood pressure tends to rise. This rise is not infrequently associated with cardiac acceleration and an irregularity of the pulse due to auricular fibrillation, and possibly in extreme cases followed by ventricular fibrillation resulting in death.

(d) A low systolic blood pressure in Graves's disease, other factors being equal, indicates from an operation point of view: (i) Little myocardial exhaustion. (ii) A small post-operative rise in blood pressure and consequently little liability to post-operative cardiac failure. (iii) Less haemorrhage.

(e) Diurnal variations in blood pressure are considerable in Graves's disease, being relatively greater than in health.

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INTRATRACHEAL ANAESTHESIA BY THE NASAL ROUTE FOR OPERATIONS ON THE MOUTH AND LIPS.

BY

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THE following is a brief description of a method of anaesthesia which I have found very useful in plastic operations, and which is recommended for all operative procedures in the region of the mouth. The catheter is well out of the surgeon's way, and his technique is thus rendered more easy.

It consists essentially of three manœuvres:

1. Passing the catheter through the nose and nasopharynx.
2. Picking it up in the oropharynx by means of a special guiding rod.
3. Directing it into the trachea.

These may be supplemented by

4. The provision of a return nasal airway, a procedure which is often a great help to the surgeon, in that it prevents bubbling of blood in the mouth and directs expired anaesthetic vapours away from him.

The following instruments are required:

Catheter.—The usual "aseptic" type of tracheal catheter.

Laryngoscope.—Hill's pattern. Illumination is obtained either by an attached distal lamp or by a pencil light pushed down by the side of the laryngoscope.

Guiding Rod.—This is a round rod of metal ⅛ in. in diameter and 10½ in. long. The end for picking up the catheter (Fig. 1, A) is sloped away on its under side (Fig. 1, A, (1) and (2)) for about 1½ in. back in order to allow it to dip more easily from the laryngoscope into the eye of the catheter. The upper side (Fig. 1, A, (2) and (3)) is also bevelled for ⅛ in. from the end to meet the under side. The terminal ½ in. (Fig. 1, A, (2)) is now tilted upwards until the upper bevelled surface is parallel to, and only very slightly above the level of the upper surface o the rod. This slight tilt gives an upward bend to the catheter which makes its introduction through the cords much easier. The end is rounded off, and there is no sharp edge where the upper and lower surfaces meet. The other end of the rod is curved down to form a handle, bending away so that the operator's hand does not hide his view along the rod.

Details of Method.

Before starting, the end of the guiding rod is pushed from the top of the eye into the solid end of the catheter and a little notch (Fig. 1, B) made for its reception in Stage 2 (Fig. 1, C).

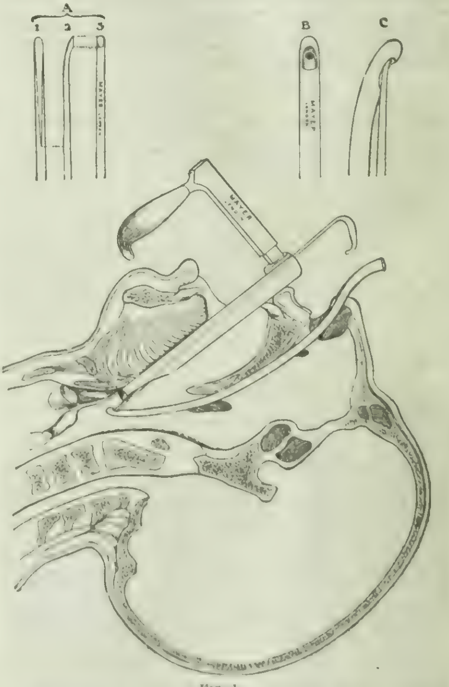

FIG. 1.

1. The passage of the catheter through the nose is usually easy. It should be curved with the eye facing inwards, and, after lubrication with sterile vaseline, passed through the nares with its concavity towards the floor of the nose. Still new catheters sometimes strike the back of the nasopharynx and refuse to go on. Rotation of the catheter—or the previous passage along its lumen of a piece of stout wire, the end of which is lodged in the notch for the guiding rod, followed by bending so that there is a very distinct tilt to the end of the catheter—will usually overcome this difficulty. The wire should, of course, be removed before proceeding to the next stage.

2. A view of the catheter is obtained by means of the laryngoscope passed to the back of the mouth. The guiding rod is passed down the speculum and its extremity pushed into the notch in the end of the catheter (Fig. 1), the outer end of the catheter being held meanwhile either between the little and ring fingers of the hand manipulating the rod, or by an assistant. After it has been picked up it is essential that the catheter be held taut outside the nose so that the guiding rod shall remain pushed home in its end.

3. The laryngoscope is now manipulated so that a view of the glottis is obtained, and the end of the catheter directed between the cords by the guiding rod, which is withdrawn before

pushing on the catheter from the nasal end. In an average adult the catheter should be passed for a distance of about 30 cm. from the ala of the nose, or about 5 cm. further than the distance from the teeth required in the oral route. Catheterization is greatly facilitated by the relaxation obtained by a really deep anaesthesia and by the use of a large size laryngoscope.

4. Six pieces of ordinary rubber tubing (sizes 22, 24, 26, 28, 30 and 32 French catheter gauge, walls 2 mm. thick) are smeared with sterile vaseline, and, starting with the smallest, rapidly passed one after the other through the opposite naris. This manœuvre gradually dilates the nasal passage, and enables a tube large enough to provide a sufficient return airway in most cases to be used. The length of tubing to pass may be roughly estimated by the distance between the patient's ala and the external auditory meatus of the same side; but the most suitable length can really only be found by trial in each case, a good return airway with the end of the tube as near the glottis as possible being the aim. A metal angle piece may be fitted into the outer end of the tube to direct the anaesthetic vapour away from the surgeon, and prevent towels obstructing the airway. The back of the mouth is now packed with a long strip of gauze.

Fig. 2 illustrates the method in use during a plastic operation on the lips. A sufficient nasal return airway cannot always be obtained in this manner, but occasionally it may be improved by increasing or decreasing the degree of extension of the neck. Again, it is sometimes found that if a tube which has remained in for a short time and dilated the nasal passage be removed, the larger airway obtained by its removal proves sufficient.

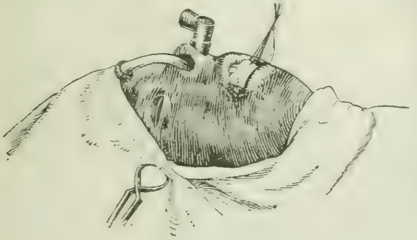

FIG. 2.

Occasionally, when the catheter is passed through the nose with a wire in it, as described above, and pushed on, the cough characteristic of its passage into the trachea occurs, and, on inspection, the fact that it has actually passed between the cords is confirmed. Working on this, attempts were made to judge the curve on the catheter required to direct its end towards the mid-point of the thyroid cartilage after passage through the nose; but so far experiments have shown this to be a very uncertain method of tracheal catheterization, the correct curve for each case being very difficult to estimate. The guiding rod, nasal tubes, and metal angle piece were made for me by Messrs. Mayer and Phelps.

A CASE OF CEREBELLAR TUMOUR.

BY

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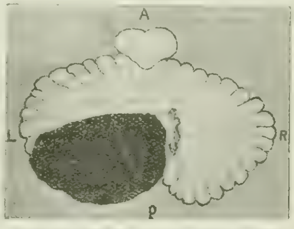
WITH respect to the ataxia in localized cerebellar tumour, different statements have been made in British and foreign medical literature as regards the side to which the patient tends to fall when attempting to walk. By some distinguished British and Continental physicians it is stated that, in the ataxia of cerebellar tumour, when the patient walks there is no constant relation between the side to which he tends to fall and the side of the tumour. By others it is stated that the patient tends to fall to the side of the lesion. According to some physicians, when the posterior part of the middle lobe of the cerebellum is affected the patient tends to fall backwards when walking; and when the anterior part is affected the patient tends to fall forwards.

The abstract of the notes of the following case may be of interest, because it tends to support the view which has been expressed by certain English physicians with respect to the direction in which the patient tends to fall. The case is an instance, also, of the deviation and rotation of the head described by Dr. Grainger Stewart and Dr. Gordon Holmes "as occurring in certain cases of cerebellar tumour."

M. G., a man aged [illegible], was sent to me by Dr. [illegible] Scott. When first seen his chief symptom was headache. The optic discs were then normal, and no symptoms of cerebellar disease or other localized organic brain disease could be detected. I did not see the patient again for many months. When I next examined him definite symptoms of cerebellar tumour had developed. He complained of severe headache, and on examination the following were the chief symptoms: Double optic neuritis; internal strabismus of the left eye; paralysis of the left external rectus muscle; diplopia; ataxic gait; definite tendency to fall backwards and to the left when walking—the last symptom, at the end of the illness, was very well marked; also when standing or sitting the head was tilted or rotated, so that the chin was directed, or approximated, to the right shoulder.

The autopsy revealed a cerebellar tumour. It was situated at the posterior part of the cerebellum, just under the tentorium. It affected the posterior half of the middle lobe (or vermis) and extended to the left lobe, affecting almost the whole of the posterior half of this lobe, but it only affected a very small portion of the right lobe, quite close to the middle lobe. The growth extended both to the upper and lower surfaces of the posterior half of the left lobe of the cerebellum, but it was most extensive in the central or middle portion of this lobe. The dentate nucleus was seen outside the growth on the right side. The growth occupied the position of this nucleus on the left side and the position of the roof nuclei in the middle lobe. The growth was a plexiform angio-sarcoma, the cells being chiefly spindle cells.



Horizontal section through middle of cerebellum. Position of tumour shaded.

A NOTE ON INFLUENZA IN INDIA, 1918-20.

BY

H. G. WATERS, M.R.C.S., L.R.C.P., D.P.H.CAMB., D.T.M. AND H.,

CHIEF MEDICAL OFFICER, EAST INDIAN RAILWAY.

MY report on influenza, published in February, 1919, gives an account of the result of treating the 1918 influenza outbreak by stimulants instead of by the usual depressant mixtures containing salicylates. It records the treatment of 28,859 cases, with 509 deaths—a case-mortality of 1.7 per cent.

The second outbreak in 1920 gave a general impression to all my staff of medical men, numbering almost 100, that one attack of influenza protects the individual against a second attack. The following definite records, although of small numbers, are so confirmatory of this impression that we may, I think, accept them as proving that "one attack of influenza protects against a second," as much as measles does. The cases recorded were all clear to type, and not catarrhal cases, so often miscalled influenza.

At the three Oak Grove Schools, Mussoorie, we have a population of:

Boys' school	220
Girls' school	118
Junior boys	105
Junior girls	72
Staff (includes families)	56
Clerks ,, ,,	9
Menials ,, ,,	225
	805

To attend on these we had one medical officer, two sub-assistant surgeons, and eight nurses. The records and attendance were therefore probably much better than those furnished in the average case. Every one of the nurses in turn contracted the disease; these are included in "staff sick." In the 1918 October outbreak 195 cases occurred amongst the European and East Indian population, with four cases of pneumonia, of whom one died, giving a case mortality of 0.55 per cent. Thirty cases occurred amongst the menials, with a case mortality of 3.3 per cent. Thus there were 225 cases out of a population of 805.

In March and April, 1920, we had a second outbreak. Population the same as recorded above. There were 55 cases amongst the Europeans and East Indians with no death; 79 cases occurred amongst the Indians with 4 deaths. Thus there were 134 cases among 805 population. Of these two only had had a previous attack of this disease.

At Bishop Johnston's Orphanage there are 60 girls, and at Colvin Free School 100 boys. The two school residences are a mile apart on opposite sides of the railway. The girls walk daily to the boys' school, where they are taught in mixed classes. In September, 1918, influenza started amongst the girls and their school attendance was prohibited; 50 per cent. were attacked, with no death. There were two doubtful fever cases amongst the boys. In February, 1920, influenza started in the boys' school, and school attendance was continued by the girls; 46 boys out of 100 were attacked, while of the girls 10 only developed the disease, none of those previously attacked suffering; this in spite of daily association in class with boys sickening for and recovering from influenza.

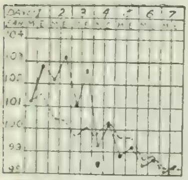


Fig. 1.—Composite temperature chart of uncomplicated cases of influenza treated in East Indian Railway Hospitals during 1918-19 and 1919-20. Continuous line = 1918-19; dotted line = 1919-20.

The stimulant mixture used was tr. nucis vomic. and ammon. carb.; other treatment according to symptoms. The figures for the 1920 outbreak were not complete when I left; the treatment this year was supplemented by camphor and nux vomica extract pills.

The type was marked by a sudden onset, with a rise of temperature to 103° F. in a few hours; severe headache, nasal catarrh, pains in limbs and body, slow pulse (80 per minute in spite of the high temperature) and very marked prostration.

Combined charts showing the relation of the temperatures for 1918 and 1920, simple and complicated with pneumonia, are reproduced herewith.

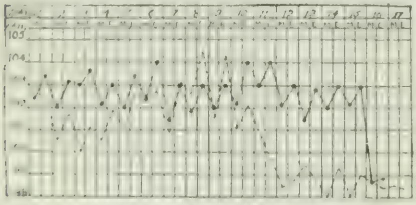


Fig. 2.—Composite chart of twelve fatal pneumonia cases treated in East Indian Railway Hospitals during 1918-19 and 1919-20, [illegible] terminating on the [illegible] day. Continuous line = 1918-19, dotted line = 1919-20.

In 1918 every pregnant woman attended for influenza, with one exception, aborted and died of *post partum* haemorrhage; four were under treatment in hospital; neither pituitrin nor ergot seemed to have any action on the uterine muscle. There was no special age or sex incidence.

The twenty-sixth congress of the Italian Society of Internal Medicine will take place at Rome from November 3rd to 6th, when the following subjects will be discussed: Bronchial asthma, introduced by L. Giuffrè and C. Frugoni; [illegible], by C. Moreschi and A. [illegible]; and clinical electrocardiography, by F. [illegible]. Further information may be obtained from R. Clinica Medica, Policlinico Umberto I, Rome.

According to the report of the medical officer of health for Winnipeg, the death rate for 1919 was [illegible], compared with [illegible] for 1918. The infant mortality rate was [illegible] per 1,000 [illegible]; the birth rate was [illegible]. There were [illegible] cases of typhoid fever, with [illegible] deaths. During the outbreak of encephalitis lethargica, which prevailed throughout the Western Provinces during the later months of the year, [illegible] cases occurred in Winnipeg, with 11 deaths; in no instance was a connexion traced between any two cases.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TRAUMATIC OBSTRUCTION OF DUODENUM: OPERATION: RECOVERY.

The following case came under my care in France:

A driver of a three-ton motor lorry started his vehicle by swinging the starting handle. He had omitted to put his gear "into neutral"; the lorry moved forward, and before he could jump clear his belly acted as a buffer between his own lorry and another standing in front. A comrade who witnessed the accident stopped the engine and extricated him, but not before the impact had pushed the front lorry several yards. This occurred in the morning. When I saw him in hospital about two hours after the occurrence there were no symptoms whatever, excepting slight redness and pain (which was not severe) over the epigastrium; the pulse was 76 and of good volume, and there had been no vomiting. He stated that he did not feel at all ill. He was put to bed and given small quantities of liquids only; the same evening, apart from slight pain over the epigastrium, there was nothing to note. Next day the patient desired to get up and to have a solid meal; neither was allowed. On the third day, at 11.30, he complained of feeling sick and vomited liquid food, tinged with bile, but containing no blood, fresh or altered. Examination of the abdomen, etc., revealed no rigidity, and the tenderness over the epigastrium had practically gone. During this day he vomited several times, with increasing frequency; the vomit contained more bile, and the patient's general condition was decidedly on the downgrade. On the evening of this day the stomach was found to be dilated. A diagnosis of duodenal obstruction was made. This was confirmed by *x* rays, which showed that the obstruction was located in the second and third portions. On the morning of the fourth day the patient's condition had not improved; he was still vomiting and the vomit contained much bile. At laparotomy I found that the duodenum showed no signs of trauma, but was very markedly pushed forward and to the left; the distortion was due to a large retroperitoneal haematoma, the size of a large hen's egg, situated over the right psoas magnus. The haematoma was incised vertically, and a handful of blood clot was removed; there was little bleeding, and the peritoneum was closed. The patient made an uneventful recovery, and during his convalescence never vomited.

The case is interesting in that, despite tremendous compression of the belly, the viscera were undamaged, and also in the delayed appearance of symptoms of disordered function and of obstruction of the duodenum.

Parkend, Troon, N.B. F. J. Strachan, M.B., B.S.

THE INCIDENCE OF WORM INFECTION IN INDIAN TROOPS OF THE EGYPTIAN EXPEDITIONARY FORCE.

During the six months July to December, 1918, specimens of faeces were examined from 2,002 patients in No. 45 Indian General Hospital, Cairo. Worm infections were found in the following numbers:

Ankylostomum (including Necator) in ...	568
Ascaris lumbricoides in	138
Trichuris in ..	68

During this period 9,937 patients were admitted to hospital in both the medical and surgical divisions.

The cases examined were partly selected as clinically suggestive of worm disease and partly were taken at random. Practically all came from Palestine.

Reduced to percentages, the above figures represent:

Ankylostomum among those examined ...	28.3 %
" among total admissions .	5.7 %
Ascaris among those examined .	6.8 %
" among total admissions	1.3 %

I am indebted to the officer commanding No. 45 Indian General Hospital for permission to publish the above figures.

F. H. Stewart, M.D., D.Sc., Lt.-Col. I.M.S.,
Lately Medical [illegible] Officer, No. 45 Indian General Hospital.

FISH BONE IN WHARTON'S DUCT.

About the end of May, Mrs. H. complained of having a "fish bone stuck in her mouth"; she said that while eating "fish and chips" she had felt the pricking of a bone on the left side of the mouth.

Careful examination in direct and reflected light and palpation with the finger failed either to find the bone or to demonstrate any painful area. Four months afterwards the patient returned, stating that she had had "a cold," and that on the previous day when coughing heavily she had felt a pricking sensation under the tongue. During the night she had begun to have swelling and pain under the left side of the jaw. In addition to enlargement of the left submaxillary gland I found that the floor of the mouth was fuller on that side than the right; the track of Wharton's duct could be seen, and was palpable and tender. The papilla was red and more prominent than its fellow, which was pushed a little to the right. The mucous membrane was anaesthetized and the duct was picked up with a dissecting forceps; it was manifest that there was something inside, like a stilette in a catheter. An attempt to push the foreign body out through the opening of the duct was unsuccessful. A tiny incision revealed the fish bone, which was easily extracted with another forceps. It was three-quarters of an inch in length, with blunted ends.

The patient stated that from her first visit to the day previous to her second visit (four months afterwards) she had had no pain or discomfort. Probably the opening of the duct became blocked by the end of the bone by reason of the force of the coughing.

Heeley, Sheffield. JAS. D. MACKAY.

A LARGE URETHRAL CALCULUS.

THE following case of urethral stone appears to be of sufficient interest to justify its brief report.

The patient, a male aged 21, was attached to the Indian Army in Mesopotamia. He reported sick, complaining of incontinence of urine, and of slight haematuria; the point of a metal catheter was found to impinge upon a stone in the membranous urethra; calculus was also palpable by rectal examination. A Wheelhouse's perineal section was performed and the stone removed from the enormously dilated urethra, which was sutured over a No. 10 catheter. The wound was loosely closed and a gauze drain inserted, passing down to the urethra. Recovery was uneventful. The wound was completely healed on the twelfth day, when control of micturition had returned and a No. 10 metal catheter passed with ease.

The calculus was largely composed of phosphates, it was two inches in length and weighed 6⅔ drachms.

Derby. SIDNEY B. RADLEY, M.B., F.R.C.S.

Reports of Societies.

MEDICAL REQUIREMENTS FOR AIR NAVIGATION.

AT a meeting of the War Section of the Royal Society of Medicine on October 11th Wing-Commander **MARTIN FLACK** lectured on medical requirements in air navigation. The selection of a flying officer, he said, was a task in which the clinician and the physiologist must co-operate, though in his lecture he intended to deal with the subject mainly from the physiological point of view. It was evident that, no matter how much research might be put into the flying machine itself, there always remained the fact that the man who stepped into the machine became from the moment he did so its controlling and co-ordinating mechanism, and it was as necessary that the human mechanism should be intact as that the aeroplane itself should function efficiently. In the first place, the past history of the candidate, both family and personal, must be inquired into. If the candidate had at any time suffered from malaria or dysentery it was a matter for particular attention, and often for a specialist's report. Men who had a history of head injury or of severe surgical operations of any kind were generally ruled out. In America and also in Italy there had been a great deal of psychological study of prospective fliers. Mental aptitude for flying was, however, difficult to assess. Whether it was right to put a candidate through a psychological examination he was not prepared to say, but, at any rate in this country, it had seemed better to the authorities to cross-examine the candidate with regard to his experience and capacity—as, for instance, his prowess in games which required the co-operation of eye, hand, and leg—rather than to institute one set examination on a single occasion to discover his psychological value. Testing of the psychomotor responses had been carried out, but even this was of more use in picking out the fatigued man than in selecting the new flier. The examiner must always bear in mind also how certain psychological qualities might develop in a man during his period of actual instruction with the machine, although these were only rudimentary or scarcely to be observed at all at the time of the preliminary observation.

In view of the controlling and co-ordinating functions which the airman had to exercise, the possession of certain sensory attributes was of very great importance, and of these the most important undoubtedly was the visual. The pilot must possess good visual acuity, and in most cases it was particularly necessary that he should have ocular muscle balance, as without this his landing capacity was likely to be very seriously affected. An examination of those who had gained distinction in flying revealed the fact that although perfect visual acuity might not be necessary, even for air fighting, yet any large defect was a reason for rejection, and the visual test must be kept severe. Next in importance to vision came muscle co-ordination and cutaneous sense. The flier must have the "feel" of the "joy-stick," of the seat, and of the back, also of the blowing of the wind in his face. Muscle sense played a very large part in good flying. The flier also derived impressions from hearing, as, for instance, the singing of the wires. It did not appear, however, that the vestibular apparatus was of great use, seeing that, if it were, the airman should not lose his way in fog, and yet a great many very expert pilots had confessed that in a fog they were completely lost. The semicircular canals would give a man information with regard to his own position in relation to the machine, but no information, usually, with regard to his position in relation to the earth. At the same time the lecturer would not say that the semicircular canal tests were altogether useless, only no fixed rules could be laid down. Certainly some of our very best fliers would have been "ploughed" by the American standard in this respect. The vestibular mechanism should be intact, of course; there should be no gross ear disease, and it was very important to rule out Eustachian obstruction, for this impeded the equalization of pressure at varying altitudes. This equalization of pressure must pertain to both ears.

With regard to respiratory capacity, the lecturer pointed out how necessary it was that this should be adapted to the special needs of high altitudes. Seeing that it might be necessary to fly high, the airman must have a good air intake, and particularly good expiratory efficiency. The pulse was a crucial test of the airman. If, when a candidate was asked to raise his body weight on to a chair five times in fifteen seconds, his pulse increased 36 or more, and the time taken to return to normal was more than thirty seconds, he was to be looked upon with suspicion. A great deal could be predicted with regard to efficiency from the mere feel of the pulse. The pulse of the successful airman was soft, harmonious, easy working, like a sure machine, and it was very important that only men with such a pulse should be taken as fliers. A high diastolic pressure within the normal limit was undoubtedly very essential. He showed a list giving the capacities in various respects of airmen who had gained distinction; the general result was that all these men were capable of holding the breath for from fifty-five to seventy seconds, and their vital capacity was above 3,800 c.cm. Adaptation to altitude seemed to be a matter of respiratory efficiency, circulation, and also, possibly, concentration in the blood.

Lieut.-General Sir **JOHN GOODWIN**, Director-General of the Army Medical Service, in proposing a vote of thanks to Wing-Commander Flack, said that he had had a conversation with an airman who had gained the Victoria Cross while flying, and this officer had told him that when he got into the clouds he lost all sense of direction, and did not know until he emerged whether the earth was above him or underneath.

THE forty-fifth annual report of the Mission to Lepers shows that the expenditure for 1919 was £25,980 more than in any previous year. Grants were made towards work for lepers at Vengurla in South India, Palo Seco (Panama), and Tong Yung (Korea); an asylum has been opened at Cuttack, Orissa. The Mission has received much aid in India and in the United States of America.

Reviews.

IRRITANT GAS POISONING.

THE first publication of the Anthony N. Brady Memorial Foundation is a very fully illustrated account, entitled *The Pathology of War Gas Poisoning*,[1] of the anatomical changes—gross and microscopical—found in dogs as a consequence of experimental exposure to a variety of irritant gases used in the late war. The work recorded in the volume was done under the direction of Major MILTON C. WINTERNITZ, M.D., by the branch of the Medical Science Section of the U.S.A. Chemical Warfare Service concerned with pathology.

The book is devoted to an examination of pathological changes, and only mentions incidentally something of the properties of the gases used and their physiological effects. It is divided into sections on the pathology of poisoning by chlorine, phosgene, chloropicrin, superpalite and palite, mustard gas, cyanogen chloride and bromide, arsine and organic arsenic compounds. The greater part of the experimental work was done with the first three gases. Sections are also devoted to a preliminary study of intratracheal therapy and the significance of haemorrhages in residual pulmonary lesions. Each section is profusely illustrated. There are in all forty-one coloured plates of uniform excellence, and numerous black-and-white reproductions of microscopical sections, a few of which are not quite up to the high standard of the remainder. The general plan adopted is to classify the dogs employed in groups according to the length of time elapsing between gassing and death, and to describe the pathological changes found to be characteristic of each group and the transition from one group to the next. The detailed carrying out of this scheme varies somewhat with the different gases.

The largest amount of work was done on the effects of chlorine, and the conclusions reached are the result of the examination of the tissues of 326 dogs poisoned by this gas. These dogs could be divided into four groups: (1) those dying in the first twenty-four hours—acute death; (2) in 2 to 5 days—delayed death; (3) in 5 to 15 days, and (4) those surviving 15 to 193 days, chronic or recovered cases. The pathological changes, both gross and microscopic, were found to be markedly different in the various groups, but it was possible to trace development of the lesions throughout the series. Unfortunately, many different concentrations of gas were used, but a full record is not given, and this detracts from the value of the tables. The simple effects of the gas were found to be complicated by secondary infections and inflammation after about six hours. Some bacteriological results are given. Death was due in the acute stage to oedema, in later stages to infection. Two factors appear to play an important part in causing the emphysema and atelectasis so characteristic of chlorine poisoning—(1) obstruction of bronchioles by [illegible] epithelium, and (2) by muscular spasm. [illegible] staining was employed to show that chlorine kills the epithelium directly, not as a secondary result of oedema. An interesting observation, in view of the chronic symptoms of patients who have recovered from chlorine poisoning, is the severity of emphysema and bronchiolitis obliterans in the dogs which survived for long periods.

It was found that the histological effects of widely varying concentrations of phosgene were much the same, only the rate of development of symptoms being altered. [illegible] treated more briefly, and it is unfortunate that the number of dogs examined is not stated in the case of some of the gases.

The section on intratracheal therapy relates the resumption of work originally undertaken in connexion with pneumonia, and is based on the theory that impairment of the protective mechanism of the upper respiratory tract facilitates the attack of bacteria on the bronchioles and lung tissue. It was found that pulmonary irrigation was possible without ill effects, that absorption from the lungs was rapid, and that materials introduced as indicators could be washed out of the lungs.

The book forms a valuable record of the anatomical effects of some irritant gases on one species of animal, the dog, and the authors do not fail to draw attention to the different effects found in different species. Perhaps some account of the effects of other gases, such as H_2S, might have been included with advantage. The work recorded is highly specialized, and its full value will only be appreciated by simultaneous consideration of the physiological and clinical effects of the gases in question, for an account of which other works must be consulted. The plates and printing of the book are excellent, and few misprints were noticed. On p. 31 Bancroft should be Barcroft, and the formula for palite, or chloromethyl-chloroformate (p. 91), should be $ClCOOCH_2Cl$.

A list of the papers cited is given at the end of some of the sections, but these lists do not form a complete bibliography—for example, most of the histological work on gas poisoning carried out for the Chemical Warfare Medical Committee in this country is not mentioned.

SYPHILIS.

Too many writers on syphilis are content to treat of the disease in its regional aspects and to ignore the disease as a whole. In his admirable textbook[2] Dr. HENRY H. HAZEN has been careful to avoid this fault, for, beginning with a consideration of the primary sore, he traces the morbid processes through their involvement of skin, bone, the nervous system, the eye, and almost every tissue of the body. Indeed, the enumeration alone of the many forms of disease which may be the result of syphilitic infection is startling evidence of the havoc wrought to the community by this universal scourge. To this aspect—the economic—the author refers particularly; he makes the statement, based upon most sound data, that a loss every year of nearly half a billion dollars results to the United States alone from this cause.

As in all morbid processes, but in the case of syphilis perhaps more than others, effective treatment depends very largely upon early diagnosis. It is in the primary and secondary stages that cure is possible, and, indeed, were our methods more perfect, or perhaps were they carried further, much of what appears in this book would be unnecessary or only of historic interest. The author has very properly devoted a considerable amount of space to the consideration of the cutaneous eruptions. He also adverts—and in this he will have the approval of all engaged in the study of venereal diseases—to the far too common custom of ignoring clinical evidence and attaching undue importance to laboratory findings. It is beyond dispute that information of the most valuable kind is to be obtained from the "Wassermann" test. The difficulty lies not in the test itself, but in its interpretation. The truth of this statement finds complete demonstration in the table on page 199, in which the results obtained from the examination by the Wassermann method of [illegible] cases of untreated syphilis are recorded. Taking the cases as a whole, in 14 per cent. the result was negative; in secondary cases 19 per cent. gave a negative result, and this is a period when the highest proportion of positive results is expected. When it is stated that these tests were carried out by a pathologist of such established reputation as Colonel Craig, doubt as to their accuracy will not be entertained.

Dr. Hazen is fully conscious of the magnitude of the task he has set himself in the compilation of this book. He puts the matter clearly in the preface when he says that to know syphilis means to know the entire domain of medicine, and that for any one man this is impossible. He has therefore sought the help of a number of other specialists whose contributions are in no small measure responsible for the success of the venture. In the section descriptive of the Röntgen-ray diagnosis of bone and visceral disease, for example, he is associated with Dr. Van Sweringen, and their combined labours have produced, on an aspect of this disease somewhat neglected by other writers, an attractive chapter, well illustrated by means of x-ray pictures.

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[1] [illegible]

[2] *Syphilis: A Treatise on Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment.* By Henry H. Hazen, A.B., M.D. [illegible] Medical Department [illegible] London: Henry Kimpton. 1919. [illegible]

While a necessary caution is given against the mistake of relying too much on the laboratory methods of diagnosis, this part of the subject has not been neglected. Both the Wassermann technique, and the methods used for detecting the *Spirochaeta pallida* are thoroughly discussed and explained. We cannot refrain from comment upon one point made by the writer of this section, Colonel Craig—namely, the effect of an alcoholic debauch in converting a positive result into a negative. Is it now possible for such a dilemma to arise in the United States? Nevertheless, since the book is assured of a ready audience among European readers, knowledge of this sort will not be wasted.

This is a well balanced and sane book, covering the wide ground in a remarkably skilful manner without unduly overloading any part. To each chapter is appended a full bibliography where the reader will obtain a guide to other sources of information.

OPHTHALMOLOGICAL TEXTBOOKS.

The new edition of **Webster Fox**'s *Practical Treatise on Ophthalmology*[3] is written on conventional lines. It will probably be of more use to the ophthalmic surgeon and to the senior clinical assistant than to the student who is only beginning the study of diseases of the eye, for it is written in rather a diffuse, discursive style, and in the sections on treatment especially the student is given too great a variety. It would have been preferable had the author limited his remarks on treatment to well tried methods, and if he had refrained from describing quite so many operations when dealing with diseases of the lids. A textbook should not aim at being an encyclopaedia; and the student who reads the accounts of the different operations for such conditions as ptosis and entropion will be greatly puzzled as to which of the many methods he should prefer. Some of the contents are of theoretical interest rather than of practical value—for instance, the use of dionin and of subconjunctival injections; we doubt whether opinion in this country is much in favour of either, though it is only fair to add that, so far as we know, they do no harm. The ophthalmic surgeon will be interested in the description of a new operation for conical cornea, and in the chapter on retinal diseases, which is one of the best in the book. Paper, printing, and illustrations are exceptionally good. As a very minor criticism, we would point out that the Royal London Ophthalmic Hospital is known as the Moorfields Hospital, not as the Moorfield's; probably this was a typographical error.

The fourth edition of **Curt Adam**'s pocket-book of ophthalmic diseases[4] does not differ materially from previous editions, save that the present has been brought up to date by additions to and, where required, amplification of the sections dealing with local and general therapy. For those acquainted with the German tongue this book can be safely recommended as of the nature of "first lines" to its subject. Some of the chapters—those, for instance, on injuries and on diseases of the conjunctiva—are very good; we regret to see that in dealing with cases of raised tension accompanying iritis, the advice is given to discontinue the use of atropine and to use miotics; this is the usual advice given at this point in German textbooks, but it should give place to paracentesis of the anterior chamber, coupled with a continuance of atropine or some other mydriatic; this form of treatment has been found to give beneficial results in the majority of cases. A convenient formulary with a subsection of maximal doses, and a very full index, add materially to the value of the book. The paper and printing are good.

OBSTETRIC TEXTBOOKS.

Dr. **Frederick E. Leavitt**'s *Operations of Obstetrics*[5] is a pleasantly written and attractively illustrated volume, based avowedly not so much upon the author's experience as upon the writings of others. This is the source of the weakness that impairs the value of the book throughout. There is not behind the writing that weight of personal experience which gives the ring of authority. Apart from that it is a creditable and commendable book. It is disappointing to find Dr. Leavitt still employing forceps with solid blades, and discarding any scientific attempt to obtain real axis traction. True it is that the hand that guides the forceps is more important than the instrument itself; but Dr. Leavitt ought to remember that he cannot transmit to his pupils the skill of his own hand, whereas he can teach them to use with reasonable skill the instrument that is most perfect in design. Mere familiarity in the use of an imperfect weapon is no reason—particularly on the part of a teacher—for failing to strive for familiarity with improved weapons. It is disappointing also to find that Dr. Leavitt makes no mention of the use of the forceps as a rotator in cases of persistent occipito-posterior positions. In discussing the operative treatment of tubal pregnancy, the author asks the question, "Shall the unaffected tube be removed?" To this he says most obstetricians would answer "Yes." And he proceeds, "Knowing how apt pregnancy is to follow in the other tube, it seems rational to excise it." It is comforting to think that in this country at least most obstetricians would answer Dr. Leavitt's question with an emphatic "No," provided the other tube were otherwise healthy.

We congratulate Dr. T. W. **Eden** on the fifth edition of his well known *Manual of Midwifery*.[6] The latest edition differs in no material particular from its predecessor, but the book has been revised and some new matter introduced in regard to the management of normal labour. An eminently safe guide to obstetrical practice, Dr. Eden's attractively written manual bids fair to pass through many future editions.

Professor **Donald**'s little handbook for midwives, *An Introduction to Midwifery*,[7] has reached its eighth edition. At this date it were a work of supererogation to descant upon the merits of the teaching contained in it. But we would like to express our pleasure at seeing the antique woodcuts of previous editions replaced by illustrations rather more worthy of the book.

LESIONS OF NERVES.

The original monograph of Mme. **Athanasio-Benisty** on the nerve injuries of warfare—of which an English translation was published in 1918—is familiar to most students of neurology. The author, in a concise little manual, *Les Lésions des Nerfs*[8] now presents what is practically a new edition of the second volume of the translation. In it the section dealing with operative treatment has undergone amplification. The important question of failure of regeneration after suture is considered, and a sound working rule is laid down—namely, that two years should elapse before a case is written down a complete failure. For the repair of large defects in nerve trunks, the value of nerve grafts is considered to be proved, and their use advised not only in irreparable lesions, but also as an alternative to the extensive freeing of nerve trunks and the postural relaxation obtained by acute flexion of joints which might allow of end-to-end approximation. The recommendation of nerve grafts is based on the later experimental investigations of Nageotte, who has shown to the satisfaction of the French school that heterogenous grafts preserved in alcohol are to be preferred to autogenous grafts. It is stated that signs of recovery have been observed after a number of these operations. In the opinion of the author and her surgical associates, end-to-end suture and nerve grafting are the only logical methods of nerve repair; such operations as the turning down of flaps, tubulization, or nerve anastomosis are to be condemned.

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[3] *A Practical Treatise on Ophthalmology.* By L. Webster Fox, M.D., LL.D. Third edition. New York and London: W. Appleton and Co. 1920. (Roy. 8vo, pp. 857; 303 figures, 6 plates. 35s. net.)

[4] *Taschenbuch der Augenheilkunde, für Aerzte und Studierende.* By Professor Dr. C. Adam. Fourth edition. Berlin and Vienna: Urban and Schwarzenberg. 1920. (Cr. 8vo, pp. 408; 72 figures, 5 plates. M. 66.)

[5] *The Operations of Obstetrics.* By Frederick Elmer Leavitt, M.D. London: Henry Kimpton. (Med. 8vo, pp. 466; 248 figures. 30s. net.)

[6] *A Manual of Midwifery.* By Thomas Watts Eden, M.D., F.R.C.P., F.R.C.S.E. Fifth edition. London: J. and A. Churchill. (Demy 8vo, pp. viii + 747; 364 figures, 5 plates. 24s. net.)

[7] *An Introduction to Midwifery.* By Archibald Donald, M.A., M.D., F.R.C.P. Eighth edition, revised. London: Griffin and Co. (Cr. 8vo, pp. 202; 70 figures. 5s.)

[8] *Les Lésions des Nerfs: Traitement et Restauration.* By Mme. Athanasio Benisty. Paris: Masson et Cie. (Cr. 8vo, pp. viii + 156; 66 figures. Fr. 7 net.)

The work is an admirable exposition of the views of the French school of neurologists on the pathology, treatment, and clinical features of recovery of injuries of peripheral nerves. From the practical standpoint its value would be enhanced by the inclusion of actual detailed authoritative statistics of the late results of operative treatment in the many cases which have passed through Mme. Athanasio-Benisty's hands.

NOTES ON BOOKS.

In *The Control of Parenthood*[9] the subject is discussed from the biological, economic, social and religious, and the imperial and racial aspects, by nine writers, who present their divergent views in a series of essays. In a dignified introduction the Bishop of Birmingham directs the wedded couple to "view the office of parenthood as awful in its majesty and perfect in its beauty." From the biological standpoint Professor J. Arthur Thomson, after balancing the pros and cons, commits himself to the opinion that the good side of the reduction of the birth rate deserves more consideration than it usually receives, and that it makes for race saving and not for race suicide. Dr. Leonard Hill believes that it is untrue that abstinence from sexual life is harmless, and states that the effect of contraceptives is injurious, thus agreeing in the second though not in the first conclusion with Mrs. Scharlieb, who strongly opposes their use on moral grounds. As the unphysiological conditions of slum life render a restriction of the birth rate advisable, he advocates emigration and a natural sexual life. Writing as an economist, Mr. Harold Cox strongly supports the Malthusian tenets, and incidentally meets arguments brought forward, from the imperial and racial standpoint, by Sir Rider Haggard in favour of increase and multiplication of our citizens in order to assure the future of the empire against Eastern perils in the future. Mr. Harold Cox is not impressed by the condemnation of birth control by some members of the medical profession in face of the statistical fact that the birth rate among medical men is lower than that of almost any other class in the community. Dr. Marie Stopes, whose views are criticized at some length by Mrs. Scharlieb, advises conscious elimination of all diseased and overcrowded lives before their conception, by planning to conceive those only for whom adequate provision of material needs and a loving welcome can be reasonably anticipated. The Dean of St. Paul's contribution is remarkably broad-minded and from its [illegible] should be read as the first of the series. Sir Rider Haggard writes on the danger of race suicide, and reiterates his conviction that the root of the trouble is the desertion of the land for the cities.

The third edition of Professor RICHARDS's *Practical Chemistry*[10] supplies students of chemistry, medical students, and dental students with a clearly written and [illegible] elementary account of qualitative analysis, the preparation of various salts, volumetric analysis, and elementary practical technique. The book is written, one may say, largely to the order of certain examination syllabuses; it is thoroughly practical, and should be of service to those for whom it is intended.

Under the title *Electric Ionization*[11] Dr. TURRELL has published a monograph on ionic therapy designed as a practical introduction to its use in medicine and surgery. Following three short chapters on ionization and the [illegible] current, equipment, and the effects of different ions, the final portion is devoted to details of treatment.

This latter part is all the more valuable as it is evidently based upon the author's own work and experience. There are many practical and useful illustrations and diagrams. As an introduction to the study of a special form of treatment the book is well set out and can be recommended.

In spite of the fact that there are already several large textbooks on diseases of the eye in the German language—for instance, those of Fuchs, Axenfeld, and Römer, to name only three of them—Professors BRÜCKNER and MEISNER, the Oberarzt and First Assistant in the University Eye Clinic in Berlin, have brought out a large volume entitled "Outline of Ophthalmology for Students and Practitioners."[12] The price is certainly reasonable. The subject is dealt with on conventional lines, and is divided into four parts, the first of which deals with anatomy, development, and physiology; the second, and by far the largest section of the book, is devoted to special pathology, in which are found descriptions of the various diseases of the eye; the third part deals with methods of examination, and would in our opinion have been placed earlier in the volume with more advantage to the student; the final part deals with treatment—medical physical, and operative; it must not be thought from this that the appropriate treatment for the different diseases described in the second part is not mentioned under the heading of those diseases, for it is so described in its proper place, and this last section of the book is mainly devoted to operations and to various forms of general treatment. The volume appears to us to be a good one; it will doubtless appeal more to the Germans for whom it has been written than to students in this country.

The Topographical Anatomy of the Limbs of the Horse,[13] by Professor O. CHARNOCK BRADLEY, can, we think, be best described to medical readers as a book comparable in many ways to Cunningham's well known *Manual of Practical Anatomy*. The comparison is made peculiarly close by the fact that the drawings which form so important a feature of the two works are from the pencil of the same gifted artist, Mr. James T. Murray. The description of the parts of the limbs is accompanied by instructions as to their display by dissection. While the book is, of course, primarily intended for students of veterinary anatomy, it will be found, we think, invaluable to any human anatomist at work on the morphology of the bones, muscles, ligaments, or joints of the limbs; it is a book of which many workers on these subjects must often have felt the want. A study of the book, together with the study of human anatomy, will also, we imagine, throw a flood of light on the functions of the various parts and structures making up the limbs as well as on Nature's methods of evoking progressive and retrogressive variation. We feel confident the book will quickly gain the popularity its merits deserve, and that the demand for a similar treatise on the remaining parts of the horse as well as on the anatomy of the other domestic animals will be so insistent that their appearance can only be a matter of time. The work does credit both to the author and to the school with which he is associated.

The Street of Faces: Glimpses of Town,[14] by Mr. CHARLES VINCE, will appeal to readers who love old London and the flavour of Lamb and E. V. Lucas. It is inspired by a whimsical imagination not without a touch of melancholy, and has a keen eye to antiquarian relics, as is shown in the attractive essays on "Street Signs" and the "Garbling Office." The latter is the tragedy of a word, for originally "to garble" meant to purify, and the Garbling Office was set up under the Lord Mayor and City of London to cleanse all imported spices, to grade them, and to seal them; but this official used his purifying office corruptly and garbled to his own illegal profit; hence disputes arose, and in the middle of them John Locke wrote, in his *Essay on Toleration* "To garble thus the truths of Religion" apparently the first use in any famous work of this word in its degraded and modern sense. Of these twenty-seven little essays, the thirteenth, which gives its name to the collection, is a fanciful sketch of two rooms in the British Museum, in which the busts of gods, emperors, and heroes form a street of faces with the minds and deeds of the men cut into them. The work is beautifully illustrated and well printed.

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[9] *The Control of Parenthood.* Edited by James Marchant, C.B.E., LL.D. [illegible] London and New York: G. P. Putnam's Sons. 1920. (Cr. 8vo, pp. 217. [illegible] net.)

[10] *Practical Chemistry, including Simple Volumetric Analysis and* [illegible] By [illegible] Third edition. London: [illegible] 1920. (Cr. 8vo, pp. 177. [illegible] net.)

[11] *Electric Ionization.* By W. J. Turrell, M.A., M.D.Oxon., F.R.C.P. [illegible] London: [illegible] 1920. [illegible]

[12] *Grundriss der Augenheilkunde für Studierende und praktische Ärzte.* By Professor Dr. A. Brückner and Professor Dr. W. Meisner. Leipzig: G. Thieme. 1920. (Med. 8vo, pp. 657; 176 figures; 1 plate. Unbound, 15s. [illegible]; bound, 18s. 6d.)

[13] *The Topographical Anatomy of the Limbs of the Horse.* By O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S. Edinburgh: W. Green and Son, Limited. 1920. (Roy. 8vo, pp. vii + 172; 115 figures. 21s. net.)

[14] *The Street of Faces: Glimpses of Town.* By Charles Vince, with [illegible] London: Philip Allan and Co. 1920. [illegible]

BRITISH AND AMERICAN SURGEONS.

Presentation of a Mace to the American College of Surgeons.

Three representatives of the Consulting Surgeons of the British Armies—Sir Berkeley Moynihan, Sir William Taylor of Dublin, and Mr. Albert Carless—have crossed the Atlantic to attend the meeting at Montreal of the American College of Surgeons. They took with them a mace, designed and wrought for the purpose, in order to present it, on October 11th, to the American College of Surgeons, whose president this year is Dr. George E. Armstrong, Professor of Surgery and Clinical Surgery in McGill University.

We reproduce below the letter of greeting from Sir Anthony Bowlby, President of the Royal College of Surgeons of England, which was read by Sir Berkeley Moynihan on this occasion, together with a description and photograph of the "Great Mace," and the speech made by Sir Berkeley Moynihan in making the presentation.

It is interesting to remember that Philip Syng Physick, described on the head of the mace as the Father of American Surgery, was house-surgeon to John Hunter at the close of the eighteenth century. The first congregation of the American College of Surgeons was held at Chicago on November 12th, 1913, when Sir Rickman Godlee, then President of the Royal College of Surgeons of England, gave an address of congratulation and greeting on behalf of British surgeons.

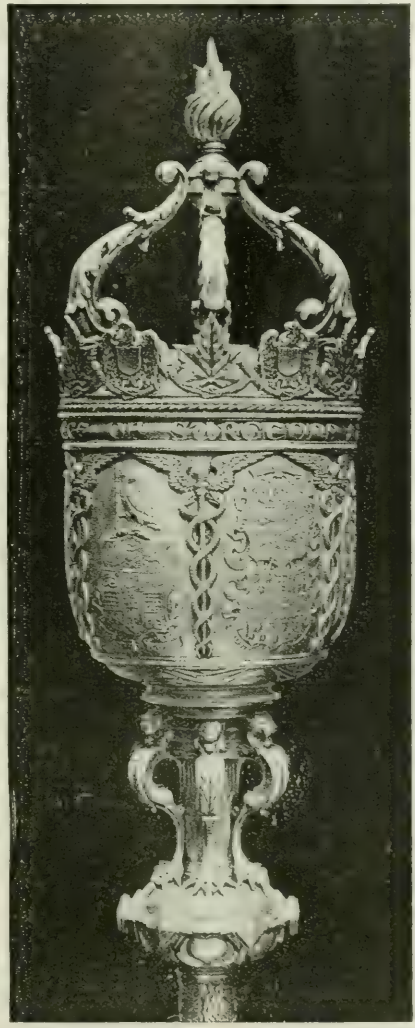
Royal College of Surgeons of
England, Lincoln's Inn
Fields, London, W.C.2.
July, 1920.

Dear Mr. President.

The hospitality which I enjoyed at the meeting of your College in October, 1919, makes me regret all the more deeply that my duties in England prevent me from joining you again this year at Montreal

The feelings of affectionate regard entertained by British Surgeons have found expression in the creation of the "Great Mace," which has been designed in order to commemorate "our mutual work and good fellowship in the late War," and is a gift from the Consulting Surgeons of the British Armies to the American College of Surgeons.

Much thought has been given to the various emblematic devices which decorate it, and we trust that it may be found worthy of acceptance, and of a place in your College buildings at your annual meetings. The Mace has always been the emblem of "Authority," and, as the American College of Surgeons is now the chief surgical authority on your continent, we hope and believe that our gift is a suitable one. The names of the fifty-four donors will satisfy you that all parts of the British Isles and of the Overseas Dominions are represented, and that Surgeons who served in Italy, in Salonica, in Egypt, and in Palestine have joined with those whose work lay in France and Belgium and at home.



The representatives who have been appointed to convey the Mace to Montreal will assuredly convey to you also the hearty good wishes of all the donors for the continued prosperity of your College, and I can assure you that all of us are animated by the most ardent desire that the good fellowship of the workers in the Great War shall be continued through innumerable years of Peace.

May I ask you to convey to all the Fellows of the College, and especially to my personal friends, my own most cordial good wishes, and may I also offer to you the hope that your Presidential Year will be one of great success in advancing the science and art of surgery.

Yours very truly,
Anthony A. Bowlby.

To the President,
American College of Surgeons.

A Description of the Great Mace Presented to the American College of Surgeons by the Consulting Surgeons of the British Armies.

This Mace has been designed so as to tell in symbolic language of the close union between British and American Surgery, and of the ties which unite Great Britain to Canada and to the United States of America. It retains the traditional shape and proportions of the Civic Mace of the seventeenth century, and is of hand-wrought, chiselled and repoussé silver-gilt. It has been designed and made by Omar Ramsden, who has also embodied some suggestions of the donors.

The Dedicatory Inscription engraved on the plate under the Crown sets forth that it is a gift "From the Consulting Surgeons of the British Armies to the American College of Surgeons, in memory of mutual work and good-fellowship in the Great War, 1914–1918."

The Crown-shaped Finial is formed of six rich scroll buttresses upholding the "Sacred Flame of Science" issuing from a mortar of antique pattern, the model of which was recently found on the Field of Battle near Salonica. These buttresses spring from a cresting composed of alternating Maple Leaves and American Eagles intertwined with the Serpents of Esculapius; while the position usually occupied by a band of jewels in a Monarchical Crown is filled with the words "The American College of Surgeons."

The Body or Head is divided into six panels by the Winged Caduceus; being an ornamental rendering of the badge of the United States Army Medical Corps. The panels set forth the following "Achievements at Arms" in delicate and finely detailed repoussé work:

1st. The full Blazon of the United States of America.
2nd. The Dominion of Canada.
3rd. The Royal College of Surgeons of England.
4th. The Badge of the Royal Army Medical Corps.
5th. The Shields of Arms of John Hunter and Lord Lister.
6th. A cartouche bearing the words "Philip Syng Physick," 1768–1837, Father of American Surgery.

The lower portion of the Head is decorated with a symbolic band of water indicating the ocean which both unites and separates America and the Mother Country. The latter is symbolized by the British Lion Brackets of highly chiselled work which support the head and terminate the upper part of the staff. The talons of the lion's feet grip the hammered decoration of the upper knop, which consists of a design of American and Canadian Maple seed-pods and heart-shaped spaces. This hammered work is protected by boldly projecting, solid, jewel-like bosses of chiselled work.

The Staff is decorated with a free design of the National floral emblems of the United Kingdom—the Rose, the Thistle, the Shamrock and the Leek. Intertwined among these are a [illegible], each one of which bears the name of one of the donors.

The Foot bears, as decoration, the root form from which the [illegible] springs, and a series of six small shields which may be used for possible future arms or inscriptions. The extreme bottom knop is carved with leaves of *Isatis tinctoria*.

The various parts are held together in the traditional manner by a rod of English oak, cut from a tree grown at Wytham, Berks. The extreme length is 3 ft. 11½ in., and the weight of silver is 140 oz. troy.

Speech by SIR BERKELEY MOYNIHAN.

Three centuries ago, on this very day, a little sailing vessel, leaving England far behind her, was struggling against adverse winds and heavy seas towards America. On board were one hundred pilgrims fleeing from civil and religious tyranny to seek sanctuary and freedom in a new land. No voyage in history has been so fateful. Those who journeyed in that vessel, a chosen company on the horizon of your history, were the best of English stock. They helped to found here a small colony of people, grim and stoical in spirit yet touched with idealism. Though all the great countries of the earth have since given of their best to build your nation, those few pilgrims have left their indelible stamp upon the culture, the institutions, and the laws of this land. Almost a century and a half ago that colony broke away from the mother country, with which it was long at war. But a hundred years of peace between the two nations had been celebrated when, in 1917, they stood together in arms. War is the great revealer. We learnt in that great testing time of our race that ties of blood, when they mean kinship in spirit and an equal surrender to the noblest impulse, are never to be broken. In the Great War America and Britain mingled their blood upon the same stricken field. The hope then grew strong in many hearts that a new understanding, born of comradeship in battle, fiercely tested in the furnace of affliction, and sealed in death, would redeem all ancient blunders, blot out the bitter memories of wrong, and lead at last to a supreme and permanent reconciliation. For we seemed then to realize that deep down in the hearts, enthroned in the conscience of the two peoples, there was the same full eager devotion to eternal principles, love of justice, joy in liberty, hatred of oppression, the same unselfish determination to strive for the redemption of mankind, and to establish anew the freedom of the world. On the fields of Flanders and of France, as in the cabin of the *Mayflower*, humanity recovered its rights.

In the grave and anxious days of war, when we fought so long in fellowship, no associations were closer, no friendships more swift and intimate, no joint labours more fruitful than those of our profession. We then gained each for the other, not respect and sympathy alone, but true affection also. Every lover of his country, every lover of humanity, must wish that the spiritual alliance then created shall endure to the end of time. In our desire to perpetuate the remembrance of those days of duty done together we, the Consultant Surgeons of the Armies of Britain, ask the College of Surgeons of America to accept this Mace. We pray that you may regard it as a token of our union in the harsh days of trial; as a pledge of our devotion to the same imperishable ideals; as a witness to our unfaltering and unchanging hope that the members of our profession in the two lands shall be joined in brotherhood for ever in the service of mankind.

The following is the list of Consultant Surgeons who gave the Great Mace to the American College of Surgeons:

Sir [illegible] Ballance, K.C.M.G.,
C.B.
Sir [illegible], K.B.E.,
C.B.
[illegible]
[illegible]
[illegible], K.C.B.
[illegible]
[illegible]
[illegible], C.B.
[illegible]
[illegible], K.B.E.
[illegible], C.B.E.
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible], M.D.
[illegible]
[illegible]
[illegible]
[illegible]
[illegible], K.C.M.G.,
[illegible]
[illegible]
[illegible]
[illegible] Watson, C.B.

Sir [illegible], G.C.M.G., C.B.
Sir [illegible] Mayo-Robson, K.B.E.,
[illegible]
A. [illegible] O.B.E.
Sir Berkeley Moynihan, K.C.M.G.,
C.B.
Sir [illegible], C.B.
[illegible], C.M.G.
[illegible], D.S.O.
[illegible], C.M.G., D.S.O.
[illegible]
[illegible], D.S.O.
[illegible], C.B.
[illegible]
[illegible]
[illegible] Swain, C.B., C.B.E.
[illegible]
[illegible]
[illegible]
[illegible]
[illegible], C.M.G.
[illegible]
[illegible], C.M.G.
[illegible], K.C.M.G.,
C.B.
Sir [illegible] Gordon Watson,
K.B.E., C.B.
[illegible], C.B.E., D.S.O.
Sir W. [illegible]

MEDICINE AT THE END OF THE EIGHTEENTH CENTURY.

PRESIDENTIAL ADDRESS TO THE MEDICAL SOCIETY OF LONDON.

SIR WILLIAM HALE-WHITE, who was inducted to the chair of the Medical Society of London on October 11th, drew largely upon the early history of that society for his presidential address on "Then and Now." The society was founded in 1773, and Guy's Hospital Physical Society two years earlier, and from a study of the proceedings of both these bodies during the first twenty-five years after their foundation the new President elicited some interesting facts and conclusions. Our ancestors at this period, he said, were in great earnest in their desire to add to medical knowledge. It was not a day in which there were just a few geniuses abroad, but large numbers of the profession were enthusiastically engaged in learning all that they could. Because, a century ago and more, doctors had not the help of the scientific instruments possessed to-day, there was an inclination to think that they must have been unscientific. Nothing could be more unjust. Sir W. Hale-White read extracts from the early proceedings to show the scientific temper in which problems were approached. The medical men of that day had open minds and were appreciative of the value of evidence. They were aware of the need for discriminating between casual conjunction and necessary connexion. Their debates were prolonged: one on fermentation lasted four and another on animal vitality six consecutive evenings. Cases were recorded with an exactitude and detail that might well be imitated to-day. Our forefathers were trained observers, trained all the more carefully because they had not many instrumental aids, and therefore had to depend to a greater degree upon their senses. From these old memoirs it was evident that they had just as much wisdom as their successors, and from their more scanty data they drew their conclusions quite as carefully. They had as great a desire to advance knowledge, they were as devoted to their profession, they had as keen observation, and although they made mistakes, we were probably making mistakes just as great. It was in treatment that some of their errors were most manifest. Medicine was not for another fifty years after this time to escape from the doctrine that bleeding was almost universally desirable. The amount of blood drawn in those early days was prodigious. Frequently the symptoms of the bleeding were attributed to the symptoms of the original disease, as also were the symptoms resulting from the overdose of a drug—mercury, for instance, in a case of syphilis. The most popular drug at this time was Peruvian bark, which was used not only for malaria, but for many other conditions. It did no harm, and by aiding digestion did some good. Malaria was then rife in many parts of Britain; as its cause was unknown, and it had not been differentiated from many other diseases, and as the benefit of the drug in many cases was dramatic, it was natural to give it in all sorts of disorders. But was not iodide of potassium given almost as loosely to-day? In nervous diseases their mistakes in diagnosis were common; it was not recognized that many symptoms were hysterical which were obviously so, and malingering seemed to go unrecognized. On the other hand, some advice on the treatment of oesophageal stricture by James Johnson in 1787 could hardly be bettered, and there was an admirable discussion on a case of enlarged prostate brought forward by Fothergill. The value of ipecacuanha for dysentery was very widely appreciated. There were several papers also on digitalis, which was employed with great success as a diuretic. The importance of industrial diseases was recognized. Yet all this went on side by side with a certain amount of attention to the phases of the moon in relation to therapeutics.

The four diseases most frequently mentioned during the twenty-five years selected for this review were hydrophobia, tetanus, influenza, and typhus. The profession believed that the best way to deal with hydrophobia was complete excision or the application of strong caustics as soon as possible after the bite. In tetanus enormous quantities of opium were given to relieve the spasms. Influenza came in epidemics; our ancestors made much of the cough. Typhus was extremely common, and one of the most interesting papers in the early journals was a paper by Lettsom, who described the typhus prevailing in Newgate prison.

British Medical Journal.

SATURDAY, OCTOBER 16TH, 1920.

BRITISH AND AMERICAN SURGEONS.

THE American College of Surgeons, fellowship of which is not limited to the United States, is meeting in Canada for the first time this week, under the presidency of Dr. George E. Armstrong, Professor of Surgery in McGill University, and the occasion has appropriately been marked by the exchange of international courtesies.

Independence is an idea which has played as relatively great a part in the development of surgery in America as it has in the history of the United States. Independence of thought and action has characterized the surgeons of that country from early days, and they succeeded in inspiring their patients with a determination to face the risks of formidable operations. But there have also been drawbacks, for independence among certain sections of the populace has set up an opposition to medical authority which has led to some strange and erroneous practices. Even more important has been the State view of independence as regards licence to practise; each State has clung to its rights, and it has been impracticable so far to establish a Federal licence to practise throughout the United States.

Among American surgeons in the early part of the eighteenth century was Cadwalader, who had dissected under Cheselden; Philip Syng Physick was a pupil of John Hunter; John Collins Warren studied under Astley Cooper in London, then in Edinburgh and Paris. American surgeons at the beginning of the nineteenth century gave special attention to the arrest of haemorrhage by ligature, and to the ligature of large arteries for the cure of aneurysm. In 1807 Twitchell successfully tied the common carotid for secondary haemorrhage following a bullet wound, an operation not often a success even to-day. Alexander Mott ligatured the innominate artery, and subsequently he removed a large myeloid sarcoma of the clavicle. The operation lasted four hours, and involved the tying of forty vessels; the patient was rewarded for his endurance by a long life. McDowell was in practice in a country district when he undertook his first ovariotomy, about which he could have learnt from John Bell in Edinburgh nothing beyond the pathological anatomy of the cyst. He based his recommendation of the operation to the patient on an analogy with Caesarean section; she rode sixty miles on horseback to be operated on, and was likewise rewarded for her bravery by a long survival after the operation.

Independence and readiness to try fresh expedients on the part of the surgeons, as well as courage on the part of patients, may be further instanced from the history of that great evolution in surgery, the introduction of the practice of general anaesthesia. In the middle of the last century S. D. Gross exerted influence in two directions. By his "Experimental and Critical Inquiry in the Nature and Treatment of Wounds of the Intestines" he started in America the experimental method for the solution of surgical problems; also by his contributions to medical history in his *Lives of Eminent American Physicians and Surgeons*, and the foundation of the American Surgical Association, he extended an interest in medical literature. There followed after the Civil War the founding of the Surgeon-General's Library, and the whole English-speaking medical world has benefited by the publication of the *Catalogue* of the library and of the *Index Medicus* under the direction of J. S. Billings. As great centres of population sprang up in the middle States, surgical activity extended westward. At Chicago Senn and Murphy followed Gross, and experimented on animals as to the suitable methods of treating pistol bullet wounds and intestinal obstruction. Murphy imitated in his experiments the various causes of obstruction, and thus transferred to the regular practice of surgery conditions which from the earliest times had been deemed hopelessly incurable.

But whilst surgery made advances in cities, country practitioners lagged behind. They had obtained from their State a licence to practise on easy terms after a superficial education, and continued out of touch with the advances which were being made. Yet owing to the great distances from surgical centres, all urgent cases came perforce under the care of such practitioners. Hence arose a great movement, in which Murphy took a leading part, for the purpose of diffusing surgical knowledge by means of postgraduate courses, periodic travel for study, and the holding of meetings for the demonstration of recent advances in surgical treatment. In order to raise to an adequate standard the surgical practice of all the hospitals throughout the United States, an endeavour was made to link up together those practising surgery. Although Federal recognition may be anticipated in the future, the association of surgeons into a college and the institution of advanced surgical examinations have been started on a purely voluntary basis. The English College of Surgeons and its surgical examinations served as a basis, but variations were introduced. In the conduct of the examinations advantage has been taken of the advice and experience of Mr. F. G. Hallett; and Sir Humphry Rolleston and Mr. H. J. Waring lately reported on their visits to the examinations as now held in the United States.[1] The Inaugural Address to the American College of Surgeons was given seven years ago by Sir Rickman Godlee when President of the English College, and last October Sir Anthony Bowlby gave an address on Surgical Experiences in the War.

The programme for the meeting in Montreal opens with a series of demonstrations at the various hospitals and the delivery of the first oration of the foundation to commemorate Dr. J. B. Murphy of Chicago. Appropriately enough, the first item on the programme concerns acute intestinal obstruction, with Dr. Finney, of Baltimore, as the first speaker. But the American College does not restrict itself to such a great general meeting. During September sectional meetings connected with the Clinical Congress were arranged to be held in the principal towns of such States as Idaho, Oregon, and Montana, and in Washington.

It may be recalled that Murphy presided at the meeting of American surgeons in London just before the war, and he then visited a number of the London hospitals. Now the American surgeons are visiting another centre of British surgery, and an English surgeon, Sir Berkeley Moynihan, has been selected to perform a double duty. The happy association with American surgeons has led the chief surgeons serving in the British Armies during the war to present to the American College a Mace, fashioned on that of the English College, with certain fitting variations, such as may be gathered from the description published at p. 597. The formal presentation of the Mace by Sir Berkeley Moynihan was accompanied by a felicitous speech. The selection of him as the first J. B. Murphy Orator is a compliment to British surgery which the Orator worthily sustained, and he has commemorated one more of the heroes of American surgery by an intimate sketch of Murphy's personality, as well as by a reference to his work as a surgeon.

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[1] BRITISH MEDICAL JOURNAL, June 19th, 1920, p. 833.

INDUSTRIAL HOMES FOR CONSUMPTIVES.

MODERN methods have succeeded in subduing the activity of many forms of infective disease, but tuberculosis still defies all efforts to check its spread in crowded communities. The reason is not far to seek. The compulsory enforcement of precautionary measures is out of the question, and no adequate means have been adopted voluntarily for dealing with the disease, either in individual cases or in county or municipal areas.

A vast amount of thought, time, and money has been expended upon the provision of various methods of treatment, but, for the most part, only temporary success has been achieved. The consumptive working man who has been rendered fit for work by the judicious regulation of life in the open air or the sanatorium, coupled perhaps with carefully graduated inoculations, must needs return sooner or later to home conditions which preclude the possibility of maintaining the required standard of health. He must, moreover, enter at once into full work in order to earn enough money to live upon, since the hard conditions of most systems of insurance will deprive him of his grant if he undertakes any form of paid work. If his health deteriorates, the arrested tubercle may become active again and he finds himself an invalid as before, a charge upon his immediate relatives or the public and a danger to those living in close association with him. These facts have long since been realized, but it is only of late years that a more rational method has been devised whereby the early consumptive, who is seldom incapacitated from all kinds of work, can be enabled to put in practice all the well-recognized rules of hygiene, associated, if need be, with special methods of treatment, but at the same time to engage in some form of remunerative work.

The idea of segregation on a large scale has often been mooted as a possible means of controlling the spread of the disease, but it has never been brought within the range of practical possibility until the scheme of industrial colonies associated with village settlements or garden cities was devised. Details of the scheme with a full account of its practical working out in Cambridgeshire have recently been made public in a book by Sir German Sims Woodhead and Dr. Varrier-Jones, introduced in an interesting preface by Sir Clifford Allbutt.[1] The object of the colony and village settlement that they have set up at Bourn and Papworth in Cambridgeshire is the provision of treatment for arrest of the disease together with occupation and even remunerative work for the consumptive while he is still in receipt of grant or pension. The difficulty of finding such work has been to some extent met by the introduction of machinery. An adult patient with physical and mental powers crippled by disease cannot easily adapt himself to a new trade, but he can so adapt himself, as so many thousands of unskilled munition workers have proved, to the control of a machine. If by such means he is enabled to earn a living, he is provided with a cottage in which he can resume home life in the garden city or settlement, so long as he agrees to such restrictions as he knows to be needful for his future well-being.

The details of working, the objections that have been raised and the difficulties that have had to be overcome, together with an account of the results obtained, are duly set forth by the authors. A beginning having been thus successfully made, the promoters look forward to the widespread establishment of garden cities with organized industries in connexion with a central institution, worked by State subsidies through the agency of a Pensions Ministry or the friendly societies. The difficult question of segregation of the actively infective case might, it is thought, incidentally be settled by the establishment of "temperature wards," in which all cases with abnormal temperature would be treated temporarily; the chronic case with persistent temperature would become a permanent inmate, but would not be debarred from some form of remunerative work.

This scheme, which if it is to be successful must be carried out on a very large scale, would seem to offer more of the "hope," to the importance of which Sir Clifford Allbutt refers in his preface, than any other that has yet been suggested. To be successful it must be carried to completion. Permanent and not merely temporary relief, to the patient and the community alike, must be aimed at. It has been abundantly proved that no hard and fast classification of consumptives is practical, and that an infinite amount of care, patience, and tact, founded on large experience, is required in dealing with the many phases of the disease. Hence the need for specially trained medical superintendents able to devote their whole energies to the work. Such men are not easy to find, but the introduction of village settlements must needs be slow, and there is plenty of time for special education in the control of them.

As effective means of checking the spread of tuberculosis, notification and sanatorium treatment—as usually applied at present—have not, it must be admitted, achieved the results which were anticipated by those responsible for their introduction. They have undoubtedly restored a considerable number of individuals to working capacity, but they have not touched the larger question of arrest of the spread of the disease. Something more complete is called for, and local authorities would do well to consider carefully the prospect that is held out to them by the manifest success of the experiment in Cambridgeshire.

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UNIVERSITIES AND STATE GRANTS.

THE annual parliamentary grants to universities for this year was fixed at one million, and an extra half-million was granted to help the universities and university colleges to reinstate their machinery after the war. The Chancellor of the Exchequer, speaking at Birmingham on October 8th, said that it was the intention in future to grant £1,500,000 a year, and it was also hoped to do something by way of a special non recurring grant to enable the federated universities scheme of pensions to be adapted to the cases of older professors and teachers who had served before the pensions scheme came into existence. The grants, he said, would be administered through the University Grants Committee, which was guided by certain regulations. In the first place a university would not be encouraged to undertake any new development until it had made adequate provision for the subjects it had already engaged to teach and had paid its existing staffs adequate salaries. A second condition was that the grant must not be given for secondary or technical work unless it was clearly established to be work of a university standard. Thirdly, the committee was directed to take into account the amount of local support; if a locality did not give its university adequate local support it could not reasonably expect the taxpayer at large to help it. A promise had been made by the Prime Minister that a grant of pound for pound would be made in respect of any money raised in aid of the University of Wales; the condition was that a penny rate should be raised throughout the whole of the Principality; if other localities did the same for their universities they would have a similar claim. The same principle would apply to the University of London. The question of the proposed new site in Bloomsbury seems to have advanced during the last ten days. The original offer of the Government, as made public by the Minister of Education in May, was to give a site which would eventually amount to eleven and a half acres, and to provide for the maintenance of the buildings but not for the cost of their erection. In return the University would give up its offices at the Imperial Institute, South Kensington, and King's College would resign its site in the Strand, which it holds at a peppercorn rent from the Crown. Mr. Fisher has now addressed a letter to the Vice-Chancellor of the University, which seems materially to alter the situation. After denying that the balance of gain, after the exchanges above-mentioned are carried out, rests with the Treasury, and after noting that the annual charge for maintenance of the new and more spacious head quarters will be larger than that in respect of the present offices at South Kensington, he said that if the University Grants Committee were to recommend that a grant spread over several years should be made towards the building of the new university head quarters there would be no difficulty with the Treasury in making arrangements for the payment of such a grant in instalments as might actually be required for the erection of buildings. The grant, he added, would be made contingent upon the amount of support the university could obtain from municipal or private sources. Mr. Fisher estimated that the total grant from the Treasury to the University of London, its colleges and schools, for the academic year 1920–21 amounts to £244,000, an advance of more than £200,000 on the grants paid to the same institution in 1899. In addition, a non-recurrent grant of £141,000 was made in respect of the academic year 1919–20. In view of these facts Mr. Fisher thinks that the University need not fear that the Government will be unsympathetic in considering its further needs. It has not, we believe, hitherto generally been understood that the University Grants Committee was competent to recommend the Government to make a grant towards the building and equipment of the future head quarters of the University, but, as this is so, it is not surprising to hear that the Sites Committee has recommended the Senate to accept the offer of the site in Bloomsbury.

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[1] *Industrial Colonies and Village Settlements for the Consumptive.* By Sir German Sims Woodhead, K.B.E., M.D., LL.D., and P. C. Varrier-Jones, M.A., M.R.C.S., L.R.C.P. With preface by Sir Clifford Allbutt, K.C.B., M.D., [illegible] London: Cambridge University Press; and of all booksellers. 1920. (Demy 8vo, [illegible] net.)

SICK WASTAGE IN WAR.

A VALUABLE article on sick wastage appears in the August number of the *Journal of the Royal Army Medical Corps*, by Colonel A. B. Soltau, A.M.S.(T.F.), who (it is an open secret) did a great deal to focus attention on the enormous importance of the wastage of men from medical causes, as opposed to that from battle casualties, in the latter part of the war. The author gives statistics of the sick admissions to casualty clearing stations for one year (1917) in one of the armies. From an analysis of the figures he finds that no fewer than 25 per cent. of the cases originated from scabies or some form of pyodermia similarly preventable by careful inspection and personal cleanliness, and that nearly 20 per cent. were due, directly or indirectly, to trench fever—a disease similarly, of course, preventable. The evolution of laundries, first started in the field ambulances and eventually taken over by the Armies, the provision on the large scale of baths and disinfestation stations, went a long way latterly towards the suppression of these dirt diseases. A great number of patients who went to form the floating hospital population were men suffering from slight disabilities, who had been enlisted in error by medical boards in England, for disabilities which in civil life do not prevent a man from being a wage-earner but are bars to efficiency on active service once the psychological stimulus of enthusiasm has worn off. Standing medical boards at the bases, as established in the Egyptian Expeditionary Force, composed of men experienced in the needs of the front line, would appear to be essential. Venereal disease as another cause of wastage ought also to be included among the preventable diseases, if instruction by medical officers were thoroughly carried out. According to Colonel Soltau's statistics, therefore, the majority of medical admissions to hospital—excluding certain diseases which at times were epidemic, such as influenza in 1918 and nephritis in 1915 and 1916—were from preventable disease. In regard to the treatment of the sick, the experiment carried out in the Fourth Army during the winter of 1917–1918, of establishing convalescent centres in the Corps areas, was very successful in preventing wastage. As we have often remarked, the evolution of the casualty clearing stations—from being actually rail-head clearing stations to becoming the vital centres of surgical and medical activity, better equipped than many base hospitals—was one of the most striking developments of the war. Every stage, however, of evacuation of the sick man, from casualty clearing station to base, from base to England, meant greater delay in return to duty—far greater once the man was sent to England, where a state of "hospitalization" was easily acquired and extremely difficult to overcome. For this reason, and also because a man could be sent back to his own unit, where he was at once more efficient and more contented than in a strange unit, the completion of treatment of the sick in the forward areas—latterly not much less quiet and safe than the base—was found to give excellent results. Colonel Soltau's article, which appears to be the first attempt to show the wastage that sickness caused in France, is all the more useful in that it so clearly indicates how the failures in the past might be obviated.

CONFERENCE ON CAUSES OF DEATH.

AN international conference, organized by M. Jacques Bertillon, is being held in Paris this week to assist in the decennial revision of the International List of Causes of Death. The delegates nominated by the British Government to represent the United Kingdom are Dr. G. S. Buchanan, Senior Medical Officer of the Ministry of Health, Sir Humphry Rolleston, Dr. T. H. C. Stevenson, Superintendent of Statistics, General Register Office, Dr. J. C. Dunlop, Superintendent of Statistics for Scotland, and Dr. N. M. Falkiner, Medical Superintendent of Statistics for Ireland. The conference was opened on October 11th by M. Breton, the French Minister of Health; it is the third of the series. The preceding conference, that of 1909, which was attended in strength by delegates of the United States but not by British delegates, issued the present International List. This the British Registrars-General adopted in common with the greater part of the civilized world. The English *Manual of the International List of Causes of Death* and the "short list" used by medical officers of health are both based upon the International List; the British "short list" is very similar to the condensation used in the United States. In this way comparison of British mortality with that of other countries has been greatly facilitated. Before leaving for Paris the British delegates conferred at the Ministry of Health with representatives of various authorities interested in the nomenclature of disease, such as the Navy, Army, and Air Force, the Royal Colleges, the London County Council, the Medical Research Council, and the Society of Medical Officers of Health. They have also received and considered detailed criticisms upon certain proposed amendments from the same representatives.

COMMON SENSE IN SITE PLANNING.

A BRIEF reference in a recent issue to the economy of putting fireplaces and flues on inside walls has led Dr. Lionel Picton to send us a pastoral photograph, showing a sheep-dog and a lamb warming themselves against the outside wall at the back of the kitchen fire. The picture may serve to impress on the public mind the loss of heat from a fireplace built against an outside wall; it is used to illustrate the report on housing issued by Dr. Picton, who two years ago succeeded Dr. Garstang as M.O.H. for Winsford, a growing town in the salt district of Cheshire. The report deals with the special conditions of a particular site, but the problem is looked at freshly, and many of its shrewd common-sense observations are of general application. The present cry for better housing, Dr. Picton thinks—and we hope he is right—is a genuine demand for the abandonment of what may be described as the Victorian standard of urban dwelling, which consisted of row upon row of wedge-shaped buildings, with slatternly back-yards dovetailed between the narrow part of the wedges. Dr. Picton would lay out a site without regard to preconceived conventions. In his conception aspect is the essential point; for this reason he thinks the lay-out should not be determined by existing road frontages, but the houses so placed on the site that the chief living rooms are to the south. Though he shows a parlour he does not fear to say that the architect should remember that the kitchen is the chief living room of the house, and for the woman it and the scullery the chief working rooms. The kitchen should have a wide window to the south and a stove on an inside wall. The arrangement of the scullery is a special feature of his plan; it opens on to a southern porch and the two together occupy the whole depth of the house. The scullery is separated from the porch by an ingenious but simple double door, which can be opened one-third, two-thirds, or altogether. Dr. Picton estimates that the scullery might be widely open to the porch for two hundred days a year, so that the woman of the house may, if she chooses, work practically in the open air. Further, a window is shown looking from the kitchen into the porch, so that the mother, if working in the kitchen, can keep an eye on an infant in the porch. Four bedrooms are shown upstairs, one of them opening by a French window on to a balcony. The cottage he describes measures [illegible] by [illegible], and would form a suitable dwelling for an artisan with a young family. The house stands back towards the north of its site, and the living rooms look over the garden to the south. Groups of houses are reached by drives leading from the main road. These drives need not be heavily metalled, curbed, and channelled; instead of flagged sidewalks there may be grass verges and gravel paths, and [illegible] walls and iron railings could be replaced by hedges. After careful calculations the Committee on Housing, presided over by Sir John Tudor Walters, concluded that a lay-out of the open type, though using more land, was less costly than closely packed, heavily paved streets. Nevertheless the plans of the housing department of the Ministry of Health do not seem to contemplate the possibility of detached houses; it appears to be assumed that they will be semi-detached or in blocks of four, pierced by an arched passage through the middle, which, as Dr. Picton says, indicates a reversion to the evil tradition which the present movement towards better housing should do away with. Convenience is subordinated to symmetry, and to a narrow margin of cheapness. The new houses in rows will not provide those inestimable benefits of air and light which the same land, and almost the same materials and workmanship, would confer if employed in the more open type of development.

LUNACY IN 1919.

THE sixth annual report of the Board of Control for the year 1919[1] states that on January 1st, 1920, the number of notified insane persons under care in England and Wales was 116,764, an increase of 61 as compared with the number on January 1st, 1919. This is contrasted with decreases of 3,278, 3,159, 8,188, and 9,138 for the years 1915–18 respectively, and with an average annual increase of 2,251 for the ten years immediately preceding the war. In previous reports attention had been directed to the consistent increase in the numbers of patients under care occurring yearly from 1859 to 1914, and in the last report the opinion was expressed that the decreases of the years 1915–18 were of a temporary character, and related to the exceptional social and economic conditions arising from the war. A return to more normal conditions during 1919 has coincided with the first increase in numbers for any year since 1914, although the marked change from a decrease of 9,138 (in 1918) to an increase of 61 (in 1919) has been caused not so much by an increase in the number of patients admitted as by a decrease in the number of deaths in institutions, which were 7,446, or 39 per cent. less in 1919 than in 1918. The economic conditions due to the war, which affected the general health of the community, were felt with exceptional severity in institutions, and especially in the asylums, of this country. A rising death rate, culminating in the last year of the war, was marked by an exceptional mortality from dysentery and tuberculosis—preventable diseases which have always been prevalent in asylums, and to which the insane would seem to be markedly prone. It is gratifying, therefore, to find that in 1919, with the abnormal war conditions gradually disappearing, the asylum death rate has so remarkably improved. A fact that has a bearing on the increase of male patients under care is that there were some 1,600 mental and nervous cases in military hospitals on January 1st, 1920, about 2,000 less than a year previously, and of these 2,000 a considerable proportion were during the year certified and admitted to civil institutions. The report includes the circular letter issued to visiting committees by the Board of Control, already fully noted in the JOURNAL of September 4th last (the Educational Number). This gave suggestions for improving the status and prospects of assistant medical officers in the asylums service (an object for which the British Medical Association and the Medico-Psychological Association have long been working together and separately); for providing more effective treatment of recoverable cases upon modern lines; and for raising the standard of instruction of assistant medical officers in asylum practice, both now and in the future.

CANNED FOOD.

WE have received from the Food Investigation Board an interesting report,[2] by Dr. William G. Savage, on the methods used for the inspection of canned foods and their trustworthiness for the purpose. In view of the extent and the value of the trade in canned foods, and of their widespread popular use the report raises points of great importance. The trade examiners are impartial, and there is no inducement for them to be otherwise, as the large retailers to whom the cases are sent are well acquainted with the signs of defective tins and will certainly throw them out, erring if anything on the side of an undue stringency, since the local retailer will not accept any tin with the slightest sign of defect.

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[1] H.M. Stationery Office. 1920. [illegible] net.

[2] Food Investigation Board, Special Report No. 3. Part I. Canned Meats. H.M. Stationery Office. Price [illegible] net.

To a doctor the methods employed by the wharfinger examiners are particularly interesting, for they strikingly resemble those employed by him in the physical examination of the human chest. A full examination of the unopened tin comprises inspection, palpation, percussion, and sometimes shaking, a form of auscultation. In practice, apart from obviously blown or otherwise obtrusively unsound tins, reliance is placed mainly upon percussion—that is, the character of the sound yielded by tapping the surface of the tin by the fingers or by a piece of wood. As there is a considerable vacuum normally inside the tin after the process of sealing and cooling, the pressure of the outside atmosphere ensures that the meat is in contact with the tin all over; on percussion, therefore, a sound tin emits a dull note, but if the meat is not in contact there is air or other form of gas and the note is tympanitic. It is satisfactory to find that the investigations of Dr. Savage show that there is the smallest possible chance of unwholesome canned food getting as far as the ordinary retail markets.

THE PRINCE IN AUSTRALIA.

The home-coming of the Prince of Wales this week makes it appropriate to refer to a letter we have received from Lieut.-Colonel Leonard W. Bickle, A.A.M.C., describing the arch of welcome erected by the New South Wales Branch of the British Medical Association in honour of the Prince's arrival in Sydney. Colonel Bickle's letter is accompanied by a photograph of the arch taken by himself, but this, unfortunately, does not lend itself to reproduction in our columns. The picture shows us a rectangular archway, with massive columns, each some 24 ft. high and topped with a flagstaff bearing a standard. The slender cross-piece is inscribed "Welcome to H.R.H. the Prince." The whole design is severely simple, and for that reason all the more effective. Through the arch we see the long vista of College Street flanked by decorative masts, with the Sydney Museum on the left of the picture. In the far distance is another arch—the citizens' arch; many others were set up by public bodies at different parts of the route taken by the procession. Our correspondent expresses regret that the marks on the arch erected by the New South Wales Branch were not distinctive enough to allow of the general public at once recognizing by whom it was put up. We are therefore the more pleased to have some record of our colleagues' loyal tribute to the Prince.

LIVERPOOL TUBERCULOSIS CONFERENCE.

The eighth annual conference of the National Association for the Prevention of Tuberculosis was held last week in Liverpool, and was attended by nearly 1,000 delegates, representing all parts of the United Kingdom.

At the opening session, over which Sir **Arthur Stanley** presided, there was a discussion as to the value of the methods of prevention and treatment now in vogue. This discussion tended to centre on the sanatorium, and while the majority of clinicians who spoke were agreed as to the excellent results of this treatment in suitable cases, a fresh issue was raised by the suggestion that advanced cases should be admitted to sanatoriums. Dr. E. W. **Hope** (M.O.H. for Liverpool), whose paper was read by Dr. **Mussen**, expressed the view that sanatoriums had been introduced with an unfortunate flourish of trumpets, which resulted in inflated expectations amongst those who did not appreciate the precise functions of a sanatorium, while the extravagant claims which the more ardent supporters of sanatoriums put forward gave the general public the impression that admission to a sanatorium was equivalent to restoration to health, exclusion from it a sentence of death. It must be asserted with absolute confidence that institutions for the reception of patients at all stages were essential, but that the exclusive selection of cases with a view to good sanatorium statistics, and the limitation of institutional care to these, was preposterous. Mr. T. **White**, who later supported this view, said that in Liverpool they had opened wards for advanced cases, but that as soon as this was known the patients refused to go. If the advanced case was willing to go to a sanatorium it would be inhuman to refuse him. Dr. **Nathan Raw** held that the unsatisfactory results of treatment at the present time were due almost entirely to the fact that sufficient time could not be devoted by the patient to his cure. Dr. **Ian Struthers Stewart** said that factors which militated against the success of sanatoriums were that individual doctors had charge of too many cases, and also the failure to diagnose many cases until the disease was in a late stage. The medical profession must bear a part of the blame, as a large proportion of cases were not recognized until the disease was advanced. Dr. **Halliday Sutherland** considered an average of three months' sanatorium treatment was nonsensical. If advanced cases were admitted to sanatoriums and died there, the only result would be that these institutions would get a bad name, and that the early curable cases would refuse to go. That was already happening. The sanatorium and the hospital were interdependent elements in a co-ordinated scheme. Dr. **Charles L. Minor** said that in America they had already tried and abandoned the practice of lumping all stages of the disease in one institution. When patients refused to go to an institution there was something wrong with the institution. With all respect he urged the reform of British institutions for advanced cases. Each ward should be a little family of twenty-five persons, each of whom was intimately known to the doctor.

Lord **Glenconner** presided over the second session, when the subject for discussion was "Practical difficulties in connexion with the carrying out of tuberculosis schemes and the best measures to overcome them." Dr. J. G. **Adami**, Vice-Chancellor of Liverpool University, said that some of the difficulties of domiciliary treatment might be overcome by adopting a modification of the "class method" introduced by Dr. Joseph Pratt of Boston. Classes were established in association with churches, the congregations providing funds with which to make a start and to appoint a specially trained social worker. Suitable cases for the class were those still in the curable stage. Patients spent the entire twenty-four hours in the open, on the roof or verandah of their house, which they only entered for meals and ablutions. That was easier to do in Canada than here. Tents, blankets, and reclining chairs were supplied by the congregations. On the average those patients living in Montreal streets gained twice as much as patients sent to a sanatorium seventy miles away. The cause of this difference was certainly psychological. Sir **Henry Gauvain** entered a strong plea for better instruction on tuberculosis in medical schools. The medical practitioner represented the first line of attack in the fight. It was imperative, if real and speedy progress were to be made, that thorough and systematic instruction in all forms of tuberculous disease should be given in the medical schools and facilities provided for extramural knowledge to be obtained. Dr. **Alexander Sandison** advocated a co-ordinated and systematized scheme for keeping clinical records of all cases of tuberculosis.

Sir **Robert Philip** presided over the final session, at which Dr. A. W. J. **MacFadden** opened a discussion on tuberculous milk. He urged that measures to protect the community from dangers arising through milk should be combined with an active policy for increasing the consumption of milk in order that the dairy industry might attain its maximum commercial efficiency. Professor J. M. **Beattie** discussed the various methods of ensuring a pure milk supply. In regard to the campaign for clean milk, he remarked that clean milk might be tuberculous milk. Sir **Robert Jones** condemned the use of artificial milks. The photographs of children fed on such milks looked very impressive, but there were marks about the wrists and heads of these children which any surgeon could recognize as characteristic of rickets. Dr. **Stenhouse Williams** drew attention to the practical needs of the dairy farming industry.

Before the conference ended the following resolution was carried unanimously:

> This Conference views with satisfaction the growing interest which is being shown throughout the country in connexion to the prevention of tuberculosis. It reaffirms its belief that the methods adopted are justified by the results obtained, and urges their still more vigorous prosecution. In particular the Conference urges the Government to consider the immediate institution of a more definite system of medical inspection in the case of certain industries where tuberculosis is especially rife. It also urges that the Milk and Dairies Order, 1915, and the Tuberculosis Order, 1914, should be brought into operation with as little delay as possible.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

FUEL PRICES.

NOTHING could better illustrate the chaotic conditions of to-day than the situation in regard to motor fuel. A month ago there was every prospect that the world would have to pay more and yet more for its petrol and benzol. Yet this week threepence a gallon has been taken off the price of petrol in this country. Some vendors are actually forecasting that, when the sixpence a gallon duty comes off at the end of the year, it will be found that the price of fuel will be reduced to the public by that amount. Seemingly the financial situation in Europe and America will help towards the attainment of this. It would, however, be unwise to build too many hopes on this, for we have seen the situation completely reversed in the last four weeks: consequently there may be a reversal, in an unfavourable direction to the consumer, in three months. Many explanations have been or may be given as to the cause of this present change in the prices of motor fuel. One thing is certain, it proves once more that at present the price of motor fuel is controlled by America. The chief cause of the fall is that the United States groups are willing to sell it cheaper. The reason is that the United States are now passing through a period of extreme depression, which has had an immediate effect in reducing the home demand for new motor vehicles. Of course, the prices of motor fuels are fixed by the big corporations, on the result of calculations made on prospective, as well as on present demands. In the ordinary course prospective demands include the increasing rate with which new motor vehicles are acquired and put into service by the public, therefore a check to the absorption of new cars or utility motor vehicles by the public at once reduces the estimates of consumption in the near future: hence the controllers of motor fuel look for other markets.

In doing so their attention turns first to Europe. In France there has been a brief period of rapidly changing prices, practically always in an upward direction; while these prices obtained, the full force of the industrial depression came over France, with a result that there has been a great check in the prospects of motoring, particularly in the case of utility vehicles. Consequently France has accumulated a very satisfactory supply of motor fuel; indeed, she has probably never been better off in this respect than she is to-day. But demand rather tends to decrease than increase, for Frenchmen, like other taxpayers, have to curtail their expenditure. Therefore the price of motor fuel in France during the last few weeks has come down steadily.

Germany has also been faced lately with the fact that she has not as much petrol as she presumed she could use, by two-thirds at least. True she can get at a price all she wants from America, but she cannot afford to export money to purchase the petrol. Therefore the German Government is standardizing two classes of motor fuel. One is a combination of benzol and petrol; the other is a combination of alcohol and benzol. She can rely on both [illegible]

[illegible]

[illegible] In this country, [illegible]

[illegible]

The Royal Automobile Club [illegible] the point of [illegible] [illegible] Germany, what will be the effect of [illegible] not been decided, but it is likely that there will be no trial of these devices if the price of fuel tends rather to fall than to rise. In the interests of medical men it is possible only to repeat the advice given here long ago, to the effect that it is not wise to lock up the sums of money necessary to acquire these devices unless the one selected has been submitted to an official test of some sort. The reason is obvious. Every time any increase of costs is manifest in connexion with motoring, inventors see a chance of reaping a golden harvest by causing the public to buy devices before there has been furnished any official proof of the ability of the given invention to justify its claim in practice. Anybody marketing a genuine device need not wait for the Royal Automobile Club to suggest a trial of it, for that organization is always able to undertake individual tests of devices for very moderate fees—that is to say, for practically the bare costs. Provided the invention is a genuine one the certificate issued to the public has an enormous advertising value to those marketing the device. Therefore it is practically inconceivable that anybody with an invention that can really revolutionize the fuel situation by effecting economy would abstain from such an obvious cheap and simple form of enterprise as getting it tested officially. It takes several extra pence per gallon off petrol over a long period to recover, say, £10 10s. spent on acquiring a fuel economizer *plus* the cost of fitting it.

In the meantime it may be noted that practically none of these devices are standardized. There is, however, at least one exception, for quite twelve months past a number of cars, both in the Old World and in the New, have been standardized with the "autovac" system of fuel feed between the petrol tank and the carburetter. Undoubtedly this principle does save fuel and make for more satisfactory working, particularly in the case of machines that have a pressure tank. For all its disadvantages that method is coming increasingly into use owing to the need to redistribute the weight on the chassis in face of mechanical engine starting devices, and so forth, all increasing the load on the forepart of the vehicle. Therefore, for weight distribution it is better to place the tank at the extreme rear of the chassis instead of at the dash. The autovac system is excellent both for pressure and for gravity fed systems.

For the rest, the best hints that can be given to the medical man for saving petrol are to remember such obvious things as to test, at frequent intervals, the alignment of the wheels of his car. It is astonishing what a number of folk drive their cars with the wheels slightly out of alignment, with a result that the tyres get ground away and there is a great loss of effort, or, in other words, a considerable proportion of extra fuel consumption. Again, especially in the event of cold weather, one should always assist the warming up of the engine by leaving a rug, or some sort of a cover, over the radiator until the engine has got thoroughly hot. In the case of medical men, when a call is made something should be thrown over the cooler. Two or three miles more to the gallon can be obtained by doing this, apart from the convenience of easier restarting and the gain of better performances as judged by pulling power. Another point to remember when driving a car is that when it has attained the desired speed it is wasteful to keep the accelerator pedal in the position by which that speed was got. Instead, the proper way to drive is to employ the accelerator mostly to attain the desired speed; it should then be released gradually to such a position as enables the given speed to be maintained. That is the most economical way. Another thing very common among drivers is that they "run too much petrol and too little spark," as the saying goes. On those cars wherein the driver has control of the ignition point the tendency is to leave the lever more or less in one position, or to employ two positions at most, one for starting and the other for running. Economy, as well as a much better performance, can be achieved by remembering that in the hands of a driver who develops a good sense of timing [illegible] the spark control [illegible] to no less an extent than is the throttle. In the ordinary way, at twenty to twenty-five [illegible] an hour a car ought to take the fullest advance of the ignition. In so far as the spark is retarded the fuel burned is wasted. The spark ought to be retarded just ahead of pinking, which should never be allowed.

Medical men will doubtless be interested to know that the second post-war Motor Car Exhibition will be opened at Olympia, Kensington, and at the White City, under the patronage of the King, from November 5th to 13th. This will be the first occasion on which the British show has taken the place of the French one. It will be the most representative show of the kind ever held, the exhibitors being more numerous than ever before. Nothing that has been done in America is in any wise comparable as regards representing the international element. Last year the outstanding feature was furnished by the number of high-powered expensive cars staged. This year the middle and small sized cars will constitute the principal features of the display.

FACTORIES AND WORKSHOPS IN 1919.

THE annual report of the Chief Inspector of Factories and Workshops for the year 1919 has just been published.[1] It appears in a new form, in chapters, each dealing with one important subject and containing a summary of the detailed reports of the inspectors.

It has been found that during the war the standard of safety and sanitation on the whole declined owing to pressure of work, shortage of staffs, and difficulties in obtaining materials and labour to effect repairs or renewals; but during 1919 a great step forward was made not only in recovering the lost ground but in many cases in advancing to a much higher standard. The higher level of sanitation and comfort required in munition and other war material producing works, and the strict conditions attached to emergency orders have tended to produce better surroundings in general and greater regard for cleanliness in particular, in certain classes of factories.

It is surprising to learn that on the part of the workers themselves there is no great demand for washing and sanitary conveniences, even where the trade is obviously dirty and unpleasant, and also that firms that are leading the way in welfare work have unsatisfactory sanitary conveniences. One firm which had a continuation school, a dental clinic, and a welfare staff, had sanitary accommodation which the report describes as "extraordinarily bad." Conditions of this kind, however, are bound still to be found, when the general standard of domestic sanitation is still so low in many parts of the country, both urban and rural, and where it appears to be difficult for the factory inspectors to persuade the local authorities that anything better is necessary or desirable. The same difficulty has been found in the provision of drinking water in factories, under the Order of October 9th, 1917, which routine enforcement during 1919 has now made well known. Under pressure from the factory inspectors to provide "wholesome" drinking water, firms in certain country districts have found it necessary to stir up the local authority, with the result that it is hoped that a more efficient service for the whole district will be provided.

The whole question of heating, especially in large factories such as engineering shops, appears to be receiving much attention, and in nearly every district the unit system of heating is being introduced. In this system each unit consists of a bar which forces the air under pressure downwards over steam-heated pipes and so distributes the heated air at floor level where the effect is most felt by the workers. In order to obviate the "dry" feeling in the air, sometimes noted in shops heated by this system, one firm has introduced a slight amount of steam from jets near the roof, and the workers maintain that the atmosphere is improved. Another interesting development for reducing the very high temperature associated with many important industries is the douche system of air cooling, in which a douche of cool moving air is blown by means of fans into the space where the men are at work, producing a cooling and refreshing effect. Employers and workers both speak enthusiastically of it, and whereas in former years the men often left work in the early afternoon owing to the excessive temperature they were now able to put in full time without fatigue. The close relationship between production and good working conditions is thus demonstrated.

In regard to industrial diseases the Whitley Councils made themselves felt during the year, and conferences were held with representatives of the manufacturers and operatives in different trades to consider possible improvements in matters affecting health. The statistics show that in lead poisoning there has been an increase as compared with the phenomenally low figures for 1918, but that was unavoidable with the return to ordinary trade. The industry which now stands out as the one exposing workers to the greatest risk of plumbism is not that of the manufacture of white lead, pottery, or coach painting, but the manufacture of electric accumulators. Experiments have in the past been made in this country in the direction of accomplishing by machinery the operation of pasting in this industry—in which the larger proportion of cases occur—but they have not been so successful as in America, where pasting machines are beginning to take the place of hand-pasting in the larger works. Among the few cases of plumbism reported in the pottery industry the proportion of fatalities is very high—28.1 per cent. over the five years 1915-1919, compared with the proportion—7.2 per cent.—to all reported cases.

The Anthrax Disinfection Committee was appointed in 1919 to advise the Home Office on the scheme for disinfecting infected materials. With the formation of this Committee the Anthrax Investigation Board of Bradford, feeling that the object was accomplished for which it was appointed fourteen years ago, has dissolved. The success of the work of this Board is a signal instance of a branch of a large industry attacking the particular problem in a scientific manner and in the right spirit. They consider that clinical experience has shown that a fatal termination in anthrax is now a rare event, provided the necessary medical attention be available and the disease recognized at an early stage. This may be due to the efficiency of the serum treatment of anthrax combined with enforcement of physiological rest, the need for which, they say, has been well established; while grave doubts have been cast on the utility of the excision of external anthrax, save perhaps in the earliest stages.

During the year considerable progress was made in complying with the first aid clauses of the Welfare Orders, and three inspectors have been entirely engaged during the year in their administration. With the routine keeping of records of all slight accidents requiring first aid, attention has been focussed on their causation, and surprise has been expressed by more than one management at the number that occurred, very few of them being reportable under the Notice of Accidents Act. Workpeople and employers alike appreciate the advantages of the new regulations, and find the first aid rooms of great benefit to the works from both points of view.

EXPERIENCES OF PROPHYLACTIC VACCINATION AGAINST INFLUENZA.

Two methods may be used in an endeavour to estimate the efficacy of prophylactic vaccination against influenza. According to the first mode, the incidence and the mortality rate of influenzal infection, simple or complicated by pneumonia, are measured among the inoculated and the uninoculated; the alternative is the retrospective method of ascertaining what proportions of patients undergoing attacks of influenza have received prophylactic inoculation, regard being had also to the comparative mortality among the uninoculated, the partially inoculated, and the completely inoculated.

During the influenza epidemic in New South Wales—of which we gave an account on September 25th, 1920—prophylactic vaccination was employed on a very large scale. Public dépôts for vaccination were opened two months before the occurrence of the first case, and prophylactic inoculation became exceedingly popular, partly, it is said, in consequence of a widely spread belief in its efficacy as a remedy for rheumatoid arthritis and chronic catarrhs. For some weeks the practitioners in the towns were kept busy in inoculating their patients; most of the large business firms made private arrangements for the inoculation of their staffs, and in the public dépôts the number of inoculations, according to a conservative estimate, was 670,000. Almost a quarter of the whole population of the State received this treatment. In this epidemic it was not possible, by a process of "following up," to compare the mortality among those who had and those who had not received prophylatic vaccination. By retrospective investigations, however, it was found that of 12,000 persons treated in public hospitals, the mortality among 6,249 persons who had not been inoculated was 16.5 per cent.; among 705 persons who had been inoculated once, 11.1 per cent.; among 2,273 persons who had been inoculated twice, 10.1 per cent.; and among 605 persons who had been inoculated three times or more, 8.2 per cent.

In the Studies on Epidemic Influenza issued by the University of Pittsburgh School of Medicine, Dr. Samuel R. Haythorn gives an account of vaccine prophylaxis against influenza as employed during the epidemic in Pittsburgh. At the commencement of this epidemic articles on preventive vaccination began to appear in the daily papers, and several large industrial companies offered free vaccination to their employees and their employees' families. As a consequence, "physicians' offices were besieged by persons who either demanded vaccination at once," or wished to be advised regarding its efficacy. The call for vaccines soon exceeded the supply, and the Medical Society felt it necessary to issue a public notice giving warning that no vaccination, serum, or inoculation would guarantee immunity against influenza; as the result the public demand for inoculation became considerably diminished. Dr. Haythorn points out that comparisons of the incidence and mortality among the uninoculated and inoculated are most valuable when vaccination has been completed before the epidemic has reached the field of observation. The only instance in which in the Pittsburgh epidemic such a comparison was possible was that of a hospital having a population of about 1,000 patients and 300 employees; a mixed vaccine was given about three weeks before the appearance of the first case. Among the unvaccinated the case incidence was 9.8 per cent., and deaths were 1.2 per cent.; among the vaccinated there were no deaths, and 1.2 per cent. only were attacked. Some evidence is thus afforded in favour of vaccination, and of a consequent decrease in the severity of the secondary infections.

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[1] Cmd. 911, H.M. Stationery Office; price 1s. 6d. net.

When prophylactic vaccination is begun after the epidemic has reached the district concerned, it is necessary to remember that as the epidemic progresses those inoculated will include a constantly increasing proportion of persons who are relatively insusceptible; the comparison of incidence among the uninoculated and inoculated is therefore fallacious. An account of the attempted prophylaxis among the employees of three manufacturing companies may, however, be given for what it is worth: 12,251 employees had influenza, and 40,400 escaped. Of those persons who received four inoculations of a mixed vaccine, 2,790, or 17.2 per cent., were attacked by influenza; of 15,560 persons not inoculated, 4,333, or 27.8 per cent., passed through an attack. The percentage mortality diminished as the number of received inoculations increased. It should be noted that these statistics are subject to other fallacies besides the one mentioned above; three different vaccines were employed, the injection had in some cases to be given by nurses, and in many instances the figures were based on the assumption that any employee who had been absent from work for three days had influenza, and that those who were confined to bed for seven days or more had had pneumonia. It is concluded, therefore, that by this method of investigation no convincing evidence was obtained that the [illegible] death rate. [illegible] only [illegible] Although the numbers concerned were small, allusion must be made to the experiments of McCoy, Murray, and Teeter,[3] who found, contrariwise, that the incidence, severity, and mortality of influenza were slightly greater in the inoculated moiety of 780 asylum patients vaccinated before the occurrence of the first case.

Ireland.

IRISH HEALTH GRANTS.

THE Irish Public Health Council recently made representations to the Chief Secretary regarding: (1) The allocation of a substantial share to Ireland of the £700,000 which is allocated for voluntary hospitals from the National Relief Fund; and (2) the dangers that would be entailed to the health of the community if the State grants to local authorities for health services were withheld.

Dr. E. Coey Bigger, chairman of the Public Health Council, has received the following reply from the Chief Secretary:

Chief Secretary's Office, Dublin Castle,
September 30th, 1920.

Dear Sir,

The Chief Secretary desires me to inform you that he has considered the proposals submitted to him by the members of the Irish Public Health Council, who called upon him on the 21st instant.

With regard to the Council's request that a full share of the £700,000 voted by the Committee of the Prince of Wales's Fund for voluntary hospitals may be secured for hospitals in Ireland, the Chief Secretary is pleased to be able to inform the Council that Ireland will get its due proportion of the money, which will be allocated among the hospitals upon certain definite principles which will be applicable to the hospitals elsewhere in the United Kingdom.

The Chief Secretary much regrets that he is not able to give the Council an equally favourable reply to their suggestion that the grants for public health service should be continued notwithstanding the refusal of the public health authorities to submit their accounts to audit. The Local Government Board are bound to certify after audit whether the expenditure in respect of which these grants are made has been duly and properly incurred in accordance with statutory rules and regulations, and they would not be empowered to dispense with these conditions even if it were defensible to do so.

As grants are made, in some cases, on account of the current year's expenditure before the audit takes place, it became incumbent on the Board, owing to the resolutions passed by many of the local authorities determining to ignore the authority of the Local Government Board, to ask for an assurance from these councils that if the advances on account were issued, the Board would not be debarred from fulfilling its statutory obligations to Parliament of certifying the expenditure.

The responses to the Board's circular asking for this assurance have made it quite plain that many councils have no intention of adhering to the audit and complying with the conditions upon which the grants of public money were made. Some councils have removed their official treasurers [illegible] and have made illegal arrangements by which all funds coming into their hands shall be paid to [illegible] as trustee for the ratepayers, while other councils have declared that all statutory rules and orders shall be disregarded, and that every obstacle shall be placed in the way of the Government.

It can hardly be expected that public moneys shall be entrusted to local bodies who take up this position. But in the case as the law at present stands the Local Government Board [illegible] which would enable [illegible] to make [illegible]

All that the Public Health Council has urged as to the [illegible] health [illegible] local authorities [illegible]

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[1] [illegible] 1919.
[2] [illegible]
[3] Ibid., December 14th, 1918.

A large number of the local authorities have already given the Local Government Board the assurances they require and are receiving the State grants in full, and the Chief Secretary cannot discriminate and make special arrangements by legislation or otherwise to enable other councils to be treated more favourably and relieved from all responsibility for the consequences involved by the repudiation of their bargain with the State.

Some members of the Public Health Council have suggested that many local authorities are quite prepared to allow their accounts to be audited and to conform to the law and the regulations, although they have not explicitly said so in reply to the Board's circular. This, of course, remains to be proved, and if the auditor in such cases is given the usual facilities and completes the audit and passes the accounts and certifies that the expenditure, in respect of which recoupment is claimed, has been duly and properly incurred, and any other obligations towards the Government have been duly met, the public health grants will follow as a matter of course, and the assurance required by the Board will then become superfluous.

But if this really represents the intentions of any councils, it would be better for them to at once notify the fact to the Board so that the usual grants on account of the current year's expenditure could be issued without waiting till next year when the time for the audit will arrive.

More than this the Chief Secretary is unable to promise. If the course suggested is taken, the claim of each council, as it comes up, will be duly considered, and where the statutory obligations of the councils towards the Government are fulfilled, and the authority of the local government is recognized, and a legally appointed treasurer exists, the Government will gladly direct the grants to be made.

This promise applies equally to all statutory committees of the county councils or district councils, and boards of guardians which have a separate audit and have not associated themselves with the policy of the councils of their county on the repudiation of the Local Government Board's regulations.

In the case of these bodies the Irish Government will give favourable consideration to any application they may make for the direct payment of the State subsidies to their own treasurers instead of to the county councils on their behalf as heretofore, provided that their accounts are certified by the Local Government auditor, or that in the case of an application for an advance on account of the year's expenditure it is accompanied by an undertaking from the Committee that the expenditure will be submitted to the auditor at the proper time and that all their statutory obligations towards the Government are fulfilled.—Yours truly,

(Signed) C. J. Gregg.

E. Coey Bigger, Esq., M.D.,
Chairman, Irish Public Health Council, Dublin.

In connexion with the withholding of the Government grants for Irish health services it must be borne in mind that the Criminal and Malicious Injuries (Amendment) Act, 1920, provides that the treasurers of the Irish health authorities shall, out of the first moneys under their control, meet decrees made under the Act. This would mean in many counties, owing to the number of malicious injuries and the high awards granted for compensation, that after the funds had met such charges no money would be left to pay for the public health services, including the salaries of Irish Poor Law medical officers. The Irish health authorities, apart from other objections, apparently consider they would lose more than they would gain by giving the undertakings asked by the Government in order to receive the grants for health services.

In connexion with the withholding of the grants the following letter has been addressed to the Lord Mayor and Corporation of Dublin:

My Lord,

The undersigned view with dismay the lamentable and untoward effect on the public health of Dublin which would inevitably follow the closing of the existing machinery for dealing with public health, and especially with tuberculosis—that disease which has exacted such a heavy toll on the health and welfare of the civic population.

We also recognize what a hardship would be inflicted on poor persons of feeble intellect by the proposed partial closing of the Richmond Asylum.

For these reasons alone we are willing to offer our services to receive and distribute the moneys which the above services should receive from the Treasury, on the conditions, first, that the accounts in full of these institutions be furnished to us in order to be audited by the Local Government Board for Ireland, and second, that we, as trustees, incur no financial liability in regard to the administration of the institutions involved.

Subject to the approval of this scheme by the Municipal Council, we would be willing to approach the Treasury with a view to obtaining their assent to our proposals.

James Craig, President, R.C.P.I.,
Edward H. Taylor, President, R.C.S.I.,
Wm. F. Delany, Governor, Apothecaries' Hall,
John W. Moore, M.D., President of the Royal Academy of Medicine.
James S. Ashe. Honorary Secretary.

Scotland.

Small-pox and Typhus Fever in Scotland.

A marked decrease has taken place in the number of cases of small-pox occurring in Glasgow during the past fortnight, so that at the end of last week (October 9th) only about seventy persons were undergoing treatment in the city hospitals. Stray cases are being reported elsewhere throughout Scotland. Thus, during the same week two deaths from the disease took place at Crofthouse Hospital, Ayr, and eleven patients are there being treated. A woman who had come from Glasgow to Wick has now been isolated in the small-pox hospital in that town as she was found to be affected. A third case of small-pox has occurred at Dunfermline—a man who had been working at Rosyth Dockyard. On October 8th the *Glasgow Herald* reported four deaths from typhus at Greenock, several other cases being under treatment and all the contacts under observation.

Edinburgh University.

Entries for the Faculty of Medicine in the University of Edinburgh were closed last April, the fixed maximum having then been reached, and as regards science the same thing happened in June, when some two hundred students had to be refused for this session. On October 6th 1,009 medical students had already matriculated, so that the number for last session is likely to be passed; among these were fully 180 "freshers," including 40 women. The addition to the Anatomy Department at Teviot Place and the new chemical laboratories at the King's Buildings (Liberton) are being proceeded with as rapidly as possible. On October 30th the election of a Lord Rector will take place; Earl Beatty is the present holder of the office. The Prime Minister (Mr. Lloyd George) is the Coalition candidate, and Professor Gilbert Murray is being supported by the Edinburgh University Students' Liberal Association.

India.

The Prevention of Blindness.

The population of India, as ascertained by the census of 1911, was 315 millions, and it is calculated that there are about 600,000 blind persons. This estimate relates to the totally blind. It does not include people who are going blind or people with some degree of vision, nor those whose defective sight is such that, though not altogether blind, they would, in England, be regarded as fit subjects for a blind school. If all these were included the number would be vastly increased. In all countries where there is intense sunlight, great heat, and much dust, a high incidence of blindness will probably be found, unless the population is sufficiently advanced and intelligent to take the necessary precautions—witness Syria and Egypt, and some of the Balkan territories, with their intense heat in summer and a dust-laden atmosphere. In India itself the dry, hot areas like Sind are much worse in the matter of blindness than the comparatively cool, damp, and greener tracts like the Konkan.

Mr. C. G. Henderson, of the Indian Civil Service, in a pamphlet entitled *Blindness in India and the Possibilities of its Diminution*,[1] has given an account of his personal investigations in the districts of India in which he has worked. His statement of the high incidence of blindness is lamentable, and his account of the lethargy of the people in the face of their afflictions and the little that is done to bring home to them the possibilities of relief calls for the attention of those who have the interests of that great country at heart. The Indian peasant, he says, fails to realize the danger of eye complaints which may, if neglected, lead to blindness. Even where medical facilities are near at hand he often fails to take advantage of them, and when for a complaint which he may regard as trivial he has to travel many miles and attend regularly at a distant dispensary he remains in his village and suffers the consequences of his neglect. The Indian public would like medical facilities to be brought almost to their very doors, and many an eye is destroyed by the travelling quack who visits villages and persuades his patients to submit to his unskilled operations. There are thousands of blind persons in India who could obtain some measure of sight if they would submit to a surgical operation. Cataract is one of the commonest causes of blindness, and may come on as early as 30 to 35 years of age. Small-pox takes a heavy toll of sight. Trachoma, conjunctivitis, and keratitis add to the heavy list; and ophthalmia neonatorum is very destructive. Midwifery is mainly in the hands of *dais*, who are unqualified midwives, entirely without education, dirty in their habits, and primitive in their ideas; 90 per cent. of the maternity cases are attended by these women. The efforts made during the last few years to teach them something, improve their methods, and supervise their work have met with success, but must be extended.

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[1] *Blindness in India and the Possibilities of its Diminution.* By C. G. Henderson, I.C.S. Bombay and Madras: Oxford University Press. 1919. (Cr. 8vo, pp. 34. 12 annas.)

The broad lines on which the work of reform might, Mr. Henderson conceives, be attempted are something as follows:

1. Campaigns against ophthalmia neonatorum; even if at first confined to the cities, the work would be of the greatest importance.
2. Finding out the blind and attempting to bring the benefits of modern surgery to them.
3. The setting up of village medical agencies to keep in constant touch with the sufferers.
4. The establishment of travelling hospitals and dispensaries connected with the larger more centrally situated hospitals of the great towns.

In an appendix a number of cases are cited of blind persons who were brought under surgical treatment so that sight was regained. There is a foreword by Colonel Elliot, in which he writes: "The pity of it all lies in the fact that so much could be done to rescue these poor people if their true condition were once realized by their more fortunate fellows."

THE PASTEUR INSTITUTE, SHILLONG.

The third annual report of the King Edward VII Memorial Institute, Shillong, states that, during 1919, 1,406 patients, or 40 per cent. more than in 1918, underwent the full course of antirabic treatment. Two patients died of hydrophobia during their treatment, 7 from hydrophobia within fifteen days of completing the treatment, and 6 more than fifteen days afterwards; thus the total hydrophobia death rate was 15 deaths out of 1,408, or 1.07 per cent., and the failure rate 0.43 per cent. Jackal bites were next in frequency to dog bites, and were the most important cause of rural cases. Treatment of kala-azar by intravenous injections of tartar emetic has reduced the mortality from this disease in Assam from 90 per cent. five years ago to a figure approaching 25 per cent. In the course of treatment 200 cg. of tartar emetic are given intravenously, in 1 per cent. solution, over a period of two and a half to three months. The chance of finding Leishman-Donovan bodies in blood films is reported to be greatly increased if 1 c.cm. of liquor adrenalini (*B.P.*) is given half an hour before the blood is removed. Numerous bacteriological studies have been made of Naga sore, the transmission of which is probably due to flies. Films made from the pus contained, in addition to cocci and spirochaetes, a fusiform bacillus, which appears to be identical with that of Vincent's disease. The conclusion is reached that Naga sore is merely Vincent's disease, affecting not the mucous membranes, but the skin tissues. For prophylaxis of influenza a mixed vaccine was manufactured on a large scale and used extensively. The condition among the inoculated and the uninoculated varied so greatly that little statistical value attaches to the collected results.

A faculty of medicine will shortly be organized at the Polish University of Posen. Several new buildings have recently been added to the University of Cracow, including institutes for clinical medicine, obstetrics and gynaecology, and microbiology. Dr. Ciechanowski, professor of pathological anatomy, has been elected rector.

The University of Heidelberg has received half a million marks from [illegible] of Bielefeld for the erection of an institute for the study of the chemical constitution of albumin. Until the institute is completed the researches will be carried on in the physiological institute under the direction of Kossel.

Correspondence.

THE MEDICAL SERVICES IN INDIA.

SIR,—I am much obliged to you for your invitation to give my views on the subjects raised in connexion with your leading article of October 9th on "The Medical Services in India."

In the first place I wish to support as strongly as possible every word you have written in that article. The really big thing, indeed the only thing that matters, is to get the best possible medical service for India, a service which will attract the right class of man, and will give the Indian Empire the fullest possible value. No question of sectional or Service interest must be permitted to stand in the way.

The British Medical Association has promised, and is giving, its support to the Secretary of State for India in recruiting for the I.M.S. in return for his very statesmanlike appreciation of the medical position in India. Whether it is possible for any body, however powerful it may be, to achieve this purpose which we share with the Secretary of State, must depend very largely on the evolution of affairs in India itself. A wise, wide, statesmanlike plan such as that put forward by the Verney Lovett Committee, will, if carried into effect, go a very long way to rehabilitate the medical service in India. On the other hand, the continuance of the present condition of jealousy, overlapping, and schism will assuredly be disastrous to the future. It is most important that this matter should be put clearly and squarely before the Government of India, before the peoples they govern, and before the wider Empire, which takes an interest in the welfare of each and every part of His Majesty's dominions.

The Esher Committee lays stress on the importance of a unified service, and admits that the Verney Lovett report puts forward the only feasible scheme for the formation of such a service, but denies its support to that recommendation on what appear to me to be wholly partisan grounds. The arguments that the Esher Committee adduces in favour of this lamentably weak policy are feeble to a degree. They may impress a committee of laymen; they will not carry weight with expert medical men.

During the years that I have had the honour to be Chairman of the Naval and Military Committee I have had ample opportunity of studying the trend of thought and the policy of the British Medical Association. The Association has no interest in the rivalries and disagreements of different services. Its one desire is to put the interests of medical men and of those they serve in the front rank, and I am confident that the support which it can and will give to the Government of India in the future must and will be largely determined by the way in which that body handles large questions of medical policy, such as those raised by the Verney Lovett report.

It is most deplorable that we should have been deprived at this anxious time of the help of Sir William Babtie. I had many opportunities of discussing with him questions allied to those now under consideration. I had looked forward to the day when he would be the Chairman of the Naval and Military Committee, with both the will and the intention to develop the great scheme of his later years—namely, the institution of a unified medical service, both on sea and land, for the length and breadth of the British Empire. In this I had promised him my whole hearted support. He was far ahead of his time, but the Verney Lovett Committee would appear to have been not far behind him, for its report foreshadows, if dimly, an aspiration in the same direction, to which the formation of an Indian Medical Corps is merely a stepping stone.

I trust that you will believe that in writing as I have done I am endeavouring to personify the policy of the Association to put the empire first and personal considerations by comparison nowhere. I am not writing as one who once belonged to the I.M.S., but as one who feels that great history is now being made, and that the responsibilities for making it aright are very grave indeed. I would not hesitate to sacrifice any or every interest to that of the greatest good of the greatest number.—I am, etc.,

R. H. ELLIOT,
Chairman, Naval and Military Committee.
British Medical Association.

London, W., Oct. 10th.

THE MOBILE PROXIMAL COLON.

SIR,—Mr. John Morley, in his interesting article on the mobile proximal colon in your last issue, refers to one of mine on the same subject published in the *British Journal of Surgery*, January, 1920. He is able to condemn it in a few incisive sentences, and I do not feel able or inclined to defend it with similar brevity and without undue trespass upon your space. I am contenting myself, therefore, with a few comments upon his references to my article, and with the observation that they only deal with the fringe of the subject. He quotes, apart from its context, a sentence from the middle of my article that "the second part of the duodenum is the site most liable to ulceration." He omits to quote any of the seven preambles in the form of questions which govern the whole of what is written subsequently. No. 4, on the second page of the article (p. 344 of the *British Journal of Surgery*), reads:

> Why are gastric ulcers clustered around the pyloric region of the stomach, and why is it that duodenal ulcers are almost always in the *first and second* parts of the duodenum?

This was meant in addition to emphasize by omission the universal knowledge that there is an ulcer-bearing area extending from the prepyloric portion of the stomach to the level where the hepatic flexure of the colon crosses the duodenum, and that the relative immunity from ulcers of the cardiac portion of the stomach and of the infracolcnic portion of the duodenum is a most astounding phenomenon in view of the current theories that these ulcers have a toxic, chemical, bacterial, or cytotoxic origin, or even result from "caecal stagnation and catarrh," which he asserts are causal agents, but the "precise manner" of whose action is still hidden from him. All of the 208 adults and 111 children whose operations formed the basis of my article had "caecal stagnation and catarrh." Ten of the adults had ulcers, and all of the children were free from them!

In studying the association of a mobile proximal colon with gastric and duodenal ulcers, he has frequently found a difficulty in exposing "the appendix through the ordinary upper rectus incision owing to normal fixation of the ascending colon." He must forgive me for saying so, but this is only evidence that the ascending colon was fixed in the region of the appendix. The only evidence that the ascending colon "is fixed in the normal way" is when it has been found to be so by inspection and palpation of its whole length—and this is not possible through the incision he describes. The upper half of the ascending colon, as I described in my article, quite frequently retains its primitive mesentery, while the lower half is fixed in the normal way. These observations on the collective structural malformations of the alimentary tract were made upon a series of 319 operations (the number is nearly 500 now), during the course of which the whole of the abdominal and pelvic viscera, with the exception of the spleen, were inspected and palpated as an essential preliminary to any form of operative treatment. (Incidentally, for the last two years, I now turn the right rectus outwards instead of inwards, and refuse to operate without two assistants, the sole duty of one being to hold the right rectus out of the way. All incidental and accidental snapping of nerves is thus avoided.) Twelve more cases of these rare diseases (gastric and duodenal ulcers) have fallen to my share since the article was written. In four of them the upper half of the ascending colon retained its primitive mesentery, and in the remaining eight the ascending colon was mobile over its whole length. That Mr. Morley is unconvinced by my writings is very regrettable to me, but that I have "not attempted to justify" my "very questionable hypothesis" is a discourtesy to him of which I must plead guiltless. He must forgive me once more. I attempted very hard indeed, and although the attempt is so poor in his opinion, he must have the charity to believe that it was made, and that it was my best. He is clearly so interested in the mobile ascending colon—in fact, I suspect him of a deeper regard for its possibly morbid action than for the present he is inclined to admit—that I do hope he will be persuaded to publish in full detail the knowledge in his possession whereby he can "reject quite confidently the mechanical theory recently advanced by Waugh," the value of which would be inestimable. At the same time I hope he will include a detailed account of any *post-mortem* examination he may possibly have had the opportunity of making upon any patient upon whom at any time he performed the operation of "plication of the colon and caecum," so that we may have incontrovertible evidence that for the rest of the patient's lifetime, at any rate, "the lumen of the gut was permanently narrowed." Such simple facts would be most refreshing, and should not expose us unduly to the charge of a morbid "craving for simplicity."—I am, etc.,

London, W., Oct. 10th. GEORGE E. WAUGH.

"THE RIGHT TO STRIKE."

SIR,—A certain section of the Press, by the simple stimulus of a free matinée, recently succeeded in obtaining from clergymen their various opinions around and about a burning question. The same process is now being applied to doctors, who, I hear, have been asked to witness, in company with industrial leaders, social workers, and publicists, a play dealing with the strike problem to which you refer in your issue of October 9th. Moreover, each member of the audience is asked to answer by letter the questions: "Are doctors justified in counter-striking? Are reprisal strikes desirable?" It is clear from the character of the invited audience that strikes and labour leaders and doctors are all associated in the minds of the promoters; and apparently with justification, for they state that they are receiving large numbers of applications for seats from medical men; who surely have every right to go if they so desire without drawing any comment from their fellows. Nevertheless, the circumstances beget some thoughts which may be expressed without offence.

A strike is the outcome of an irreconcilable difference between employer and employed. The word strike has a collective meaning, and I would apply it to an organized movement affecting a number of individuals. One man alone cannot strike. He may leave his work in an endeavour to enforce his demands, but his solitary act does not constitute a strike. The word should be used only in its correct sense; it not only expresses an act, but an attitude of mind towards an act. Thus if a body of men approach their employer and ask for higher wages which he refuses, and then proceed to give him a week's notice which he accepts, that act is not a strike. But if when the deadlock is reached both sides assume a defiant attitude, and the men do not give notice but nevertheless threaten to stop work, and the employer accepts the situation and likewise abstains from giving them notice, then all the conditions of a strike are fulfilled. Note well that the work itself takes no part in, and endures nothing as a consequence of, the dispute.

These conditions cannot at the present time be reproduced in the medical world, for two reasons mainly. In the first place, in contract practice a dispute might arise leading to a deadlock, but it is certain that no body of doctors would do more than proclaim their intention of not renewing the contract on the same terms. A strike would involve a dishonourable breach of a contract already agreed upon. In private practice such a situation could not arise. The medical attendant would either withdraw or be dismissed from the case. In the second place, the character of the work prohibits absolutely anything in the nature of a strike. It has been said that in an industrial strike the work itself does not endure anything (even in the case of perishable foodstuffs it is not the food, but the people who are deprived of it, who suffer); but in medical practice the work is the patient and the patient is everything; and if anyone can say that he has it within him to strike—that is, to abandon his patients and flatly refuse to see them in any circumstances—then the sooner he realizes that he has no moral right to be called a doctor the better.

There are some who still seek to trail the name of Medicine in the mud by advocating the adoption of industrial methods of settling disputes. Let them go on. Their historical credit will not be greatly adorned by such a record. Our general mental level may be none too high, but the recent negotiations with the Ministry of Health showed conclusively that any method resembling a strike is abhorrent to the vast majority of medical men, and embraced only by the fire-eating few.

The practice of medicine stands apart from any other calling, and those who seek to instil into it the methods of the office and the shop, or to associate it in any way with such an act as a strike, only reveal their own sad lack of the spirit which the public are entitled to expect to animate their doctors.—I am, etc.,

W. A. STOKES.

October 16th.

SIR,—I think most medical men will agree with me that we, as a profession and as really the most powerful of all bodies, are responsible to mankind, society, the country, and the Empire if we do not bind together to curb labour in its present destructive and irresponsible attitude towards the rest of the community. A little while ago the profession at once put an end to a railway strike in the south of France by refusing to attend, directly or indirectly, to persons or their families connected with the strike. If the medical profession acted up to its responsibility in England and Scotland it would do away at once with the dreadful prospect ahead of us in Ireland, Great Britain, and the Empire.—I am, etc.,

R. W. BURKITT.

Nairobi, British East Africa, Sept. 15th.

ANTIMONY IN KALA-AZAR.

SIR,—Dr. J. Dodds Price's letter in your issue of September 18th, advocating the use of the sodium salt of antimony, will be of the greatest interest to practitioners in the tropics who have kala-azar cases to treat. The cough, nausea, and retching which frequently occur after the intravenous injection of tartar emetic solution are a serious disadvantage to the use of this salt. Although I cannot claim to have administered thousands of injections, yet I and my assistants in Madras have administered some hundreds of injections, in many cases carrying the dosage up to 10 c.cm. of the 2 per cent. solution of tartar emetic in normal saline. Severe cough, nausea, and retching has been met with in a number of these cases, but as a rule these symptoms have occurred only when the dose has attained or exceeded 6 c.cm. By giving the injections on an empty stomach, and keeping the patient "absolutely still" for ten minutes after injection, the coughing and retching is minimized, but there are a number of cases in which such precautions fail to prevent these symptoms occurring.

Dr. Dodds Price recommends the use of the sodium salt of antimony tartrate in a strength of 1½ grains in 10 c.cm. of normal saline, the maximum dose being 10 c.cm., as he says this salt is less liable to produce cough, nausea, and collapse than the potassium salt. It is possible, however, that these symptoms might be produced even by the sodium salt if used in a 2 per cent. solution with a maximum dose of 10 c.cm., which contains over 3 grains of the salt, but the great advantage of the sodium salt appears to be that it is efficacious in curing kala-azar in considerably smaller doses than the potassium salt, and so toxic effects are avoided. If these smaller doses of the sodium salt do indeed prove efficacious, the use of this salt, which is easily obtained, will certainly prove a marked advance in the treatment of kala-azar, for the cough, nausea, and collapse produced by the potassium salt sometimes result in the patient or his parents in the case of a child refusing to permit the treatment to be continued until an apparent cure is effected; and in my experience cases which have undergone an incomplete course of injections of tartar emetic are very difficult to cure if a relapse occurs.

I should like to endorse Dr. Dodds Price's statement that a case of kala-azar can only be considered cured provided that in addition to prolonged absence of fever there is marked diminution in the size of the spleen. This latter sign is a most important, if not the most important, clinical sign of cure, for I have had the opportunity of following the subsequent history of some of my patients, and have noted that those in whom there was marked diminution in the size of the spleen during treatment have had no relapse, and the spleen has continued to diminish in size until it has disappeared beneath the costal margin a few weeks after ceasing treatment. On the other hand, I have had the unfortunate experience of finding that in some patients who have ceased treatment before there has been marked diminution in the size of the spleen the disease has recurred within a few months, and has not been cured by a further course of injections, though temporary improvement has followed in some cases.

It seems to me, therefore, that once having commenced the treatment it is essential to continue the injections until apparent cure is effected, as indicated by prolonged absence of fever with marked reduction in the size of the spleen.—I am, etc.,

F. F. ELWES, M.D.,
Lieut.-Colonel I.M.S.

London, W., Oct. 11th.

TUBERCULOUS MILK.

SIR,—In your review of Dr. Marcus Paterson's book, *The Shibboleths of Tuberculosis*, you state that "he suggests that the ingestion of a moderate amount of tuberculous poison during childhood may have an immunizing effect in the long run." I understand that this theory has already been propounded by a few tuberculosis experts. One cannot imagine a more pernicious half-truth being promulgated. It is one which, if it gains ground, will certainly handicap the sufficiently difficult work of district medical officers of health in combating tuberculosis in milking herds. The 10,000 children under 5 years of age who die annually in England and Wales from tuberculosis have evidently ingested an immoderate amount of tuberculous poison. The majority of milking herds in this country are not submitted to veterinary inspection. Recently, when my three rural councils applied for permission to appoint veterinary officers, they were advised to postpone such action pending the legalizing of the Milk and Dairies (Consolidated) Bill, which vests county councils and county boroughs with the necessary powers for this purpose. At present I am dependent upon voluntary notification from private veterinary surgeons. In this way I have had many tuberculous cows destroyed and the herds submitted to the tuberculin test.

The campaign against tuberculosis has in the past suffered much from "views" and "cures." These come and go, but still the most readily preventable of infectious diseases continues to take its toll of hundreds of thousands of wage earners and producers. Scientific leaders amongst medical men should be absolutely sure of their ground before they make statements on highly controversial subjects, otherwise the lay mind is confused. Some of my councillors, who had heard of the theory in question, were with difficulty convinced of the necessity of measures being taken to improve the milk supply. It was argued that if doctors say tuberculous milk is good for children, then dirty milk cannot be so harmful as it is said to be.—I am, etc.,

S. NICOL GALBRAITH,
Medical Officer of Health.

Newark on Trent, Oct. 6th.

NERVOUS AND FUNCTIONAL DYSPEPSIAS.

SIR,—While the paper with which Dr. Arthur Hurst opened the discussion on the diagnosis of the nervous disorders of the stomach and intestine is obviously the outcome of brilliant and painstaking work such as we are accustomed to expect from him, it seems to me—a general practitioner—to include too much in the term nervous disorders. Allowing cancer of the stomach, peptic ulcer, and gastritis to be organic diseases, he apparently classifies all other forms of dyspepsia as of nervous origin.

Are we not all too prone to misuse the word "functional"? Dr. T. Lewis, in a lecture on heart disease some months ago, pointed out how it was misused in that connexion, and in the same way there is a tendency to assume that functional diseases of the stomach are also of nervous origin. If the stomach is not fulfilling its average duty, if it fails to secrete enough or if it secretes too much gastric juice, if its motility is slow or over-active—these are functional defects whether organic disease be present or not; but are we justified in assigning a nervous origin to all of them?

Laboratory experiments are of course essential to the proper understanding of the fundamentals of disease, but when the stomach is only discussed in terms of test meals and x-ray findings are we not apt to overlook the fact that few, if any, diseases can be said to belong to a single organ? [illegible] phenomena for example [illegible] only the salient features of a general tendency, and in a similar way many of the so-called functional dyspepsias are not of nervous origin. Take the idiosyncrasy against a certain food that may occur in an otherwise healthy subject. This, it has been suggested, is in the nature of an anaphylaxis, and the perverse behaviour of the infant stomach may perhaps be similarly explained. We know how a normal baby digests its mother's milk thoroughly one day and the next has a severe attack of indigestion because some worry or excitement has affected the maternal secretion.

I think, too, that Dr. Hurst exaggerates when he ascribes all flatulence—apart from that of organic disease—to swallowed air. If this is so, what is the nature of the gas that a dose of peppermint or other carminative never fails to expel from a healthy stomach? Is not a certain amount of gastric fermentation a normal process?—I am, etc.,

Westcliff-on-Sea, Oct. 5th. T. Blanchard Sellors, M.D.

THE EYE AND MOUTH IN SLEEP.

Sir,—Mainly with the object of ascertaining whether the closed mouth in the human being was the natural physiological state, some fourteen years ago I made some observations with regard to respiration during sleep on three classes of individuals: (1) Infants during the first few days of life while still in a lying-in ward; (2) patients in the phthisical wards of a Poor Law infirmary; (3) aged people, from at ages ranging from 80 to 100 years, in the dormitories of a large workhouse.

I am not in a position to reproduce figures, but the main impressions I gathered were as follows: (*a*) I found that healthy infants invariably slept with the mouth shut. The few exceptions who slept with the mouth open were found to be suffering from an early snuffles which set in about the third day. (*b*) Among phthisical patients an abnormal number were mouth-breathers with narrow nostrils and narrow chests. (*c*) Among the old people the closed mouth was the rule during sleep. Many of these people had the Roman type of nose with large bean-shaped nostrils. With regard to the closure of the eyes during sleep, I have noticed that certain children when ill often have the lids partly open during sleep—sufficient to show the eyeballs rolling about.—I am, etc.,

Frank B. Skerrett, M.B., B.Sc.Lond.

London, E., Oct. 4th.

MORTALITY OF VENEREAL DISEASES.

Sir,—Are not all such discussions as that now proceeding in your columns futile, unless we remember and appreciate two dicta of the late Dr. Mercier?

(1) *A* disease . . . has no existence *in rebus naturae* or *in rerum natura*, but is a mental concept;

(2) *The* cause of an effect is that cause in which for a certain purpose we are most interested.

Were these fundamental and indisputable truths properly appreciated, many of the differences between medical controversialists would disappear; and, were they taught in the medical schools, students and teachers alike would not be in the state of bewilderment that a perusal of recent medical addresses shows clearly to obtain nowadays.—I am, etc.,

London, W., Oct. 10th. F. G. Crookshank.

DEATH AFTER TONSILLECTOMY.

Sir,—In his interesting memorandum on this subject (September 18th, p. 438) Dr. Sladden states "apparently there was cardiac failure," although previously he stated that "the heart, save for a moderate degree of dilatation of the right auricle, appeared entirely normal." There was no dilatation of the left auricle and no congestion of the lungs, so that the mere dilatation of the right auricle is the only criterion of cardiac failure. Is it a sufficiently good one? To estimate a small degree of dilatation is extremely difficult, and for purposes of comparison the statement is not very helpful, even if accompanied with the actual increase in capacity.

May I suggest, as a result of my experimental work in this connexion, that it be advisable at all *post-mortem* examinations to estimate the intrapericardial pressure, for so far I have found that this pressure, which in health is negative to the extent of 4 centimetres of water, becomes atmospheric in cases of cardiac failure. If my contention be correct, then an estimation of this sort will give us some definite standard to work with. Accompanying this variation of pressure it is found that the quantity as well as the specific gravity of the pericardial fluid varies so that it would be well in all reports to include data of this sort.

Dr. Koch's letter in your last issue emphasizes the importance of such a suggestion, because undoubtedly the chemical chloroform reacts adversely on hyperthyroidized blood, and consequently on the secretions.—I am, etc.,

Swansea, Oct. 11th. G. Arbour Stephens, M.D.

Obituary.

WILLIAM MURRAY, M.D., F.R.C.P.,

Newcastle-upon-Tyne.

On October 4th, at Scaurbank, Longtown, Cumberland, where, as also at Armathwaite in the same county, he had lived in comparative retirement since he left Newcastle several years ago, Dr. William Murray passed away at the age of 81. The news of his death was received in Newcastle with regret, for there are still many persons living on Tyneside who are grateful to his memory for medical services rendered to them or to their friends.

A native of Chester-le-Street, co. Durham, Dr. William Murray retained a strong affection for the North of England. From Durham school he went to the medical school and Royal Infirmary, Newcastle-upon-Tyne. He then went to University College Hospital and afterwards studied in Paris. He obtained the M.R.C.S. and L.S.A. diplomas in 1859, the M.D. degree of Durham University in 1862, and the M.R.C.P. diploma two years later. In 1872 he was elected a Fellow of the Royal College of Physicians of London. Although he never held an infirmary appointment, he yet succeeded in securing a large consulting practice in the northern counties. As a specialist for diseases of women his opinion and assistance were much sought for, but his wide knowledge and intuition made him equally distinguished as a general consultant. His strong personality, fine presence, attractive manner, and discernment not only made him an acceptable presence in a sick-room, but explained why his professional attainments were so highly appreciated by his confrères.

For fourteen years he lectured on physiology in the Newcastle School of Medicine. His lectures were marked by an originality and breadth of interpretation which the students enjoyed. Dr. Murray outlived nearly all his contemporaries. Of his old pupils who are fortunately still with us may be mentioned Dr. John Hedley of Middlesbrough; between these two from first to last there remained ties of the closest friendship.

Dr. Murray contributed important papers to the medical journals. One of his books, *Rough Notes on Remedies*, is well known, for it has passed through several editions, so admirably does it meet the needs of the general practitioner. To the deceased belonged the honour of having cured the first case of abdominal aneurysm by pressure. It was accomplished by relays of willing assistants. As a student of Sir William Jenner and Sir Alfred Garrod Dr. Murray carried on the high traditions of the practice of medicine of their time. Medicine kept ever presenting to him fresh problems for solution. Over these he pondered, not only when in the armchair in his study but in his country pursuits.

It was after a breakdown in health in the early part of his professional career that Dr. Murray decided to indulge in a long holiday and took up fishing and shooting, in both of which he afterwards became an adept. He was a keen and successful angler, many a salmon having succumbed to his lures.

Dr. Murray played an important part in founding the Young Men's Christian Association in Newcastle; he was its first president and held the office for many years. Twice married, he leaves by his second marriage a widow and daughter. One of the sons by his first marriage is Professor George R. Murray, who holds the Chair of Systematic Medicine in the Victoria University of Manchester. Dr. William Murray's remains were laid to rest in Arthuret Churchyard, Longtown, Cumberland, on October 6th.

RICHARD DAVY, M.B.Edin., F.R.C.S.Eng.,

Consulting Surgeon, Westminster Hospital.

Mr. Richard Davy, who died at his house, Burstone Manor, Bow, North Devon, was for thirty years well known as a consulting surgeon in London. He was born at Chulmleigh, in Devon, in 1838, where his father, Mr. J. C. Davy, had long practised. The son entered at Guy's

Hospital in 1858, and took the diploma of M.R.C.S. in 1860; afterwards he went to Edinburgh, where he graduated M.B. in 1862. After a winter in Paris he settled in London, became surgeon to the St. Marylebone General Dispensary, and assistant surgeon to the Westminster Hospital. He took the diploma of F.R.C.S.Eng. in 1868, and, without devoting himself specially to it, gave a great deal of attention to orthopaedics; that department of practice was then in a transition stage, subcutaneous tenotomy and excisions being the rule before antiseptic surgery, to which Davy never subscribed, became the practice. Davy learned of Sayre's method of treating spinal caries by the application of plaster jackets during suspension on a visit to New York, and was one of the surgeons who helped to popularize the method in this country. In 1878 he published in our columns a description of the method of compressing the common iliac artery by a rod introduced into the rectum. Two years later he published a volume of *Surgical Lectures*. He continued to reside and practise in London until about 1893, when he retired to North Devon, where he had always spent his holidays. He engaged in farming and in the management of the small estate he inherited from his father. Soon after settling in London he married the daughter of Mr. George Cutliffe of Witheridge, Devon, and is survived by two daughters. He had gradually become blind during the last years of his life.

Richard Davy had a genial personality, and possessed many friends among the profession in London. Surgeons who criticized his attitude towards antiseptics recognized his honesty of purpose, while students valued his careful clinical teaching, and respected his independence of view.

WE regret to record the death, which took place on September 27th, at Trowbridge, of Dr. J. TUBB-THOMAS, late medical officer of health for the County of Wiltshire. Dr. Tubb-Thomas, who was educated at Cork, Edinburgh, and Cambridge, graduated in 1886, and took the D.P.H. in 1896. After holding appointments at Lowestoft, and in Leicestershire and Rutland, he went to Wiltshire in 1899 as the first whole-time county medical officer. The war had greatly increased the strain of Dr. Tubb-Thomas's office, and after a period of impaired health he found it necessary in February of this year to resign his appointment; his services were retained, however, as consulting county medical officer of health. Dr. Tubb-Thomas was a Fellow of the Statistical Society, and past president of the West of England Branch of the Incorporated Society of Medical Officers of Health. He was a leading member of the Wilts Branch of the British Medical Association. He was the author of *Prevention* [illegible] *Shallow Wells and* [illegible] *Water Supplies*, and numerous other works connected with public health. As Dr. C. E. S. Flemming said at a meeting of the Wilts Panel Committee, "By the death of Dr. Tubb-Thomas the medical men of the county have lost an old friend and valued adviser, who by his good nature, his [illegible], and his very human qualities had won their [illegible] affection and esteem." Dr. Tubb-Thomas is survived by a widow but no family.

WE regret to announce the death of Dr. [illegible] GRATTIE, of [illegible], Newport, Monmouth. Dr. Grattie obtained the M.R.C.S. and L.R.C.P. diplomas in [illegible]; he was educated at Bristol, where he acted as assistant house surgeon at the Royal Infirmary. After settling in practice in Newport he became honorary physician to the Newport and Monmouth County Hospital; besides holding many other public appointments, he was lecturer to the Monmouth training centre for midwives. During the war he received a commission in the R.A.M.C. and served with [illegible] on the staff of the local military hospital. He was a member of the British Medical Association, and had been a representative of the local Division on the Branch Council. Dr. Grattie enjoyed an extensive practice in the district, and his death, which took place suddenly from pneumonia at the age of [illegible], is keenly felt by his patients and his colleagues.

DR. [illegible] of Llanrhaiadr, who died on September [illegible], aged [illegible], received his medical education at the University of Glasgow, and took the Scottish triple qualification in [illegible]. He shortly afterwards settled in practice at Llanrhaiadr, where he became very popular. He had served as medical officer and public vaccinator of the Llanrhaiadr and Llansilin districts and of the Oswestry Union. In spite of the heavy calls upon his time he devoted much attention to public affairs, he was a J.P. for the county of Denbigh, had served for twenty years as chairman of the Llanrhaiadr school and had held the office of chairman of the Llansilin Education Committee and of the Llanrhaiadr Parish Council as well of the conjoint parish councils. He hardly ever took a holiday, and, though about twelve years ago he found himself suffering from Bright's disease, he kept at work until he had a seizure about twelve months ago. The funeral was attended by many friends.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

THIRD M.B., CH.B. (*Materia Medica*).—Margaret S. R. Armstrong, Lilias F. E. Begg, J. Brown, Jane G. H. Burnet, C. G. Catto, G. G. Cochrane, T. J. Craig, E. J. Crawford, Jean Connochie, F. G. Creaser, A. H. Deighton, N. Fram, Flora M. Hogg, E. G. Hunter, Margaret W. Kemp, B. Leader, R. C. Little, J. R. Macleod, Susannah S. Murdoch, S. Petkoon, R. M. Saunders, H. Seal, C. Siung, A. T. Sloan, M. T. Smith, F. M. Stuart, M. Witkin.

UNIVERSITY OF GLASGOW.

THE following degrees were conferred on October 11th:

M.B., CH.B.—*A. P. Agnew, A. G. Aitken, Margaret Bennett, D. E. Brown, W. A. Galbraith, Dorothy J. L. Gallie, J. G. Gilmour, C. Glen, (Mrs.) Agnes S. Glover, C. N. Gordon, Mary B. Grant, Margaret Gray, H. W. Howieson, †T. T. Hutchison, D. Imrie, J. A. Jenkins, H. J. MacBride, A. M. M'Clure, W. R. M'Crae, A. B. Macdonald, E. P. Macfarlane, D. MacKenzie, Jean M'I. Mackintosh, Marie J. M'Naught, A. M'C. Macqueen, F. M'Vean, M. P. G. Main, A. Markson, Effie Niblock, J. Prentice, Mary Russell, †T. S. Sargent, Mary Shiskin, A. W. Smyllie, F. C. Speechly, D. Stewart, J. Stirling, Dorothy M. Summers, J. D. Whiteford.

The following candidates have been approved at the examinations indicated:

M.B., CH.B. (M., Materia Medica and Therapeutics; P., Pathology).—J. B. Adams (P.), D. Baird (M.), A. L. Bernstein (M.), F. A. Brown (P.), J. E. Brown (P.), M. Brown (P.), R. O. Bruce (M.), J. A. Cameron (P.), J. Campbell (M.), H. Collingbourne (M.), A. MacD. Douglas (M., P.), A. Gardiner (M.), W. Geyer (M.), [illegible] (M.), G. F. Graham (M., P.), R. A. Grant (P.), J. Hamilton (P.), W. Houston (M., P.), W. MacD. Johnston (M.), [illegible] (M., P.), D. A. Ker (P.), A. King (P.), F. J. Kitt (P.), [illegible] Leckie (P.), J. F. S. [illegible] (M., P.), J. A. Lister (P.), A. Logan (P.), G. M'Alpine (P.), A. M. Maccallum (M.), H. M'Cluskey (M.), A. A. Macdonald (M.), C. F. H. M'Fadyen (M., P.), T. J. M'Kail (P.), K. W. Mackenzie (M.), M. M'Lean (M., P.), N. A. Maclean (M.), M. Macleod (M.), S. M'Mahon (M., P.), R. C. Macmurray (M.), D. C. Marshall (M., P.), R. R. Morrison (P.), ‡I. Murray (P.), T. C. H. [illegible] (M.), F. [illegible] (M., P.), F. C. Porter (P.), F. Prentice (M., P.), J. S. Ramage (M.), J. M'L. R. C. Ross (P.), J. Rowatt (P.), J. Russell (P.), W. Simpson (M., P.), A. Snaddon (P.), J. Sneddon (M., P.), A. B. Taylor (M.), E. J. T. Thompson (M., P.), A. Wilson (M.), Margaret Alexander (M.), Elizabeth B. F. Allison (P.), [illegible] (P.), Mary [illegible] (P.), Mary A. M. [illegible] (M.), Mary D. A. Boyd (P.), [illegible] Brodie (M.), Isabella L. Campbell (M., P.), Margaret L. Campbell (P.), Margaret G. Connell (P.), [illegible] (M., P.), Elizabeth S. Cook (M.), Katharine L. Cooper (P.), [illegible] Davidson, M.A. (M., P.), Martha D. Dixon (M., P.), [illegible] M. S. Dewar (M.), Agnes F. Dickson (P.), Margaret A. Galbraith (M.), Margaret L. Gilchrist (P.), Catherine M. Gray (M.), [illegible] (P.), Catherine Hill (P.), Helena J. S. Irving (M., P.), Elizabeth G. Jamieson (M.), [illegible] (M.), [illegible] C. Kerr (P.), Elizabeth C. Kerr (P.), Janet S. Kerr (P.), [illegible] (M.), [illegible] (P.), Eileen M. M. Macdonald (P.), Marion A. M'Kenzie (M.), [illegible] (M., P.), [illegible] M'Nab (M.), Mary [illegible] (M.), [illegible] (M.), [illegible] (P.), Clara [illegible] Marshall (M.), [illegible] (M.), Sarah H. [illegible] (M.), [illegible] (P.), [illegible] Rees (M.), (Mrs.) Sarah [illegible] (M.), Katharine [illegible] (M.), Bertha F. A. Sharpe (M.), [illegible] (M.), [illegible] S. Stephen (M.), [illegible] (M.), [illegible] (P.), Janet A. O. West (M.), Evelyn A. Weyman (P.), Catherine B. Wilson (M., P.).

* With honours. † With commendation. ‡ Distinction in Pathology.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At the meeting of the Faculty on October 4th Sir Donald MacAlister, K.C.B., was admitted as an honorary Fellow. The following Fellows were also admitted: J. M. Christie, C.B.E., A. M. Crawford, A. D. [illegible], A. E. Kelly, L. F. Paterson.

CONJOINT BOARD IN SCOTLAND.

THE following candidates, having passed the First and Second Examinations, have been admitted Diplomates in Public Health:

D.P.H.—[illegible]

The Services.

PAY AND RETIRED PAY OF R.A.M.C. OFFICERS.

AN Army Order (No. 437 of 1920) has just been issued amending the rates of pay and retired pay for officers of the A.M.S. and R.A.M.C.

With effect from April 1st, 1920, the following rates of pay will be substituted for those laid down in Table VI of the Pay Warrant of September 13th, 1919:

	£	s.	d.	
Major-General	4	15	0	per diem
Captain	1	7	0	,,
Captain (after six years' total service) ..	1	8	0	,,
Captain (after ten years' total service)...	1	11	0	,,
Lieutenant	1	2	0	,,

The rates of pay admissible in the rank of Colonel, Lieutenant-Colonel, and Major will remain as laid down in Table VI.

It is further laid down that the "service element" for retired pay shall be at the rate of £15 for each completed year of service in the case of officers of the A.M.S. and R.A.M.C., instead of at the rate of £150 for the first fifteen years' service and £15 for each subsequent year, as laid down in paragraph 2 (a) of Table XVI attached to the Pay Warrant of September 13th, 1919. This amendment will have effect from the same date and under the same conditions as if it had been originally embodied in the table of the Warrant. The rate of "rank element" and the maximum rates of retired pay admissible for each rank will remain as laid down in that table.

The above amendments are contained in a Royal Warrant dated October 9th, 1920. On the Warrant are issued the following Army Council's Instructions:

Pay.—In the amended rates the increase of pay given in Army Order 324 of 1919 to a Captain after five years' total service disappears. An officer who has qualified prior to the date of this Warrant to the £1 7s. 6d. rate of pay may continue to draw that rate.

Retired Pay.—Steps will be taken to reassess retired pay already granted under Army Order 324 of 1919 in accordance with the terms of this Warrant. Individual applications will therefore be necessary, but in the event of considerable delay occurring before reassessment is made in any particular case, application should be addressed to the Secretary (F.3), War Office, S.W.1.

Medical News.

ON St. Luke's Day, October 18th, at 3 p.m., the Lord Mayor of London will preside at a meeting at the Mansion House on behalf of the Great Northern Central Hospital.

DR. WALTER RIGBY, on resigning the office of honorary surgeon to the Blackburn and East Lancashire Royal Infirmary to take up an appointment under the Ministry of Health, has been presented by the resident medical and nursing staffs with a fitted attaché case and a revolving bookcase.

THE King has conferred the medal of the Order of the British Empire (Civil Division) upon Mr. E. B. Turner, F.R.C.S., and Dr. G. J. Lane, inspectors in the Metropolitan Special Constabulary, for service during the war "which has been distinguished by conspicuous courage or by exceptional zeal and devotion to duty."

THE Westminster Hospital Old Students' dinner was held at the Imperial Restaurant on September 30th. Lord Glenconner, chairman of the hospital, presided, and 102 old students and guests were present—a record attendance during the last fifteen years. Lord Glenconner proposed the toast of "The hospital and medical school," to which the Dean of the Medical School, Dr. A. S. Woodwark, replied. Mr. A. H. Tubby, senior consulting surgeon of the hospital, proposed "The past and present students"; Mr. Arthur Evans and Mr. Brown responded. The toast of "The visitors" was proposed by Mr. Charles Ryall; Sir Malcolm Morris and Mr. S. Ingleby Oddie replied. The proceedings terminated with the toast of "The Chairman," submitted by Dr. de Havilland Hall, senior consulting physician of the hospital.

FOUR lectures on physic will be delivered by Sir Robert Armstrong-Jones, M.D., at Gresham College, Basinghall Street, E.C., on Monday, November 8th, Wednesday, November 10th, Thursday, November 11th, and Friday, November 12th, at 6 p.m. The subjects are: "The air we breathe," "The houses we live in," "The clothes we wear," "The food we eat." Admission is free.

THE annual general meeting of the Society of Superintendents of Tuberculosis Institutions will be held at 122, Harley Street, W., on Monday, October 18th, at 4 p.m., when there will be discussions on (*a*) classification of cases of pulmonary tuberculosis; (*b*) sanatorium case records and charts; and (*c*) a scheme for sickness insurance for ex-patients.

THE annual general meeting of the National Baby Week Council will be held at Armitage Hall, 224, Great Portland Street, W.1, on Tuesday, October 26th; the chair will be taken by Sybil, Viscountess Rhondda, at 3 p.m. An address will be given by Mr. H. O. Stutchbury, Assistant Secretary, Ministry of Health, on the Future of Infant Welfare Work. Sir James Crichton-Browne and Dr. Elizabeth Sloan Chesser will take part in the discussion.

A SERIES of six demonstrations of specimens in the museum will be given in the theatre of the Royal College of Surgeons, Lincoln's Inn Fields, by Professor Keith and Professor Shattock, an Fridays and Mondays, at 5 p.m., commencing on October 15th and terminating on November 1st. The demonstrations are open to advanced students and medical practitioners.

LORD JUSTICE ATKIN will deliver his Presidential address to the Medico-Legal Society on Tuesday, October 19th, at 8.30 p.m., at 11, Chandos Street, Cavendish Square, W.1. A discussion will follow, and Dr. Bernard Spilsbury will exhibit specimens.

THE winter session of the North-East London Post-Graduate College will begin on Thursday, October 28th, at the Prince of Wales's General Hospital, N.15, without any formal opening address. In addition to clinics in the various departments of the hospital there will be a daily lecture-demonstration on groups of selected cases, clinical and laboratory methods, etc. It is intended to hold an intensive course in December, beginning on Monday, December 4th, at 10.30 a.m., particulars of which will be published later. The syllabus of the general course may be obtained on application to the Dean.

THE next annual meeting of the American Dietetic Association will be held in New York from October 22nd–26th, 1920.

THE late Mr. Sinclair White, C.B.E., formerly professor of surgery in the University of Sheffield and senior surgeon to the Sheffield Royal Infirmary, who died at Bournemouth on August 8th, has left estate of the value of £49,194 gross and £48,537 net. After personal bequests the ultimate residue, about £30,000, will go on the death of his wife to the Sheffield Royal Infirmary for a home of rest for the nurses of that institution.

THE foundation stone of the British Hospital for Mothers and Babies, Woolwich (National Training School for District Midwives), will be laid by H.R.H. Princess Christian to-day (Saturday, October 16th) at 3 p.m. The institution was founded in 1905 to improve and lengthen the training of midwives, and it received from its inception the warm support and encouragement of the late Dr. Cullingworth and others. The work of the hospital has hitherto been carried out on a very small scale owing to lack of funds, and it is now refusing from twenty to thirty mothers every week.

THE inaugural address before the Abernethian Society of St. Bartholomew's Hospital will be given on Thursday, October 28th, at 8.30 p.m., by Sir StClair Thomson, M.D., on "Recollections of Joseph Lister by one of his house-surgeons," illustrated by lantern slides.

THE Post-Graduate College and past and present West London Hospital dinner will take place at the Café Royal, Regent Street, at 7.15 for 7.45 p.m., on Saturday, November 13th, with Mr. H. J. Banks Davis in the chair. Applications for tickets, price 15s., should be addressed to the Secretary, Post-Graduate College, West London Hospital, Hammersmith, W.6.

THE annual dinner of the Society of Medical Officers of Health will be held at the Hotel Cecil on Friday, October 22nd, at 7.30 p.m. The new President, Lieut.-Colonel F. E. Fremantle, M.P., will take the chair. Tickets (15s. each) are obtainable from the Executive Secretary, 1, Upper Montague Street, Russell Square, W.C.1. The general meeting will be held on the same afternoon at 4.30 o'clock at the offices of the society, when the new President will be installed, and will give his address on "Parliament and public health." The annual meeting of the School Medical Service Group will be held at 1, Upper Montague Street at 11 a.m. on Saturday, October 23rd. New rules will be considered, and officers elected in accordance with the new constitution of the Society of Medical Officers of Health.

CHESTERFIELD Lectures will be delivered on Thursdays at 6 p.m. at St. John's Hospital for Diseases of the Skin, 49, Leicester Square, W.C. These lectures are free to medical practitioners and to medical students who desire to attend regularly. After each lecture demonstrations will be given on special cases, followed by clinical instruction on patients presenting themselves in the out-patient department.

TWO cases of typhus have recently occurred at Rotterdam, one in an emigrant at the emigrants' hotel of the Holland-America Line and the other in a dock labourer.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the British Medical Association and British Medical Journal is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the British Medical Journal, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediseera, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"M. D." writes: Can any reader suggest treatment for staphylococcal infection of the anterior nares? Some patients have recurrent crops of small boils just inside the nostrils; they are very painful and do not respond to ordinary remedies.

"F. B. G." asks for suggestions for the internal treatment of a very obstinate case of dry seborrhoea capitis which has resisted all lotions, etc.

Income Tax.

"G. D. B." inquires as to his liability.

*** The allowances for children are £36 for one child and £27 for each other child fulfilling the conditions as to age or education. The wife allowance is merged in the personal allowance, which is £225 for a married and £135 for a single man. These allowances were provided by the Finance Act, 1920, which was passed after the form enclosed with our correspondent's letter was printed. His liability for the current financial year is as follows:

		£	s.	d.
Professional earnings		632	0	0
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		569	0	0
[illegible]	£[illegible]			
[illegible]	£[illegible]	[illegible]	[illegible]	[illegible]
		281	[illegible]	[illegible]
[illegible]		[illegible]	15	0
[illegible]		[illegible]	15	[illegible]
		50	11	[illegible]
[illegible]		7	[illegible]	[illegible]
[illegible]		42	12	0

[illegible]

[illegible]

[illegible]

[illegible]

	£	s.	d.
[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] the end of March, 1921, and then to obtain from the bank a formal certificate as to the precise amount of interest paid for the financial year: the certificate should then be sent to the local inspector of taxes with a request that the appropriate allowance should be made from the July, 1921, instalment of the tax under Schedule A or Schedule D, or both.

Reissue of Uniform Clothing to Workmen.

"Acus."—The practice of passing on from male employees to their successors uniform suits of clothing is very undesirable; especially is this the case as regards trousers or breeches. There ought to be no difficulty in arranging that these clothes should remain the property of the workman. It is certainly not sufficient to hang them up in a chamber exposed to the fumes of sulphur. If they are disinfected they should be subjected to steam under pressure.

Climate in Rheumatoid Arthritis.

Dr. Leigh Canney (London) writes in reply to "Rheumaticus" (September 25th, 1920): Cases which have been treated by vaccines and spas at home repeatedly are found to do well by treatment in warm dry climates, especially Egypt. Arrest of activity of the process is generally notable towards the end of three months, and a second or even third winter is desirable. Medical guidance is essential to success. There is no climate in this hemisphere possessing the essential qualities of great dryness and warmth, as good as that of Egypt, and especially Upper Egypt. A full account of this climate and its effect on disease will be found in Hobhouse's *Health Abroad* (Smith, Elder, and Co.).

LETTERS, NOTES, ETC.

London Hospital Catgut.

Mr. E. W. Morris, C.B.E., House Governor of the London Hospital, asks us to mention the new venture of the London Hospital in making surgical catgut and selling it to other hospitals and to surgeons. "Owing to the war," he says, "there has been much difficulty in obtaining trustworthy catgut; we therefore have fitted up plant, which is open to inspection at all times, for the preparation of surgical catgut from the raw intestine to the finished article. One merit we claim for it is that sterilization takes place when the sheep's intestine is in the flat and before it is spun into threads, and therefore we eliminate the danger of bacteria being enclosed in the centre of the thread, secure from the action of antiseptics, and only to be freed when the catgut is absorbed. As it is as easy to make for twenty hospitals as for our own, we have plant sufficient to make much more than our own requirements, and to sell to those who desire a trustworthy catgut. Any profits accruing go, of course, to the general funds of the hospital. Messrs. Allen and Hanburys have consented to be our distributing agents."

Motorists and Overhanging Hedges.

The Automobile Association and Motor Union has issued an appeal to surveyors throughout the country on the question of the danger caused by overgrown hedges, bushes, etc., at cross roads, sharp bends, and blind corners. Under the Highway Act surveyors have considerable powers enabling them to deal with this subject, but it is suggested that local landowners, as well as railway companies and other big property owners, can render great assistance in this matter. A necessary improvement can often be carried out with little or no expense to the owners of the property, and may possibly be the means of averting fatal accidents.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 44, 45, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 42, 43, and 44.

The following appointments of certifying factory surgeons are vacant: Inveraray (Argyll), Ivybridge (Devon), Newtown Butler (Fermanagh), Stockport (Chester), Usk (Monmouth).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

Harveian Oration

ON THE

BIRTH AND GROWTH OF SCIENCE IN MEDICINE.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, OCTOBER 18TH, 1920,

BY

SIR FREDERICK ANDREWES, M.D., F.R.S., F.R.C.P.,
PROFESSOR OF PATHOLOGY, UNIVERSITY OF LONDON; PATHOLOGIST TO ST. BARTHOLOMEW'S HOSPITAL.

A HARVEIAN orator, in choosing the subject of his discourse, hesitates between two paths. He may seek to elucidate some point in the founder's life or work which has escaped the notice of previous orators, or he may take some wider theme and speak of the spirit in which Harvey carried on his labours. I have not the knowledge to attempt the first of these alternatives, and when, Sir, you did me the great honour of nomination as this year's orator, it was clear to me that I must adopt the second. Many of my predecessors in the office have been more distinguished pathologists than I am, but I believe that this is the first occasion on which the honour has been conferred upon one who is not engaged in ordinary medical practice, but who is a pathologist by profession. I have to thank you, Sir, not only on my own behalf, but even more in the name of the subject which, in all humility, I represent.

The Harveian orator is enjoined to commemorate the various benefactors of this College, but considerable latitude is by custom allowed him as to the manner in which he fulfils this duty. Our College is rich in former gifts of books, pictures, silver, and other valuable and beautiful possessions; our endowments in houses and land have enabled our foundation to carry out its work with ampler means. To all those who have conferred such benefactions upon the College our grateful thanks are due, and if to-day I do not formally recite the long list of names it is because I think that the founder of this oration would himself have been the first to recognize that our intellectual heritage is a treasure of greater worth than material possessions. The great men of the past to whose labours we owe the development of medical science have been benefactors of this College, and of all that it represents, in a nobler sense. Harvey was one, and not the least, among them, and I conceive that I cannot more fittingly honour his memory than by devoting this oration to the inward spirit which has animated the progress of medical science. Many great names stand along the centuries, marking the toilsome and broken road by which our science has reached its present position, and Harvey is worthy of his company.

It is natural that as a pathologist I should take the more purely scientific aspect of medicine as the subject of my discourse, and it will be proper, in the first place, to consider the position which medicine occupies amongst the sciences. We are accustomed to speak of the "art and science of medicine," perhaps without reflecting on where the art begins and the science leaves off. A body of facts in any branch of knowledge, however thoroughly their truth has been established, does not of itself constitute a science. Science lies in the way the facts are treated. They need to be classified and viewed in their mutual relations; then, by appropriate reasoning, it is sought to formulate the general laws which govern the province of nature studied. The aim of science is to discover the "Laws of Nature," and in its truest though narrowest sense it is the pursuit of this knowledge for its own sake, irrespective of any practical use to which it may be put.

The primary aim of medicine is the practical one of healing the sick or preventing disease, and therefore, in the narrower sense, medicine is not a science but an art. Physiology, pathology, and pharmacology are sciences in the strictest sense; medicine is the art of applying the laws established by these sciences to the prevention or cure of disease. More than this, it is the very human art of treating the patient as well as his disease. But in a broader and surely a more natural sense we may regard medicine as a science. Pathology may, it is true, be pursued as an abstract subject, but in real life it is inseparable from medicine. Treatment and prevention are so intimately based upon a right understanding of the nature of disease and of the laws which govern its course that I refuse to separate pathology and medicine. It has too long been the fashion to limit the sphere of pathology to the dead-house and the laboratory; its field is equally at the bedside, and, indeed, I would assert that there is no method of studying the natural history of disease which pathology may not claim as its proper province. By Harvey's injunction I am to admonish you to seek out the truths of Nature by observation and experiment. These are two different ways of pursuing a subject, and, indeed, the concrete sciences have been divided into the "observational" and "experimental"; anatomy is an observational science, physiology an experimental one. The observational sciences long preceded the experimental, and in pathology and medicine, which partake of the nature of both, the experimental method is of late growth.

My aim is to trace, so far as I may in the allotted span of time, the influences which have governed the growth of our knowledge of disease; to pursue them to their beginnings rather than to record their final results. I cannot, indeed, hope to say anything new; I can only endeavour to place before you the facts to be gathered from literature in the way in which they group themselves in my own mind. In the first place, let me consider the conditions necessary to the successful development of a science.

The foremost is *liberty of thought*. Unless man is free to reason from his facts, unhampered by deference to received opinion or tradition, real progress in science is impossible. The history of medicine abounds in evidence of this truth; indeed, Harvey's demonstration of the circulation offers a striking instance. The second condition is *accuracy of observation*, with patient accumulation of the facts which form the building stones of science. The third, widely different from the preceding, is the gift of *imagination*, which can frame a tentative explanation of the observed facts a rarer faculty in the chastened form demanded by science and, perhaps, a more dangerous one. The two conditions last named are seen united only in exceptional men; they were so in Harvey, who has left a clear record of the mental processes which led him to the truth. In the fourth place comes the verification of hypothesis by *experiment*, in which the conditions are so controlled as to allow of more convincing conclusions than chance observations permit. And governing the whole chain of thought from its first inception there must be present that capacity for severely correct thinking, the rules for which are embodied in *logic*. Let us now see how the history of medical science sheds light on the development of these fundamental conditions.

History has been said to be the story of the influence of great men. It is true that we can associate the more striking advances in medical science with the names of certain individuals who stand out as landmarks in its development, but the course of history is surely swayed by influences deeper than this. A great man is the product of his times. Harvey would not have discovered the circulation had it not been for the labours of his predecessors and the intellectual atmosphere in which he lived. The great man is he who has the vision to combine the scattered facts into a harmonious whole and who can carry conviction to others by the force of his reasoning. I shall have to commemorate such great names standing along the history of medical science, but I shall also be obliged to consider the conditions which produced them.

In his suggestive little book, entitled *The Revolutions of Civilization*, Professor Flinders Petrie has pointed out that culture is an intermittent phenomenon. No civilization in the past has proved permanent, and he estimates the average duration of any given period of culture at about 1,500 years; in Egypt he traces eight such periods.

The downfall is usually brought about by the invasion of a people of lower culture but greater virility, and from the mixture of the old and the new races a new civilization is born, but only after an interval of relative barbarism—a sort of incubation period lasting some hundreds of years. The first phase of the new culture is hampered by imperfect traditions of the past; it is the stage of archaism in art, and in science it is marked by blind reliance on received opinion. In time these trammels are shaken off and the new people enters upon the unfettered exercise of its inborn genius: it acquires intellectual liberty, and now comes the phase of maximum fertility in every branch of human enterprise, lasting perhaps but a century or two, and followed by gradual decadence till the over-ripe civilization is ready to fall. That this has been the course of all the civilizations known to us admits of no dispute, and Professor Flinders Petrie adds the important observation that there is a fairly regular sequence in the development of the various branches of human activity. Art is the first to reach its highest point, and notably sculpture and architecture. Literature follows later, while science is last of all in its development, and may be delayed for 500 years or more after sculpture has reached its acme. Our own civilization offers confirmation of the truth of these propositions. Science is still rapidly [illegible], but as a race we are now quite incapable of Salisbury Cathedral, of Magdalen tower, or of King Henry VII's chapel. Consider the recent work at Cambridge on the structure of [illegible] and then go and look at the statue of Sir Wilfrid Lawson on the Embankment.

But, with all this intermittence, there is none the less an upward movement of civilization as a whole. Each new period of culture is coming to found itself more and more on that which has preceded it. In early times a civilization, when it fell, passed more or less utterly away; its successor had to begin again from the beginning. The invention of writing has profoundly affected the degree to which one period can influence that which comes after it. In spite of all that has been lost our debt to classical antiquity is one that never can be measured, and with the art of printing and the distribution of books over the world it would seem impossible that any important element in our own culture should be lost to our successors when our civilization perishes in its turn.

These considerations are of no little significance in relation to the development of medical science. We are aware of three great periods of civilization in Europe during the past 5,000 years—the Mediterranean or Minoan, with its head quarters in Crete from 3,000 to 1,200 B.C.; the Classical, of which Greece was the intellectual fountain head; and the Modern or Western, in which we are still living.

We know too little of the first of these, at least from the aspect of science, to enable me to say much about it. Medical science, so far as we are aware, began with the ancient Greeks. [illegible] requires justification, for we know that the [illegible] of Egypt and Babylonia had some acquaintance with medicine, and attained a certain degree of surgical and therapeutic skill. I have spoken of science as an endeavour to formulate the laws of Nature, and as the pursuit of knowledge for its own sake. Now the Egyptians, as Professor Burnet has pointed out, had invented certain practical rules of mensuration, amongst others one which involved the properties of the triangle with sides of 3, 4, and 5 units respectively, [illegible] empirically. The Greeks took this [illegible] and began to study the properties of numbers for [illegible]. [illegible] proved the abstract proposition [illegible] as Euclid I. 47. The Greeks originated the [illegible]. Similarly, the Babylonians amassed [illegible] and arrived at a certain [illegible], but they made no attempt, so far as we know, to formulate the laws governing the movements of the sun, moon and stars. The Greeks absorbed the Babylonian data and began to reason about them; in a few centuries they found out that the earth was round and floated in space, and surmised that it was only a member of a larger system of [illegible] not merely observed, but succeeded in explaining [illegible]. They thus founded the science of astronomy. In [illegible] I propose to relate, they laid the foundations of [illegible].

The way in which Greek history is usually taught in schools is, to my mind, a deplorable thing. If one takes up a primer on the subject, one finds it a lamentable record of petty strife and treachery, redeemed, indeed, here and there by some noble and heroic action, but containing little of the marvellous achievements of the Greeks in the realms of thought and art.

[illegible] matter in comparison with [illegible] with the rise of [illegible]

[illegible] were brought by the Southern race—a fertile combination for the growth of science. There was a long period of darkness and barbarism, lasting some 400 or 500 years, a dreadful time about which history is silent. In the wreck of the old culture even the art of writing seems to have perished and a new alphabet had to be brought into use. But by 800 or 700 B.C., the new civilization began to dawn, and in the realms of thought the dawn was earliest not on the mainland of Greece but in the more settled countries round the Ægean occupied by the Ionian Greeks.

So far as we are aware the earliest attempts at science began in Ionia, some six centuries before Christ, and the name which I would first commemorate as a spiritual benefactor of this College is that of Thales of Miletus. I might have chosen Empedocles or Pythagoras, but we may let Thales, as the first of the succession of early Greek thinkers, stand as the prototype of the group of men who laid the foundations upon which science was to be built by future generations. Doubtless they had acquired what they might of the lore of older civilizations, but they seem to have been the first to pursue abstract knowledge. Till their day men had been content to accept any foolish myth about the nature of the world and of the things they saw around them. The service which Thales and his successors rendered to mankind was that they rejected all fabulous tales and began to think for themselves how things had become such as they saw, definitely reaching out after the laws which they felt sure must govern nature. Their great contribution to science was to establish that atmosphere of intellectual liberty which rendered science possible. It says much for the liberal spirit of that age that these men, who broke with all the cherished traditions of the past, were not as a rule reviled for impiety, but received universal honour; Thales was accounted one of the Seven Wise Men of Greece.

It is easy for us to smile at the crudity of some of the attempts of these early philosophers to explain Nature. Yet they early realized the permanence and indestructibility of matter, and one of their chief preoccupations was the search after the primary substance out of which they conceived everything to arise. Some identified it with water, some with air; and Empedocles, in the fifth century B.C., is credited with formulating the doctrine of the four elements—earth, air, fire, and water—which was to dominate scientific thought for more than a thousand years. The obvious antagonism between heat and cold, dryness and moisture, early led to the doctrine of "opposites," which became one of the chief tenets of Greek medicine. Even the atomic theory can be traced back to Leucippus of Miletus in the fifth century B.C. This conception, elaborated some four centuries later in the well known poem of Lucretius, is an interesting example of a hypothesis reached by sheer thinking, but remaining barren for two thousand years until established by the experimental method in the hands of Dalton. That marks the difference between the science of the armchair and that of the laboratory.

But let me now consider what the earlier Greeks did for medical science. Medicine of a sort and rude surgery must have been transmitted even through the dark ages, handed down, it is said, by special families, the Asklepiadae, just as the epic tradition was passed along by the Homeridae. Certain rules of surgery and the practices of blood letting and purgation are known to be of immemorial antiquity, but for the most part the medical practice of those times seems to have been bound up with fetish worship and superstition. There is no evidence that Egypt had any true medical science to impart, and our knowledge of Minoan medicine is limited to the single fact that in the great palace at Cnossus there existed a system of sanitation so good that it was never equalled till the reign of Queen Victoria. We may be quite sure that the inquisitive and receptive Greek mind was quick to pick up what it could from the older civilizations, and then, in accordance with its peculiar genius, it proceeded to develop it out of all recognition. The greatest achievements of the Greeks were not in medical science; other sciences had to develop before medicine could rest upon a proper foundation, but what they did for medicine was no small thing.

[illegible] philosophers, and their philosophers speculated [illegible] about the functions of the body as they did about the universe. Their physiology [illegible] reflected their views on science in general. The [illegible] four elements with the hot and the cold, the moist and the dry, and loss of balance between these opposites [illegible] to produce disease. [illegible] But there was much more. The Greeks were [illegible] and they began to study and to record the phenomena of disease, grouping and classifying [illegible]. Thus medicine entered upon its first scientific phase: it became an observational science. More than this, just as in other matters the philosophers had put away the myths and fairy tales of their ancestors, so, too, in medicine they rejected the magic and fetish worship which had hitherto formed so large a part of practice. This was one of the greatest services rendered by the Greeks to medical science. Not that medicine became altogether dissociated from religion. Æsculapius was worshipped at numerous temples, and thither the sick were brought to receive such benefit as they might from the rites of the god. But at such health resorts they were also subjected to other influences—careful diet, pure water, rest, and cheerful associations—and when improvement occurred the physicians had the acuteness to perceive that this simple treatment had probably more to do with the result than the religious rites.

This brings me to the second name which I naturally commemorate to-day—that of Hippocrates of Cos—the first great clinician of whom we have any knowledge, and one whose name will always be associated with the phase which Greek medicine had now reached.

When Hippocrates was born, about 460 B.C., observational medicine had attained a considerable pitch of excellence. He doubtless imbibed the teachings of other good physicians who had gone before him, but the veneration in which Hippocrates was held by the Greeks themselves assures us that he was a man of outstanding character and attainments. We can, however, judge of him more directly. It is certain that only a small part of the Hippocratic treatises which have come down to us are from the pen of the master himself, but we may reasonably take them, as a whole, to represent his teaching, and they give us a fair idea of the stage at which the best Greek medical science had arrived in the fifth century B.C. It was a simple and rational medicine based on careful clinical observation and on a watchful study of the results which followed hygienic treatment. The healing powers of Nature formed a leading tenet of the Coan school; we may almost regard Hippocrates as the founder of sanatorium treatment. Perusal of those of the Books of Epidemics which are most certainly by Hippocrates himself shows that he was an admirable case-taker; in the light of our present knowledge we can readily make a diagnosis from many of his descriptions. His medicine shows, of course, the natural limits of a purely observational science; it knows little of anatomy and less of physiology; its crude pathology is based on the doctrine of "opposites"; the idea of experiment as a means of investigation has not yet arisen. Yet in spite of this the school of Cos is a landmark in the history of rational medicine. Throughout its writings there breathes a certain lofty and independent spirit, so that we feel that we must reverence Hippocrates not only as a great physician but as a great gentleman.

We look back to Athens, in the fifth and fourth centuries B.C., as the golden age of Greece and the fountain head of later European thought. It is the more disappointing to find that Athens itself made little direct contribution to medical science; the Athenians of those centuries were more concerned with metaphysical speculations than with science, until, indeed, we come to Aristotle. Nevertheless, it would be a grave mistake to suppose that Athens did nothing for medicine, for at this period were firmly founded some of the abstract sciences, and, above all, mathematics and logic, upon which the future development of the concrete sciences ultimately rested. I must not dwell on Aristotle, for he has been the theme of more than one Harveian oration, and rightly so, for his influence on Harvey was immense; probably no one man has so profoundly affected the thought of succeeding generations. Logic was essentially his creation; his works remain a monument to the genius of the Greeks, not only for careful observation and daring speculation, but for correct thinking. I have at times thought it might be well if this College insisted on a course of logic for the Diploma of Membership.

The gradual decay in the glory of ancient Greece is usually attributed to the known historical facts—to their petty quarrels and their incapacity for combining amongst themselves. There was probably also a deeper cause; the racial fusion to which they owed their origin had passed its period of maximum fertility, and the Greeks but fulfilled the doom which ultimately overtakes every civilization. But Hellenism did not die; what the Greeks had achieved remains as a quickening influence for all time.

In medical science the centre of interest now shifts elsewhere, and especially to Alexandria, but it remains Greek. Alexandrian culture represents a sort of continuation of that of Athens, though, perhaps, in comparison smacking somewhat of Wardour Street. The great creative age in art and poetry had gone by; it was a period of imitation in art, and in literature, largely a time of scholiasts and commentators on the better work that had been done before. But here we have an excellent illustration of Flinders Petrie's dictum that in each period of culture science reaches its prime long after art and literature have begun to decline. For all the branches of science then extant continued to advance in Alexandria. I need hardly recall how mathematics and astronomy flourished under the Ptolemies, and in medical science the Alexandrian school maintained its premiership for many hundred years.

Anatomy and physiology form a necessary basis for medical science, and much as the earlier Greeks had done for medicine they had lacked any adequate knowledge of these subjects. The later Greeks proceeded to remedy this defect. The practice of dissection became established, and anatomists must look back to the Alexandrian school for the foundation of their science. I must pass over Herophilus and Erasistratus and commemorate the later Greek school in the person of its most distinguished alumnus, Galen.

The gifts of Rome to Europe were law, order, and settled government; the Romans left us a stately literature, but to science, as to art, they made little original contribution. If we except the elder Pliny's *Naturalis Historia*, itself largely a compendium, Rome produced no great scientific work. Roman medicine, like its art, was wholly Greek in origin; its great physicians received their training in Greek schools, and Celsus, the best-known writer on medical subjects, was not himself a practitioner of medicine. Thus, though we associate Galen with Rome, I must commemorate him as a Greek—the last and in many ways the greatest of the Greek physicians.

Nearly 600 years had passed between Hippocrates and Galen, and when we compare the two it must be remembered that Galen had the advantage of that 600 years of medical experience. It gave him a wider outlook and thus made him a better physician, though I conceive Hippocrates, considering his times, to have been the bigger man. I do not propose to dwell on Galen's eminence as a physician, though he stood far above all others of his age. His real claim to immortality may be put into a few words: he was the first to make systematic use of the experimental method in medicine, and he founded the science of physiology. He probably owed more to his studies in Alexandria than to his native school of Pergamum, for there he had the opportunities of human dissection which were denied to him later in Rome, and there, too, he must have gained his first insight into the possibilities of the experimental method. To us it seems a marvel that a man of Galen's ability—an adept in the methods which we know he used—should have failed to apprehend the great fact of the circulation of the blood, for he came very near it. History is full of instances in which erroneous assumptions, so firmly held that their truth is never called in question, blind men to a truth which would otherwise be obvious. It was so with Galen, and, did we know it, it is probably true of ourselves. Nevertheless, his experimental discoveries in other regions of physiology, and particularly in the domain of the nervous system, entitle him to be called the father of that science. Galen must also be credited with a great advance in pathology. The earlier Greeks had regarded internal medicine from a purely humoral aspect; the later Greeks began to recognize affections of certain definite organs, but Galen developed this conception beyond any of his predecessors. His latest treatise, *De Locis Affectis*, deals with the morbid conditions of the different organs as judged from the symptoms of the patient. Dr. Payne has justly remarked that, had Galen been able to make *post-mortem* examinations, he might have founded morbid anatomy. It so happened that Galen was one of the most prolific writers who ever lived, and by devious ways much of what he wrote has come down to us. It is no wonder that the works of so eminent a man should have come to occupy in later ages a position in medicine almost like that of the Bible.

For with Galen we come to the end of the great age of classical civilization, and it will be fitting, before leaving it, to summarize what Greek genius had accomplished in medical science. An atmosphere of intellectual liberty had been established by the Greeks, essential to the birth and growth of science; they had developed the love of knowledge for its own sake. Their shrewd observation had transformed medicine from a medley of traditional empiricism and superstition into a natural science; they freed it from magic and laid the foundations of a rational treatment of disease. Towards the close of their epoch they devised the experimental method and used it to found the science of physiology. Indirectly medicine, like the other sciences, owes them the laws of clear thinking and the development of mathematics and mechanics. Could I have selected four names from antiquity who more fully deserve our gratitude as benefactors of this College than Thales, Hippocrates, Aristotle, and Galen?

When the Minoan civilization passed away the Greeks had been compelled to begin again almost from the beginning. There was no such complete break between the classical period and our modern civilization; much was handed on by direct tradition, and vastly more by written manuscript. Nevertheless, after the fall of the Roman Empire Europe had to be remade, and to pass through its dark ages before the dawn of a new culture. The new mixture of races seems to have been incapable of intellectual achievement till the ordained incubation period was over, and that period was at its darkest from the fifth to the tenth centuries A.D. Art was at a low ebb, and the culture of classical times was largely forgotten. The great libraries were neglected, or in some cases destroyed, and an immense amount of the literature of Greece and Rome perished beyond recall. Medicine shared the fate of the other sciences, and what was not forgotten became debased by admixture with Eastern magic and superstition.

The dominant power in Europe during this period was the Church, and although its conservatism had a wholly deadening influence as regards the advance of science it did much to preserve the culture of classical times. The mediaeval monasteries were the storehouses of learning, and though the study of pagan writings was not encouraged there was nothing to prevent a good monk of literary tastes from making copies of ancient manuscripts. This was one channel by which some knowledge of classical medicine was handed down the dark ages, but there was another of even greater importance. In the seventh century occurred the last of the four known Arab migrations which have overwhelmed neighbouring peoples; it spread not only over Western Asia but all round the Mediterranean. Whatever may have been the primitive culture of these Arab invaders, they presently acquired a high degree of civilization. They were a keen-witted race, quick to assimilate the culture with which they came in contact, and this was largely Greek in origin. For some hundreds of years the Moorish Empire in Spain was far in advance of the rest of Europe in literature, in science, and in medicine. The best medical works of classical antiquity were translated into Arabic, and it is by this strange route that much has come down to us which would otherwise have been irretrievably lost. The Arabs were skilled in criticism and dialectics, but they were not great original thinkers. They left us descriptions of certain diseases unknown to the ancients, such as measles and small-pox, but medical science owes them relatively little. Their chief share in medicine was to absorb and transmit the knowledge of the Greeks.

An end came at last to the dark ages of Europe, and in one sphere of activity after another the fetters of the past began to be shaken off. Art was the first to revive; sculpture and architecture almost reached the zenith of their development in the thirteenth century; painting took two centuries longer to free itself from archaism. Intellectual freedom was still longer delayed; from the twelfth to the fifteenth century there was learning in plenty, but it was study devoted to what had been written in the past, not the free exercise of the mind in fearless inquiry after truth. It is easy to blame the Church for this exclusive devotion to tradition and dogma, but the Church could not prevent the Renaissance when the times were ripe; we should rather regard the fact, with Flinders Petrie, as part of the ordained cycle in the evolution of a civilization. Medicine reflects the spirit of these centuries; the traditions of the past were still supreme, and Galen was the god of the medical world. Men felt him to have been a better man than themselves, as in truth he was, and it was enough that Galen said this or that, or that his writings could be interpreted in such and such a sense, and there the matter ended.

And then, in the fullness of time, after more than a thousand years of intellectual slumber, men again began to think for themselves, just as the Ionian Greeks had done twenty centuries before. The Renaissance was at first literally a revival of learning, due to the renewed study of the Greek language and the discovery of much of the classical literature which had been hidden away in the libraries of the East. It is outside my province to discuss this great movement, which spread from Italy to England in the fifteenth and sixteenth centuries, except in so far as it influenced medical science. The first effect of the revival was to strengthen the position of Galen. It must be remembered that he was but imperfectly known in mediaeval times. Much of his work had been lost, and as for what remained it is unlikely that all the spirit of the original would be conveyed by Greek writings, translated into Arabic, and later rendered into corrupt Latin. But with the revival of Greek in the fifteenth century his original writings became accessible and manuscripts hitherto unknown came to light. It became the aim of the scholars of the time to translate these works into polished Latin for the benefit of those unacquainted with Greek. Amongst the medical humanists, as they are termed, was the founder and first President of this College. There is no more honoured name in scholarship than that of Linacre, but it is instructive to note the difference between his mental attitude and that of Harvey, little more than a hundred years later. Linacre stands for the revival of learning, Harvey for the intellectual quickening that revival was to engender. The avowed aim of the medical humanists was not the advance of medical science but a return to the uncorrupted knowledge of the Greeks; the thought and science of antiquity were still held so immeasurably superior to anything that modern times could produce that no advance was contemplated. But the [illegible] Greek literature was the product of an original creative activity and a mental freedom to which Europe had been long unaccustomed. Men could not study it without at the same time drinking in something of the spirit in which it had been conceived and which animates it for all time. This was our true heritage in the Renaissance, and once again imbued with this spirit men felt at liberty to ask whether the ancients were always right and to criticize and test their statements. The reign of [illegible] came to an end, and there was commenced that advance which has continued to the present day.

The first science to bear new fruit was anatomy. It was in Italy that the renaissance began, and the book written by Vesalius on "The Structure of the Human Body," published in 1543, set the seal upon the new method of the appeal to first [illegible] of the dissection. But the story of the rise of anatomy has been told so often, and so well, in these orations, especially in relation to the discovery of circulation, that I need not dwell on it. We all know that the truth as to the [illegible] was [illegible] while it was reserved for Harvey to demonstrate the [illegible]. The [illegible] of experiment as an adjunct to observation, [illegible] for hundreds of years as it had been [illegible] by Galen, [illegible] that when a man arose, deeply imbued with the true spirit of science and capable of [illegible] with intelligence and an open mind, the [illegible] was at once rewarded by a discovery of capital importance.

One does not commemorate the name of William Harvey in this oration merely from a sense of duty; he truly stands as one of the landmarks in the history of medical science. His was the first scientific discovery of absolutely first-rate importance to be made by the application of the methods and spirit now revived from ancient times; he possessed the vision, the power of imagination, as well as the needful industry and patience in gathering his facts and devising his experiments.

Harvey has left us two treatises of unequal greatness. The *De Motu Cordis* has no need of any introductory disquisition on scientific method, for it itself is the method incarnate. It is the mature work of a master who is sure of his ground; it sweeps us along from one short chapter to another, each filled with accurate observation and close reasoning, so that no doubt or hesitation is possible to the reader. And we feel that this is because the methods open to Harvey had been adequate to solve the problem at issue; the times were ripe for his discovery.

But he also essayed to solve other biological problems, for which his means were not adequate, and the *De Generatione*, which he was reluctant to publish, is reading of a different kind. The most instructive part of this treatise is perhaps the introduction on scientific method, "Of the Manner and Order of Acquiring Knowledge." Here Harvey in his later age sets forth the principles which had guided him, with Aristotle as his leader, in his life's work, and we realize how truly scientific were his methods. But though these methods enabled him to correct many of the errors of his predecessors, and though the *De Generatione* is full of accurate and curious observations and good reasoning, in comparison with the *De Motu Cordis* it leaves us cold. No great conclusion emerges; the real problems of generation remain unsolved. And no wonder; Harvey had no microscope. But the methods and reasoning he employed, his freedom from prejudice, his modesty—these remain a guiding light to future generations to point out the path by which science should be pursued.

With Harvey we feel that medical science has fairly entered that path. The conditions which I ventured to lay down at the beginning of this discourse as essential to scientific progress—freedom of thought, accuracy of observation, imagination, experimental verification, and logical reasoning—all are exemplified in Harvey's work. I have endeavoured to trace the birth and growth of medical science up to this point, and I fear that, in the attempt to cover so wide a field in the brief hour allotted me, I may have incurred the charge of superficiality. I must be content if the sketch, though superficial, is not wholly wanting in perspective. I have intentionally dwelt upon the earlier phases of scientific medicine, for my theme has been the spirit which brought it to birth rather than the triumphs of its maturity.

If you are not weary of somewhat trite observations, I will conclude by passing in brief review some of the influences which, since Harvey's day, have been most fruitful in furthering the growth of medical science. However admirable the spirit of inquiry, medicine can only employ the means at its command, and of all sciences medicine is, perhaps, the most complex, the most dependent upon other sciences for its development. Hence it is from outside medicine that the chief stimuli to progress in medical science have come. In saying this I would not be thought to undervalue the vast internal progress which has been brought about by clinical study. One has but to recall the mighty name of Sydenham to realize what a pure clinician can accomplish. Sydenham would have none of physiology or pathology, and we may almost wonder whether one so disdainful of science would have been pleased to know that he was the founder of epidemiology.

There is room for difference of opinion as to the impulses from external sources which have had the most far-reaching effects upon medicine, but I would name four as of exceptional importance. They are the invention of the compound microscope, the development of chemistry, the acceptance of the doctrine of evolution, and the discovery of the relation of micro-organisms to disease. The microscope was invented in Holland early in the seventeenth century, but its possibilities as an aid to anatomy were not at first grasped, and it was not till after Harvey's death that Malpighi actually saw the capillaries and the contrary direction of the blood flow in arteries and veins. The use of histology from that time forward has transformed our ideas of the structure of the body, and with each improvement in the microscope our horizon has widened. We have passed from the organ to the unit of which it is built up, and Virchow's "Cellular Pathology" marks an epoch in medicine. To-day we are a stage further, for the inquiry is being pushed into the more intimate structure of the cell itself, in the hope of revealing the nature of the processes by which it carries on its work.

The rise of physics and chemistry has been even more fruitful for medicine. We cannot nowadays consider them separately, so closely merged have they become. We recognize the fundamental importance of these sciences for the right understanding of physiology and pathology by placing them at the root of medical education.

Chemistry has influenced medicine from the days of alchemy onwards; Paracelsus and Van Helmont stand out as picturesque figures in its history. In England the rise of physics and chemistry began in Harvey's lifetime with those meetings of scientific men which later gave birth to the Royal Society. It must not be forgotten that the work of such men as Boyle, Hooke, Lower, and Mayow practically solved the problem of respiration not long after Harvey's death a problem second only in importance to that of the circulation—though a century was to elapse for its full meaning to become clear with the discovery of oxygen. Every advance in physics and chemistry has borne fruit for us in its turn; to day we can almost affirm that the chief issues in physiology and pathology are to be sought in the chemical activities of the human body. These, again, are bound up with physical conditions, and there is one recent branch of chemistry the possibilities of which are only beginning to be appreciated in medicine. If we reflect that the body, from a chemical point of view, consists almost entirely of colloids, the behaviour of which is still imperfectly understood, it will be realized that advances in colloidal chemistry are destined to throw a flood of light upon the processes of vital activity.

The doctrine of evolution has scarcely received the attention it merits as a factor in modifying the opinions of medical science. So long as it was believed that the body, with all its natural functions, had been created from the first in its present condition, there was little room for inquiry into the origin of those functions, and still less into that of morbid processes. Darwin has changed all this, as a single instance will suffice to show. Metchnikoff's studies on the comparative pathology of inflammation have taught us that this is not a diseased state but a purposeful reaction against injury, gradually perfected in passing up from the lower to the higher animals. Almost without our being conscious of it, the idea of evolution has gradually effected a great change in the standpoint from which we view a large number of diseases, the symptoms and morbid changes in which we now understand as efforts of the body to maintain its integrity in face of the injurious agencies which threaten it. One might almost re-write pathology from the evolutionary point of view.

Last, but not least, of the great changes which have swept over medical science is that which was due in the first place to Pasteur, was carried on by Koch, and brought to triumphant practical application by Lister. The discovery of the true nature of infection has of necessity transformed the outlook of medicine and surgery, but bacteriology and its daughter science immunology would demand a Harveian oration to themselves.

We loosely speak of such fundamental discoveries as those I have just mentioned as producing a revolution in medical science. It is not revolution, but upward growth. With the establishment of each great principle we gain a fresh height from which the field of science takes on a new and wider aspect, and we may be confident that we shall reach yet greater heights to reward us with an even ampler range of vision. There is no sign that the vitality of science in our civilization is in any way spent; on the contrary, its fertility is unchecked. During the late war we saw for the first time the scientific forces of this country fully mobilized, and no previous five years have seen so many scientific problems brought to a successful issue. So forcible has been the lesson that science has gained mightily in public estimation, and research is on the lips of everyone. New facts are being gathered in, old facts are coming to be seen in a new light; we are almost bewildered by our own progress. The workers in the field of medical science are many, and it may not be given to any one of us to make an immortal discovery, such as that of the circulation of the blood. But the humblest of us can work in Harvey's spirit and bring his contribution to the building up of knowledge in the full assurance that even a single stone, if honestly and truly squared, will in due time find its proper place in the fabric.

THE third report on colloid chemistry and its general and industrial applications has been published by the Department of Scientific and Industrial Research (H.M. Stationery Office, price 2s. 6d.). The report gives an account of the work done during 1919 by the Committee of the Chemical Section, British Association. It does not touch upon the pharmacological and therapeutic aspects of colloids.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF NEUROLOGY AND PSYCHIATRY.

HENRY HEAD, M.D., F.R.S., President.

DISCUSSION ON PSYCHOTHERAPY.

OPENING PAPER

BY

T. A. ROSS, M.D.Edin.

PSYCHOTHERAPY covers a vast domain, and it would be impossible within the limits of this paper to make even the flimsiest sketch of the whole ground; it is proposed, therefore, to consider one aspect which seems of some importance, to try to examine the reasons which divide us into hostile sects, and to see whether we cannot do something to heal our divisions. It cannot be denied that those who hold different views on psychotherapy regard each other's opinions with something approaching bitterness. While difference of opinion is healthy—for there is no vitality where there is complete unanimity—bitterness and the imputation of unworthy motives do not lead to progress, but engender only the partisan spirit that is incapable of right judgement.

It is probable that there is no school which is not getting good results, and there is none that is not experiencing failures: let us look into the causes of these successes and failures, and we shall go far towards clearing up the misunderstandings which occur among us. These misunderstandings are not imaginary. In a recent book[1] on war neuroses the statement is made that on no account must psycho-analysis be practised; on the other hand, in the last edition of a textbook[2] on mental diseases it is laid down that there is only one certain cure for neurasthenia—namely, psycho-analysis.

We have these sects in psychotherapy mainly because we are in a state of adolescence. Eighty years ago general medicine was still in that condition, and there were bitter sectarian wars, the last of which echoed into our own time, the war of the homoeopaths and the allopaths. Now homoeopathy is dead, but it is not probable that any of the descendants of the victors would care to be described as allopaths. We can see now what an unimportant part of medical science they were wrangling over, and that it was about that part of their therapy which they comprehended least. Within our specialty the same thing is going on, the same hatred and distrust, the same imputation of bad motive.

Let us see whether each side has not good objective reasons for its views, whether the truth will not turn out to be that there are classes of cases which need no analysis, and others where it is essential; whether in short the controversy will not end in showing that both sides are right.

The first obstacle which has prevented understanding has been names. We cannot do without names, but we are all in the habit of thinking that when we have named a phenomenon we understand something about it. So when we have named a condition "hysteria" we find one man thinks at once of the necessity of psycho-analysis, while another thinks of the utter folly of psycho-analysis, and of the need only of simple persuasion.

There is more than one reason for this. Hysteria is not only a condition with protean symptoms, it is a condition with manifold kinds of roots. These may be implanted in the superficialities of the present, or they may drive down into the deepest layers of the past. There is, truly, no such entity as hysteria; there is only a kind of problem, each example of which needs a separate kind of solution.

The reason that this is not grasped more widely is because of the extremely limited experience which any one of us has, and because of the facility with which we tend to run in narrow grooves. One man acquires most of his experiences among the easily cured, another among those benefited with more difficulty. The latter becomes contemptuous and makes no attempt at the easy cure; the former sees so many patients easily cured that he makes little further attempt at the more difficult, and tends to think they are malingerers. It is one of the misfortunes of being a specialist that one tends to see exclusively difficult cases only; and the better the specialist the more does this happen. Patients are not seen by specialists till they have failed elsewhere. Thus we find in a recent book[3] by one of our foremost analysts a feeling of gloom on the whole subject. He is inclined to think that it is more the very early and mild cases that are worth analysing, as they alone hold out hope of real cure, that palliative methods are more suited to very bad ones, as they can at best look only for amelioration. Unfortunately also we do not see much of our own failures; they drift off. We do see the failures of other people, they have drifted to us. These are apt not to speak kindly of the former doctor who failed to cure them, and when they tell us of their previous treatment we may be sure it was not put in the best light. They probably were worse after it, for he who sets out to cure a neuropath and does not help him very much is sure to make him worse.

The problem, then, before us is not whether a case is one of hysteria or neurasthenia or obsessional neurosis or anxiety neurosis—it is where are the roots of the malady? It is in the answer to this that the key of therapy will be found.

There are men of austere Calvinistic leanings who say that the matter was predestined from the beginning, and it is to the intrauterine life that they look for the origins of psychoneurotic disorders. With these the writer of this paper cannot pretend to deal. Others less exacting in their ruthless logic say that the foundations are laid in infancy. Naturally both these maintain that the cause of any neurosis lies in the unconscious, and that there can be no neurosis without repression. It must be admitted that there is much to be said for the infantile view. Every act of the child, every desire which is gratified or refused, every difficulty faced or shirked, help to build its character, to determine how it shall react to environment—and good nervous health is nothing but suitable reaction to any stimulus which life provides. But even if we grant this we need not conclude that every neurosis requires investigation back to the origin of life.

Take the case of a man seen eight or nine years ago, who complained of pain radiating towards the throat on deglutition, and whose voice was hoarse. His history included the fact that some doctor had spoken gravely of the possibilities and that he himself had thought that cancer of the larynx was what was being hinted at. The larynx appeared normal on examination. But the fear was always in the patient's consciousness; it was spoken of quite readily. A single conversation of about half an hour dissipated it altogether. The pain disappeared forthwith, and the patient showed no further neurotic symptom till his death, which occurred about six years later from diabetes. In such a case it seems absurd to say that the cause of the neurosis lay in the unconscious. The patient was an intelligent lay man who knew what a terrible thing cancer of the larynx was, who had received an impression, from someone whom he believed to be competent, which conveyed fear, and he suffered in consequence from a neurosis. He never repressed anything. [illegible] a matter of [illegible] analysis. The analyst is [illegible] by a [illegible] of the kind. Why [illegible]? Why [illegible]? And an [illegible] that the man had fear of pain and fear of death, that he had associated with these fears [illegible] altogether. In the end [illegible] the patient would have been cured, and the analyst would have felt that the danger of relapse would be lessened to a greater degree than if the case had been treated by reassurance. In this case it could not have been bettered, and it may be pointed out that later this man did face death without losing his nerve, so that probably it was not fear of death but fear of torture that made him give way before—and there are not many of us who will face torture, in cold blood and for no cause, with much fortitude. There is a mass of psycho-neurotics who are suffering mainly from the fears and difficulties of their present environment, who have not suppressed these fears in the least, and who are curable in this way. The ancients, who were perfectly familiar with that very modern discovery that mental conflict affects the bodily health, furnish many examples in their literature of conscious constellations of ideas being the causative factor.

> "But Amnon had a friend whose name was Jonadab, the son of Shimeah, David's brother; and Jonadab was a very subtil man. And he said unto him, Why art thou, being the King's son, lean from day to day? Wilt thou not tell me? And Amnon said unto him, I love Tamar, my brother Absalom's sister."

But the persuasionist should take care that his cases are cured, that he has not simply got rid of something very manifest and neglected a series of other symptoms because he did not ask about them. There were cases of hysterical paralysis in the war which by persuasion alone were really cured, but there were many who, after the disappearance of their gross disability, were sleepless, had headaches and other symptoms which were ignored, but which were the cause of further failure.

Between these two extreme schools there has grown up a considerable body of opinion which is blessed by neither and despised by both, partly because it agrees with both sides, and perhaps partly because it is without a name. This should really be a point in favour of this trend of thought, but the world has ever despised the nameless. Its view, shortly, is that some of the technique of analysis is most helpful, that some of its conclusions are correct, and that persuasion is a most valuable adjunct. There is with this innominate body a belief that analysis has been used to excess, that the sexual theory, even in its latest attenuated form, has been overdone, and that a limit must be put to the interpretations which are obtained by free association.

It has just been said that the innominate body has much to commend in the teaching of Freud, and, as a member of this class, the writer finds that a delicate thing to say. To the followers of Freud it will be an offence. To them he would say that he and his fellows recognize the greatness of Freud, that they are aware that he has been the great stimulus to psychotherapeutic work, that his technical methods are of unsurpassed value, but that all the same they respectfully remain protestants, unable to bow to any kind of medical pope, unable to accept anything *ex cathedra*.

The main quarrel that the "innominates" have with the Freudians is that the latter seem to them to go too often deeper than is necessary for the purposes of cure. If it is true that they do so the disadvantages are many.

The analysts often say that they would gladly find some way of shortening the processes by which they arrive at their end, and to the observer it must be admitted that they have made at least an attempt to do so—namely, by the adoption of the theory of fixed symbols. If certain things in dreams are always symbolic of the same thing obviously much time might be saved, but the view seems to those of the innominate body dangerous, making it too easy for the observer to read his own complexes into those of the patient. To this danger the analysts are alive, and their constant advice is that it should be avoided by the analyst himself being analysed. Even if this were done it does not follow that it would of necessity improve matters. It is quite likely that a man would tend to run after those complexes which had been discovered in his own case; the danger is all the more likely now that we are told that a further attempt is to be made to shorten analysis by allowing the analyser to interfere and direct the course of the association.

The followers of Freud analyse deeply, because even if the patient is better at an early stage they attribute this betterment to something unstable, transference, faith in the physician. They work from a theory which seems fundamental in the Freudian view, but which appears to the present writer unsound. This theory is that of the attachment of psychical energy to the complex. When a constellation of ideas is repressed emotional energy is attached to it, and is repressed along with it, this energy being part of the sum of the energy of the universe can neither be created nor destroyed. It therefore has to do something. It may become sublimated and be used for altruistic or artistic work; but if all outlet be denied to it, it will cause symptoms. If such a theory is true, it is logical to turn out the entire subconscious content of the mind in order that the misdirected energy may be freed for useful and unhurtful work.

Even if it be granted that this psychical energy is the same thing as the energy of the physicists, it does not follow that it must do work. All the energy of the universe is not doing work; some of it is potential. The solar energy is stored in the coal, and as it lies in the undisturbed seam it can remain there for millions of years and cause no symptoms to the land above it. It is only when communication is made with the outside air and a suitable stimulus applied that the energy becomes kinetic. So we might imagine the energy of a completely repressed complex. It is shut off from the oxygen of consciousness; no stimulus can reach it. If it is not disturbed nothing can happen.

The school of Freud may say that they admit that this energy may be latent, but the literature teems with the view that it is always kinetic. The doctrine is never stated so baldly as has just been done, but sentences constantly occur which, if they have not this meaning, do not seem to have any at all.

> The repressed impulses do not die . . . but continue throughout life to strive towards gratification. Owing to the permanent and automatic action of the inhibiting forces, they cannot attain any direct mode of gratification, and so are driven to seek indirect symbolic forms of expression. The energy derived from them is transformed into these secondary more permissible kinds of activity.[4]
>
> The most frigid woman has a sexual instinct, even granting (what is most unlikely) that she has not and never did have any conscious sexual feeling. And if she has a sexual instinct, it must play *some* part in her mental life, even supposing (another impossible state of affairs) that it is wholly confined to the unconscious. In the face of numberless observations which found the sexual factor present and dominant in the neurosis, the only sort of case report that should have any weight against Freud's statement would be one which not only connected the symptoms with exclusively non-sexual factors, but at the same time traced the sexual instinct through all its ramifications and showed what it *was* doing and how it *did* manifest itself.[5]

Granting that this energy really exists, let us examine the arguments in favour of the ideas that it must be kinetic and is capable of being repressed.

Certain phenomena which have been put forward by Dr. William Brown have been used as supporting the view. He has described amnesic patients who, on being hypnotized, recovered their lost memories; accompanying this there has been an outburst of intense emotion, which was supposed to have been repressed along with the dissociated period of time. No such hypothesis is necessary for an explanation of the facts he has described. When the constellation of ideas was a percept before the amnesia, that percept was of a terrifying character, and was accompanied by an emotional reaction; when it was revived as a concept "with hallucinatory vividness" according to Dr. Brown's practice, it was again to all intents a percept of the same nature, and the same mechanism naturally produced the same result. There is no need to suppose that the discharge of energy had anything to do with the cure. By less dramatic methods many suppressed events of a terrifying character may be brought more gradually and less vividly into consciousness; and cure of amnesia may be brought about without any great emotional display.

Take, again, the somatic hysterical symptom. From an emotional reaction a patient becomes paralysed. He remains so because he believes he is organically paralysed; and this belief depends on an active wish not to be well in a hurry. This wish may be vague and would be hotly repudiated, but it is not easy to explain loss of function as an example of the action of repressed energy. Energy might be keeping the complexes from entering consciousness, or it might be thought of as keeping the paralysed limb in a state of dissociation. But that is not the energy of the complex but of the censor.

When we turn to the anxiety case there seems at first sight more ground for the belief in repressed energy. Here we have clinically signs of overaction in many directions—tremors, insomnia, abnormal reactions to sounds, and many other stimuli.

> Whether it were a whistling wind, or a melodious voice of birds among the spreading branches, or a pleasant fall of water running violently; or a terrible sound of stones cast down, or a running that could not be seen of skipping beasts, or a roaring voice of most savage wild beasts, or a rebounding echo from the hollow mountains; these things made them swoon for fear.[6]

The patient suffering from anxiety neurosis is not one suffering from a continuous illness; he seems rather to be one who has, as it were, a succession of small illnesses, one following on the top of another; to-day he has a headache, and to-morrow it is distinctly better, but in the evening he has it again, and it continues for a few days, and then is gone for a little, and so with his other symptoms. There are days when he feels well, with much available energy; on other days he is fit for nothing. When such events are studied individually it will be found that each was preceded by some anxiety, manifest or latent. The manifest need no supposition of repressed psychical energy. One of the patient's many worries has struck him, and he has an emotional reaction.

The latent anxieties can also be explained without reference to suppressed energy. A complex stimulator has touched some repressed constellation which was therefore about to be summoned into consciousness, but which was kept out by the censor. There has been, as it were, a struggle at the door of consciousness. Would it not be odd if a conflict of that sort did not give rise to symptoms? It is difficult to see where the idea of repressed energy helps. It is not the mere bringing of the complex into consciousness with the liberation of energy that brings relief. It is, as Morton Prince[7] has suggested, that when it is brought into consciousness the chance of viewing it from a new standpoint is thereby rendered possible. In many cases this is deliberately brought about by the doctor. It is a simple thing for him to show the patient that his view has been one-sided, and that, seen from a different aspect, the trouble may have a different signification. The complex will then be robbed of its power to initiate emotional reactions, and the complex stimulators will lose their effect. The strict Freudians say that they do not interfere, but get benefit all the same; interference, however, is not absolutely necessary for this to take effect. When the present writer was in general practice it often occurred that he encountered a case of which he did not have a glimmer of understanding; and in such an event he was accustomed to ask for a consultation. On such occasions there is the talk by the practitioner in attendance to the consultant, the examination of the patient by the consultant, the after-talk when the consultant explains the matter. Often enough for him to be assured of its importance the present writer used to wish that the consultation could have ended with the close of its first phase, before the consultant had seen his patient. For as he talked of the case aloud, he was aware that fresh aspects of it were presenting themselves to his mental vision, and by the time he had finished the mystery was no longer a mystery but a set of coherent facts which easily built themselves up into a harmonious whole. So with the patient and his complexes; as he talks them out in the presence of a helpful friend new aspects may present themselves. But here again is no need for the idea of repressed energy.

In the obsessional cases where we have the substitution of a less distressing idea for a more distressing one, there is no need to conceive of repressed energy. The obsession may be regarded as a ragged and all too small cloak with which the patient is constantly striving to cover some still more objectionable object. This object need not be regarded as possessing any energy at all. It is simply something which the patient does not wish to look at, because doing so would cause pain.

When any patient has come under the care of a doctor in whom he has confidence, an improvement in his symptoms will soon ensue. It may not last long, but it always occurs. The theory of repressed energy has been used to explain this. Certain affects which the patient had repressed are supposed to be "transferred" from their original object to the physician. It is difficult to understand exactly what this means, but so far as diligent study can make out, the energy is supposed to be projected on to the physician, and the patient having got rid of it feels better. This happens only if the patient likes the doctor. Otherwise the reverse happens and he feels worse. Why should not hate and distrust be as good a way of getting rid of suppressed energy as love and trust? The first get rid of as much energy as the second. It seems easier to believe with Dejerine that depressing emotions cause disagreeable symptoms; that elevating emotions such as hope act in an opposite way. Faith in a doctor is a sure accompaniment of hope, which was, we remember, the name of the key that opened the dungeon in Giant Despair's castle and set the prisoners free.

In his interesting account of the latest development of Freud's views, given this year at the Royal Society of Medicine, Dr. Ernest Jones mentioned a possible answer to this view of hope. He said that Freud had pointed out that psycho-neurotic symptoms might arise at the height of success, and he gave the Macbeth-Lady Macbeth concept as an example. But the Macbeths never achieved their end, and the first great breakdown (though by no means the first symptom) occurred when he seemed at the top of his fortune in the banquet scene, and Banquo's ghost appeared. The first symptom of all was, of course, long before—namely, the hallucination of the dagger, which occurred at a period of fear and anxiety. But at the banquet Macbeth must then have seemed to the Thanes secure in his power. Duncan was dead, his sons were fugitives, he himself was undoubtedly master. He had news that Banquo had been successfully murdered. But he had also just heard that Fleance had escaped—Fleance, within whose veins flowed the blood of that race that the sisters had made him think would supplant him. Banquo's murder was therefore useless; the whole plot had failed. It is somewhat surprising that Freud should, like the Thanes, have taken only the manifest content of the phenomena presented, and not have striven to see what must really have been in Macbeth's mind.

A neurosis may seem to begin at a time of success. Analysis will show that the idea of success was not in the patient's mind.

Now, if we get rid of this idea of the repression of psychical energy, or even if we do not go so far and get rid only of the idea that, if it exists repressed, it is not necessarily always kinetic, what do we gain? This, that there is no longer a necessity to turn out all the complexes that are lying in the unconscious. If my room is dirty and needs redecorating, I shall think the decorator foolish if he proposes as a routine to make an examination of the foundations of the house. It might very exceptionally need to be done, for the foundations might be damp and this might have spread upwards. If I am proposing to install a dynamo I should need such an examination. If it is said that this common-sense view is accepted in practice, I must refer again to the various books already quoted.

What line should we follow to get the essential complexes and avoid the unnecessary ones?

To me it seems that a return to something more after the long abandoned practice of Breuer would be helpful. It is possible that the present psycho-analytic procedure is much too wide in its scope of inquiry. In all the psycho-analytic books much prominence is given to the interpretation of dreams, and in most it is called the royal road to the unconscious; and unfortunately the phrase appears to be true. It does not in the least follow that the interpretation of dreams is the best clinical method of getting back to causal complexes. For the experimental understanding of the working of the mind the study of dreams has no doubt been of unrivalled value, just as the opening of the human thorax would have been the best method of studying auricular fibrillation. As soon as the main attack was made by dream analysers the [illegible] ramifications of the unconscious were discovered; the potentially explosive material found in every corner was [illegible], and in conjunction with the doctrine of repressed energy the view seemed unassailable that all the material, not some of it but all of it, was necessarily responsible for the onset of the neurosis. It seemed possible to the pioneers that they would be able to do the work thoroughly, to get rid of all the perilous stuff that weighed upon the heart, and so effectually minister [illegible] [illegible] the [illegible] mind, &c., so it was [illegible] the complex opened like the products of an abscess. But as has been attempted to show, all the stuff may not be pernicious, [illegible] it be explored. And if we are to employ surgical similes, what of rightly opening up an old wound infected with pernicious tetanus bacilli? In any case, the aim of getting rid of all seems impossible. The thing is endless. Dreams get on to too many associations, on to a number which few men are able to cope with, on to a number of painful complexes which need never be unearthed. For if the theory of the ever-kinetic energy of the complexes be abandoned, there is no need to unearth any complex that is not being stirred often by its appropriate stimuli. We want to narrow our investigation to those complexes which are in frequent communication with the outside and which are being constantly disturbed. Is it possible to narrow the inquiry in this way? I believe it is. The method to be employed is free association. As a method it can hardly be improved upon, and while free association is being practised, there should probably be no interference by the observer. His interference will come when the complex has been obtained, when he will be able to present the trouble to the patient in a better light. If it is undesirable to start from dreams, from what are we to start?

At the beginning we may start with the most marked symptoms presented in the history, which was more or less Breuer's method, only we use free association, not hypnotism. We should try to get the patient to think back about these symptoms through the years till we come to their origin, or what seems to him their origin. If he will mentally recall the environment in which they arose—the house he lived in, the school he went to, the other boys, the roads, and so forth—all sorts of other forgotten memories will crowd in upon him. When he has got his environment clear, let him picture it, and from that picture practise free association. Complexes will then appear at the surface, of a kind which will explain much. Later, while he is under treatment, he will report relapses, relapses which occurred for no ascertainable cause. If he is being seen regularly it will be found easy to fix a day, an hour, a minute when this occurred; again he pictures the whole scene of the relapse just before the symptom came on, and then says what comes into his mind by free association. Again a complex will be unearthed by him with very little trouble, and one which will be found to have a definite bearing on the case.

Gradually it will be found that the complex stimulators are losing their effect and that the patient can face up to them. When he has by this method become comfortable he may be left alone to report when relapse occurs. After many years this may not have occurred at all. If it does occur the process can be repeated.

It must be acknowledged that there are cases which do not yield to such simple treatment, just as it is acknowledged that there are some which do not yield to the most elaborate methods. It is too soon to say yet which will on the whole produce the most satisfactory results; but it seems as if it would be better to leave the wider analysis which dreams entail until this much narrower analysis has been thoroughly exploited. If it fails altogether the wider one should be undertaken.

It is hoped that something has been done to show that there is a scope for the various kinds of psychotherapy now being practised, that there is no need to dub some of them as palliative measures, no need to regard others as wildly fantastic. Much of the psychotherapeutical literature has been unwise, too much of it has been merely polemic. It is time that we tried to see what our fellow workers are about and ceased to regard them as merely unprincipled persons who are seeking their own ends or as fools who are not fit to be trusted with the simplest case.

REFERENCES.

[1] Hurst: *Medical Diseases of the War.* [2] Stoddart: *Mind and its Disorders*, third edition, p. 21. [3] Ernest Jones: *Treatment of the Neuroses*, p. 11. [4] Ibid., p. 1[illegible]. [5] Frink: *Morbid Fears and Compulsions*, p. 223. [6] *The Wisdom of Solomon.* [7] Morton Prince: *The Unconscious*, Lecture X.

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I propose to confine my remarks to psychotherapy as it appears to one who is called upon to advise and treat patients suffering from nervous disorders, rather than from the view-point of the professing psychotherapeutist.

Looking at the subject from an interested but detached position, I confess to some bewilderment over the varieties of psychotherapeutic measures—suggestion, persuasion, explanation, relaxation, hypnotism, therapeutic conversation, free association and psycho-analysis. There is reason to believe, also, that individual practitioners have modifications or combinations of the primary methods. I am informed by a well-known psychologist and practising psychotherapeutist that, whatever the method adopted, all psychotheraphy resolves itself into treatment by suggestion. Surely it would be of enormous service to many practititioners if some guiding principle were formulated upon the relative value and expediency of the recognized methods of psychotherapy and of the types of nervous reaction likely to derive benefit from one or other of them.

Such a step may be considered to be placing the psychotherapeutic weapon into the hands of insufficiently instructed persons, but Dr. Ross has shown how an analysis through free association may be carried out by any medical man using ordinary intelligence and under the guidance of simple psychological principles.

The great service which has been rendered to medicine by the psychological studies of the past few years is the recognition of the psychogenic factor in the causation of the neuroses and some of the psychoses. It is generally accepted that the psychoneuroses are reactions to a failure of psychological adaptation or readjustment to circumstances, and that these reactions may be of a type known as hysteria, anxiety neurasthenia, psychasthenia or even epilepsy in some instances.

But the recognition of these disorders clinically is not always easy. We know how frequently the symptoms of hysterical paralysis are grafted upon an organic basis, such as disseminated sclerosis. Most of us are alive to the difficulty of eliminating from the neurasthenic picture the influence of early organic disease, such as tuberculosis, arteriosclerosis, or general paralysis of the insane. We are all aware of the close association existing between hysterical and epileptic seizures and the great difficulty which may be experienced in differentiating the one from the other. We realize that many epileptic seizures, indistinguishable from those of genuine epilepsy, may be symptomatic of gross organic disease of the brain or its blood vessels.

It seems hardly necessary to mention how often symptoms of a neurasthenic-like type precede or are the initiatory phenomena of one of the established psychoses. A "fear of disease" has been mentioned by Dr. Ross in illustration of the superficial and easily displaced nature of some phobias, but we cannot forget that such a fear may be an instinctive premonition of the development of that particular disease, be it cancer or any other, which forms the basis of the patient's besetment.

There is a large group of medical cases in which symptoms of so-called neurasthenia and chronic anxiety are associated with recognizable physical disorder, such as gastro- and viscero-ptosis, floating kidney, etc. Under the same group may be placed the false cardiopaths, false gastropaths, sexual hypochondriacs, and the like. It is becoming increasingly evident that in certain types of temperament epileptic reactions may be explained by psychogenic influence. There is probably general agreement that individual seizures in a patient with established epilepsy may arise from emotional shock or mental conflict, but a much fuller understanding of the mechanism of epilepsy and of its root causes is necessary before the purely psychogenic causation of epilepsy can be accepted and its treatment by psychotherapy regarded with assurance.

There seems also to be a tendency to disregard, or at least to minimize, the influence which physical causes play in the determination of psychoneurotic reactions. Fatigue, exhaustion, chronic ill health, acute toxic or infective disorders, may contribute profoundly to that state of nervous instability, diminished resistance, or impaired control, which favours reaction to emotional shock—a circumstance which shows that physical remedies should not be entirely displaced by psychotherapy. For these and such other reasons as have been mentioned by Dr. Ross, no one doubts that psychotherapy has its failures. In this respect it does not differ from other therapeutic methods, such as the "rest cure" and the treatment of epilepsy by bromides. The essentials to success in psychotherapy do not differ from those relating to other branches of medicine. They entail a sound knowledge of general medicine, and more especially of neurology and psychiatry. Psychotherapeutic treatment should be invariably preceded by a careful clinical investigation of the physical state of the patient before a psychological examination is made of his mental symptoms.

There is only one other point to which I would like to refer, and it is the somewhat unfortunate degree of secrecy under which treatment by psychotherapy is commonly conducted. I admit that there may be cogent reasons from the methods of the confessional, but it is just this atmosphere of mystery, not untinged with a suspicion of the quality and quantity of the means employed, that has tended to stultify its real usefulness in the minds of the large body of practitioners and has made it an obsession in the minds of others. At a time when psychotherapy is recognized as a legitimate means of treatment and psycho-analysis is freely discussed in general conversation and in the press it is only right that medical opinion should be sufficiently informed to guide the seeker after health along the right lines.

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I REGRET that this discussion on psychotherapy should take place before the Neurological Section, as it seems to me it would lead to more valuable results if a combined meeting of all the sections had been arranged for it. For psychotherapy is not merely required for the treatment of the neuroses. Not only is a large functional element frequently associated with organic nervous diseases, but many patients suffering from a great variety of disorders—whether medical or surgical—benefit by psychotherapy given at the same time as medical or surgical treatment The difference between the successful and the unsuccessful practitioner depends more upon his psychotherapeutic ability than upon his knowledge of medicine. His psychotherapy is generally applied unconsciously, but it would be still more successful if he had learnt the elements of psychology and psychotherapy as a student, and for this reason open discussions on the subject must be to the advantage of every medical practitioner. The experience I gained in the war has led me to recognize far more than I ever did before how large a functional element there is in many diseases which I should hitherto have regarded as entirely organic. I would place myself in Dr. Ross's intermediate class, as my ideas on the subject of psychotherapy correspond very closely to his. He quotes a view I expressed three years ago on psycho-analysis, but this was at a time when I was observing very serious results following the employment of psycho-analysis in soldiers by members of the extreme Freudian school. If, however, by psycho-analysis one means no more than analysis of the psychological history of the patient, nobody could disapprove of it, but the word in the minds of many people suggests the acceptance of all the doctrines of Freud, and especially of the sexual origin of the neuroses.

In my own experience civil cases differ very little from those observed during the war, and the majority of the neuroses depend upon psychological factors which are comparatively easily discovered by ordinary conversational methods, if the patient's confidence has been gained. More elaborate methods are rarely required, and I have yet to see any evidence that the cures obtained by simple explanation, persuasion, and re-education are not as complete and permanent as those obtained by any more elaborate psychological methods.

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IN former years psychotherapy had to battle strenuously for recognition within the pale of medicine. This recognition has now been generally conceded, but the strife and dissension persist. The struggle at the present time, however, is an internal one, and is waged between the exponents of the various methods of psychotherapy. The most active of these disputes rages round the doctrines of Freud. Psycho-analysis has been subjected to many criticisms, some of them based on ethical and aesthetic grounds, which are naturally irrelevant and futile in the sphere of science. To the latter the answer is sufficiently convincing that anyone who cares to investigate cases by Freud's method will confirm his results. The most solid criticism is, however, directed against the method itself, questioning whether it is not in itself a faulty weapon, and this criticism it is not easy satisfactorily to confute. Nevertheless, a great number of Freud's conceptions have withstood all the tests that can be applied to them, and it is not too much to say that they are now firmly incorporated in the structure of our knowledge. How far other sections of his teaching are sound cannot yet be decided with certainty, but they are at least worthy of careful scientific investigation free from the dust of conventional prejudice. It is certain that Freud's work has opened a new era in psychology and psychopathology, and his introduction of the dynamic point of view—the conception of mental processes as the resultant of the action and interaction of great instinctive forces—has fertilized immeasurably the arid field of the old academic psychology. One would like to plead, therefore, for the frank but critical recognition of the gains to our knowledge which Freud has brought, and for co-operation amongst the various schools of psychotherapy rather than futile dissension.

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I SHOULD like, in the first place, to thank Dr. Ross for his admirable paper, and particularly for the excellent classification of the "innominate protestants." I am glad to consider myself a member of this group. Dr. Ross said that the problem of the psychotherapist is, "Where are the roots of the trouble?" I venture to differ; for it appears to me that this is not the problem at all: the problem is a pragmatic one. The business of the psychotherapist is to restore the patient to social efficiency, and to do so with the minimum amount of treatment compatible with the maximum result. Let me, for instance, take the case quoted by Dr. Ross of a diabetic who was obsessed by a fear of laryngeal cancer. Dr. Ross appears to have cured him by a therapeutic conversation in an hour or less. He claims that this result could not have been bettered, and that the man had no further trouble for the rest of his life in this direction; that the lightning cure was therefore justified by the result. But Dr. Ross had no right to infer from his test that the trouble was so superficial and that the patient "repressed nothing." That seems to me impossible; we all repress; and I venture to think that this patient had a great many repressions, some of them, no doubt, responsible for his inordinate fear of laryngeal cancer. Would Dr. Ross, if he had faced a similar condition in a young man, say in his twenties, have been satisfied with the lightning cure, and felt that nothing more was needed in the way of treatment? Surely not. He would have felt that the man with his life before him had to make a very different adjustment to life, and that no superficial treatment could possibly be regarded as adequate. Similarly with such a case as Dr. Hurst has mentioned of hyperemesis actually endangering life. Obviously Dr. Hurst's treatment was justified—that is to say, it produced adequate results under the circumstances. But I venture to suggest that if a woman can suffer from hyperemesis of so serious a degree and if that condition can be cured by any rapid therapeutic method, she is a woman whose adjustment to life is very far from perfect, and when the circumstances made it possible, I would suggest that her emotional life should be treated in a very much more fundamental way.

It has already been pointed out that the Freudians expose themselves to very just criticism by the length of the treatment they adopt and its elaborate nature in every case that they handle. It seems to me perfectly reasonable that this criticism should be made without necessarily contesting the validity of their theory of pathogenesis. Every one of us has seen cases, especially those of elderly hypochondriacs, in which it is perfectly clear that the roots of the trouble go right back into the infantile life. The patient may have a very bad adjustment to life, and from the point of view of social efficiency may be a relative failure. His mental life is perhaps a mass of repressions, [illegible] and transferences of every kind. But the man who starts to pull that life to pieces is devoid not only of therapeutic insight but of common sense, because by thus meddling he will in all probability break up the poor adjustment that the patient has already attained to, and the last state of that patient will be worse than the first. Cases treated by psycho-analysis must be justified in the mind of the physician not by the fact that the roots of the trouble are deep down, but by the fact that no easier or speedier treatment would benefit the patient to the maximum extent.

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LIKE every other physician the psychotherapist, before attempting to cure, must comprehend the processes taking place in his patient. The psychological disturbances with which he deals can all be expressed under the ruberic deconditioning—that is maladjustment, not necessarily in action, but as regards the sense of personal satisfaction with a situation. For instance, although no abnormality of behaviour may be evident, a person alone is in terror; to face another imports anxiety; blood brings faintness; to cross a street, dread; to contemplate, apprehension; to bear a child, horror; to speak publicly, panic and tremor; to decide induces rumination; to review acts causes remorse; and so on. Many persons endure for years with these handicaps, but eventually there is manifested a general unhappiness, along with inefficiency.

It has been alleged that the repression of such painful affects is the cause of psychoneuroses. Never have I found this. In many instances there is no attempt to repress at all, and when there is the repression is a consequence of anxiety, and not its cause. In some cases, however, there is a further anxiety lest what is felt to be a shameful weakness become known to others; but this again is a secondary and not a primary repression.

The basis of the neurosis is always the clothing of a situation with a distressing emotion which should not appertain in the eyes of common sense. The patient is unaware of the *cause* of the discrepancy, and is unable to reconcile the apparent absurdity. It is not always a defence. Guiding him to a solution is the rôle of the psychotherapist.

That it offends common sense is no valid argument against a doctrine; although in most minds that is the objection to the theory of Freud and his school. Even the flimsiness of the inductions on which depend their dogmas is not more than a ground for scepticism. However, even the extravagant use of deductive methods has failed to maintain their own adhesion to the most cardinal of their tenets—that is, the sexual origin of the neurosis. It took, however, the colossal psychopathological data of the war to remove an obstinacy which had refused even to listen to previous studies. (*Contrasts in Psycho-analysis*, 1911. *Prevention of Suicide*, 1912, etc.)

A second tenet in course of destruction is the censor. I need add nothing to what Dr. Rivers has written of this highly artificial psychological interpretation. The personification of forgotten or disused precepts into a mystical "unconscious" has not yet received the scepticism it deserves, so greatly are psychopathologists of this generation permeated by the teachings of Janet, based upon data accumulated in a period of high credulity regarding the very special qualities of hypnotic states. So dramatic and attractive are his data that they tend to numb criticality. Behind them all, however, lurks the shadow of the mythomaniac, already clear as regards the similar data of Morton Prince. A safer basis of study would be the proposition that complexes capable of disturbing the affectivity and influencing behaviour are always conscious, even although their groundwork may not be in mind. What unconsciousness there is, is not in his patient, but in the doctor who believes in it. Even then, however, its unfolding takes place under a proper anamnesis in the fully conscious state, provided that the patient's tendency to try to avoid that which is inconvenient or unpleasant, or of which he is ashamed, is changed by the skill of the interrogatory into a co-operative acquiescence without reserves. By this method the groundwork is quickly reached without dream analyses, without artificial associational expedients, and therefore without any appeal to a so-called non-conscious.

It is true that in each of our lives there are thousands of incidents submerged to which access can be gained by persistent associational digging. It is also true that many of these will give a more complete view of the avenue of our personal development, but it by no means follows that any of these has the active or important influence which has induced maladjustment. It must be remembered, however, that to a later incident former ones may become attached by associational recollection. This fact is the basis for false induction of displacement, and the still more false generalization of floating affectivity. What one disapproves of is not the analysis but the doctrine of one of its exponents.

Whilst it is true that there are affective states which become associated with concepts with which they have logically nothing to do, yet these are primitively physiological disturbances which are all too readily attributed by the sufferer to a psychological circumstance of the moment. It is a familiar mechanism during and after confusional states (*Management of Confusional States*, 1916). The only physician who will fall into the error, however, is the psychogenist *à outrance*, who is not truly an expert neurologist, a *sine qua non*.

The negation of Freudian doctrines must not connote as an alternative the adoption of such neophytic methods as suggestion in hypnosis, now scarcely spoken of. Nor is it desirable to fall back upon the equally crude direct or indirect suggestion, sometimes still utilized under the shelter of the name of Babinski, in spite of the fact that he himself has specifically spoken of persuasion in the treatment of hysteria, even though he himself makes no claims as a therapeutist, having devoted nearly all his energies to differential diagnosis.

Although induced by a mechanism of suggestion, symptoms removed by suggestion cannot be assured from relapsing, as I have constantly pointed out since 1908. The symptom itself should rarely be attacked. Psychic opinion is no more curative to the soul than is morphine to the body. On the contrary, symptoms which disappear in consequence of the ascertaining and removal of their cause and an understanding of their mechanism, followed by psychological construction, never relapse; at least none of mine have done so in a period of over twelve years, during which I can trace most.

The aim of psychotherapy, then, is much deeper than the mere removal of a symptom. That its end can be accomplished without hypnosis, without suggestion, without use of Freudian methods or hypothesis is demonstrated, and was so even before the schism of Jung, with whose special doctrines we also have nothing to do.

Furthermore, the time required for adequate exploration of the subject's psyche and the readjustment of the patient's difficulties instead of being reckoned in months can be measured in days, requiring more often less than ten days, never more than a month, for the patient to acquire adaptive power. Psychotherapy eventually can be discussed in general circles; but experts must first agree as to principles.

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I AM in agreement with almost all that Dr. Ross has said in his excellent paper, but since he has referred explicitly to me in one paragraph, I should like to limit my remarks to an explanation and justification of the view which he criticizes. While treating shell-shock cases in the field in France, I found that a large proportion of the cases showed a more or less extensive amnesia for events that had occurred immediately after the shell explosion. These patients were easily hypnotized, and under light hypnosis the lost memories could be immediately restored. But I soon discovered that if I recalled at the same time the terrifying emotion that had originally belonged to these experiences, there was a tendency for the accompanying hysterical symptoms—deafness, mutism, tremors, paralysis, contractures, etc.—to disappear spontaneously, without the necessity of giving explicit suggestions to this end. The more complete I made the working-off of the emotion, or the "ab-reaction," to use Breuer's original term, the more complete was the recovery. In cases seen by me previously in England, I had also restored lost memories by light hypnosis, but had not produced intense emotional revival and had not seen collateral symptoms disappear. But again, towards the end of the war, I was seeing more chronic cases in Scotland, and then found that amnesias of longer standing could be cleared up with accompanying ab-reaction of the emotion of fear; and that with the ab-reaction there was observable that tendency for the collateral symptoms to disappear at the same time such as I had observed so frequently in France.

These are observed facts, and I endeavoured to show in a paper in the BRITISH MEDICAL JOURNAL last year[1] that they could be explained in terms of a theory of reassociation. The amnesic patients fresh from the trenches showed a two-fold dissociation, namely, (1) a dissociation of the memory of events immediately following upon the shell explosion from memories of earlier and later parts of the patient's life; and (2) a dissociation of these memories, as mere intellectual awareness, from the accompanying emotional reaction of fear—tremors, sweating, mutism, paralysis, etc.—which are of a physiological nature. The physical reaction of fear, thus dissociated from its psychical counterpart, had become relatively permanent instead of being transitory. The patient no longer felt the emotion of fear—at least, of just that fear which the shell explosion had aroused—but did show its physical manifestations in the form of hysterical symptoms. By re-arousing the whole of the lost experience in all its emotional vividness I overcame *both* dissociations. The physical manifestations became linked up with their psychical counterpart, and this in its turn was linked up with earlier and later memories of the patient's life. In this way the mind was completely resynthesized, and the physical symptoms came once more under the sway of the entire mind (the complete personality) and could disappear.

The process, however, seemed to involve an actual working off of repressed emotional energy, and from hypnotic experiments which I have carried out on the revival of early emotional experiences I am inclined to believe in the possibility of past emotions being retained as such below the threshold of consciousness, and that in certain cases earlier memories may be overburdened with these emotions, and that the overburdening can be corrected by re-arousing the memories and providing an opportunity for the emotions to become "worked off." This is not Freud's view. Freud does not believe that past emotions can be remembered as such.

In addition to ab-reaction, I would agree with Dr. Ross in advocating the thorough thinking out of the whole psychological situation by the patient, so that he may be brought eventually to understand himself thoroughly. This process might be called autognosis, or self-knowledge. The patient is encouraged to obtain as objective a view of his entire mental condition as is possible.

DR. MAURICE NICOLL (London) insisted that it was now necessary to make a distinction between psycho-analysis and analytical psychology. Psycho-analysis was a term that should only be applied to the method used by wholehearted followers of Freud—as Freudians very rightly insisted nowadays. No proper understanding of neurosis could arise without analysis, but there were other analytical conceptions of the unconscious than that of Freud. The great splitting point arose over the nature of the unconscious. Freudians believed it to be only the pleasure-principle—the auto-erotic; this was antagonized by the endopsychic censor which was not in the unconscious. So they reduced all patients to the auto-erotic. Dr. Nicoll believed that the unconscious contained the check to the pleasure-principle itself, as well as the pleasure-principle, out of which was developed the constructive side, which antagonizes the auto-erotic. It made an enormous difference in the outlook of posterity if it took one or other view as true. In this way Freud and Jung had become almost legendary hero-demon figures, owing to the projection of this unconscious significance on to them, and extraordinary tales were heard about them.

DR. H. DEVINE (Portsmouth) emphasized the fact that while an intensive psychological study of the psychoses is of the utmost value in leading to an understanding of the mechanism, origin, and meaning of the symptoms, yet he had not found that in the true psychoses—for example, dementia praecox or paranoia—such studies have any influence on the course of illness. Very striking cures occurred in these cases, but the patient himself solved his own conflicts in a manner not clearly understood. As regards the question of psychotherapeutic treatment, it would seem to be necessary to approach the subject from the point of view of personality conflicts, wishes, needs. A neurotic symptom was one method of reacting to a situation which the individual could not face—it was a biological defence mechanism. All treatment must therefore aim at finding out this situation and explaining it to the patient who did not realize it himself, and indicating to him the necessity for making an efficient adaptation to life and helping him to do so.

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[1] "Hypnotism, Suggestion, and Dissociation," BRITISH MEDICAL JOURNAL, June 14th, 1919.

Dr. **Gordon Holmes** (London) pointed out that as psychotherapy, in the true sense of the term, had been practised and its value recognized as long as medicine had existed as a science, this discussion should be limited to the use of those methods that have been recently introduced, and especially to those based on the teaching of Freud and Jung. He referred, in the first place, to the harm that might be done by attempts to trace all neurotic symptoms to sexual causes, and mentioned the cases which he had seen during the last year of five unmarried women of the educated class who had been told that their complaints were due to incest, or to sexual relations in early life with brothers or other male relatives. All five had not only failed to obtain benefit from prolonged psychoanalysis, but had suffered severely from the suggestions that had been made to them. They all recovered later under more rational treatment. He entered a vigorous protest against the indiscriminate employment of such methods, and especially against their use by inexperienced "specialists," which was apparently becoming more common and widespread. In the second place he questioned the value of this form of psycho analysis as a mode of treatment. As it had been extensively employed in the treatment of the psycho-neuroses of war, it should be possible to obtain definite figures to determine its worth. And since psycho-analysis professed to be a radical method that removed the roots of the trouble, it was only fair to ask what proportion of soldiers treated by it had been returned to full active service during the war, and what proportion of pensioners who had been only psychoanalysed according to the methods of Freud and Jung had resumed their civil occupations without any claim to further pensions.

Dr. **W. A. Potts** (Birmingham) wished to corroborate what had already been said about the value of simple psychotherapeutic methods in ordinary practice, especially obstetric work. In many cases pernicious vomiting, and also failure of the milk supply in otherwise healthy women, could be put right by one treatment. Of course an emergency only was dealt with as a rule, and the underlying morbid condition was left untouched. But it was a great advantage to relieve symptoms, which was often all that could be done in many provinces. He agreed with Dr. Miller that treatment ought to be continued, and the patient's character built up; but that was a counsel of perfection which could not always be carried out. Complete treatment usually took a considerable time, and the same held good in criminal cases. In many criminal cases, especially those concerned with the young delinquent, a simple analysis would often establish that there was some mental conflict, in consequence of which the prisoner was not fully responsible. The simplest example of such a conflict was that afforded by the wrong occupation. Sometimes the essential cause was unreasonably strict discipline of one or both parents. But far the most frequent cause in young criminals was a sexual one. Dr. Potts said that he was not a Freudian and did not, as a rule, in his practice find a sexual cause of mental conflict. But no one could work among juvenile delinquents without realizing the importance of the sexual factor. There were not necessarily immoral acts, though they were frequent, especially in the public parks; sometimes all that had happened was that at a critical age or at a very early age, when there was previously complete ignorance and innocence, a large amount of sex knowledge had suddenly been imparted in the wrong way instead of being gradually unfolded in the right way. The objectionable words and ideas haunted and terrified, and might lead to impulsive acts. Some of these cases would say the impulse was irresistible. A simple analysis was often sufficient to [illegible] these cases, but of course they required prolonged treatment to set them right. It would therefore be a great advantage to have some system of social service, such as existed in some of the big cities in America, linked up both with the hospitals and the courts, to see that all the necessary treatment was carried out.

Dr. **W. J. Tyson** (Folkestone) maintained that psychotherapy had been exercised for many years past in a simple way and yet with considerable success. The present system was often most complicated, and was generally carried out by so called specialists. It seemed to him necessary that men who practised this method should be honest—also that as the sexual system was talked about so much, women should be consulted and asked much more than at present to take a serious part in this discussion.

Dr. **Prideaux** remarked that Dr. Gordon Holmes had asked the Section to consider the questions as to whether (1) psycho-analysis did harm, and (2) whether it could really produce any results. He therefore felt it his duty to join in this discussion. In his opinion psycho-analysis could certainly do harm when practised by those ignorant of all psychological principles, just as a surgeon with no knowledge of surgical technique could do harm. Dr. Prideaux's position was that of an investigator. He professed to no absolute knowledge. All he could say was that he had been treating patients who had been already treated by most of the speakers that morning, and he expected they had been treating his. It became, then, a question for investigation and research. Why did they get failures? His experience showed him that failures came under two classes. On the one hand there were cases (and these were in the majority amongst pensioners at the present time) in whom psychological treatment would never do any more than temporarily relieve gross symptoms—they never had been and never would be able to face reality. They were of a high-grade type of mental deficiency, and to them Janet's theories applied. On the other hand, there were cases who were suitable for and needed psycho-analysis; these cases owed their illness to the presence of infantile complexes. His experience had shown him that there were cases exactly as described by Freud which cleared up only as the result of analysis. Much had been said of the sexual factor, and he would suggest that there were not more than ten persons in the room who understood what Freud meant by sexuality. When physicians had learnt that they would find out from their own experience the truth of Freud's principles. They applied to a certain group of cases, but not to all. It was the business of those present to find out which cases were suitable for analysis, and it must be realized that psychotherapy for the first class of case—the deficient type—could only lead to complete failure.

Dr. **J. P. Lowson** (London) was glad that Dr. Prideaux had laid stress on the fact that "we do not know." He thought it must have struck everyone who had listened to this discussion what a large number of psychotherapeutic treatments or forms of treatment there were. To Dr. Lowson the interesting point was that there was not one of them which did not sometimes work. And if they searched for the point which they all had in common it might be said that the success of each of them, when it did succeed, depended upon its leaving the patient better adapted to the actual facts of his situation—better adapted to reality--than he was before. William James said long ago that we all divide the universe in two, and that each one of us makes the division at a different point—at the point, namely, where each man's mind meets with the external world. Now the discoveries of the last hundred years had familiarized men with the fact that the reality of the physical world was something very different from our ordinary notions of it, and quite independent of them, but it was only perhaps in this century that we had begun to realize distinctly that the same thing held good of the other half of the universe—namely, the processes which went forward in our own minds. The actual processes which went on in a man's mind and his notions about those processes were entirely different things and his notions did not alter the facts. For example, in some cases of functional mutism the patient got a spasm of his larynx when he tried to speak. Anything which enabled him to get round that spasm would enable him to speak—anything, that was to say, would make him speak which adapted his activity to the actual facts of the situation in his larynx, facts of which he was naturally ignorant. But there was another side to his situation; it was impossible to treat many of these cases without realizing that the patient made mountains out of molehills. The difficulty with his larynx was really such a molehill. Why, then, did he take it for a mountain? To answer this question, and to make such mistakes impossible to him in the future, involved some kind of exploration of the processes actually at work in the patient's mind processes of which he was just as ignorant as he was in the case of his larynx, his notions about them bearing frequently little relation to the actual facts. Such an exploration frequently benefited the patient, but an exact knowledge of how best to carry it out, and of just what happened in his mind when it was carried out, seemed still to be lacking.

The Chairman, Dr. W. H. R. Rivers, F.R.S. (Cambridge), drew attention to the fundamental agreement which underlay the differences of opinion apt to show themselves in a discussion, and pointed out that mistakes and undue enthusiasm were natural in a study so young as the subject of psychotherapy.

THE DEFENSIVE VALUE OF NORMAL MUCUS FORMATION, AND THE THEORY OF CATARRH.

By F. G. CROOKSHANK, M.D.Lond., F.R.C.P.,

PHYSICIAN TO THE FRENCH HOSPITAL, LONDON, AND TO ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM.

The interesting note by Mr. Benians, entitled "Air-way Infections,"[1] draws attention to some points of physiological, clinical, and epidemiological interest that have not hitherto been accorded sufficient importance.

Certainly, physiologists have not told us much as to the conditions of mucus formation, and, by denying it the right to be called an act of "secretion," have tended to obscure appreciation of the evident purpose which our belief in the economy of nature warrants us in recognizing.

It is true that the formation of mucus is held to be an exfoliation, or degeneration, by many writers of the kind who sees, in lactation, a form of suppuration—forgetting that there is no inherent distinction between physiological, degenerative, and pathological processes. One and the same process may be (1) physiological when efficient, and conditioned by accustomed stimuli; (2) pathological when tentative, and conditioned by unaccustomed stimuli, and (3) degenerative, when a confession of failure on the part of the organism to respond properly to stimuli within the range of custom. What is physiological *now* has once been pathological, and may perhaps one day come to be regarded as degenerative.

The normal formation of mucus, then, must be regarded as physiological and purposive; in Samuel Butler's sense, it represents an intelligent act on the part of the organism. What is its purpose, and what are the consequences of failure in its due performance?

It seems pretty clear that a layer of mucoid matter must, in the first place, protect the delicately vascular underlying membrane from the direct action of atmospheric changes—changes in temperature, humidity, composition, and the like—as well as from the no less direct action—mechanical or chemical—of solids and liquids in contact with it.

Mr. Benians, however, goes further, and suggests that the mucoid layer may not only prevent the absorption and inhibit the action of bacterial ferments and toxins by and on the mucous membrane, but may actually prevent invasion of the body by the organisms themselves. If his hypotheses be well founded, the maintenance of a proper state of mucus formation becomes of great importance; and interference with such a proper state constitutes an etiological factor that cannot be neglected when discussing the origins of certain forms of ill health.

The customary view is, I suppose, that interference with mucus production is a result of bacterial or protozoal attack; the notion suggested by Mr. Benians's paper is that when from one or another cause—whether vasomotor, hormonic, or nervous—mucus production is seriously disturbed, not only may mechanical, chemical, and other agents do harm, but scope may be given to the activities of organisms which are habitual, occasional, or accidental denizens of the "mucoid layer."

There are not a few clinical facts which seem to me to support Mr. Benians's propositions.

Some years ago, when frequently dealing with cases of typhoid fever, diphtheria, and scarlet fever, I made the practical observation that oily preparations such as paraffin, applied by means of an atomizer, are far more efficacious as cleansers of the tongue, throat, and nose than is either the conventional glycerin of borax or any of the watery solutions used for swabbing and syringing. As I then said (and long clinical experience has confirmed me in the opinion) "such preparations soothe the mucous membranes, prevent breaking the surface, and inhibit the growth of organisms by encapsulating them."[2]

It seems to me that in such cases the paraffin acts by way of taking on the duties of the normal mucus when (as in the worst cases of pharyngeal infection from the point of view of absorption and general invasion) the mucous membrane is obviously "tight," shiny, and glazed.

It is precisely in these cases that old-fashioned demulcent drinks would act as Mr. Benians assures us mucilage in laboratory experiments does act, and that old-fashioned clinicians would prescribe remedies calculated to render free the "secretion" of mucus.

The chemistry of the gastro-intestinal mucus has not as yet been fully elucidated, but certain clinical facts are indisputable; amongst them this, that whilst hyperacidity is apparently associated with deficiency of mucus, gastric ulcer is rarely met with in cases of "mucous catarrh" or "mucous dyspepsia." According to Sahli[3] gastric "mucus" is held in solution by hydrochloric acid, but is precipitated in cases of hypoacidity. Mucus deficiency, then, may well be a factor to be reckoned with in the production of gastric ulcer, by reason of the exposure consequently entailed to mechanical, chemical, peptic, and sometimes bacterial agents.

So far as the intestines are concerned, we have on the one hand the fact that paraffin is at present found to be the best clinical remedy when motions are hard and dry (from absence of mucus, amongst other things) and when the mucous membranes available for inspection appear desiccated rather than succulent; whilst, on the other, the grosser intestinal parasites—tape-worms, round-worms, and thread-worms—best carry on their relatively harmless lives when protected by the excess of mucus invariably present where they are. Indeed, as everyone knows, the best way to get rid of thread-worms is to give repeated doses of those preparations of rhubarb which inhibit excessive secretion of mucus, and of alkalies which loosen what is already there; whilst, until the protecting mucus in which the head is ensconced is cleared away, no dose of male fern will do its helpful work in respect of taenia. In fact, in respect of the grosser parasites, an excess of mucus seems to act just as Mr. Benians thinks normal mucus may act in respect of "carried" bacteria.

The production of mucus in the true dysenteries is pretty clearly pathological, in the sense in which the word has been just defined, but a fact pointed out by Roger, of Paris, some time ago,[4] raises some important issues relative to the pathogeny of certain bowel diseases that should not escape notice. Roger has shown by experiment that the coagulation of mucin into such large masses as those seen in certain cases of "mucous enterocolitis" may be the result of biliary insufficiency, since, *in vitro*, bile inhibits the coagulation of mucin by the normal intestinal ferment called mucinase.[5]

Again, the protective effect of mucus is clearly seen in respect of the genital organs of both men and women; for the inhibition, under nervous influences, of the mucoid flow in women is well known, and very probably, like temporarily abnormal conditions of the male urethra due to strong drink, plays a part in facilitating actual invasion of the mucous membrane by organisms of various sorts.

It is, however, perhaps the state of the respiratory mucous membranes that is, in most respects, of greatest interest; and in the light of the hypothesis of the protective importance of the mucoid layer, the rationale of some old-fashioned clinical methods seems clear. I refer to the use of demulcents and of mucilaginous preparations generally, in the acute stages of a catarrh; to the administration, first of medication directed towards the loosening, and later towards the diminution, of mucoid secretion; and to the care necessary to avoid premature inhibition, by opiates, of its secretion and removal.

Certainly we may wish to understand the underlying processes that affect the secretion of mucus, and if, as is perhaps the case, the primary change, in a catarrh, is not so much one of bacterial infection as a change in the physiological equilibrium of the mucous membrane that allows scope to bacterial activities, it seems likely that, when we do attain such understanding, we may come to appreciate how it is that, during the epidemics we call "catarrhal," there are associated cases and groups of cases, with affection of the cerebro-spinal system, not "catarrhal" in our modern sense, and yet a part of the "epidemic."

To Fernel, Benedetto, Ballonius, and other physicians of the sixteenth century these nervous forms of disease were alternative to those we now call "catarrhal"—whether respiratory or gastro-intestinal—and the epidemiological unity of what we now call encephalitis, myelitis, and the like with what we now call influenza was explained by them in terms of the famous doctrine of "catarrh," whereby an "excretion" of the central nervous system, if "repulsed," set up nervous disease, but, if determined to a mucous membrane, produced bronchitis, diarrhoea, and so forth.

To these physicians, then, a "defluxion" through the ethmoid safeguarded the brain against encephalitis; we, in thought, reverse the process and consider cerebro-spinal meningitis, encephalitis, and poliomyelitis as due to organisms reaching the nervous system by the ethmoid route, after having set up or failed to set up a preliminary "catarrh" of the nasopharynx. But we may well consider anew whether the factor which turns the scale to the one side or the other may not be sometimes a condition of the mucous membrane depending on vasomotor or trophic disturbances, and sometimes an alternative condition of the meningeal and cerebro-spinal structures.

In a word: although the explanations of Fernel and Benedetto may seem to us absurd, were they not right in discerning an essential and epidemiological unity between cases that seem to us, clinically, to be totally antipathic?

Again, Mr. Benians's notion, that it is possible that a primary alteration in the state of the mucous membranes may allow harmlessly "carried" micro-organisms to gain access to the blood and lymph channels and spaces, is perhaps to be collated with a rather curious passage, in Falconer's celebrated account of the influenza of 1803,[6] that seems to deserve citation. On the occasion of a *post-mortem* examination on a young woman who had died of influenza, upon opening the trachea it was observed that, "on viewing the inner membrane of the trachea with a magnifying glass, ulcers were clearly perceived at the close of the small holes which supply the trachea with mucus *to defend it from the acrimony of the air*."

Now here we have an instance of an observation, worthy of attention, that has been rendered a little ridiculous by the [illegible] explanation. It may, however, be put side by side with what is said by Michels, who in a very [illegible] paper seeks to explain the "incon[illegible]" of the many diverse clinical forms manifested during the present epidemic period by [illegible] groups of different [illegible] [illegible] become [illegible] by the [illegible] primitive."

In Mr. Benians's hypothesis micro-organisms replace [illegible] acrimony of the air, and an alteration in the state of the mucous replaces Michels's "virus [illegible]."

There are obviously, therefore, several points to be considered relating to these matters which would seem not amenable to the application of such [illegible] hypotheses, [illegible] may stimulate further observation and inquiry. And [illegible] might be well advised to adopt as their motto the [illegible] but nevertheless still pointed [illegible] of [illegible].

[illegible]

REFERENCES.

[illegible]

A CASE OF ENCEPHALITIS LETHARGICA TREATED BY HEXAMINE.

BY

SAMUEL CRAWSHAW, M.B., CH.B.VICT.,
ASHTON-UNDER-LYNE.

THE following case of lethargic encephalitis, in which recovery followed large doses of hexamine, is worthy of record, although I do not wish to attach too much importance to a single case.

I first saw the patient, a girl aged 12 years, on the evening of January 25th, 1920.

The parents definitely fixed January 17th as the day on which she became really ill, but careful inquiry elicited the fact that for quite a week previously she had been unusually quiet, had not wanted to play, and had slept a great deal. They also told me that on the last day she was at school she had gone to sleep on her desk and that the teacher had failed to rouse her, so let her sleep till close of school, and then sent her home with some other girls. She never made any complaint of headache or other pain; she simply wanted to be left alone. Gradually this lethargy became so deep that they could not get her to take food, and for several days she had nothing. For several days, too, she had passed both urine and faeces without seeming to be aware of the facts.

I found her lying in bed on her back with her legs straight down and close together; her arms were close to her sides; with bent elbows and clenched hands lying on the chest near the chin; her mouth was wide open and her eyes slightly so. She was breathing regularly, but rather deeply, though not noisily. Her face was placid but expressionless. When spoken to loudly she would open her eyes a little, and for a moment seemed to be looking at one, but then relapsed into her former state. The conjunctivae were slightly congested; the pupils were equal and reacted sluggishly to light, and there was a slight corneal reflex. When the lids were raised she moved her eyes slowly from side to side, but the movements seemed to be quite aimless, as if she did not see. There was no squint or ocular paralysis. When I came to move the limbs I found that a distinct effort was required, owing to a certain degree of tonic rigidity which involved all the muscles of the body; it could be overcome easily, and when the limbs were put into a new position they remained there for a short time, but gradually resumed their previous position. A distinct effort was required to close the mouth, and when the effort was relaxed it opened rather quickly. Attempts to move the arms from the sides, straighten the elbows, or unclench the hands met with distinct resistance; and the same was true if any attempts were made to move the joints of the lower limbs. It was not a temporary contraction of the muscles brought about by the moving of the limb, but a continuous condition and the muscles felt firm. These passive movements elicited no sign of pain or consciousness. The muscles of the neck were in the same condition; the abdominal wall was strongly retracted, the abdomen being typically scaphoid. It seemed to me that the superficial reflexes were abolished, but there was a very marked *tache cérébrale*. The knee-jerks were distinctly lively, I think exaggerated, and a slight but positive Babinski's reflex was present. In both cases the reaction seemed to be more marked on the right side. I tried to get her to swallow by placing a few drops of water on the tongue and allowing it to trickle into the pharynx, but there was no response.

There was no sign of any injury anywhere. The ears appeared to be normal. There was no oedema nor any acetone in the breath. Heart and lungs were normal. Temperature 99°.

After my examination I was standing at the bedside looking at her. Her chest was partially uncovered by the clothes when she opened her hands, grasped the clothes, and made an attempt to pull them up. It was very feeble and unsuccessful, but accompanied by a marked tremor of the hands. Her mother told me she had at times tried to do things like that, and occasionally had spoken a word or two, but they could make no sense of it.

Beyond the usual childish ailments and an attack of tonsillitis about eighteen months previously, there was nothing to note in the medical history, and she had been thought to be very well until this illness commenced, though she was not what would be called a robust child.

The first impulse in a case of this kind is to diagnose meningitis. But the expression of the child's face, her attitude in bed, and the complete absence of pain in the premonitory stages compelled me to reject this. I had never seen a case of encephalitis lethargica, but the mental picture of it that I had formed as the result of slight acquaintance with the literature was recalled by this case. Sequelae of injury and ear disease were evidently out of the question; and so was any disease of vascular origin. There was nothing to suggest nephritis or diabetes, though unfortunately I never examined the urine. Neither did I perform lumbar puncture. It might have been difficult to do on account of the rigidity, and I doubted if one would get information of value, but it would have been more satisfactory. One could also definitely exclude any form of poisoning. However faulty my line of reasoning may have been I came to the conclusion that I had to deal with a case of encephalitis lethargica, and I gave an extremely gloomy prognosis. I knew of course that mild cases did occur, and that recovery under various lines of treatment, or with none at all, had happened, but this was not helpful.

So far as treatment was concerned, I contented myself that evening with ordering nutrient enemata, and directing that nothing should be given by the mouth as it was obviously dangerous. When I got home I looked up what literature I had by me, but found nothing I could get material help from. Hexamine seemed to be the only drug likely to be of any value, and I searched for information about it. I found there was a general consensus of opinion that it was rapidly absorbed from the stomach into the blood, and that it rapidly passed into the tissue fluids. Some said it passed into the cerebro-spinal fluid, others that it did not. Then there was also a general opinion that it only acted by liberating formaldehyde, and that it only did this in acid media. If this is so then it is difficult to see how it can be of any service either in the tissue fluids or cerebro-spinal fluid, as these are always alkaline. Then I remembered hurriedly reading an article in the January number of the *Medical Review* about intravenous injections of this substance, and looked it up. It was an abstract of an article in the *Wiener klinischer Wochenschrift* of November 6th, 1919, by F. Deutsch. In this abstract Deutsch is credited with the opinion that the bactericidal action of urotropine is much greater *in vivo* than *in vitro*; also that sufficiently large doses cannot be given by the mouth, as the stomach will reject them. He had used large doses of urotropine intravenously in acute rheumatism—as much as 90 grains daily for six or seven doses—with nothing more serious than a transient rigor and rise of temperature, and usually with no untoward symptoms at all. I came to the conclusion that this was a possible line of treatment for my case; but before finally deciding I would see the patient again. I saw her the next morning (January 26th). The condition was unchanged. The mother said that once during the night she had put her hand to her neck and said something about beads, otherwise she had lain just as I left her. I therefore decided I would try the drug, and the same evening gave her 45 grains dissolved in 10 c.cm. of normal saline in the left median basilic vein. She winced a little as the needle was passing through the skin. I noticed not the slightest change in her condition while I stayed there.

January 27th—Morning: No change in her condition; not retaining the enemata; passes urine unconsciously. Evening: No change.

January 28th—Morning: There is certainly less rigidity of the limbs and the pupillary and corneal reflexes are more lively. Knee-jerks less marked, and Babinski's test yields a feeble but distinctly flexor response. Mental condition unchanged. Gave a second dose of 45 grains of hexamine. Evening: About the same.

January 29th—Morning: Distinct improvement. Has spoken several times, and seems to have some idea of things about her. Rigidity less, and moves her limbs a little. Cannot be roused to answer.

January 30th—Morning: Still better; asks for things, and answers when spoken to, but in a weak, tremulous voice and not alertly. When speaking there is marked tremor of the jaw. Rigidity everywhere is much less; pupils react very well. Gave a third injection of 45 grains as before. Gave marked evidence of feeling the needle. She was able to swallow a little water, and now she began to have liquid food.

February 2nd and 5th: Had fourth and fifth injections respectively. From this time onwards improvement was steady and uninterrupted. She began to ask for solid food and for her toys, and in a few days was able to sit up in bed. At the end of the third week she was able to get up and sit in a chair for a short time, and was quite bright and cheerful. My last visit to her was on March 4th, when she was going about the house and quite lively. I have seen her on several occasions since. She began to go to school half-time in June, but after three weeks complained of headache, which disappeared again when she stayed at home. She seems now to be as well as ever she was.

From one successful case of this kind it is easy, of course, to draw extravagant conclusions as to the value of the line of treatment adopted. I do not wish to do that, but in any similar case, or even in a case of meningitis, whatever its nature, I should without hesitation try the method. It is only by repeated trials that the value of any treatment can be verified. As regards this line of treatment, I have satisfied myself that it can be used without fear of any serious ill effect following. None whatever followed in this case, and in certain other cases in which I have tried it, of quite different nature, I have given it with impunity, though I have occasionally seen a rigor follow, usually about four hours later, and accompanied by a rise of temperature up to 101° or even higher. The effects have always passed away in about twelve hours. I should certainly not try it in any case enfeebled either by long illness or any other cause.

In the August number of *Medical Science* there is a long series of abstracts from various sources about the disease, amongst others from certain articles by Netter of Paris, an admitted authority. He apparently regards hexamine as the best drug to use, but recommends oral administration in preference to intravenous. In this case it could not have been given that way. I do not know in what doses he gave it intravenously, and that may conceivably make a difference.

I have recently seen the master of the school she attends. He thinks she is altered in disposition and mentally, not being so bright, and wanting to keep away from the other children. Her mother says she will not go out to play with her friends as they are "so noisy."

TWO CASES OF INTESTINAL TUMOUR: OPERATION: RECOVERY.

BY

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I HAVE had recently in the Cottage Hospital, Fleet, two cases of intestinal tumour which seem to have distinctly interesting features.

CASE I.

A. G., a widow, aged 52, with four children, a thin spare woman, accustomed to land work, gave no previous history of illness of any kind, except that she had suffered much from constipation. A few days before admission she had pain in the right lower quadrant of the abdomen, but kept at work for three or four days longer until the pain got so severe she could only work kneeling. She then consulted Dr. Alban Ward of Crondall, who found a large swelling in the region indicated and sent her into hospital.

A hard tumour could be felt a little above the caecal region; it was fairly movable laterally, and a provisional diagnosis of possible malignant disease of ascending colon was made. There was no sickness nor other signs of obstruction. An exploratory operation was advised, and in performing it the honorary secretary of the hospital, Surgeon Rear-Admiral Axford, C.B., kindly assisted me.

On opening the abdomen in the middle line an intensely hard tumour was felt, about the size of a large hen's egg, immediately behind and partly embracing the ascending colon. Although freely movable with the bowel, it had all the appearance *in situ* of malignant disease of the colon, and a decision was at once come to to excise freely. The appendix was seen to be quite healthy and some distance from the growth. An end-lateral anastomosis was made between the ileum and the transverse colon and the gut removed from the hepatic flexure to the caecum. The tumour, when cut into, was found to be of scirrhus-like hardness, but though attached to the wall of the bowel, had not invaded it.

The *pathological report* from the Clinical Research Association was as follows: "The tumour consists of a fibrous wall of granulation tissue, in the midst of which there are the remains of the appendix. There are large collections of what appear to be proliferating peritoneal cells, but no signs of new growth."

On my pointing out that the appendix had been seen to be quite healthy, an amended report was submitted as follows:

"The centre of the tumour contains an organ which shows all the characters of the atrophied mucous membrane of the appendix. In view of the fact that the organ was not involved, the only possible explanation is the presence of some intestinal diverticulum which may have become separated from the lumen of the intestine."

The patient made a rapid and uninterrupted recovery. As she is shortly about to emigrate to New Zealand I thought it advisable for her to take documentary evidence with her.

The diagnosis of diverticulitis is obviously the correct one. Unfortunately the whole specimen was not preserved for further examination, but only a section saved.

From the knowledge derived from the recent interesting discussion on diverticulitis at the Royal Society of Medicine, the case seems of interest owing to the situation of the tumour on the ascending colon and not on the sigmoid; the absence of any other diverticuli; the absence of all clinical symptoms except constipation until a few days before operation, though the growth must have been there for a long period previously; the absence of any adhesions, the growth being confined to the mesentery, and freely movable with it; the ease with which it was excised. This is contrary to the experience of most of the speakers in the recent discussion, but one feature it has in common—namely, its mimicry of carcinoma before and during operation.

I cannot help comparing it with a case we had in hospital in 1910, under my late partner, Dr. P. E. Adams. A gardener, aged about 45, gave a three weeks' history. He attributed his symptoms to the severe exertion of turf cutting. A large swelling was found in the left lower quadrant, and, as symptoms of obstruction supervened, the abdomen was opened by Mr. Bowreman Jessett. A large mass with a multiplicity of adhesions was found; a diagnosis of carcinoma was made and a colotomy was performed, and the family prepared for the worst. The man is now in perfect health, though the colotomy opening is still present, and all defaecation occurs through this.

CASE II.

H. M., a spinster lady, aged 65, had suffered for two years with abdominal pain and constipation. The latter symptom, which had troubled her most of her life, had become much [illegible]. She had lost 2 st. in weight and altered much in appearance. She herself attributed all her symptoms to "[illegible]."

Dr. [illegible] Ward first saw her on October 27th, 1919. She then [illegible] abdominal pain and persistent sickness. Next day, in spite of [illegible], the symptoms were not relieved; the sickness was more persistent and the vomit had changed from green to dark brown. There was no abdominal distension. I saw her, with Dr. Ward, in the afternoon. On rectal examination we [illegible], at the extreme tip of the finger, what appeared to be an [illegible] tumour. A diagnosis of high rectal cancer was made. She was at once removed to the hospital and operated on [illegible]. An incision was made as for inguinal colotomy. On opening the abdomen the sigmoid was found [illegible] and no growth could be detected in the [illegible]. [illegible] small intestine were found [illegible] through the wound. One of these [illegible] to the interior of the bowel, [illegible]. This was obviously what we had felt from the rectum. [illegible] An incision was [illegible] the tumour, which was found to be [illegible] and an [illegible] was made.

The [illegible] report showed the tumour to be a fibro-lipoma.

The patient [illegible]

I have related this case with the other, on account of the strong mimicry of cancer. A growth of the intestine in a patient past middle life is almost invariably diagnosed as cancer, and in ninety-nine cases out of a hundred [illegible].

The growth, which must have been present for many years, had apparently caused little trouble but constipation and vague abdominal discomfort, until by the weight and [illegible] drag it brought matters to a climax by producing an intussusception and consequent symptoms.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PERFORATED GASTRIC ULCER WITH EXTRA-PERITONEAL ESCAPE OF CONTENTS.

A MAN of 47, who gave a history of indigestion extending over several years, was admitted to Duke Street Hospital on January 17th. The night before there had been sudden onset of severe epigastric pain, with sickness and vomiting.

On admission he was pale and anxious looking, and complained of severe pain in the epigastrium, extending round to the back on both sides. The epigastrium was tender to palpation, and the abdomen was flat, rigid, and board-like. The temperature was 99.2°, the pulse was 140, and the respirations were 36. Dr. Scott, the resident physician, reported some dullness at the bases of the lungs posteriorly, and also suggestions of friction. These signs were not clear but pointed to the possibility of acute basal mischief in both lungs. The diagnosis was thus uncertain, but as the man was obviously very ill, and the doubtful lung signs did not appear to account for the condition, an exploratory laparotomy was made. The abdomen, opened in the middle line above the umbilicus and rapidly explored, was found to be perfectly normal; this applied to so much of the stomach as could be seen, both anteriorly and posteriorly. When traction was applied to the stomach in order to bring the lesser curvature into view, the patient suddenly stopped breathing. As the anaesthetist sharply compressed the chest with a view to re-establishing respiration, there was a sudden gush of a quantity of characteristic gastric fluid from the region of the diaphragm, and respiration was restored. The stomach being brought further down a large ulcer was found on the lesser curvature, close to the point of entrance of the oesophagus. The ulcer was dealt with in the usual manner; the parts were carefully cleaned out, and packing was inserted. The patient made a slow but uneventful recovery, and was discharged well in April.

The interest in this case lies (1) in the difficulty of establishing a definite diagnosis between possibilities of thoracic and abdominal affection—the basal dullness was probably due to the diaphragm being pushed very much upwards, and the friction to spread of infection through the diaphragm; (2) in the normal condition of the peritoneal cavity—it would have been very easy to conclude from the exploratory operation that the mischief lay in the chest, and that the abdominal cavity was free from infection; (3) in the rarity of the condition. Perforating ulcers are generally classified as affecting either the greater or lesser sac; but in this case, owing to its peculiar position, the ulcer opened on a small portion of stomach uncovered by peritoneum, and discharged between the layers of the lesser omentum; the discharge was therefore strictly extraperitoneal. To this fact recovery was doubtless in great measure due, as perforation had occurred twenty-four hours before operation.

JOHN A. C. MACEWEN,
Visiting Surgeon, Glasgow District Hospitals;
Assistant Surgeon, Glasgow Royal Infirmary.

EXPULSION OF FULL TERM FETUS WITH UNRUPTURED MEMBRANES.

I THINK the following case may be worth recording, as I am sure it is of rare occurrence. I was called at 1 a.m. to a multipara, aged [illegible], fifth pregnancy, living in a village three miles away. The message I received was that the baby was born, but they did not like the look of it and dare not touch it. I arrived about 1.30 a.m. and found that the placenta, with an unruptured bag of membranes containing a full time fetus, had been expelled complete. The child, which weighed about 5¾ lb., was of course dead, but it was born alive, as the woman with her noticed the movements. The history was that the patient had only three or four violent pains and the fetus was expelled; there had been little haemorrhage, and when I arrived the uterus was firmly contracted.

[illegible] JAMES H. GILBERTSON.

A PASTEUR Institute has been founded at Manaos, Brazil, under the direction of Professor Astrolabio Passos, Director of the University.

AN International Institute of Anthropology has been founded at Paris. The first general meeting will be held at Liège in September, 1921.

Reports of Societies.

THE BASAL GANGLIA.

THE first meeting of session 1920–21 of the Royal Medico-Chirurgical Society of Glasgow was held in the Faculty Hall on Friday evening, October 15th, when Professor W. K. HUNTER delivered the presidential address, the subject being "The basal ganglia: their functions and diseases." Professor Hunter first discussed the anatomical relations of the ganglia, and quoted the most recent observations, following out in detail the tracts and fibres passing to and from the ganglia, illustrating the points by diagrams and photographs. Their microscopical appearance and the grouping of the cells composing them was also referred to. In dealing with the functions of the basal ganglia, it was pointed out that these structures were phylogenetically as well as embryologically much older than the cerebral cortex, and reference was made to the evolution of the ganglia and tracts. In the lower vertebrates the basal ganglia appeared to represent the higher centres of the brain, where the optic thalamus constituted the receptive centre for afferent and the corpus striatum the centre for the direction and regulation of efferent impulses. Ascending the animal scale, the basal ganglia became subordinated to higher centres although the optic thalamus still received sensory impulses, and the corpus striatum would seem to regulate to a certain extent automatic and associated movements. In considering the relationship of these lower and higher centres the case of the optic thalamus and the cerebral cortex was first taken up. Was the destination of our various sensory impulses the thalamus or the cortex? The study of cases of what was called Dejerine's syndrome gave an answer. Here there was a lesion in the thalamus which interrupted the sensory fibres passing from the thalamus to the sensory area in the region of the post-central gyrus, and also the efferent fibres coming from the cortical area back to the thalamus. According to Head and Gordon Holmes, who had studied a number of these cases, the thalamus was the centre for painful and tactile impulses, for the appreciation of heat and cold, and of heat apart from cold, and also for the vibration sense. Appreciation of touch and temperature seemed to be cortical, for they were lost in Dejerine's syndrome. Questions of comparison were determined by the cortex, as were appreciation of posture and passive movement, which were lost in this syndrome. Further, the cortex focussed attention on sensation and might inhibit sensory impulses which reached the thalamus. The lessening of this inhibition would permit of impulses reaching consciousness which would not do so under normal conditions. This was offered as an explanation of the subjective pain and discomfort on one side of the body which was a feature of the Dejerine syndrome. The symptoms of disease of the thalamus would, of course, vary with the exact seat and magnitude of the lesion.

Diseases of the corpus striatum were next reviewed, and evidence was offered showing that paralysis agitans is probably due to disease of this body. The symptoms of this disease are recognized in three forms: (1) the presenile and senile, (2) the symptomatic, and (3) the juvenile. In the first two, vascular changes were found in the corpus striatum after death; in the juvenile form the large ganglion cells of the globus pallidus and their neurons were the seat of primary and progressive atrophy. So also with the progressive lenticular degeneration of Kinnier Wilson, where the symptoms had a certain resemblance to the juvenile cases of paralysis agitans, but where the duration of the disease was short and the termination always lethal. *Post-mortem* examination had shown a symmetrical and bilateral degeneration in the corpus striatum. Again, in Huntington's chorea the pathological anatomy as described by Hunt showed that this was a disease of the same type as the juvenile form of paralysis agitans, the difference being that in the former it was the smaller cells, whilst in paralysis agitans it was the larger cells of the corpus striatum which had undergone degeneration. A fourth disease with its lesion in the corpus striatum was primary, idiopathic, or double athetosis, sometimes called the Vogt syndrome. Here the larger as well as the smaller cells of the caudate nucleus and putamen were destroyed. The lesion produced athetotic movements of practically all the voluntary muscles, increased by voluntary movement. Surveying these four diseases one might conclude that the essential symptomatology in lesion of the corpus striatum was rigidity, tremor of the paralysis agitans type, choreic movements, athetosis, and mobile spasm. The corpus striatum, therefore, was a centre with certain co-ordinating and inhibiting functions, controlling associated and automatic movements. The lecturer concluded with some speculations as to the presence in the central ganglia of centres for the emotions as well as for the various viscera, and pointed out that lesion of the optic thalamus might cause loss of emotional movements as expressed by the facial muscles, etc., while such loss did not occur with lesion of the corpus striatum. At the close of the meeting a very cordial vote of thanks was awarded Professor Hunter for his interesting address.

AT a meeting of the Manchester Medical Society, held on October 6th, with the President, Professor R. B. WILD, in the chair, Dr. R. C. HOLT read a paper entitled "Sunlight as a cause for disease." Dr. L. SAVATARD read a paper on "Diagnosis of early epithelioma of the skin" (illustrated by numerous lantern slides) in which he drew attention to the absence of illustration of these early lesions in either dermatological or surgical textbooks. He dealt with this differential diagnosis from vasal-cell carcinoma (rodent ulcer) both in the clinical and pathological aspects. The PRESIDENT showed photographs of two cases of acanthosis nigricans, two cases of actinomycosis, and of a case of unilateral multiple naevi.

Reviews.

MALARIA.

THE book entitled *Malaria at Home and Abroad*,[1] written by Lieut.-Colonel S. P. JAMES, I.M.S.(ret.), now medical officer for malaria to the Ministry of Health, makes an opportune appearance. Malaria loomed large during the war, and many young medical men were then brought into contact with it for the first time; large numbers of demobilized soldiers are still suffering from the disease in England, and it is essential that the home practitioner should have much more than a superficial acquaintance with the subject. By preparing this book, which is a fuller version of an article already published, entitled "Practical points in the study of malaria, and its diagnosis, treatment, and prevention," Colonel James has filled a real want. The scope of his treatise is wide, and all the ten chapters deserve careful study. After a definition of the disease, and an account of the factors concerned in its spread, he describes the practical study that must be undertaken with regard to the parasite in man and the characters and habits of mosquitos; a malarial survey of England is followed by a similar survey, with epidemiological observations, of the disease in the tropics, and there are chapters on diagnosis and treatment. The last chapters deal with the prevention of malaria and the control of mosquitos. The chapter on symptoms will repay careful study, as will that on treatment, which is short and concise. The treatment of the attack is first dealt with, and then after-treatment. The latter is a very important factor in the case of large numbers of men now in England who are and will be subject to malarial relapses for some years to come. The different methods of treatment are given in detail.

Quinine prophylaxis—a point upon which so many authorities differ—is dealt with in a judicious manner; polemical discussions are avoided, and it is shown that there is a right and a wrong way of giving the drug; he believes that the best prophylactic results will be obtained by taking a 5-grain dose of quinine every evening about an hour before sunset, and a second dose of 5 grains about midnight. A dose of quinine taken in the morning is too late to destroy the sporozoites which were injected the previous evening, and too early to destroy those which will be injected during the coming night. This is a very important and crucial statement; probably the poor results that have followed many of the so-called quinine prophylaxis methods are thus to be explained. There is no doubt that quinine prophylaxis properly carried out is of value, especially in civil life, though on military service it may fail entirely, owing to the exigencies of the service and the impossibility of escaping multiple and repeated infections. We would gladly say more of the interesting matter dealt with in the other chapters—on the suppression of mosquitos, on mosquito-proof houses, and other matters—but the reader must dip into those pages himself, and will obtain great advantage from them. The illustrations are excellent, the printing is clear, and the paper good. It is a first-class work, excellent in every way.

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[1] *Malaria at Home and Abroad.* By S. P. James M.D., D.P.H., Lieut.-Colonel I.M.S. (ret.). London: John Bale, Sons, and Danielsson, Limited 1920. (Double cr. 8vo, pp. 245; 104 figures, 1 coloured map. 25s. net.)

OPHTHALMOLOGY IN GENERAL PRACTICE.

In ophthalmic literature nothing quite similar to **Maitland Ramsay**'s *Clinical Ophthalmology for the General Practitioner*[2] has, so far as we know, been published before in this country, though one or two works on rather similar lines have appeared in the United States of America.

The author, who spent ten years in general practice before he took up ophthalmic surgery, disclaims any intention of producing a book to take the place of the systematic treatises on ophthalmology; his volume is purely clinical, deals with the symptomatology of eye diseases, and aims at presenting the subject to the general practitioner as the latter meets it in daily practice. Though not a textbook in the precise sense of the word, it is nevertheless a book that will amply repay the reading of it, and the men in general practice for whom it has been written will owe the author a debt of gratitude for it.

The descriptions of the various conditions are good, and the author's advice is nearly always judicious and sound; we venture to think that few would be inclined to criticize adversely the practical common sense of the advice contained in this work; therapy and interventions of a doubtful or hazardous nature, if mentioned, are always mentioned with a caution.

The first chapter, on methodical examination, is excellent, as are also many of the other chapters, notably those on the clinical significance of a hard eye, ophthalmia neonatorum and its consequences, serpiginous ulcer of the cornea, and those on injuries. A feature of the work is the really excellent section at the end on therapeutic notes and formulae; the Greek and Latin derivations are relegated to a glossary—an excellent place for them.

The publishers have done their work well, and the text is remarkably free from typographical errors, the only amusing one which we found being "Staung's papilla" in the chapter on the ophthalmoscope in general medicine.

We congratulate the author on having produced a thoroughly practical book—one that will form a welcome addition to any medical man's library.

TUBERCULIN IN GENERAL PRACTICE.

The great decrease in the incidence and mortality of tuberculosis since 1882 has served as an object lesson to confirm most of the etiological theories that have been slowly gaining acceptance since the true nature of the disease became recognized. Among the many textbooks of treatment published during the past twenty years that of Bandelier and Roepke has always held a prominent place. A tenth edition of their book[3] has now appeared in which the value of tuberculin is more than ever insisted upon. The theory of the reaction and its therapeutic effects are discussed in the earlier part of the work with the customary Teutonic thoroughness, a large number of authorities' views and suggestions being quoted and closely discussed at great length. The value of [illegible] is clearly examined, and illustrated in a few coloured plates, but the greater part of the work is devoted to the therapeutic aspects of the subject, and the very numerous and varied methods of applying tuberculin are minutely described and discussed as regards their action in general, and also as to their special effects upon the disease in individual organs.

To the reader who may be already well versed in tuberculosis lore the conclusions summed up in the final chapter will be of chief interest. Imbued with unbounded faith in their own experience, the authors are somewhat impatient of criticism, and maintain that the tardy recognition of the views they hold has delayed success in dealing with the disease as a whole. Much of this delay they believe to be due to faulty observations, leading to mistaken conclusions; and as an instance of this they point to the alleged presence of active tubercle bacilli in the blood stream after tuberculin injections. They maintain that the acid-fast bacilli often found in blood are to be regarded as non-virulent forms, and in any case unimportant as regards the course and prognosis of the disease.

Assuming that the value of tuberculin is now fully accepted, they regard sanatorium treatment as a preliminary step towards preparing the human soil to receive the good seed which is in future to be supplied to the patient in his own home and no longer in the consulting room of the specialist. The family practitioner is to undertake the responsibility for correct interpretation of the instruction given him in the course of the 485 pages contained in the textbook before us. But he will probably be at a loss to decide which authority to follow, since no less than 413 are quoted. In the multitude of counsellors there must doubtless be much wisdom, but for practical purposes it should be presented in a more concise form, and only such methods as have been proved to be successful in a large number of cases should be recommended for general use.

Some of the theories hitherto accepted as regards the blood changes after inoculation are undergoing reconsideration, and the moment has certainly not yet come for the general acceptance of any but those which have stood the test of time. The German writers do not appear to be inclined to accept the theory of auto-inoculation, by which so much of our home treatment is regulated, preferring the graduated dose to the unknown quantity; but they are equally alive to the meaning of the reaction, whether it be produced from within or without.

IMAGINATION IN MEDICINE.

There never was a time when armchair philosophers were more at a discount in medicine than they are now, and yet we dare to believe that never at any period were thinkers more needed than to day. We have become worshippers of new facts and sceptics as regards new ideas and principles; our bookshelves groan with the files of new observations piled on them year after year. We need in all departments of medicine—indeed, in all branches of biology—that form of synthetic imagination which, brooding over our harvests of facts, will bring order out of chaos. It is a task which men trained in our modern departmental scientific laboratories do not dare to embark upon; yet it is one which has been essayed with success by a professed writer of fiction—Mr. Morley Roberts. We marvel at the completeness with which his contemporary Mr. H. G. Wells has surveyed the origin of man and his civilization, but in *Warfare in the Human Body*[4] we have a task accomplished of even a higher order. Many readers of this Journal, as was the case with the reviewer, did not associate Mr. Morley Roberts, who has contributed to its pages instructive and intimate articles on immunity and vagus inhibition, with the writer of sea stories; it seemed impossible that a writer of fiction could handle so expertly the problems which are now engaging the minds of medical men. Yet those who have followed Mr. Roberts's career, who know *The Western Avernus*—his first book, published in 1887—a tale of his youthful vagabondage in wild America, his story of *The Flying Cloud*, a record of his time before the mast, his later novels, *Time and Thomas Waring* and *The Hearts of Women*—medical and psychological studies—cannot be surprised to find him appearing in his latest work as a serious student of the most recondite of all subjects—the secrets and mysteries of life itself. All along he has been a student of the realities; in his latest work, when discussing the action of the vagus on the heart, he goes back to observations made on the beating heart of a shark exposed on the deck of a sailing ship in a tropical sea, to show that diastole is just as positive and as controlled an act as systole; he cites the mate's voice, as it times the pull of a crew, as a "pacemaker"; he uses the change of watch to exemplify the mechanism of reflex inhibition, and when postulating the important rôle which cannibalism has served in the evolution of early man refers to the "man-eater" he knew when camped in the Selkirks, British Columbia.

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[2] *Clinical Ophthalmology for the General Practitioner.* By W. Maitland Ramsay, M.D. [illegible] Henry Frowde and Hodder and Stoughton. 1920. (Roy. 8vo, pp. xx + 420; 20 plates, 11 coloured. 42s. net.)

[3] *Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose.* By Dr. Bandelier [illegible] und Dr. Roepke [illegible] Zehnte Auflage. [illegible] Kabitzsch. 1920. (Roy. 8vo [illegible] M. 45, bound M. [illegible])

[4] *Warfare in the Human Body. Essays on Method, Malignity, Repair, and Allied Subjects.* By Morley Roberts. With an Introduction by Professor Arthur Keith. London: Eveleigh Nash Company, Ltd. 1920. (Med. 8vo, pp. 278. 18s. net.)

The conception of the human body—or of any animal or vegetable body whatsoever—as a confederation, republic, or society of individual units has lost its vogue in modern times; there is a consensus of opinion among students of science that the bonds which knit together the organs and cells in a living body are of a different order from those which weld men, women, and children into a community. *Warfare in the Human Body* will go a long way to rehabilitate the old conception. Mr. Roberts has grasped and expounded the idea that whether we are politicians or psychologists, anatomists or architects, bacteriologists or botanists, physiologists or novelists, pathologists or farmers, medical men or midwives, we are all students of the same subject—the manifestations of living protoplasm. For him the unicellular protozoon elaborating its shell is carrying out an operation paralleled by the erection of a glorious Gothic cathedral by a company of mediaeval monks: it is a step indeed a long one—from the simple amoeba to the nerve cells of the human cerebral cortex, yet it is one, as Mr. Morley Roberts reminds his readers, which is taken in every human fetus; in a few months the progeny of the human ovum have become transformed into cortical nerve cells—the basis of human imagination. But instead of using the living manifestations of the protozoon to illuminate human action he does the opposite; he tries to fathom what is going on in the ultramicroscopic organism by studying action in living communities where the units are larger and can be seen by the naked eye and by all. At first he went to biological and medical laboratories in search of facts to help him to unravel the laws which must regulate the behaviour of human beings living together in organized communities, but soon found that the student of human society had more to give to the trained biologist than to get from him. Whether it be a nation or a multicellular body of an animal, continued life is not possible unless there be a mechanism by which every unit can control every other unit, and in turn be controlled. Starling's doctrine of hormones gave us the first glimpse of the existence and nature of such a mechanism, and Mr. Morley Roberts has realized to the full the great import of Starling's suggestion. He regards the cell units of the body as living in a state of armed neutrality, ready to break into riot if control be in any way weakened or withdrawn. Malignity of all kinds, he argues, must depend on a weakening of mutual or hormonic control; the dermal epithelium of the fingers becomes invasive when the hands have been scorched by *x* rays, but this invasiveness, the author holds, is not because the epithelium has become infected by a rabies-like madness, but because the underlying connective tissue has been damaged, and can no longer control its epithelial neighbour.

Perhaps the most suggestive pages of this book are those in which the author seeks to give an explanation of the nucleus of a cell and of the elaborate nuclear changes which herald the division of a cell. In studying human communities he had noted that every great evolutionary change depended on the invention of new or of improved tools and weapons. This has held true for every human advance from the palaeolithic period to the present. To account for the nucleus and its behaviour he regards the cytoplasm as the essential element of the living cell, while the nucleus represents a tool-shop containing the catalysts or hormones which regulate the growth and work of the cell; the phenomena of mitosis as seen through the microscope are the same manifestations as a celestial observer might have seen on the banks of the Jordan when Abram and Lot separated their herds and flocks and moved apart.

Among the more brilliant suggestions put forward by Mr. Morley Roberts must be counted his extension of Wolff's law—making it apply not only to bone but to all tissues which are subjected to mechanical stresses, including muscle. Wolff's law stipulates that osteoblasts respond in their operations to meet the stresses to which they are subjected. The author extends the law to muscular tissues of all kinds—voluntary, cardiac, and unstriated. Muscle fibres group themselves so as most effectively to sustain the stresses which fall upon them while contracting. He rejects with impatience the idea that adaptations acquired under this law are barred from transmission by heredity.

We have only cited one or two of the daring interpretations with which the penetrating imagination of the author has studded his pages. *Warfare in the Human Body* is not an easy book to read in spite of a clear style and a wealth of simile and epigram. But emphatically it deserves study by everyone who seeks to come to grips with the nature of living matter; medicine can never be a science until we reach the point which permits us to postulate a theory of life. We cannot hope to conquer disease until we have reached this point. Mr. Roberts has suggested some most likely lines of progress, as when he puts forward the idea that nutrition and immunity are the same problem. There is no need in his case to make any allowance on the score of his being an amateur; he can meet the specialist in the various departments of medicine and of biology on an equal footing. He has written a book which will count in solution of the many problems at which medical men are now working.

DISEASES OF THE URINARY SYSTEM.

A FOURTH edition of *Diseases of the Genito-urinary Organs and the Kidney*,[5] by Professors ROBERT H. GREENE and HARLOW BROOKS, has appeared. The work is the result of collaboration between a physician and a surgeon, and deals with both the medical and the surgical aspect of urinary disease. Although diseases of the genitalia are included within the scope of the book, it is chiefly with lesions of the kidneys, ureters, and bladder that the writers are concerned. Since considerable advances have been made in methods of examination of cases of urinary disorder during the last few years, the work has had to be brought up to date in this direction. The authors recommend, amongst other procedures to be employed in diagnosing the presence of pus in a kidney, that of examining the urine before and after massage of the kidney and the ureter. If as the result of this massage a considerable amount of pus appears in the urine nephrectomy is, they consider, as a rule indicated.

In the authors' experience surgical methods of treatment have been productive of little good in nephritis. Decapsulation is described, but is dismissed as a disappointing measure. No attempt, however, has been made to arrive at a conclusion as to what type of nephritis is likely to be benefited by such a procedure, and what type not. In a work that is the outcome of collaboration between a physician and a surgeon we should have wished to have seen such problems more fully discussed; lying as they do on the borderline between surgery and medicine, they are too often attacked single-handed. Advances will be more likely when physician and surgeon combine their forces, as in the work under review.

In the section on stone in the bladder the authors refer very favourably to an evacuating lithotrite invented by Dr. Chismore of San Francisco. The male blade of this instrument is channelled, and acts as an evacuator as well as a lithotrite. A second adjustment in the form of a hammer can also be attached to it. Altogether the instrument would appear to combine many advantages within a comparatively small bulk. The authors, however, do not appear to have proved its worth by personal experience. Their description of the technique of litholapaxy with this instrument is taken from the writings of the inventor, the authors themselves showing a preference for the operation of suprapubic cystotomy.

The subject of gonorrhoea is dealt with, but not in great detail. In view of the number of works that have been written on this special theme this restriction is wise. Syphilis is only referred to in so far as it affects the urinary or genital organs. Minor lesions of the genitalia, such as varicocele and hydrocele, are also dealt with, but occupy much less space than is given to lesions of the urinary apparatus. There is no bibliography, and references to literature are few. In their original preface the writers admitted that they had made no attempt at completeness, their aim being to discuss the more important lesions of the genito-urinary tract from the standpoint of the general practitioner and of the surgeon. They have kept the same object in view in this, the fourth edition of their work.

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[5] *Diseases of the Genito-urinary Organs and the Kidney.* By Robert Holmes Greene, A.M., M.D., and Harlow Brooks, M.D. Fourth edition. Philadelphia and London: W. B. Saunders Co. (Roy. 8vo, pp. 666; 301 figures. 24s. net.)

NOTES ON BOOKS.

The use of the title *Athena* for the Year Book of the Learned World among the English-speaking Races,[6] which Mr. C. A. EALAND has prepared, is a direct challenge to the German year book of the universities, of which twenty-three issues had appeared before the war. As Minerva was the Latin so Pallas Athene was the Greek goddess of wisdom. *Athena* is limited to the English-speaking nations, so that its scope is much smaller than that of the original German year book, and smaller also than the French publication *Index Generalis*, of which the first number appeared last year and which also is a year book of the universities of the world. The new issue of *Minerva* (for 1920) is, however, on a much smaller scale than those that appeared before the war, and the information given about the universities of the allied nations is very meagre. *Athena* therefore appears most opportunely. As a typographical production it is far in advance of *Minerva*; those who have plodded time after time through a page of the German work in search of a name will appreciate the well-spaced, clear-set pages of *Athena*. A further improvement might be effected by arranging the names of professors in any one university alphabetically. A redundancy which becomes a rather aggravating defect is the repetition of the full title of the book at the top of every page; it is confusing, and the name of the university there would make the page much clearer and search much easier. As might be expected in the first issue of a work of this character, it is not difficult to pick out some errors, but the publishers disarm criticism by appealing for corrections, and the volume promises so well that it will be worth while to send them. If the venture prove successful it is proposed to increase its scope in future editions by including the learned institutions of our allies. It may be well to go further and include those of our late enemies also. It is certain that it will not be many years before both Germany and Austria regain to a very large extent the place they held in the world of science and of letters—in the learned world, in fact—and a work of this kind, to be complete, must include the learned institutions of those countries. One wonders why such a work in English has not been brought out before, and the publishers are to be congratulated on their courage and enterprise. Their task must indeed have been a heavy one; the result of their labours, however, is very good. One could wish that the book will find a place in all libraries and [illegible] wherever the English language is spoken.

[illegible] to publish *A Hospital Letter-writer in France*,[7] [illegible]

"That sounds very like me," and, from a voice down the ward, "That's her I told you of a-talking to you." The letters of the patients' relations naturally provided some interesting references. One mother wrote to the matron of the hospital: "Will you kindly tell me who May Bradford is? my son is very susceptible." Another mother congratulated her boy on having his letters written by a nice old (three times underlined) lady; and a sweetheart, perhaps naturally, began her letter with the question, "Who is this pretty V.A.D. who wrote for you? Tell me all about her."

This year the twenty-first edition of *Gray's Anatomy*[8] has been published. This medical classic is again edited by Professor ROBERT HOWDEN, of the University of Durham, who acknowledges his indebtedness to Professor J. Acworth Menzies, who has revised the histological section, and also to Dr. J. Dunlop Lickley, Professor J. C. B. Grant, and Professor E. P. Stibbe. Dr. A. J. Jex-Blake and Mr. John Clay have edited the section on applied anatomy. In the present edition there are more than eighty new illustrations, and the whole of the text has been carefully revised. In spite of the fact, however, that in 1918 the Anatomical Society of Great Britain and Ireland concluded that there was "no reason for departing from the use of the old nomenclature," the editor in his new edition maintains his use of the new or "Basle" terminology, with the old name bracketed after the new where there is a difference. The American Association of Anatomists, it is true, considers it inadvisable to abandon the Basle nomenclature, but we are rather surprised that the editor of *Gray's Anatomy* should still prefer to agree with them rather than with the British Society, for he admits in his preface that the new nomenclature is, in its entirety, not satisfactory. When we find that at present some British and Colonial anatomists teach the old and some the new terminology, it is obvious that a definite and unanimous policy is called for, and when the policy is agreed upon it can be carried into everyday use by no one better than by the editors of the standard anatomy textbooks. As regards the present edition, it is as excellently produced as ever, and the editor is to be commended on the success with which he has kept the volume within reasonable dimensions.

Sir WILLIAM HALE WHITE has issued a new edition, the seventeenth, of his well known *Materia Medica*.[9] The whole book has again been revised, and the various war regulations affecting prescribing have now been omitted. As to the merits of this manual, the seventeen editions of "Hale White" since 1892 speak for themselves.

The National Council of Social Service has issued a revised and enlarged edition of its *Handbook on Public Services*[10] for the use of those engaged in social and personal service work. Originally published in 1917, it has evidently proved of practical value, for 14,000 copies have been issued. In the preparation of this edition the various Government departments concerned have assisted. The new edition forms a useful work of reference.

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[6] *Athena: A Year Book of the Learned World.* [illegible]

[7] *A Hospital Letter-writer in France.* By Mrs. [illegible] Bradford. [illegible]

[8] *Anatomy, Descriptive and Applied.* By Henry Gray, F.R.S., F.R.C.S. Twenty-first edition, edited by Robert Howden, M.A., D.Sc., M.B. London: Longmans, Green, and Co. 1920. (Roy. 8vo, pp. xlv + 1[illegible]; [illegible] figures. [illegible] net.)

[9] *Materia Medica, Pharmacy, Pharmacology, and Therapeutics.* Seventeenth edition. By William Hale White, K.B.E., M.D. London: J. and A. Churchill. (Fcap 8vo, pp. viii + 712. 10s. 6d. net.)

[10] London: P. S. King and Son, Ltd. Price 2s. net.

THE ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

The LORD MAYOR presided at a meeting at the Mansion House on October [illegible] on behalf of an appeal for £[illegible] by the Royal National Orthopaedic Hospital. The object of the fund is to extend the present building on an adjoining site already acquired in order to provide (*a*) adequate space for dealing with out-patients and applying new methods of treatment, (*b*) accommodation for paying patients, (*c*) a school of orthopaedics for students and post-graduates, (*d*) extension of the workshops for making surgical appliances and surgical boots, and (*e*) additional accommodation for the medical and nursing staffs. The scheme also includes the formation of a country branch with 200 or 300 beds for children. H.R.H. PRINCE HENRY, the new president of the hospital, said it gave him great pleasure to know that almost the first occasion he was attending a public meeting should be on behalf of a charitable institution of such supreme importance as the Royal National Orthopaedic Hospital. Since the end of September, 1914, when the first batch of wounded soldiers was admitted to the hospital, upwards of 18,000 serving and discharged disabled soldiers had been treated within its walls, and the out-patient department in eleven years had increased from 11,000 to 66,000. He had paid a visit to the hospital on the previous day, and it was evident that the demand upon its resources were now such that the increased work could not be adequately carried on in the existing building; 75 per cent. of the patients were children, and it must be remembered that treatment in the early stages meant probably certain cure. Lord DENBIGH, chairman of the hospital, gave particulars of the good work being done there, and urged the necessity of donations being forthcoming. The plans of the additional buildings had been approved by the King Edward VII Hospital Fund, which had promised a donation of £24,000 provided the scheme was carried to a successful issue. Sir ROBERT JONES urged the necessity of early treatment of cases. He said that a great deal of the knowledge the surgeons were able to utilize in dealing with disabled soldiers during the recent war was derived by them from treating the little crippled children. A vote of thanks to Prince Henry, proposed by Sir ROBERT JONES, was carried unanimously, and Colonel OPENSHAW moved a vote of thanks to the Lord Mayor and Lady Mayoress for their assistance in connexion with the meeting.

PREVENTIVE MEDICINE AND THE MINISTRY OF HEALTH.

SIR GEORGE NEWMAN'S HUNTERIAN LECTURE.

THE Hunterian Lecture was delivered on October 13th at the first meeting of the Hunterian Society's second century. The lecturer was Sir George Newman, K.C.B., who spoke of the Ministry of Health as an instrument of preventive medicine. After pointing out that preventive medicine had a double purpose, aiming on the one hand to fortify and develop the defensive powers of the individual, and on the other to remove the causes of disease and of its propagation, Sir George Newman went on to describe the medical structure of the Ministry of Health. He first detailed its functions as laid down by Parliament, and then went on to speak of its six original divisions, each of these departments having a medical man or medical woman in charge. The services with which they had to deal were: (1) General health and epidemiology, this department being equipped with a laboratory for research; (2) maternity and child welfare, staffed by medical women, nurses, and midwives; (3) tuberculosis and venereal disease; (4) control of food supply; (5) general medical practice (general practitioner and insurance services); (6) sanitary administration. In addition to these there were three other departments which had come into the Ministry by another route: (1) The school medical service, contracted out, it was true, to the Board of Education, but with a medical staff which formed part of the general medical staff working under the authority of the Minister of Health; (2) the Registrar-General's department; (3) the Board of Control for lunacy, transferred from the Home Office. Further, the Minister had a Consultative Committee, of which Lord Dawson was the present chairman; such a committee embodied a sound principle. He pointed out that the Ministry had the services of clinicians, that it had allocated medical referees to different parts of the country, and that it had made arrangements for closer co-operation with the other Government offices which had medical departments. The Ministry employed a system of notification, general and special, of disease occurring in any area, and the results of such notifications were all properly studied and charted. It had also a system whereby telegrams from British consuls in various parts of the world were received regularly, conveying information with regard to the incidence of infective disease in their respective countries. The Registrar-General's office was available for the Ministry; the staff of the Ministry travelled all over the country and brought back to Whitehall accounts of what was happening, and the Ministry received reports from local authorities. In England and Wales there were 1,800 sanitary authorities, 318 education authorities, 650 Poor Law authorities, 245 pensions committees, and 142 insurance committees; it was hoped in time to have a simplification of the unit of sanitary government, but this was not so easy to effect as it might appear. It was through these local bodies that the Ministry did much of its work.

The Ministry of Health, Sir George Newman continued, had been subjected naturally and properly to criticisms, but he would remind its critics that in the first place it was not constituted to solve the problems of local self-government. Nor was it a department which could yield immediate results. It was criticized for not doing at once certain things which could not by any conceivable means be done immediately, but with regard to which it was making plans which in ten or twenty years' time would yield their fruit. Again, unlike certain other departments, it could not itself "deliver the goods," as it worked through local authorities. He then proceeded to give a few specific illustrations of the manner in which the machinery worked. One task of the Ministry was to make thoroughly effective a sanitary cordon around Great Britain and Ireland. At the thirteen ports at which people could land or food be imported from abroad there was now being put into operation a system of control. The Ministry was also assisting in the creation of an international health office attached to the League of Nations and the Council of the League had accepted the scheme. With this organization it would be possible to take international action against the exotic diseases and other important measures. As other illustration, he referred to the great work which lay before the Ministry in connexion with problems of maternity and child welfare. Of the 700,000 women who gave birth to children during a year, 3,000 died, and among the others there was an immeasurable amount of invalidity. The number of stillbirths was 20,000, and 60,000 infants even now died in the first year. The solution was in the supervision of antenatal conditions and of pregnancy, reform of midwifery, and provision of maternity homes. Another illustration was afforded by mental diseases. There were now in the asylums of England and Wales 116,000 insane persons, and there were also, according to the Royal Commission, 150,000 feeble-minded, of whom 35,000 were children. Beyond these numbers there was a zone of incipient mental aberration. It had been stated that 10 per cent. of school children were "dull and backward," and he believed that to be an under-estimate. It should be part of the service of the State to maintain the mental as well as the bodily health of the people. A start should be made, not with the certified lunatic, but with the conditions which created him.

Sir George Newman spoke also at some length on the tuberculosis service and the methods of improving the sanatorium, which he thought had not had a fair trial. Among other conclusions, he suggested that in tuberculosis, as in venereal disease, the decisive factor must be regarded as social and perhaps economic, rather than medical or surgical. His final illustration had reference to the general practitioner. The insurance system had been criticized, he said, and yet there were points in its favour which it was well to recall. He believed that this was the only country in which the control which had been introduced was national as distinct from a local or sectional system of insurance; medical men engaged in the work were represented on the administration; insurance doctors belonged to the general body of practitioners; there was freedom of choice of doctor by patient; the system of payment per patient had the enormous advantage to preventive medicine that it brought the patient to the doctor oftener and earlier. In the old days contract patients came at the rate of one and a half attendances per patient per annum; the attendances now of the insured patient averaged four per annum. He believed the thirty regional or "outdoor" medical referees on the staff of the Ministry would be extremely valuable. Lastly, it was hoped at an early date to improve equipment and facilities. He concluded with the emphatic expression of his own view that there should be no attempt to make the general practitioner a whole-time civil servant, for that would be bad for the patient and the doctor, and would be likely to defeat the advance of the science and art of medicine. The thing to do was to load up the individual responsibility of the private practitioner and not to diminish it; to assist him to help himself, to provide for him the necessary facilities for efficient practice, and to secure for him his full measure of preventive work in Medicine.

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THE BIRTH AND GROWTH OF SCIENCE IN MEDICINE.

The Harveian Oration, though by no means the oldest, may fairly be regarded as the blue ribbon among the lectureships of the Royal College of Physicians of London, on the ground that it is allotted to a Fellow who combines considerable seniority with real eminence in the profession. It is probably also the most difficult to discharge with satisfaction, for since its inauguration in 1656 more than 200 orators have been called on to obey Harvey's directions that they should commemorate the benefactors of the College, exhort the Fellows to follow this example, to search and study out the secrets of nature by experiment, and to continue in mutual love and affection among themselves. In the past the commemoration of benefactors largely centred on Harvey and his great discovery, and this dutiful action has naturally made it increasingly difficult to find any new aspect of the subject worthy of the occasion. As a further development of the theme the genesis of Harvey's idea and its historical connexions with the labours of his great predecessors, who laid the foundations of anatomy and physiology, have been explored; thus the late Dr. J. F. Payne in 1896, and Dr. Raymond Crawfurd in his Harveian Oration of last year, specially considered Harvey's relations to Galen and Aristotle, while the late Sir William Osler in 1906, shortly after he became Regius Professor of Medicine at Oxford, sketched Harvey's relations to his contemporaries and more immediate predecessors in his oration on "The growth of truth, as illustrated in the discovery of the circulation of the blood."

Sir Frederick Andrewes, adopting and extending the lines indicated by these three fellow-Oxonians, has utilized the opportunity afforded him as this year's Harveian Orator to describe the birth and growth of science in medicine (see p. 615), and has attractively traced the influences governing the progress of knowledge of disease, with special reference to the early stages rather than to the final results. As a whole-time pathologist his selection is most welcome, for it emphasizes the close, indeed, inseparable relations of medicine and pathology, and, moreover, reinforces the wise scientific outlook of the College, which, as long ago as the seventies, chose two professors of pathology to give this oration. Science is defined as the endeavour to formulate the laws of nature and as the pursuit of knowledge for its own sake, and it is pointed out that medical science began in the sixth century B.C. among the Greeks, for there is no evidence of any true steps in this direction in Egypt at this time. Interpreting Harvey's last injunction in a broad sense, Sir Frederick Andrewes commemorates Thales of Miletus as the first spiritual benefactor of the College on account of the atmosphere of intellectual liberty and rejection of myth and tradition which he and his followers established and thus rendered science possible. Medicine, though associated with religion, now entered on its first scientific stage by becoming an observational science some time before the advent of Hippocrates, who is described as an admirable case-taker with the habit of independent spirit of a great physician and a great gentleman. The chief contribution made to medicine by Athens during its golden age of the fifth and fourth centuries B.C. was the firm establishment of the abstract sciences, and especially of logic and mathematics, as a sure foundation for the future development of the concrete sciences. The permanent influence exerted by the spirit of Hellenism can hardly be exaggerated; it bore fruit in the medical school at Alexandria, where dissection first came into vogue, and later was active in Rome, so that the orator rightly commemorates Galen as the last and in many ways the greatest of the Greek physicians, as he had the advantage of 600 years' experience over Hippocrates, who, however, was probably the bigger man. As the first to employ the experimental method systematically in medicine Galen should be regarded as the father of physiology, and it is indeed surprising that he came so near to anticipating Harvey in his discovery of the circulation without actually succeeding in accomplishing this monumental achievement.

With the awakening in the Renaissance from the long intellectual slumber of the dark ages Galen's works became more accessible and his influence was more widely felt. Under the stimulus of Vesalius anatomy was the first science to show signs of independent thought and research; and so, with the inspiration of experiment in the air, the time for Harvey's epoch-making discovery was ripe. After thus tracing the growth of the scientific method up to Harvey and giving an appreciative comparison of the *De Motu Cordis* and of the *De Generatione*, Sir Frederick Andrewes touches on the factors influencing the advance of medical science since Harvey's time, and in a passing reference to clinical investigation and study hazards the humorous speculation whether with his apparent contempt for physiology and pathology Sydenham would entirely acquiesce in now being regarded as the founder of epidemiology. The four extrinsic events most important in the comparatively recent progress of medicine—namely, the invention of the compound microscope, the development of chemistry, the acceptance of the doctrine of evolution, and the discovery of the relation of micro-organisms to disease—are then rapidly passed in review. As the human body is made up almost entirely of colloids, the necessity for a better knowledge of colloidal chemistry in order to understand the problems of life and pathology is obvious, and might well inspire a future Harveian orator, when dealing with *De Generatione*, to a review of the same outstanding merit as that given by Sir Frederick Andrewes in 1920.

CONGENITAL PYLORIC HYPERTROPHY.

Dr. John Thomson of Edinburgh contributed to the Osler memorial volumes an essay bringing up to date his clinical and pathological observations on congenital hypertrophy of the pylorus, a subject on which he can speak with particular authority. It is a strange disorder and the term "congenital" applied to it, though correct, is a little misleading. The muscular hypertrophy begins before birth, but, as a rule, the characteristic symptoms do not appear until the second or third week and may be delayed until the sixth or eighth. The structural change consists of true hypertrophy of the entire muscular coat of the pylorus and adjacent stomach wall, accompanied by some lesser amount of the same in the cardiac end of the stomach and in the oesophagus. Other local changes, such as dilatation of the stomach and oesophagus and gastric catarrh, are secondary to that at the pylorus. The abnormality of function consists mainly in an ill-timed abnormally forcible and prolonged contraction of the pyloric muscle which prevents the food passing into the bowel, and so determines vomiting and eventually starvation and wasting.

Two theories have been put forward to account for the hypertrophy of the pyloric muscle: the one would account for the increase by supposing it to be a simple congenital redundancy of growth. The other, which is favoured by Dr. Thomson, is that the primary defect is in function. "It is known," he says, "that the normal fetus swallows a considerable quantity of amniotic fluid during intrauterine life; and as this implies a certain amount of co-ordinated muscular action of the stomach and pylorus, it is believed that the supposed inco-ordination between these parts begins when the fluid first passes through them. There is reason to believe, however, that the muscular action may not at this period be very vigorous or continuous, and that therefore, by the time the child is born, only a small degree of hypertrophy will have occurred. After birth, when regular feeding has begun, the force of muscular action and the inco-ordination will tend to increase so that the hypertrophy will progress much more rapidly than during intrauterine life. It is in accordance with medical, surgical, and pathological experience that the pyloric tumour does grow larger and harder while the active symptoms continue."

Dr. Thomson holds that in the blocking of the pylorus two factors are at work: first the abnormal muscular contraction, and secondly the mechanical effect produced by the increased bulk of the muscular tissue; the peritoneum, which only yields slowly, prevents it from expanding outwards, and so as it enlarges it must press inwards and diminish the lumen. The stage at which the symptoms become typical probably depends mainly on the time when the muscular layer has become so thick that, even during relaxation, it seriously embarrasses the functional opening of the canal for the passage of food. In this way the varying date after birth at which symptoms begin can be accounted for. In an ordinary case the typical copious "shooting" vomiting sets in quite suddenly without apparent cause, although on inquiry it may be ascertained that previously the infant has sometimes returned milk without distress. Once the violent vomiting begins it continues at short intervals, and unless treatment is soon instituted and proves successful the condition of the child quickly becomes serious; the immediate treatment is to stop all food for at least twenty-four hours, and to give subcutaneous injections of normal saline solution every four to six hours. They may be supplemented, or, if they cause pain, replaced, by enemata of normal saline solution (one to two ounces every six hours). The important physical signs of the condition are a local tumour and visible peristalsis. If the child is seen early enough simple treatment may suffice; this consists in restricting the size of the feeds given every two or three hours to two ounces or less, and diminishing the proportion of curd and fat. At the same time the stomach should be washed out with warm water once or twice a day.

If, in spite of these measures, the child rapidly loses strength, or if after two or three weeks it fails to improve, a surgical operation should be undertaken; Dr. Thomson prefers Rammstedt's, which consists of simple division of the pyloric muscle without stitching. Of five cases in which this operation was done recovery ensued in four—a much larger proportion than after Loreta's operation for divulsion of the pylorus. All the cases at first reported belonged to the very acute type; further experience founded on the marked symptoms in them has led to the recognition of the milder cases; the acute type is now known to be rare. In these acute cases it may be necessary to resort to surgical operation before the peristalsis comes on. There are also very mild cases, which usually recover after careful dieting; yet the hypertrophy may be very considerable, and the mildness of the clinical manifestations must be attributed to the fact that in these cases the pyloric muscle, though greatly hypertrophied, is less frequently than in ordinary cases in a state of abnormal contraction, so that it allows a fair amount of food to pass into the bowel. In all probability many of these mild cases are not recognized, but are regarded as particularly troublesome examples of indigestion.

The condition with which congenital hypertrophy may most easily be confused is the obscure nervous complaint usually termed "pyloric spasm." In such cases vomiting begins soon after birth and eventually becomes projectile, the stomach being completely emptied; vigorous peristalsis is absent and small doses of opium usually give relief. In the less severe cases of congenital hypertrophy of the pylorus the object is to carry the child on until spontaneous recovery results by the natural opening up of the lumen of the pylorus. Such children, however, must be watched carefully, and the weight registered daily. It may be long before any increase in weight is noted, but when once it begins—that is to say, when once the pyloric lumen has begun to widen—the weight rapidly rises. What may be expected from medical treatment is not so much hastening of the opening of the passage as relief just sufficient to keep the child alive, in spite of the continuance of the obstruction, until the natural process of recovery has time to develop. When recovery does take place, whether with or without surgical intervention, the prospect of the patient seems to be very good. Early in 1919 Dr. Thomson got information with regard to 33 of the 42 children who had recovered from the condition; their ages varied from 10 months to 16¾ years. The majority, doubtless, as he says, owing to the extra care their mothers had taken of them, were above the average in development and vigour, and none showed any signs of serious gastric derangement. He concludes that the danger to life, and even to health, in this disease is only temporary; children who survive it in infancy are in no way handicapped thereby in after-life. Those operated on were apparently as well as the others who were treated medically.

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LONDON SCHOOL OF MEDICINE FOR WOMEN.

On October 19th a number of ladies interested in the progress of medical education of women entertained a distinguished party at lunch in Fishmongers' Hall in order to make better known the scheme of the London School of Medicine for Women for the extension of its hospital, the Royal Free Hospital, to afford greater facilities for clinical instruction. Sir Alan Garrett Anderson was in the chair. H.R.H. Princess Louise, Duchess of Argyll, was present, and among the guests were the Duchess of Sutherland, Lady Curzon of Kedleston, Viscountess Northcliffe, Sir Anthony Bowlby, President of the Royal College of Surgeons, Sir J. J. Thomson, President of the Royal Society, Sir John Bland-Sutton, President of the Royal Society of Medicine, Sir Francis Champneys, Chairman of the Central Midwives Board, and Sir George Newman, Secretary to the Ministries of Health and Education. Among the many distinguished medical women present were Miss Aldrich-Blake, Dean of the Medical School, and Dr. May Thorne, honorary secretary of the Appeal Fund Committee. After the toast of "The King," Dame Clara Butt sang the National Anthem. Sir Alan Garrett Anderson, treasurer of the scheme, said that the object of the assembly was to bring to notice what the London School of Medicine had already accomplished for the medical education of women and what it hopes to achieve in the future. It was founded in 1874, and was the first medical school for women. His mother, the late Dr. Elizabeth Garrett Anderson, who was the first English woman to obtain a medical degree, had encountered great difficulties in obtaining instruction. The progress of the school had recently been very rapid. In 1913 it had 179 students; this year (1920), the number was over 500. The cost of medical education had increased in various directions, and the need for good clinical training was never greater than at the present time. It was proposed to raise fees, but it was not possible to cover all expenses from that source. With more students extended facilities for clinical training were needed, and an appeal was therefore made for money to extend the Royal Free Hospital—which is the hospital of the school—to equip the extension, and to meet maintenance charges for free or partially free beds; certain extensions of the school are desired also. The hospital has recently been presented with ground immediately adjoining the present building, and it is proposed to erect upon it a block containing one hundred beds, including small wards for patients with limited incomes who can contribute a few guineas a week towards their maintenance. It was desired to provide accommodation for women patients who are not willing to accept the charity of a hospital but yet cannot properly be treated in small flats or bed-sitting rooms. The extension will entail provision for an increased nursing staff, and the hospital is also in need of more laboratory accommodation, for it was the ambition of the institution to provide the highest medical skill and the best nursing for those who come under its care, including those classes who were unable to provide from their own resources the necessarily high cost of efficient treatment. The toast of the School, with which the chairman concluded, was acknowledged by Dr. Mary Scharlieb, the president, who said that the success of the school was shown not only by the increasing numbers of students, but also by the fact that they were drawn from many countries, including India; there were six Indian women studying at the school at the present time. It might, she said, be asked why there was need to increase the accommodation for women students when many schools hitherto open to men only were now willing to receive a limited number of women students. The answer was that the hospitals of these schools had hitherto withheld resident posts from their women graduates. It was therefore necessary to have a strong school and hospital for women students only until all medical schools, together with all hospital appointments, were open to men and women on equal terms. We find on reference to the annual report for 1920 that the possibility of establishing a clinical unit has been under the consideration of the council of the school, and that there is a hope that a gynaecological department may shortly be founded; an endowment fund for some other chairs for a limited number of years is also in view. Altogether it is hoped to raise £[illegible] to meet the needs of the school, including a bursary fund for the assistance of suitable students.

VOLUNTARY AND MUNICIPAL HOSPITALS

Sir Napier Burnett gave an address to the West Midland region of the British Hospitals Association in Birmingham last month. It is now printed as a pamphlet, and proves to be a detailed consideration of the sources from which the income of the voluntary hospital could be increased and placed upon a more stable and permanent footing. Among the means discussed were the systematic institution of schemes for regular subscriptions from the artisan class through weekly workshop subscriptions or Hospital Saturday and Sunday Funds. Next it is urged that more could be done to induce employers to recognize their obligations to the hospitals in respect of the help given to sick and injured workmen. Perhaps the most novel point made is with regard to the value of the hospitals to insurance companies. The low tariff rates quoted now for life and accident policies are based on work done by the profession in and out of hospitals; yet the insurance companies do little or nothing for the hospitals. The secretary of one hospital lately made an appeal to fifty-three accident insurance companies, stating that in 1919, which was an average year, 224 persons entitled to statutory compensation for accidents were treated as in-patients at a cost to the hospital of £1,350, and 4,514 as out-patients at a cost of £1,500. The result of the appeal was a subscription of £20 from one company. Another point Sir Napier Burnett made was that the voluntary hospitals receive persons injured accidentally in the streets, as also criminal cases, but receive no compensation from the municipality which is responsible. To provide the additional beds which it is admitted are needed, Sir Napier Burnett, like many others, looks to the utilization of those Poor Law infirmaries which are disused or could be cleared if arrangements were made between several neighbouring authorities. He made reference to the Bradford experiment recently described in our columns by Dr. Buttar, and expressed the opinion that the two hospitals, the voluntary civil hospital or infirmary and the municipal or rate-supported hospital, could not continue to exist side by side, because the voluntary hospital must lose subscriptions and legacies. He objected to the municipalization of general hospitals on the ground that the management would be less efficient and economical. His inquiries had led him to conclude that at a moderate estimate the cost would be at least one-third greater. One reason for this was that the municipal committee would not necessarily consist of members of the council who took a real interest in hospitals; they might be quite inexperienced, or have expensive fads of their own. Another reason was that an inquiry made last year led to the conclusion that the voluntary hospitals could buy better than municipal and Poor Law infirmaries. As an instance, he mentioned that of two hospitals in the same town, the voluntary hospital bought rice at 30s. while the municipal hospital paid 81s. Finally, it was to be remembered that the present medical staffs gave their services free to the voluntary hospitals, but would not be willing to serve the municipality on the same terms. The general conclusion would seem to be that though the voluntary system cannot provide new buildings, it can, if properly conducted, meet current expenses. Sir Napier Burnett goes so far as to suggest that Poor Law hospital buildings should be handed over to voluntary committees to administer as voluntary hospitals. He regards this as a practical suggestion, falling within the bounds of the subsidy the State should make to voluntary hospitals.

INFLUENCE OF DILUTION ON THE TOXICITY OF ALCOHOL

Dr. H. M. Vernon, in 1919, in a study[1] undertaken at the instance of the Central Control Board (Liquor Traffic), investigated the action of 5, 10, 20, and 40 per cent. solutions of alcohol taken in the form of pure alcohol or brandy. The quantities of alcohol consumed were not greater than 50 c.cm., and dilutions of less than 5 per cent. were not employed. The ensuing impairment of neuromuscular co-ordination was measured by a typewriting test, or by the use of an adding machine, or by target pricking. Using the typewriting test, Dr. Vernon has conducted on himself a further series of experiments.[2] Three and a half hours after food 15 to 90 c.cm. of alcohol were taken; in the case of the larger doses the toxic effect was found to increase at a more and more rapid rate, the greater the quantity of alcohol taken; when drunk as 20 per cent. whisky, 18.3 c.cm. of alcohol was followed by an increase of 0.8 in the "corrected" number of mistakes, 30 c.cm. of alcohol by one of 3.4, 45 c.cm. by one of 8.0, and 60 c.cm. by one of 17.0. The findings of the former investigation are thus fortified. One of the inferences to be drawn from the more recent investigation is important, and—as a fact established by scientific experiment—new. The toxic effect of alcohol taken in considerable dilution was found to be much slighter than was anticipated, and Dr. Vernon concludes that, "practically speaking, beer containing 3 per cent. by volume of alcohol, or 5.25 per cent. of proof spirit, is a non-intoxicating liquid." When taken in the form of 3 per cent. beer, 90 c.cm. of alcohol produced only as much effect as 54 c.cm. in the form of 4 per cent. beer, as 46 c.cm. in the form of 5 per cent. beer, and as 42 c.cm. in the form of 20 per cent. whisky. The 90 c.cm. of alcohol mentioned is contained in 5¼ pints of 3 per cent. beer, and Dr. Vernon calculates that in his own case more than 10 pints of beer, which would take him over four hours to drink, would be needed in order to intoxicate. It may be argued that experiments conducted on one person only are open to fallacy; the subject of these experiments, however, justifies his generalization that 3 per cent. beer is non-intoxicating by comparative observations which show him to be more susceptible to alcohol than the average man. One set of experiments conducted on another person somewhat less susceptible to alcohol than Dr. Vernon is described; in this subject 65 c.cm. of alcohol in 4 per cent. strength had the same effect as that produced by about 49 c.cm. of alcohol in 10 per cent. strength. Dr. Vernon draws the following practical conclusions from his experiments. "In order to bring about an increase of sobriety in the nation, it is clear that so far as possible the consumption of the stronger beers and of spirits ought to be discouraged, and that of the weaker beers and of cider to be stimulated. This object could to some extent be achieved by exaggerating the system of taxation which is already in force. If the taxation of light beer containing 3 per cent. or less of alcohol were so reduced that it was possible to sell it at twopence per pint, whilst that of the heavier beers was increased so that beer of 4 per cent. alcoholic strength cost fivepence per pint, and beer of 5 per cent. alcoholic strength one shilling per pint, a very powerful stimulus to the sale of the light beer would be provided. For each penny spent a man would get 8.5 c.cm. of alcohol in the form of 3 per cent. beer, 4.5 c.cm. in the form of 4 per cent. beer, and only 2.4 c.cm. in the form of 5 per cent. beer. Hence from motives of economy, he would generally choose the 3 per cent. beer. He might grumble that it was not strong enough to tickle his palate, and occasionally indulge in the heavier beers, but he would seldom be able to afford enough of these beers to bring him anywhere near to intoxication." The two beers with which Dr. Vernon experimented contained, before dilution, 5.43 per cent. and 3.46 per cent. of alcohol by volume. Dr. Vernon found that light claret containing 10 per cent. of alcohol, taken with the food, had a slight toxic action comparable with that of 3 per cent. beer taken on an empty stomach; port or sherry imbibed under similar conditions would, as a rule, be rather more toxic than 5 per cent. beer taken on an empty stomach. Claret had the same effect as whisky diluted to an equal alcoholic strength.

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[1] British Medical Journal, August 16th, 1919, p. 209.

[2] *British Journal of Inebriety*, October, 1920, p. 59.

DAIRY RESEARCH.

THE Research Institute of Dairying, established at University College, Reading, in 1912, with the help of the Board of Agriculture and the Development Commissioners, has done much valuable work, in spite of insufficient equipment. It is now desired to provide a farm and laboratories; a farm of 350 acres, with a good house, has been found, and an appeal is made for funds to purchase the farm, equip the house as a laboratory, build a dairy, and secure a herd of dairy cattle. This will involve a capital expenditure of £70,000, but to place the Institute on a sound footing an endowment fund of £80,000 is required. University College, Reading, will act as trustee of the property of the Institute, which will be administered by an executive committee, responsible to a board of dairy research, containing representatives of the Ministries of Agriculture and Health, of the Royal Agricultural Society, and of other bodies and persons interested in the production of milk under hygienic conditions. The financial importance of the dairy industry is, perhaps, not generally appreciated; it was calculated in 1914 that the yield of milk in this country at 1s. a gallon was worth 53½ millions sterling a year, or one-twelfth of the total monetary value of all the foodstuffs purchased by the nation. At the present time, owing to faulty methods, producers lose money, and the larger part of the milk distributed to the public is grossly contaminated, and often in other respects not of good quality; the way to remedy this evil of dirty milk is understood, and the chairman of the appeal committee, Viscount Elveden, is himself one of the pioneers of a pure milk supply. But a research institute is needed, for there are many other problems to be solved. An institute possessing a herd, a research dairy, and laboratories would be able to study the methods which lead to success or failure in the management of dairy herds, the production and distribution of milk, and the preparation of dairy products.

A MEDICAL SOCIETY IN MESOPOTAMIA.

AT a meeting held at the Military Governor's office, Baghdad, on August 14th, Major T. Barrett Heggs, the medical officer of health, presiding, it was unanimously decided by thirty-four Baghdad medical men, of whom ten were British, to form a Baghdad medical society. Lieut.-Colonel W. B. Lane, the director of health services, was elected first president. The Executive Committee comprises the officers of the society, together with the directors of the civil hospital for women, the new general hospital, and the central laboratory. It has been decided to form a medical reference library, and to hold ordinary meetings on the first Wednesday in each month. The first ordinary meetings took place on September 8th, when Dr. Sami Bey opened a discussion on the prevalence and control of syphilis in Baghdad, and on October 6th, when Major B. M. Footner discussed the diagnosis and treatment of syphilis. At a special meeting held on September 22nd, consideration was given to the unqualified practice of medicine and surgery in Baghdad. In succeeding meetings, Lieut.-Colonel A. E. Hamerton will give a demonstration of scientific tests and laboratory aids for the diagnosis and treatment of venereal disease; Captain G. N. Braham will discuss the diagnosis and treatment of gonorrhoea, and Dr. Frederick Johnson will give a paper on the diagnosis and treatment of bilharzia. We congratulate those concerned on the successful establishment of a society which should prove of great service to the medical profession in Baghdad.

THE RED CROSS AND THE LEAGUE OF NATIONS.

PROFESSOR F. F. ROGET, of Geneva University, in the first of three Chadwick public lectures on "Health, the Red Cross, and the League of Nations," spoke of the League of Nations and the League of Red Cross Societies as joining hands for the care of health among the civil community, in conjunction with the forthcoming Public Health Department of the League of Nations. The Covenant of the League laid down that "The members of the League will endeavour to secure and maintain fair and humane conditions of labour for men, women, and children, both in their own countries and in all countries . . . and for that purpose will establish and maintain the necessary international organizations"; and further: "will endeavour to take steps in matters of international concern for the prevention and control of disease." The share assigned to the Red Cross Societies of the Allies in bringing about this effect is provided for in Article 25 of the Covenant: "The members of the League agree to encourage and promote the establishment and co-operation of duly authorized voluntary national Red Cross organizations having as purpose the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world." The lecturer explained how the reorganization of the Red Cross Societies for civil work was a direct outcome of the lessons learnt from the war. The terrible effect of war conditions upon the civil community made thoughtful men feel that to the pursuit of general political sanity in the relations of nations to one another (the business of the League of Nations) should be added international care for the bodily health of the human units forming those nations. To that end the Public Health Department of the League of Red Cross Societies, now in Geneva, would supply the centre needed for a world-wide organization. The readiness with which the general public had supplied the Red Cross Societies with money for their war work would have to be renewed for the maintenance of the coming work among the civil community. In this new field a conjunction should take place of voluntary Red Cross effort with the State agencies and institutions in charge of public health. Both, in working together, could hope to remove the ignorance, prejudices, and suspicions which, in remote and backward countries, and often in quarters which should be better informed, stood in the way of the candid and sincere working together of the League of Nations and the Red Cross for the peace and health of all civilized nations.

EXHIBITION OF SPECIMENS AT THE ROYAL COLLEGE OF SURGEONS.

A very remarkable exhibition of specimens was opened in the Museum of the Royal College of Surgeons of England, Lincoln's Inn Fields, on Monday, October 18th, and will remain accessible to medical men and medical students until November [illegible]th. The exhibition includes gifts and additions made to the museum during the past five years. Up to 1914 it had been the custom to place annual additions on exhibition in the council room of the College during the election of new members of Council. During the war the museum and its staff were employed in building up for the Royal Army Medical Service the great collection at present shown in the [illegible] of the College, and hence the annual exhibition of specimens fell into abeyance. The Council, in reviving the annual exhibition, has wisely altered the date from July to October, and instead of giving a temporary exhibition in the council room, has placed it in the museum for a period of four weeks at least. It would be impossible to give an account of even the more instructive specimens in the space at our disposal; suffice it to say that nearly all sections of medical and biological research are represented, the illustrations of surgical pathology being particularly valuable.

THE AUTUMN PARLIAMENTARY SESSION.

Our Lobby Correspondent writes: The House of Commons resumed its sittings on October 19th with a burden of business in hand representing either in progress of passage or promised, which threatens the continuance of the session up to Christmas, and then some [illegible] of [illegible]. The House then had the bills dealing with the minimum hours of labour and wages, the Shops (Closing) Bill, the Agriculture Bill and the Air Navigation Bill are amongst those of general concern which will take up considerable time. Of more particular interest are several which are in very early stages. There is the Proprietary Medicines Bill, which is at the point of report in the Lords, but has still to come to the Commons; and there is the Ministry of Health (Miscellaneous Provisions) Bill, introduced in the Commons by Dr. Addison just before the adjournment. The latter bill proposes to enable county councils and borough councils, subject to the assent of the Minister of Health, to maintain or contribute to hospitals; it has other clauses touching health and local administration, and its provisions range from clinical thermometers to early mental disorder. There are also the Milk and Dairies Bill, and the Dentists Bill, the last named to be based on the findings of a Select Committee, which reported some time ago. Three bills—the Criminal Law Amendment Bill No. 1, the Criminal Law Amendment Bill No. 2, and the Sexual Offences Bill—are being considered by a Joint Committee of both Houses, with the intention that one of them shall be passed into law this session. The Medical Services Bill has been talked about, but there is little or no prospect that it can be submitted this year.

BRITISH ORTHOPAEDIC ASSOCIATION.

THE annual meeting of the British Orthopaedic Association will be held on November 12th and 13th in London, under the presidency of Sir Robert Jones. On Friday, November 12th, the members will meet at the Medical Society of London, 11, Chandos Street, Cavendish Square, W., at 9.30 a.m. After the President's address a discussion on "The operative treatment of osteo arthritis of the hip-joint" will be opened by Mr. D. McCrae Aitken. At the afternoon session papers will be read as follows: "The electrical treatment of the foot," by Mr. G. Murray Levick; "Fractures occurring in bone grafts," by Mr. S. Alwyn Smith; "Cysts of the external semilunar cartilage," by Mr. R. Ollerenshaw; "The treatment of stiff metacarpo-phalangeal joints," by Mr. J. A. Dickson. At 7.30 p.m. the association dinner will be held at the Royal Automobile Club, Pall Mall. On Saturday, November 13th, at 9.30 a.m., there will be a demonstration at St. Bartholomew's Hospital by Mr. R. C. Elmslie.

AT the conclusion of the Harveian Oration, delivered on St. Luke's Day before the Royal College of Physicians of London, the President, Sir Norman Moore, presented the triennial Bisset Hawkins memorial medal for distinction in public health to Dr. W. H. Hamer, Medical Officer of Health to the London County Council.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from October 3rd to October 18th, in response to the appeal published in the JOURNAL of July 24th (p. 139), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

NINTH LIST OF SUBSCRIBERS.

	£	s.	d.		£	s.	d.
Brought forward from last list [illegible]	[illegible]	0	4	[illegible], Dr. Alex., Kilmar[illegible]	1	0	0
[illegible], Dr. [illegible] A., Bury [illegible]	1	1	0	[illegible], Mr. [illegible], [illegible], Streatham, S.W.16	0	10	6
[illegible], Mr. Thomas, [illegible]	2	2	0	[illegible], Prof. R., M.D., [illegible]	1	1	0
[illegible], Dr. Robert Smith, [illegible]	1	1	0	[illegible], Lt.-Col. David [illegible], R.A.M.C., [illegible], Sunderland	[illegible]	[illegible]	0
[illegible], Dr. [illegible], [illegible] Midlothian	1	1	0				
					£47	[illegible]	0

SCIENTIFIC MEDICAL WORK IN SOUTH RUSSIA.

Dr. Temple Grey, who has lately returned from the Crimea, sends us the following notes on the Central Bacteriological Laboratory at Sevastopol:

This institution was founded in July, 1918, by Professor Yurevitch of the Military Medical Academy (a bacteriologist) as a small diagnostic laboratory for the needs of the army, and to this end he collected in different places and establishments the remains of former military laboratories. Thus with one microscope, a small incubator, a few test-tubes and some other trifles, the laboratory railway car was equipped. It started working for the needs of hospitals in Ekaterinodar and for the armies. In September, 1918, it was transferred to one of the Ekaterinodar hospitals, where it occupied one small room, as its equipment was not large. But already, in December, 1918, in connexion with developing epidemics of typhus, relapsing fever, and typhoid, and the possibility of small-pox, cholera, and dysentery, and even plague, breaking out in spring and summer, and also in connexion with the extension of the territory occupied by the volunteer army, it became evident that a bigger laboratory was required, not only for diagnostic work, but also for the preparation of vaccines and serums; and such a laboratory was in fact established in April, 1919, from the transformed small laboratory of the volunteer army in Ekaterinodar, under the name of the Central Bacteriological Laboratory.

Among its problems were:

1. Carrying out diagnostic bacteriological and chemical research on prevailing epidemics.
2. Organization of laboratories for the front, mobile and stationary.
3. Supplying such newly-formed laboratories with equipment and materials.
4. Preparation of vaccines, serums, and lymph.
5. Chemical analysis of water, foodstuffs, pharmaceutical preparations, etc.

The laboratory was afterwards moved into another building, where it occupied five rooms and began to tackle the above mentioned problems. First the preparation of anticholera and antityphus vaccines was started. The absence of necessary media—agar-agar and peptone—was got over by preparing peptone from pigs' stomachs and the requisitioning of agar-agar from confectioners' shops. As there was an acute shortage of laboratory utensils, especially bottles and rubber corks, the laboratory staff began to make them for themselves. In this way, and enjoying the special attention of the Allies, the laboratory was able in a short time to accomplish at least part of the tasks set before it. In this period the laboratory prepared over 500,000 doses of anticholera and antityphus vaccine, several thousand various analyses were made, and four diagnostic laboratories for the front area were established out of the central laboratory's modest equipment.

Political considerations and the situation at the front forced the laboratory to be evacuated in November from Ekaterinodar to Sevastopol. On arrival there the central laboratory continued the realization of the proposed tasks. It proposed also to enlarge its activity by aiming at becoming a scientific centre in microbiology and chemistry for those who desired to do research work.

All who have been in Russia lately, in the most trying period of Russian history, realize the difficulty, if not impossibility, of starting any large undertaking. Only after three months' sojourn in Sevastopol—that is to say, in February, 1920—the laboratory began to function regularly, after having been equipped according to the programme and plan of its future work. At the present moment the laboratory is situated in one of the finest buildings in Sevastopol, where it occupies twenty-five rooms. The following departments are working: (1) Diagnostic, (2) serological, (3) vaccine, (4) chemical, (5) research, (6) Jennerian, (7) Pasteur. The proposed section for the preparation of antidiphtheritic and other serums could not be opened for lack of funds and equipment.

Research work has been on the following lines: Preparation and application of antityphus vaccine, diagnosis of relapsing fever, simplification of the preparation of peptone for culture media, the diagnosis of typhus, the Weil-Felix test, and the Winner test.

The laboratory instituted a scientific society for microbiologists and chemists, and the following reports have been read:

(1) The plague and public health measures in Odessa. (2) The organization of a Pasteur station in Odessa. (3) Winner's test for the diagnosis of typhus. (4) Cases of typhus occurring in those who had been inoculated against it. (5) The diagnosis of relapsing fever. (6) Antityphus incculation in Sevastopol and Simferopol. (7) Cases of typhus amongst the medical personnel during the 1919-1920 (winter) epidemic. (8) On trypanosomes. (9) On sea bacteria. (10) Variations in the structure of Medusae. (11) On radio-activity. (12) Population and death rate in Sevastopol. (13) Result of the bacteriological examination of the Sevastopol aqueduct. (14) Results of the bacteriological method for the examination of water for public health purposes. (15) Experimental syphilis. (16) The new view of the nature of chemical elements.

The activities of this institution during its sojourn in Sevastopol, from February 1st to September 1st, 1920, have been the following:

(1) The preparation of antityphus vaccine and the inoculation in Sevastopol of as many as desired to be treated. (2) The setting up in Simferopol of a branch for the same purpose. (3) The establishment of a branch in Djankoy for the needs of the military medical institutions and population. (4) The supplying of the needs of the Russian Red Cross laboratory working for the troops and population near the front. (5) 3,152 bacteriological and chemical examinations of clinical and public health material. (6) The Pasteur treatment of 170 persons bitten by rabid animals. (7) Organizing the preparing of calf lymph; 500,000 doses prepared for the needs of the army and population. (8) 1,512 litres of cholera vaccine prepared and delivered. (9) 217 litres of cholera-typhus vaccine distributed. (10) Preparation of antityphoid vaccine started and 368 litres prepared. (11) Practical and theoretical post-graduate courses in bacteriology and chemistry were organized and attended by doctors intending to work in the laboratories newly opened for the needs of the army and population.

The value of the Central Bacteriological Laboratory was made evident in the last cholera epidemic, for although the conditions were favourable for its propagation, the disease never got a hold, thanks to general vaccination of the troops and its wide application throughout the population. During the whole epidemic only a few cases occurred in the army, and most of them at the outset.

The Central Bacteriological Laboratory has made great efforts and overcome many obstacles connected with the absence of necessary materials for the preparation of bacteriological media, apparatus, laboratory utensils, and so on, and has prepared in time a sufficient quantity of vaccine and supplied it to the army and the civil population. At the present moment general vaccination against typhoid has been begun, which gives the hope that the epidemic will not become largely spread.

The reserves at the laboratory, adds Dr. Temple Grey, are now almost exhausted. It is the only institution in the territory occupied by the Russian army which supplies the population and army with serums, vaccines, calf lymph, and other bacteriological products. It supplies also the needs of other laboratories (city, zemstvo, military). But it will only be able to carry out these tasks on the condition that fresh supplies are added to its scanty equipment.

England and Wales.

Expenditure in London Hospitals.

The honorary secretaries of King Edward's Hospital Fund for London have issued the usual statistical report on the ordinary expenditure of 109 London hospitals for the year 1919.[1] These hospitals, taken together with St. Bartholomew's and the Cancer Hospital, provided a total of 9,988 beds in average daily occupation; the total in-patient admissions were 146,585, while out-patient attendances numbered 1,318,915. The total ordinary expenditure during the year at these hospitals, including maintenance, administration, rent, rates and taxes, but excluding capital expenditure, interest on borrowed money, and contributions to the maintenance of convalescent homes and country branches, amounted to £2,137,755, of which only 3.26 per cent. was covered by aids in respect of expenditure on naval and military patients; a balance of £2,068,039 (compared with £1,611,408 in 1918) had to be met from sources of normal revenue. As the total expenditure in 1913 was £1,142,938, the London voluntary hospitals had in 1919 to provide from normal sources, as compared with the year before the war, an additional working expenditure of £925,101. This corresponds to an increase of 80.97 per cent. over the expenditure of 1913;

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[1] *King Edward's Hospital Fund for London: Statistical Report on the Ordinary Expenditure of One Hundred and Nine London Hospitals for the Year 1919.* London: Spottiswoode, Ballantyne and Co. (1s. 6d. net; 1s. 9d. post free.)

the corresponding increase in 1915 was only about 4 per cent.; the increases for 1916, 1917, and 1918 were, respectively, 13, 27, and 40.9 per cent. The principal cause of the increased expenditure for 1919 was the continued rise in prices, in salaries, and in wages. Treatment of naval and military patients had for the most part ceased by the end of March; this caused general charges to be apportioned in many cases over a smaller number of patients and, together with the accompanying cessation of grants from the naval and military authorities, was to some extent responsible for the increased hospital outlay per bed, which is shown in the statistics. The average number of occupied beds increased during the war from 9,766 (all for civilians) in 1913 to a maximum in 1917 of 11,748, of which only about 8,000 were occupied by civilians; of the 9,988 occupied in 1919, 708 only were occupied by naval or military patients.

THE UNIVERSITY IN WALES.

Under this title Sir Henry Reichel, vice-chancellor of the University of Wales, has published in a pamphlet an address he gave at Cardiff last January. In discussing the relation of universities to the State he attempted to define the nature and degree of State control that should be exercised. A university, he insisted, must have academic freedom, for both as teacher and researcher the individual professor must be free to take his own line and pursue his own methods. Applied or pure science research was of importance in university life, since the discovery of new truth required a higher exercise of the intellectual powers than the assimilation of knowledge already won; it fostered a love of truth for its own sake, and was unfavourable to the cult of intellectual smartness which prided itself on being able to make the worse appear the better reason. A teacher's best was only possible while he continued to be a learner, and it was a curious psychological paradox that a man who did nothing but teach soon lost the power of teaching. Owing to the increasing expensiveness of academic equipment, particularly on the science side, and the impossibility of raising the fees without stultifying the university as a democratic agency, the modern university was not self-supporting. It must derive money either from private endowment or public subsidy. The second method was growing, and public authorities claimed the right to see that their money was properly expended. Sir Henry Reichel mentioned two ways in which the State might exercise control: in the first it earmarked its grants for a particular purpose—for example, the teaching of science and the development of particular branches of study. Though at first sight this plan seemed not to trench on academic freedom, eventually it had the effect of bringing rigidly schemes of expenditure, and as development was governed by expenditure the institutions practically came under direct State control. A second method was that by which public bodies had representation on the governing body of the university. Every county council in Wales had direct representation on the University Court, and under the new constitution this representation would be greatly enlarged. The older English universities were entirely self-governed—that is to say, they were governed by the academic expert; Wales furnished an example of a university governed by a large body democratically constituted, but on which the academic element had a certain representation. This system, under which the lay and the academic elements were in constant and living touch with each other, each side recognizing that the presence and co-operation of the other was essential, seemed to meet all difficulties. At the same time, while a university which was not truly national in spirit could not do its best work for its own people, yet if it lost touch with the international brotherhood of which it formed part, and cut itself off from the main current of human life, it would sink into comparative narrowness and sterility even for its national functions. Sir Henry Reichel argued in favour of the system of the English and American universities, by which the faculties of general and professional studies were kept side by side in the same university; it was preferable to the plan adopted in Germany of establishing separate universities of technology; the two sides of university life—arts and the professional schools—had need of each other, and should be in close association. If they were divorced professional training would be tempted to neglect those deeper aspects of the subject on which its future development depended for those which promised more immediate utility, while the removal from view of the practical applications would tend to deprive the more general study of reality and living interest.

PRESENTATION TO BRISTOL UNIVERSITY OF THE PORTRAIT OF MR. F. RICHARDSON CROSS.

A portrait of Mr. F. Richardson Cross, LL.D., F.R.C.S., subscribed for by his many friends and admirers, was presented to Bristol University on October 8th, when a distinguished company assembled in the council chamber, with Mr. George A. Wills, pro-chancellor, in the chair. The Master of the Society of Merchant Venturers, who made the presentation, said that the painting of this portrait had enabled Mr. Cross's many friends to show their appreciation of the great work accomplished by him since his coming to Bristol as lecturer in anatomy at the medical school. About the same time Mr. Cross had been elected one of the surgeons of the Royal Infirmary; here, as well as at the eye hospital, he had made distinguished contributions to medical science, and had devoted his great ability to assisting his fellow men. Mr. George Wills expressed the grateful thanks of the University Council for the compliment paid them in the presentation of the portrait, and said that the important work which Mr. Cross had accomplished in the promotion of a university for the city had placed its citizens under a great debt of gratitude to him; he trusted that Mr. Cross would be spared many years to continue his beneficent work. Speaking on behalf of the academic part of the university, Sir Isambard Owen expressed gratification at the gift of the portrait, which, together with those of other great men, would be a valuable stimulus to succeeding generations of students. Mr. Edmund King, in presenting Mr. Cross with an album containing the names of the contributors, explained that no public appeal had been made for subscriptions to the portrait, a replica of which was to be hung in the eye hospital. Mr. Richardson Cross thanked the subscribers for the kind thought which had prompted them to have his portrait painted and hung in Bristol. While feeling that he had done little to deserve the honour that had been paid him, he thanked the council for permitting the recognition of any work which he had been able to accomplish for the advancement of surgical science, or for its wider application through the hospitals, medical school, and university.

Ireland.

ROYAL VICTORIA HOSPITAL, BELFAST.

Opening Address of Winter Session.

THE opening address was delivered by Mr. T. S. Kirk, surgeon to the hospital, on Thursday, October 14th, in the King Edward Memorial Hall of the hospital. Professor J. A. Lindsay, chairman of the medical staff, presided. Mr. Kirk referred in feeling terms to the serious loss the profession had suffered since they last met; five members of hospital teaching staffs had died—Hicks, Smyth, Dempsey, Campbell, and Byers—the memory of each one of whom should be a spur to a high professional life. He then came to the subject of his address, and examined the objects and methods of the old English universities, German universities, new English universities, American universities, and the Boy Scout movement. The objects of the old English universities and of the Boy Scout movement was the formation of character first and principally, then health, and thirdly knowledge. The object of the new English universities, following the German lead and of the American, was knowledge first, health and character a poor second. In the old English institutions those of different years and with different avocational ends in view mingled together in groups and so educated each other. Examinations were not the be-all and end-all of university life. Residence, an arts course, and a broad way of teaching technical subjects were the means adopted to carry out the principle. In the old Scottish universities residence was not possible, but a course of logic, metaphysics, and philosophy proved a help, and was compulsory and universal. The modern English university, as the German, was deficient in the character-formation quality, and so missed a powerful influence for good. The lecturer urged all students to take an interest in their university. Such institutions were of slow growth, and their worth must be judged not from examinational results but from the influence they had on the community. The authorities of the Queen's University, Belfast, had given part of their ground for the erection of the Ulster Volunteer Force Hospital: these buildings were now outliving their original purpose: the wounded soldier was now a pensioner, and these were becoming fewer; an opportunity for residences was thus opening up, and each student should see that his influence was used to build up the university as an institution which cared for character, for health, and broad education, as well as vocational training; and if these hospital buildings were changed into residences, one great defect would be temporarily remedied. Professor Lindsay conveyed the warm thanks of the meeting to Mr. Kirk for his instructive, suggestive, and interesting address, and asked each student to bear in mind the duty laid upon him.

Resignation of Colonel Deane.

At the meeting of the board of management of the Royal Victoria Hospital, Belfast, held on October 6th, a letter was read from Colonel A. Deane, superintendent of the hospital, tendering his resignation on the grounds of ill health. The board accepted the resignation with much regret, and several members bore strong testimony to the splendid services which Colonel Deane had rendered the hospital during his nineteen years of office. Colonel Deane was Inspector-General of Hospitals in Punjab, before retiring from the Indian Medical Service; on his return to England he was very soon appointed to his present post in room of the late Colonel Glancy. He conducted the transference of patients and staff from the old buildings in Frederick Street to its present site in 1903, with care, quickness, thoroughness, and safety, so as to win eulogiums from all: a building which had not closed its doors for over a hundred years, and was one morning full of patients and the scene of unwonted activity, was silent and empty, with locked doors, the same evening. In the new buildings he smoothed difficulties, aided the resident staff with discreet advice, and won the goodwill of all with cheery words and kindly actions. The medical profession, and especially the visiting staff, who came into close and constant contact with their superintendent, will join their board of management in their best wishes for a happy and long rest, so well deserved, from his strenuous labours.

Scotland.

Conference on Payment of Hospital Staffs for State-aided Patients.

The second conference of representatives of staffs of voluntary hospitals in Scotland, convened by the Hospitals Subcommittee of the Scottish Committee, to consider the Memorandum of the British Medical Association on payment of staffs of voluntary hospitals for the treatment of State-supported patients, will be held on Saturday, October 30th, at the North British Station Hotel, Edinburgh, at 2.30 p.m. The first conference took place on July 29th, and was reported in the Supplement of August 21st, at p. 66.

Small-pox in Edinburgh.

An outbreak of small-pox is reported to have occurred at Craiglockhart Poorhouse, Edinburgh. Six cases were notified during the close of last week; all the patients are elderly persons. The other inmates of the institution have been placed in quarantine. During the past summer upwards of 450 inmates of the poorhouse were vaccinated, but none of those now infected took advantage of the opportunity. It is supposed by the medical officer of health for Edinburgh that the present outbreak is due to some inmate suffering from small-pox in an undetected form.

Gift to Edinburgh Royal Infirmary.

The trust fund, amounting to about £700,000, bequeathed by the late Mr. David Ainslie, of Costerton, Midlothian, to the Edinburgh Royal Infirmary for convalescent homes for patients, is about to become available.

Correspondence.

THE MUNICIPALIZATION OF HOSPITALS.

Sir,—I was much interested in Dr. Buttar's account of the municipalization of the Poor Law Infirmary in Bradford (in your issues of October 2nd and 9th), as I had no idea that a change of such far-reaching effect on the medical profession had already taken place.

I understand that a bill is being brought in by Dr. Addison to enable a considerable extension of such undertakings, and I am naturally anxious to know whether this is in accordance with the views of the Consultative Council of Medical and Allied Services, which has Lord Dawson of Penn as its head, or whether the bill is being brought forward without the advantage of its consideration.—I am, etc.,

London, W., Oct. 18th. F. C. Martley.

TUBERCULOUS MILK.

Sir,—There is nothing new in the hypothesis that immunization may be produced by the ingestion of small doses of the tuberculous poison, and I fail to grasp the reason for Dr. Galbraith's pronouncement that this conveys a pernicious half-truth. In view of the fact that most of the population is at some time or other infected with tuberculosis, and fortunately enabled to resist the infection, it is obvious that there must be frequent exposure to infection. And it is generally admitted that the great source of food infection is milk and its products.

Dr. Galbraith states that "the 10,000 children under 5 years of age who die annually in England and Wales from tuberculosis have evidently ingested an immoderate amount of the tuberculous poison." Surely he, too, should be "absolutely sure of *his* grounds before *he* makes statements on highly controversial subjects." It is possible that many of these children have been infected in other ways.

Although tuberculous milk may cause infection, it is probable that its infective virulence is over-estimated. In a report by A. Weber of a German Government investigation (1905–9), milk from cows with tuberculous udders had been consumed fresh and as butter, cheese, etc., by 209 adults and 151 children. Only two had developed tuberculosis, and others of the families taking the same milk were unaffected. The two cases were mild cervical adenitis in young children; the udder infection of the cow was severe, and the milk had been taken for one and one and a half years. And in feeding experiments on animals huge doses of the bacillus have to be given to produce infection.

In a letter to the *Lancet*, July 8th, 1909, on the frequency of tuberculosis in the first year of life, I pointed out that in 9 out of 17 fatal cases the source of infection was probably via inspired air, while in 8 the probability of infection via cow's milk was greater. Hamburger in 1913 stated that a single exposure to infection from "open" tuberculosis may set up the disease in the child, the primary lesion being in the lungs in 95 per cent., and it may confer a certain degree of immunity. I certainly agree with this view. On the other hand, I have known fatal tuberculosis occur in a healthy breast-fed infant shortly after being fed on cow's milk, but I have no evidence that the milk was tuberculous or that the child had not been exposed to other sources of infection.

Many more arguments could be advanced pro and con, but I am only writing this letter to indicate the importance of not attaching too much importance to infection by milk and too little to direct infection. In my opinion the prevention of the disease in children consists in the avoidance of exposure to infection and the maintenance of good general health and hygiene. If too much stress is laid on milk infection, other measures of prevention may be neglected. The seed is widely disseminated, the soil must be made unsuitable for its growth.—I am, etc.,

London, W., Oct. 18th. Edmund Cautley.

Sir,—I have read with interest Dr. Galbraith's letter (October 16th, p. 610) in reference to Dr. Marcus Paterson's remark about tuberculous milk, "that a moderate amount of tuberculous poison during childhood may have an immunizing effect in the long run." I am strongly of opinion that there is no positive evidence of immunization in tuberculosis at all. All the weight of evidence is on the other side, more particularly the clinical evidence. What competent physician, if asked the question, would say that a person who had suffered at one time from tuberculous cervical glands was therefore less liable to contract other forms of tuberculosis, or that anyone who had recovered from spinal caries was on that account less liable to be attacked by pulmonary or other forms of tuberculosis? These questions answer themselves. I addressed a letter to five eminent bacteriologists asking them what experimental evidence there was proving that susceptible animals could be made immune against tuberculosis, but failed to elicit any statement that such was an established fact. Anyone who cares to refer to a textbook of bacteriology on immunization in tuberculosis will find that the results of the experiments conducted by von Behring and others are very conflicting; and what little evidence there is in favour of it is very open to criticism.

That the benefits of graduated exercise (in the fresh air) are due simply to immunization is, in my opinion, a pure assumption, and that the phagocytic power of the blood is improved by this treatment seems to me to be no evidence whatever, as it would occur in any person not necessarily tuberculous. It seems to be assumed by many members of the profession that all bacterial infections confer immunity to subsequent attacks, but one has only to think for a moment to remember that this is not so—erysipelas, for instance, rheumatic fever, influenza, ordinary septic wound infections, pneumonia (acute croupous), gonorrhoea, nasal catarrh, etc. To use vaccines for the prevention of such seems to me mere silliness, but I suppose I am only a voice crying in the wilderness in this matter.—I am, etc.,

EDGAR R. IVATTS, M.R.C.S., L.R.C.P.
Late Assistant Tuberculosis Officer, Stoke;
Resident Officer, Stanfield Sanatorium, Burslem.

A[illegible], Oct. 17th.

SIR,—In your issue of October 16th Dr. Galbraith has exposed one of the anomalies of the infection theory of tuberculosis. One cannot curse the tubercle bacillus for being the cause of tuberculosis and in the same breath bless it as a friend and immunizer of the consumptive.

Dr. Marcus Paterson's suggestion that a moderate amount of tuberculous poison has an immunizing effect on the children is based on the theory that they get tuberculosis from drinking cow's milk. If this be true, how is it that the poor children, who drink less milk, have more tuberculosis than the well-to-do classes who drink more? And how is it that in countries like Japan, China, India, etc., where children are breast-fed for many months and where little or no milk is drunk, tuberculosis is widely prevalent among those people, including children? Kitasato says that the use of cow's milk for feeding infants is unknown in Japan, and that the native cattle do not suffer from tuberculosis, and yet intestinal and meningeal tuberculosis are as common as in the chief cities of Europe. Again, a well authenticated case is reported from New York, where a special herd of Jersey cows, which had supplied all the children of the richest families for a number of years, were found to be tuberculous, and the doctor who [illegible] a commission to examine these children found among these hundreds of children only one girl of 15 who showed any signs of tuberculosis. Ungermann in Germany found that among [illegible] consumers of milk from cows with udder tuberculosis [illegible] were children, the majority of whom enjoyed good health; there was a suspicion of bovine infection in 11, and in only one [illegible] infection with bovine strain.

With such facts before us, which could be multiplied, how is it possible to believe that tuberculosis in children is caused by drinking cow's milk? In fact, the tendency of modern thought is to challenge the whole germ theory of tuberculosis and to shift the angle of vision from microbe to social causes of the disease. (1) The tragedy of the great war in Central Europe has demonstrated not in one or two but in thousands of instances that rickets and tuberculosis were the outcome not of ingestion of milk but the want of it, and of chronic starvation, underfeeding and malnutrition. (2) Biochemistry has shown that the problems of immunity are not bacterial but chemical problems. (3) The social sciences, including clinical results in various sanatoriums, have proved that improvement in hygiene and feeding conditions can cure and prevent tuberculosis in children.

No theory or treatment of tuberculosis based on infection has hitherto proved satisfactory. It is time that we surveyed tuberculosis from broad facts of life derived from every branch of science, and studied less of microbes and more of man and his social and moral environment to find its true etiology.—I am, etc.,

Mendip Hills Sanatorium, Oct. 18th. C. MUTHU.

THE MOBILE PROXIMAL COLON.

SIR,—Mr. Waugh's courteous, if somewhat satirical, comments on my paper in the JOURNAL of October 9th demand a reply, for which I ask your indulgence. The criticism of Mr. Waugh's theory which I had the temerity to make applied, not to his article in the *British Journal of Surgery* as a whole, for with much of it I find myself in cordial agreement, but to his arresting and I think unsubstantiated theory that duodenal and gastric ulcers are due to the mechanical downward traction of the mobile proximal colon, acting through its mesocolon upon the duodenum or stomach respectively. My criticisms of this theory were made in the course of a consideration of the etiological relations of the mobile proximal colon with these ulcers, and if, as Mr. Waugh says, they only deal with the fringe of the subject as a whole, I think they go fairly near the centre of this portion of it.

Mr. Waugh apparently objects to my quoting "apart from its context," a sentence from the middle of his article to the effect that "the second part of the duodenum is the site most liable to ulceration." But I find that in the section on Local Effects he also says, "This strain" (that is, the downward drag of the loaded mobile colon) "falls directly upon the anterior surface of the right kidney, *the second part of the duodenum*, and, by radiation, upon the pyloric region of the stomach, the cystic duct, and, in some cases, upon the under aspect of the gall bladder." (The italics are mine.) Further, of the six cases of proved duodenal ulcer in his series, in four the ulcer was in the second, and in only two in the first, part of the duodenum. The distribution of duodenal ulcers in his series, and Mr. Waugh's definite statement as to their usual distribution, are so much at variance with the experience of the surgeons (Moynihan states that 95 per cent. of duodenal ulcers are in the first part of the duodenum) as to raise grave doubts regarding the soundness of Mr. Waugh's theory.

When I said that Mr. Waugh does not attempt to justify his hypothesis that a gradual drag exerted on the peritoneal aspect of the duodenum or stomach would produce ulceration of their mucosa, I meant that the great difficulty, from the pathological point of view, of accepting such a novel conception did not appear to have occurred to him. I should, perhaps, have said that he does not succeed in justifying it. So far as I can see, however, on re-reading his article with great care, his only attempt to justify this theory lies in the records of four cases of gastric ulcer and six of duodenal ulcer who did remarkably well after colopexy, without any operation being done on the stomach or duodenum. But clinical results alone are so difficult to evaluate with accuracy, owing, amongst other reasons, to the inveterate tendency of [illegible] to feel better after almost any abdominal operation, and the number of these cases is so small, that one looks for some solid pathological facts as a basis for the theory, and looks in vain.

I attach great importance in this connexion to Mr. Waugh's statement that, "If the mode of formation of these ulcers has been rightly surmised, then . . . a mobile ascending colon should be present in all cases." It is a crucial test. Mr. Waugh questions the validity of my statement that I have often been unable, in cases of proved gastric or duodenal ulcer, to expose the appendix through the ordinary upper right rectus incision, owing to normal fixation of the ascending colon, and he questions it on the ground that such an incision is inadequate. But in several such cases I have had occasion to prolong that incision downwards and remove the appendix, and have thus been able, by inspection and palpation of the ascending colon in its whole length, to demonstrate its normal fixation beyond the possibility of doubt.

Mr. Waugh admits with the utmost candour that if his theory be true a mobile proximal colon should be found in all cases of gastric or duodenal ulcer. I have satisfied myself, though not, unfortunately, Mr. Waugh, that the relationship which he claims is not constant, and having done so I feel justified in rejecting quite definitely Mr. Waugh's mechanical theory of the causation of these ulcers. A working hypothesis which fails to fit in with readily ascertainable anatomical and pathological facts obviously breaks down.

The practical bearings of this controversy are of very great importance, for were Mr. Waugh's theory to be held established, it would follow that the operations at present in vogue for duodenal and gastric ulcers would be obsolete procedures, and would give place to simple colopexy. No one would be so conservative as to insist that gastro-enterostomy for duodenal ulcer and gastrectomy for gastric ulcer are the ultimate word of surgery on this subject, but that they are therapeutic measures as sound in conception and as efficacious for the relief of human suffering as almost any operations in surgery, is a view that has a formidable body of evidence to support it. Very few surgeons, even though they be as convinced as I am that in some way a mobile proximal colon does predispose to these ulcers, will feel justified in treating them by simple fixation of the colon until Mr. Waugh or others have advanced far more cogent reasons than have yet appeared.

Having said this much, I wish to express regret for any apparent incivility in the brevity and, as he put it, the "incisiveness" of my original reference to Mr. Waugh's article. That article is, of course, the most considerable contribution to the subject that has appeared in English since Coffey's well-known paper[1] in 1912; and if I only referred to that part of Mr. Waugh's work with which I find myself in somewhat violent disagreement, I must plead the limitations of time and space in a post-graduate lecture in which there was a good deal of ground to cover.—I am, etc.,

Manchester, Oct. 18th. JOHN MORLEY.

INTRAVENOUS INJECTION OF ANTIMONY.

SIR,—In reference to Dr. F. F. Elwes's letter in your last issue on antimony in kala-azar, I believe that it was in the treatment of sleeping sickness that intravenous injections of tartar emetic were first given at the London School of Tropical Medicine.

During the last few years I have had considerable experience of its use in this connexion. We have found that it was best to begin with doses of gr. j in adults and of gr. ss in young people aged 12 and upwards. The dose is gradually increased; after three injections the dose is commonly increased to gr. jss, and so on, according to how the patient stands the previous injection, up to gr. ijss.

The dose is always dissolved in 10 c.cm. of distilled water, normal saline being injected both before and after the tartar emetic. This injection is usually given once a week, alternating with intramuscular injections of soamin or one of the allied arsenic compounds. In this way it is hoped that the one drug will fortify the action of the other, and the cumulative effect of the antimony will be less marked. In my experience it is unwise, as a rule, to give as much as gr. iij of tartar emetic, as this dose is commonly followed by very persistent vomiting, and in two or three instances I have lost patients, who previously had shown every sign of health, from acute cerebral symptoms.

I should say that my patients in Central Africa have rarely weighed more than 8 stone. I have noted no ill effect from a dose of 3 grains in any patient weighing more than 8 stone.—I am, etc.,

Birmingham, Oct. 18th. E. R. JONES.

EMETINE IN BILHARZIASIS.

SIR,—In the discussion at Cambridge on a paper by Dr. Philip Manson-Bahr on the treatment of human trypanosomiasis and kala-azar, Dr. A. Balfour mentioned that certain practitioners in Egypt prefer the action of emetine in bilharziasis to that of antimony. This is interesting news. Can Dr. Balfour inform us if emetine is injected also directly into the veins? I have not yet seen it recommended for intravenous injection. If this can be safely done, it would be a great advantage, as the hypodermic or intramuscular injections usually leave a rather sore place for several days; and this method might also be adopted in dysentery. If it is just as efficacious as tartar emetic, then a drug less toxic than the latter has already been found. It would greatly interest me, and no doubt many others working in bilharzia-stricken districts, to know exactly what dosage and in what way emetine hydrochloride is to be administered for the cure of bilharziasis, and if it is a certain cure.—I am, etc.,

Rustenburg, Transvaal, Sept. 21st. S. J. D. ESSER.

THE CONSULTATIVE COUNCIL'S REPORT.

SIR,—As an officer of a Division mainly rural in character and embracing some seven hundred square miles in which railway intercommunication is valueless for the purpose of Divisional meetings, I desire to enter a protest against the way in which the profession is being rushed in the matter of consideration of the interim report of the Medical Consultative Council.

The report itself was reprinting from about midsummer till the first week in September, when it again became available, so that for about three months when we might be supposed to be considering it the first-hand document could not be obtained. Now, within three weeks, Divisions are asked to consider the report, with the digest made by the head quarters committee, and give considered replies to nineteen questions.

In an area such as this it will not be possible to have more than one satisfactory Divisional meeting in the time allowed, so that the time available for discussion, granting two hours for the meeting, will average about six minutes per question.

However fully each member will have studied the Report and Memorandum at home, it will be conceded, I think, that such time is wholly inadequate to obtain the interchange of opinions which is desirable, and consequently head quarters will get to the questions submitted answers which, in the light of further and more detailed discussion, might have to be repudiated, or at any rate very greatly modified or qualified.

I am strongly of the opinion that a full year should be allowed to Divisions for the consideration of the Report and the questions submitted, and think there will be many members, especially in widespread divisional areas, who will be of the same opinion.—I am, etc.,

A. E. HODDER,
Stafford, Oct. 17th. Chairman, Mid-Staffordshire Division.

TREATMENT OF INOPERABLE CANCER.

SIR,—We are all agreed that at the beginning cancer is a local disease, and that thousands who now die could be saved by early operation. But what about the thousands who come to us for the first time too late for operation? Can anything be done for them?

From information which I obtained during my recent stay in Paris I feel justified in appealing to my fellow practitioners to give these unfortunate people the benefit of the simple, painless, and harmless treatment with an organic preparation of arsenic in the form of cacodylate of soda (sodium dimethylarsenate). I have been using it for more than ten years in nearly every disease in which arsenic is indicated, and always with the greatest satisfaction; but it is only recently that I have learned of its great possibilities in cancer.

The only way in which to test its value is that a great many doctors should give it a fair trial in several thousands of cases, say for a year. It is put up in ampoules ready for hypodermic use by Clin of Paris and Parke Davis of London. Begin with 5 cg. ($\frac{3}{4}$ grain) every day for fifteen days, by which time 75 cg. (or 12 grains) will have been given. Then leave it off for a week. If any bad effects on the heart or blood pressure are observed, give an ampoule of adrenalin hypodermically. Some doctors told me they were giving an ampoule of nuclein on alternate days.—I am, etc.,

London, W., Oct. 17th. A. LAPTHORN SMITH.

"DEATH AFTER TONSILLECTOMY."

SIR,—Dr. Sladden, in answer to inquiries, states that chloroform was the anaesthetic used in the case reported by him (BRITISH MEDICAL JOURNAL, October 9th, 1920, p. 569). I should like to ask why it was chosen.

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[1] Coffey: *Surgery, Gynaecology, and Obstetrics*, vol. xv, 1912, 365.

I wrote a letter on the mortality of chloroform as contrasted with ether (vide *Lancet*, vol. ii, 1890), giving the number of deaths in the United Kingdom for three years, there being 44 from chloroform and only 4 from ether. I stated emphatically that under no circumstances whatever should chloroform be given in dental surgery, and I would now add neither for tonsil and adenoid operations, especially in the decade of 10–20 years, which I found especially dangerous for chloroform.

Though not an anaesthetist specialist, it has been my duty to give anaesthetics during several house-surgeoncies, at any rate in major operations—six years at Norfolk and Norwich Hospital and at Manchester Children's Hospital—and during twenty years as member of honorary surgical staff of the Children's Hospital, Norwich, I have never even witnessed a death from an anaesthetic. I therefore feel justified in trespassing on your space. It has been my practice to begin with, for children, some of the modern mixtures—A.C.E., C.E.; or ethyl chloride, gas and ether, or O; or to use from 3 to 6 per cent. chloroform in ether. After such induction chloroform may be given, especially if a deeper anaesthesia is necessary. I should also like to ask, Was this boy watched in the recovery room by the anaesthetist or medical man, in addition to a nurse, until he had sufficiently recovered to be safely left? Coroners are now getting very "up-to-date," and have asked medical witnesses to explain *why* chloroform was used.—I am, etc.,

London, Oct. 18th. H. CHESTER NANCE, F.R.C.S.Eng.

PROPHYLACTIC VACCINATION AGAINST INFLUENZA.

SIR,—May I point out that the work on prophylaxis in connexion with influenza was carried out by Lowe and myself on the N.Z.E.F. here in England, and not in New Zealand as stated in your article ("Experience of prophylactic vaccination against influenza" in the issue of the BRITISH MEDICAL JOURNAL for October 16th, 1920)? It was from this work that our conclusions—which were correctly given—were drawn. Incidentally, I may say that in many of the camps vaccine was given *after* the appearance of the epidemic!—I am, etc.,

Guy's Hospital, S.E.1, Oct. 19th. J. W. EYRE.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on October 15th, the following medical degrees were conferred:

M.B. R. S. Taylor; [illegible] R. S. Woods.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly Council was held on October 14th, when Sir Anthony Bowlby, President, was in the chair.

[illegible]

CONJOINT BOARD IN SCOTLAND.

The following have been approved at the examinations indicated:

[illegible]

Gracie O. D. Evans. *Medical Jurisprudence:* W. B. Stott, C. J. Lamprecht, A. V. Bergh, I. F. McAsh, A. W. Hart, D. Ciantar, W. A. B. Clark, S. Sack, F. Walayn, J. McN. Campbell, A. Cuthbertson, R. Levey, H. J. Appleyard, D. J. Dubash, W. D. Oswald, W. Gray, Jane Copes.

The following candidates having passed the Final Examination were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

Sylvia E. Aldous, W. A. Ruble, J. P. Crichton, C. Holmes, W. W. Clucksman, A. Furniss, W. F. G. Radford, H. J. Louw, Kathleen E. H. Rutherford, C. S. G. Pillai, V. K. Paramanayagam, Dorothy M. McCullagh, A. W. Smith, D. Mackay.

ANDERSON COLLEGE OF MEDICINE, GLASGOW.

DR. NOAH MORRIS, Assistant to the Professor of Physiology in the University of Glasgow, and Dr. John R. C. Gordon have been appointed to the Chairs of Physiology, and Materia Medica and Therapeutics respectively.

The Services.

HONOURS.

THE King has, at the conclusion of the Prince of Wales's tour to Australia and New Zealand, conferred the honour of M.V.O. (fourth class) upon Surgeon Commander A. C. W. Newport, R.N., H.M.S. *Renown*.

TERRITORIAL DECORATION.

The Territorial Decoration has been conferred upon Surgeon-Major William M. Taylor (honorary lieutenant in army), 1st Lowland Brigade R.F.A., Lieut.-Colonel Frederick Whalley, D.S.O., 2nd West Riding Field Ambulance, R.A.M.C.(T.F.), Major John O. Summerhayes, D.S.O., 1st South Midland Field Ambulance, R.A.M.C.(T.F.), and Lieut.-Colonel Charles W. Eames, D.S.O., attached 2nd West Riding Field Ambulance, R.A.M.C.(T.F.Res.).

Officers of the army residing in the United Kingdom who have been awarded the D.S.O. but have not yet received their decorations should apply to the Secretary (C 2 Investitures), War Office, Whitehall, S.W.1, to have their names included in the lists for the forthcoming investitures by the King. It is particularly desired that all such officers should attend for investiture before the end of the present year.

THE following information has been sent to us by the Ministry of Pensions: In pursuance of the policy of decentralization, the Minister of Pensions has now delegated authority to the Regional Directors to deal with individual applications for the supply of surgical and artificial appliances (other than artificial limbs), spectacles, dentures, and dental treatment, which hitherto have been referred to the headquarters of the Ministry in London. Pensioners will continue to address such applications in the first instance to Local War Pensions Committees, who will, when necessary, refer the case to the Regional Director instead of to the Ministry in London. The two principal conditions which govern the provision of these appliances or of dental treatment at the public expense are: (1) That the defect which renders the supply necessary has been accepted by the Ministry as being a disability attributable to or aggravated by military service; or (2) that the pensioner is undergoing a course of duly authorized treatment in or at an institution for his service disability and the supply of an appliance or dental treatment is necessary for the efficacy of that treatment.

Obituary.

JAMES LEITH WATERS, M.B., C.M.EDIN.,

HULL.

WE regret to announce the death of Dr. James Leith Waters on September 22nd, at his residence in Hull, at the age of [illegible] years. He graduated M.B., C.M. at Edinburgh University with honours in 1879, when he obtained the Wightman Prize in Clinical Medicine. At that time the science of surgery was undergoing great changes due to the introduction of antiseptics by Lister. Dr. Waters was one of his clerks in the wards of the Royal Infirmary, Edinburgh, and he often spoke with pride and affection of the great surgeon. After graduation he held the following posts: demonstrator of anatomy under Sir William Turner; house-surgeon to Professor Annandale; resident physician to the Hertford British Hospital in Paris; and for two years was senior house surgeon at the Cumberland Infirmary, Carlisle. He then commenced practice in Caithness, his native county, and went to Hull in 1890. In Hull Dr. Waters identified himself not only with the medical institutions, but with the literary and social life of the city. He was a loyal member of the British Medical Association, a past president of the Hull Medical Society, and also of the Caledonian Medical Society. At his death he was senior surgeon at the Hull Women's Hospital, with which he had been connected for many years. He was a sound and able operator.

Dr. Waters was a great general reader and had a thorough knowledge of English classics. He was a purist and had a great contempt for looseness and the slang of present-day English. He had a close knowledge of French literature and was a keen admirer of French culture and thought. He was one of the founders of the French circle in Hull and was a past-president of the Hull Literary Club, an office he filled with distinction. In personal circles Dr. Waters was regarded as a man with lovable, large-hearted, and unselfish qualities, and he was highly esteemed, especially by his poorer patients, for his kindness and consideration.

The funeral was largely attended by his friends and members of the various institutions with which he had been connected.

Medical News.

THROUGH the gift of an anonymous Fellow the Royal Society of Medicine has been able to institute a triennial gold medal open to medical practitioners throughout the world. The donor expressed the hope that the first award might be made with special regard to valuable services during the war. Sir Almroth Wright, F.R.S., has been chosen as the first medallist, and the presentation will be made to him by the President of the Society, Sir John Bland-Sutton, at 5 p.m., on Thursday, November 11th (the second anniversary of Armistice Day) at 1, Wimpole Street, and Sir Almroth Wright will afterwards give an address on medical research.

THE Middlesex Hospital annual smoking concert, in aid of the Cancer Charity, will be held at the Queen's Hall on December 10th. The tickets will shortly be issued, and early application should be made to the honorary secretary, Mr. E. W. Smith.

THE Tuberculosis Group in the Society of Medical Officers of Health will hold its first ordinary general meeting at the National Institute of Medical Research, Mount Vernon, to-day (Saturday, October 23rd), at 11 a.m., when Dr. Leonard Hill will read a paper on open-air treatment and metabolism, illustrated by laboratory methods of research.

AN elementary course of twenty lectures on practical statistics will be delivered at University College, London, by Ethel M. Elderton, on Mondays and Thursdays, at 4.30 p.m., beginning October 25th. The class is suitable for those desirous of obtaining an elementary knowledge of the methods of modern statistics. The fee for the course is £2 2s.; application for tickets should be made to Dr. Walter W. Seton, Secretary, University College, Gower Street, W.C.1.

FOUNDERS' DAY at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., will be celebrated on Tuesday afternoon, November 2nd. There will be a service in the chapel at 3 p.m., and tea in the board room and hall from 3.30 to 4. The wards and other features of the hospital will be open for inspection from 3 to 6 p.m.

UNDER the direction of M. Georges Laurens, assisted by MM. Hubert and Girard, instruction in the surgery of the ear, nose and throat is now given daily at the St. Joseph Hospital, 1, Rue Pierre Larousse, Paris. The course began on October 1st. Two special classes have been arranged: an elementary course of nine lessons for students and graduates, beginning on November 1st, and an advanced technical course of twenty-six lessons for graduates, beginning on November 2nd.

AT a special general meeting of the Royal Society of Tropical Medicine, held on October 15th, it was unanimously agreed that the annual subscription be raised from one guinea to one guinea and a half as from April 1st, 1921, and that the composition fee be raised on the same date from £15 15s. to £23 12s. 6d.

A TABLET to the memory of the late Dr. J. Biernacki has been placed in the Plaistow Fever Hospital, and was unveiled by the Mayor of West Ham on October 14th. After an opening prayer by the Rev. Father Andrew, speeches appreciative of the work of the late superintendent of the hospital were made by the mayor and by the chairman and ex-chairman of the West Ham Public Health Committee. Among those present was a large gathering of medical practitioners from West Ham and adjoining districts.

LORD and LADY COWDRAY have presented No. 20, Cavendish Square, to the College of Nursing to become the head quarters of the college. The premises will provide accommodation for examination, lecture and class rooms, and a residential club.

THE Glasgow University Club, London, will hold a dinner at the Holborn Restaurant on Thursday, November 25th, with Viscount Bryce, O.M., in the chair. Members of the university desiring to attend may communicate with the secretaries at 30, Seymour Street, W.1.

THE twentieth Congress of the Italian Society of Obstetrics and Gynaecology will be held at Pavia next week, when haemorrhagic metritis and radio-therapy in gynaecology will be the principal subjects discussed.

A COMMITTEE of the German Dermatological Society, consisting of Dr. Blaschko of Berlin, Dr. E. Hoffmann of Bonn, and Dr. Jadassohn of Breslau has been formed to make a collective investigation on the abortive treatment of syphilis.

THE Central Midwives Board for England and Wales, at its meeting on October 14th, with Sir Francis Champneys in the chair, decided to inform the Ophthalmological Society of the United Kingdom that the Board hopes advantage will be taken by medical students and midwives of the facilities offered by the Metropolitan Asylums Board for holding classes in connexion with the diagnosis and treatment of ophthalmia neonatorum. In consequence of the great increase in the cost of printing the Midwives Roll, 1920, over the cost of printing previous copies, it was decided that the price of the 1920 Roll be two guineas.

THE will of the late Dr. Lloyd Roberts of Manchester, an obituary notice of whom appeared in the JOURNAL of October 9th, contains the following interesting bequests: To the Rylands Library, Manchester, such of his bound books as the trustees may select; to the Corporation of Manchester, for the Art Gallery, such of his mezzotints, water-colours, and paintings as they may desire; to the Royal Society of Medicine £5,000; to St. Mary's Hospital, Manchester, £5,000; to Manchester Royal Infirmary, £3,000; to the Royal College of Physicians, London, £3,000; to the Medical Society of London, £2,000; to St. David's College, South Wales, £2,000. The residue of his estate is left to University College, Bangor, with provision that £5,000 be set aside to found a Lloyd Roberts professorship in any subject the authorities think fit.

ACCORDING to *Il Policlinico* the Palermo hospitals have had to be closed owing to inability to pay their staff.

A RECENT medical examination made by the American Red Cross in Algeria and Tunis has shown that in the cities in the oases of the Sahara 10 per cent. of the indigenous population is blind, while in France there are only 3 blind persons per 1,000 inhabitants. The examination also showed that trachoma was prevalent among native and European children; of 6,025 children examined in various parts of Algeria, 1,650, or 24 per cent., had trachoma, and in the large cities on the Mediterranean 25 per 1,000 of the inhabitants were blind.

A LETTER has been sent to professors of arts and sciences in Germany and Austria by some sixty doctors, heads of houses, professors, and other officers and teachers in the University of Oxford, expressing the belief that many of those they address will share the signatories' heartfelt sorrow and regret for the breach the war occasioned in the friendly intercourse between the learned of the two countries. The letter, it is said, is sent with "the desire to dispel the embitterment of animosities that under the loyal impulse of loyal patriotism may have passed between us. The fellowship of learning," the letter continues, "offers a road which may—and if our spiritual ideals be alive, must—lead to a wider sympathy and better understanding between our kindred nations. While political dissensions are threatening to extinguish the honourable comity of the great European States, we pray that we may help to hasten that amicable reunion which civilization demands." We understand that Dr. Robert Bridges, the poet laureate, has been active in obtaining signatures to the letter, but it would appear that the majority of those approached have declined to sign. Possibly they feel that the first move should be made by German professors and teachers, including those who signed the notorious manifesto at the beginning of the war.

THE fourth congress of the Far Eastern Association of Tropical Medicine will be held in August, 1921, at Batavia, the capital of the Dutch East Indies, under the presidency of Dr. W. T. de Vogel. The last congress took place in 1913 at Saigon, the capital of French Cochin China.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"C. G. W."—The deduction of one-tenth of the earned income (subject to a maximum deduction of £200) should be made by the income tax officials.

"[illegible]" is a partner in a firm whose average liability under Schedule D is based on the sum of £1,541; his share of that sum is £[illegible]. What is his liability?

*** His liability would be computed as follows:

		£	s.	d.
[illegible]		[illegible]	0	0
Less earned income relief, that is 10 per cent.		8[illegible]	0	0
[illegible]		805	0	0
[illegible] and wife	£[illegible]			
[illegible]	1[illegible]	[illegible]	0	0
Income [illegible] tax		[illegible]	0	0
[illegible]		[illegible]	15	0
[illegible]		[illegible]	6	0
		[illegible]	1	0

[illegible]

[illegible]

[illegible]

[illegible]

LETTERS, NOTES, ETC.

[illegible]

BULLINUS OR ISIDORA.

THE deplorable confusion into which zoological and botanical nomenclature has been thrown is so well known that no surprise will be excited by a demand for the abandonment of the term *Bullinus* for the fresh water mollusc which is the intermediate host of bilharzia. The name was used by Leiper in his report to the War Office on the bilharzia mission to Egypt. Kennard and Woodward now allege that about the middle of the eighteenth century the name was applied to an immature shell and therefore must not now be used for the bilharzia carrier; they suggest *Isidora*, a name introduced by Ehrenberg in 1831 for certain Egyptian and Syrian physoid molluscs. Suggestions of this kind have a pedantic air, and sometimes it turns out that they are not accepted by other specialists. It is to be hoped that no change will be made in medical textbooks until the malacologists have made up their minds.

AN INTENSIFIER FOR GAS FIRES.

MR. CHARLES WRAY, F.R.C.S., has devised a simple apparatus for increasing the efficiency of a gas stove. It consists of a square horizontal brass tray on legs, with two short vertical side-wings of the same material; the legs and wings can be adjusted to fit any ordinary size of grate. The object of the apparatus is to keep the ground draught and door-draught from chilling the source of heat, while at the same time the radiant energy which would otherwise pass to the floor is reflected into the room. For rapidly warming the part of a room opposite the fire this apparatus is very effective. It suffices for this purpose to turn the gas on nearly full for a few minutes, and then turn it down to half pressure or less. Incidentally, the tray forms an excellent means of keeping breakfast dishes hot. The main drawback of the apparatus seems to be its tendency to heat the upper layers of the room atmosphere whilst leaving the carpet and lowest level of air relatively cold. Thus it appears better suited for temporary than prolonged use. We understand that the appliance can be obtained from William Gowlland, Ltd., manufacturing opticians, of Morland Road, Croydon.

PETROL LICENCE REFUNDS.

THE Automobile Association states that the Petrol Control Department, which has been kept open for some time for the purpose of dealing with refunds, is understood to be finally closing down on October 30th. After that date no further refunds, in respect of duty on the licences which were issued when supplies were restricted, will be paid. Any motorist who has not yet claimed refund on his unexpired petrol licence, should immediately forward the licence with a formal request for the refund, to the Petrol Control Department, c/o Patents Office, 25, Southampton Buildings, Chancery Lane, W.C.2.

WOMEN HEALTH VISITORS.

IN commenting last November on the regulations for the training of women health visitors drawn up by the Board of Education at the request of the Ministry of Health we ventured to say that time only would tell whether they would prove satisfactory in practice. It was pointed out that the course of training was for women health visitors whose greatest qualification should be the possession of womanly sympathy and consideration, and that it was possible to lay too much stress upon the scientific training and methods where practical knowledge and sympathy were more needed. We understand that a good deal of dissatisfaction with the regulations has arisen, and that a deputation from the National Health Society will wait upon the Medical Department of the Ministry of Health on October 26th to explain some practical difficulties that have been encountered.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages [illegible], 39, 40, 41, 42, 45 and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 37, [illegible] and 39.

THE appointment of certifying factory surgeon at St. Andrews (Fife) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page ...	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address

ON

SURGERY GOOD AND BAD.*

BY

CHARLES F. M. SAINT, C.B.E., M.D., M.S., F.R.C.S.,
PROFESSOR OF SURGERY, UNIVERSITY OF CAPETOWN, SOUTH AFRICA.

I AM deeply sensible of the great honour done me in electing me to the new Chair of Surgery in this university. It is not given to everyone to participate in the inception and development of a new University Medical School, and such a position carries with it great responsibility but equally great interest.

In the teaching of surgery the personal factor plays a prominent part, and the type of teaching reflects the line of thought of the teacher. It has been my good fortune for several years past to sit at the feet of one of the greatest exponents of the art in the United Kingdom—I refer to Professor Rutherford Morison of my late university. His chief object was always to inculcate general principles as far as possible and to apply them whenever it could be done. The result was a reduction of surgery to a simplicity and comprehension not commonly seen, and a correspondingly rapid acquisition of a practical knowledge of it.

Such an occasion as this appears to me most opportune to give some indication, necessarily limited, of the line along which the subject will be taught in this school. The disciple is not always a replica of the master, and while one may describe the teaching as Morisonian, it will be readily appreciated that it will be so as interpreted by me.

The subject chosen by me for this address is "Surgery—Good and Bad," and the chief point in it is the position of operative interference in surgery. It is roughly divided into two parts; the first a more or less technical exposition, and the second the deductions to be made from it.

It is a great pleasure and honour to have Sir John Bland-Sutton present here this evening. His world-wide fame precludes the necessity of any introductory remarks about him; but it is a very happy coincidence that he should arrive in Capetown at this particular time, seeing that he was one of the committee of eminent surgeons who elected me to this chair and was the last of them I saw before leaving England. I must say that he was very enthusiastic about the post and optimistic about the future of the school.

There is a popular belief that the terms "surgery" and "operation" are synonymous, and one is quite accustomed to hear the platitude that the "surgeon is the man who is always cutting people up." This erroneous conception of the surgeon and his work ought to be dispelled, and the people to dispel it should be the surgeons themselves.

The primary object of the surgeon is not "operation," but the cure of the individual by whatever means are at his disposal, and in so far as operative interference may be necessary in bringing about that cure, it plays its part in surgery. What its exact position is, however, can only be shown by a consideration of surgical principles.

The study of disease in all its aspects, using the term in its widest sense, is the work of both physician and surgeon, and its subdivision into medicine and surgery is for the most part arbitrary. Under the heading "Medicine" are commonly grouped those diseases in which operative interference is not necessary or is not likely to be so, while under "Surgery," on the other hand, are included those in which such interference will be or is likely to be necessary. At the same time, it will be readily appreciated that there is a great deal of overlapping, and many so-called medical diseases may develop conditions requiring surgical interference, whereas, similarly, many surgical diseases present medical aspects or complications.

All disease, whether medical or surgical, has a cause, although it is not always obvious and in many cases is unknown. The causes of disease are those influences which produce in the individual a departure from the normal. They are commonly known as irritants, and are subdivided into two classes:

1. *Non-infective*, including mechanical, electrical, chemical, and thermal agents, *x* rays, etc., and
2. *Infective*, the chief being the micro-organisms.

The consideration of the various phenomena arising out of the relationships of the irritants to the individual constitutes the subject of irritation. Always keeping in mind the presence of a cause, the subject of irritation may be regarded, pathologically, from three points of view: (1) Its effects; (2) the reaction of the individual to it; and (3) its complications.

In teaching one has been accustomed to subdivide the body, for purposes of generalization, into three main sections:

1. *The Composite Tissues*, including the connective tissue, vessels, nerves, lymphatics, etc., of the part.
2. *The Hollow Muscular Systems*, comprising the alimentary, vascular, respiratory, and genito-urinary systems.
3. *The Serous Cavities*, including the peritoneal, pleural, pericardial and cerebro spinal, the tunica vaginalis, and the synovial membranes of joints, tendon sheaths, and bursae.

Let us consider, then, for a moment the pathology of irritation in its relation to the composite tissues.

1. *Its Effects.*—The effects, which are essentially destructive, are found in all degrees of seriousness. They comprise *Injury*, and are divisible into general and local. The general effect on the individual is that depression of vitality which is called *Shock*, whereas the local effects depend on the structure and the function of the part affected. The most important point in the structure is that of vascularity, and the correspondingly important effect resulting from injury to vessels is that of *Haemorrhage*. The variation in the functional derangement requires no elaboration, as it tends to be special to the tissue involved. The local effects may be grouped together and constitute a "*Wound*," though this gives a much wider significance to the term than is customary, and includes "destruction of any tissue, of any degree, in any situation, and by any irritant, non-infective or infective." Whether the skin is involved or not, whether soft or hard tissues, and whether it is produced by violence or any other agent, is immaterial.

2. *The Reaction to it.*—In considering the reaction we have to deal with two separate factors: (1) the irritant itself, and (2) its effects. Whether the reaction be to either or both of these, the main part of it is essentially the same, and consists of vascular and cellular changes. It is known as *Inflammation*, and may be either acute or chronic. In acute inflammation the vascular changes predominate, while in the chronic variety the cellular changes are the most pronounced feature (Rutherford Morison). When the reaction is limited to the effects—that is, to the destruction produced—it constitutes *Repair*. The much vexed question of tumour formation is too uncertain and involved to be introduced in this address, though I have little doubt that in due course it will be shown to be simply one of the manifestations of tissue reaction to irritation.

3. *The Complications.*—As a wide generalization, one may say that the complications of irritation depend upon increase of the irritation, either from exaggeration or extension of the original irritation, or from some other superadded. For practical purposes they may be classified as arising from (1) extension of the original process; (2) secondary infection, especially sepsis; (3) healing, partial or complete—that is, where resolution or perfect healing has not occurred; cure usually takes place by fibrous tissue development, the commonest example of which is a scar.

Self-suggested by this consideration of irritation in its relation to the composite tissues, the general principles of treatment obtrude themselves; they are: (1) Remove the cause; (2) combat the effects; (3) assist the reaction; and (4) prevent complications. Should, however, complications have already arisen, it will be necessary to deal with them.

In our application of these principles we closely follow the indications given us by Nature in her healing efforts, and the subject of "natural cures" is overflowing with interest and instruction for the inquirer. I cannot hope to deal completely with this aspect of disease, but regarding it, as I do, to be the foundation on which we build, I must consider it in some measure.

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* Being the inaugural address for the new Chair of Surgery in the University of Capetown, South Africa. Delivered August 24th, 1920.

Natural Cure.

By "natural cure" one understands the active attempts of Nature to overcome disease, and whatever reaction takes place is, in essence, beneficial to the organism as a whole and curative locally. We meet with all degrees in what is actually attained in this natural curative process. Thus the result may be entirely constructive both locally and generally, which is, of course, the best that can possibly be obtained. Locally, however, the cure may involve some destruction of tissue, while, from the general body outlook, the process is constructive. Again, the local result may be in the main constructive, but nevertheless produce impairment or destruction of the general body function. Finally, the result obtained may be in great part or wholly destructive both locally and generally, leading, at the best, to a state of chronic invalidism.

It is obvious that the result depends on the efficiency of the natural reaction and the nature of the pathological condition to be dealt with, and that, while Nature's intentions are always of the very best, the curative process is often imperfect, and her attainment frequently falls short of her aim. In spite of the fact, therefore, that it may appear to be presumptuous to think of improving on Nature, nevertheless this imperfection on her part is one of the strongest pleas for surgical interference, and, while she is generally looked upon as a good physician, she frequently stands self-condemned as a bad surgeon. However, I shall endeavour to show, in some measure, to what degree we are indebted to her for indications in treatment.

Acute inflammation is the commonest natural curative process met with, and is therefore that to which we naturally turn. It represents the reaction of the tissues to irritation, and though the cause of it may be any irritant, the infective type is most frequently found, usually the pyogenic micro-organisms. The inflammatory reaction presents both general and local manifestations, the general comprising inflammatory fever, and the local giving rise to a series of symptoms and signs which have been familiar to clinicians for centuries, and consisting of redness, swelling, heat and pain, and impaired or arrested function. They are due to the local increase of vascularity and the exudation of fluid.

A. *General Reaction: Inflammatory Fever.*

Clinically, the chief features of inflammatory fever are:

1. *Impairment of all the organic functions*, muscular, nervous, secretory and excretory, giving rise to prostration, indigestion, loss of appetite, constipation, diminished excretion of urine, and hot, dry skin.

2. *Excessive Evaporation from the Skin.*—This results from the raised temperature, and leads to great thirst.

Pathologically, the essential features are:

1. *Increased metabolism*, with the formation of specific antibacterial and antitoxic substances.

2. *Leucocytosis*, which is not constant, but present in the commoner infections, and of great value for defensive and offensive purposes.

B. *Local Reaction.*

Clinically, the most important features are:

1. *Impaired function*, with restricted local activity. This is due chiefly to pain, but may also depend on mechanical effects the result of exudate.

2. *Pain.*—This may present any degree of severity, is due to increased tension in the affected part and is of great importance as being mainly instrumental in controlling the local activities.

Pathologically, the most important features depend upon

1. *The increased vascularity and local cellular activity*; and
2. *The mode of removal of the products of the process.*

1. This includes the whole of the actual local reaction.

(a) *Leucocytes* are greatly increased in number with the result that phagocytosis is marked, and specific antibacterial and antitoxic bodies are produced.

(b) *Fluid exudation* takes place in greater or less amount, and represents a mechanism for diluting the toxins, and even washing out of an open wound both the organisms and their products, and also for bringing into contact with the organisms a greater amount of the antibacterial substances present in the blood.

(c) *Increased cellular activity* is of very great importance, and has for its objects: (1) Phagocytosis, both by the leucocytes and the endothelial cells of the part; (2) extracellular antibacterial action; and (3) repair of the damage to the part.

2. This comprises the results of the local reaction—that is to say, the terminations of inflammation, which are resolution, fibrosis, partial and total destruction, and are controlled by the degree of interference with the vascular supply.

> (a) When *resolution* occurs, the causal agent has been successfully dealt with and the whole of the products of the local disturbance have been removed by the lymphatics or blood stream. Repair is perfect, and the affected tissue presents ultimately no difference from the normal. When resolution does not occur, then one of the remaining terminations of inflammation necessarily results.
>
> (b) By *fibrosis* the focus may be completely delimited, and, though the causal factor may not be entirely destroyed, it may be rendered innocuous by encapsulation. In such cases, therefore, the products of the process may not be entirely eliminated.
>
> (c) *and* (d) In *partial and total destruction* there is an attempt to get rid of a more severe infection, not by destroying it and absorbing the products as above, but by casting off the affected tissue with the infecting organisms present in it. It is employed because milder measures have been judged insufficient. In partial destruction this is brought about by a molecular or particulate destruction, such as is seen in ulceration, caries, and abscess formation. In the latter case, once pus has formed, there is a general tendency for it to track along the line of least resistance towards the surface, where an opening is established and its discharge effected. In total destruction, on the other hand, the process is one of molar or massive destruction, such as is seen in gangrene and necrosis. In this event, a large mass of tissue is separated at one time.

TREATMENT.

Following the lead given by Nature as detailed above, the treatment indicated in such an infection, where the tissue reaction is inflammatory, is as follows:

A. *General Treatment.*

1. *The impairment of all the organic functions*, whereby they are suspended in greater or less degree, as shown by the prostration, inability to digest food, etc., indicates prescribing *rest* to all the body activities, whether physical or chemical. (a) Physical rest is best attained by confining the patient to bed in the recumbent posture, which attitude he usually adopts naturally. (b) Seeing that the secretory and excretory functions are essential to life, and must therefore be continued, the body is best served and they obtain the greatest relief by rendering them as far as possible passive—that is to say, a maximum of efficiency is aimed at with a minimum of expenditure of energy. This is obtained as follows:

> The digestive impairment is best aided by the administration of a stimulating, easily assimilated fluid diet.
>
> The intestinal impairment is controlled by saline purges.
>
> The renal impairment is assisted by the administration of quantities of bland fluids.
>
> The skin activities are helped by hot bathing, and the lungs are assisted in their function by allowing the patient all the fresh air possible.

2. *The excessive loss of fluid from the skin* leads to the great thirst which indicates the administration of quantities of fluid. According to circumstances, this may be given by the mouth, by the rectum, subcutaneously or intravenously.

3. *The increased metabolism* and the formation of antibacterial and antitoxic substances gives the lead for the administration of (*a*) antibacterial and antitoxic serums, preferably monotypical; (*b*) vaccines, preferably autogenous; and also (*c*) chemical substances, which may or may not be specific—for example, salvarsan, emetine, the numerous antiseptics, etc.

4. *The presence of leucocytosis* has been imitated by the administration or injection of such substances as quinine or turpentine, with beneficial effects.

It is important to keep in mind that where the fever is excessive it may have a pernicious effect on the individual, and in such a case must be controlled, for example, by cold sponges or antipyretics.

B. *Local Treatment.*

1. *The impaired function*, with restricted local activity, suggests local rest or immobilization, which is obtained by a variety of fixation apparatus, or splints if necessary.

2. *Pain* may be relieved by elevation of the affected part, indicated by the fact that increase of pain usually follows the dependent position, and the patient himself commonly keeps the part raised.

3. *The increased vascularity and local cellular activity*, which represent the natural reaction, suggest that treatment should take the line of increasing or assisting this reaction, and this may be done by (*a*) the application of moist heat—that is, by fomentations or poultices—or (*b*) by the so-called Bier's passive congestion, by means of an elastic bandage or some form of cupping-glass. The elastic bandage also relieves the pain, and this form of treatment is frequently seen naturally, when a patient with an inflamed finger grips or ties something round the base of that finger to relieve the pain in it.

4. *The natural modes of removal of the products of the process* give several suggestions as to treatment, used chiefly as aids to the natural methods of removal, but sometimes forestalling them.

In *resolution*, where the absorption of the products by the lymphatics and blood stream takes place, this is aided by elevation of the part, which assists drainage.

Fibrosis, with the resulting encapsulation or delimitation of the focus of disease, is not imitated in the treatment of these septic infections, but is quite frequently employed in malignant disease, where, by means of x rays, radium or electricity, the development of fibrous tissue is aimed at, with a view to limiting the spread or strangling the elements of the disease.

In partial destruction a further effort on Nature's part has been seen—namely, to get rid of the disease by a process of ulceration or the formation of an abscess and its subsequent discharge. These suggest two very common surgical procedures, incision and scraping.

Incision mimics the bursting of an abscess, and is usually employed to forestall it. It allows of external drainage of pus or other products instead of their removal by the lymph and blood streams, and thereby relieves the system of a considerable quantity of toxic material. It is also employed to relieve tension, and consequently pain, and so diminish the dangers arising from vascular interference. This, however, is not comparable to the other indications for it, as it represents one of those cases in which the surgeon is called in to correct an error of judgement of Nature.

Scraping imitates the process of ulceration, and is frequently employed to assist in getting rid of such material as Nature is already occupied in removing. It is more commonly employed in chronic conditions rather than in acute ones.

Finally, *total destruction*, or the casting off of a focus of disease in bulk, as seen in gangrene or necrosis, suggests the removal of such a focus of disease by excision or, in the case of the limbs, by amputation.

We have here, then, an example of the complete analogy between Nature's line of treatment and that adopted by the surgeon, which may be described as good and sound.

Arising from a consideration of the above facts, several important and interesting points suggest themselves. The first is that we are here dealing with an ideal case—that is, one in which the etiology, pathology, diagnosis, and prognosis are completely known and understood, and the treatment, as indicated by Nature, follows automatically. The second is that Nature herself employs, and indicates the employment of, what we may call both "medical" and "surgical" measures—that is, those to which non-operative and operative procedures are analogous. Thirdly, no doubt is possible as to the position allocated to the natural "operative" measures. They come as a last resort, after all other means have failed, and tissue, representing a focus of disease, is only cast off because it is impossible to save it.

The first of these points opens up the whole subject of the relationship of the science to the art of surgery, or, to put it in another way, the question of surgical judgement and its relation to treatment, especially operative.

Good judgement depends on an intimate knowledge of disease in all its aspects, its causation, its development, the natural reaction to it, and the final results which accrue. The better this knowledge the better the judgement is likely to be. It involves the questions of diagnosis and prognosis, and on these the line of treatment to be advocated follows of necessity. If a choice were to be made between a surgeon of superior judgement and one who was only a good operator, the balance would be very markedly in favour of the former. In the absence of good judgement, therefore, with its entailed good diagnosis and prognosis, good treatment cannot be systematically carried out. Good diagnosis carries with it a clear knowledge of the pathological process present and the various means of treatment available, whereas good prognosis, with a perfect understanding of the eventualities, leads to the selection of the best line of treatment for the particular case in question.

The importance of diagnosis cannot be exaggerated, and while in many cases it is obvious, in some it is quite the reverse, and in these every possible means ought to be employed to allow of its elucidation before treatment is adopted. Dr. William Mayo has said, "You cannot always make a diagnosis, but it's a mighty good thing to try," and this is the attitude which a good surgeon will adopt. One must acknowledge, therefore, that a diagnosis is not always possible, and an operation of an exploratory nature may be necessary to dispel doubts and allow of one being made. Further, the diagnosis is sometimes wrong, indeed the correct one is not always the best (according to the various symptoms and signs present), which anomaly is to a great extent explained by the fact that the human being is not a system of rigid tubes and blocks of inert material, such as a plumber has to deal with, and the personal factor often plays a large, and perhaps misleading, part in the investigation of disease. However, the better the surgeon from the point of view of judgement, the fewer will be the cases in which absence or error of diagnosis will occur, and the fewer will be the corresponding exploratory operations. One need hardly say that the only man who never makes a mistake in diagnosis is he who never makes a diagnosis at all.

Good prognosis depends upon a sound knowledge of pathology and a wide experience of cases, and from a practical point of view its chief bearing on treatment depends upon the assessing of the probabilities of the success or failure of the natural and non-operative or "medical" measures. Should judgement be given against the likelihood of their success, then, if cure is to be obtained, the advocacy of operation follows as a matter of course. In such an event the earlier it is done the better, and so in these cases operative treatment will usually forestall and often completely replace any other.

It has already been pointed out that Nature, in dealing with disease, employs both non-operative and operative measures, and that the latter are only used as a last resort, when the former have failed. But operation, in surgical treatment, occupies the same relative position as in Nature's treatment—that is, it is a last resort, with the reservation, already made above, that, where judgement foreshadows the failure of other measures, such a failure is not waited for, but operation is advised and performed as early as possible. The indications for operative interference may thus be reduced to two—namely, (1) failure of the natural cure, and (2) failure to cure by medical means. It is therefore a truism to say that the degree of success attending surgical operation in disease is the gauge of the limitation and failure of medicine in its treatment. Hence, from the operator's point of view, true advance in the surgical treatment of disease must lead to what may be best described as "surgical suicide," seeing that, as specific therapy and preventive medicine in one or other form progress, the necessity for operative interference must steadily diminish until finally one sees it limited to the treatment of accidental injuries and mechanical defects.

In an ideal scheme, then, for the treatment of disease, operative measures have no place, and the best surgery is that which approaches most closely to the ideal. Unfortunately, the present imperfect state of our knowledge of disease, and our consequent limitations so far as ideal treatment is concerned, leave open a wide field in which operative interference offers the best hope of cure to the patient. However, this interference is minimized by the surgeon of good judgement as unnecessary, and futile operations will be avoided. The failure of the natural and medical means of treatment has been postulated as the indication for operative interference, and it is just here where good judgement appears at its best. For whether or not operative measures will be necessary, what they shall be if they should be called for, and when the most opportune time will be for utilizing them, are questions which depend entirely on the adjudged efficiency or futility of the non-operative treatment.

Should operative interference be considered advisable or necessary, the next question to be settled is, "What is the operation to be?" There can be no diversity of opinion that the best operation is that which offers the maximum of benefit with the minimum of interference, so that if some simple and conservative procedure be efficient to deal with the condition present, it is bad surgery to employ a complicated and destructive one; and, generally speaking, one might add that the efficiency varies directly as the simplicity, or inversely as the complexity, of the technique. The carrying out of such a principle, too, militates against the indiscriminate, casual, and unnecessary removal of tissue which might easily be preserved, often with benefit to the patient; this is strongly indicated by Nature, for it has already been pointed out that she casts off tissue only because she is unable to conserve it. The settling of this question also depends on good surgical judgement.

Bad judgement, then, which is due to ignorance of the normal and diseased states of the individual, and on lack of the power of correlation and deduction, is responsible for bad surgery, of which we have evidence in three main issues: (1) The withholding of operations which are necessary or advisable; (2) the performance of unnecessary and superfluous operations; and (3) the performance of inefficient, imperfect, or wrongly chosen operations.

The withholding of necessary or advisable operations is quite as much a mark of bad surgery as excessive operating, the performing of operations which are unsuited for the condition present, or of those which are not thorough or are technically wrong. No doubt one of the chief causes of unnecessary and meddlesome operative interference is the comparative ease and safety with which the ordinary operations of surgery may be embarked upon, granted an averagely good aseptic or antiseptic technique. The results of such bad surgery are not always obvious, thanks to the intervention of one or more of several agencies, and in this respect the *vis medicatrix naturae* plays a prominent part. It is invariably of the greatest assistance to good and is often the salvation of bad surgery.

In counteracting and so covering up the results of bad surgery, one example of Nature's foresight is the provision of a reserve, both physical and functional, by which the removal of a limited amount of tissue or the interference with function to a certain degree may be borne without any deleterious result. When more than constitutes the reserve is put out of action, Nature's compensatory mechanism, however, the hypertrophy and increased function of what remains, may soon adjust the deficiency.

When the local compensatory mechanism is unable to deal with the situation, one sees Nature quite often employing collateral or associated means of overcoming it. Finally, there is still the whole of the natural reaction to irritants and their effects which has been outlined above, and which is so important in dealing with what injury and infection there may arise.

Acknowledging, therefore, the wonderful compensatory, accommodating, and reconstructive power of Nature, all that may be needed to complete her concealment of bad work is that she be allowed to perform her task *in camera*, and this is readily provided for by means of the closed wound. It might be said without fear of contradiction that "the closed abdomen covers a multitude of sins."

INDICATIONS FOR OPERATION.

The general principles of treatment have already been mentioned, and are: (1) Remove the cause; (2) combat the effects; (3) assist the reaction; and (4) prevent complications. The indications for operative interference have been reduced to two—namely, failure of the natural or of medical means of cure. It therefore follows that whenever in any of the principles of treatment enumerated the natural or medical means fail, operative interference may be advisable or necessary. As a practical interpretation of this, by taking the principles *seriatim*, the chief indications for operation are as follows:

1. *Remove the Cause.*—The chief requiring surgical removal are *foreign bodies*, especially septic ones. Microorganisms may occasionally be removed by mechanical and chemical means, but usually their removal necessitates the simultaneous removal of the tissue they are present in, and the procedure does not therefore come into this category.

2. *Combat the Effects.*—The common indications for interference here are to (1) arrest haemorrhage; (2) close a wound; and (3) restore function—for example, plating a fracture, suturing a nerve, etc.

3. *Assist the Reaction.*—Here, as a last resort where non-operative measures had failed, operative interference has been shown to be indicated, by (1) incision, to allow of external drainage; and (2) scraping, excision, or amputation, in order to remove a focus of disease.

4. *Prevent Complications.*—These arise from (*a*) extension—for example, fractured ends of bone pressing on nerves, vessels, etc., or conditions requiring ligature of a vein proximally, to prevent discharge of emboli into the circulation; (*b*) secondary infection, especially sepsis—for example, in a compound fracture, psoas abscess, etc.; (*c*) healing—for example, from fibrous tissue formation and its contraction, the mechanical effects of excessive callus formation, etc.

Mention has been made of operative interference being indicated for diagnostic purposes; it may be quite a valid proceeding, but it should be reduced to a minimum. This has perhaps a special bearing in a country such as South Africa, where cases are treated at great distances and medical aid is difficult to obtain. In such cases, where the means for detailed diagnosis are not available and doubts exist, the balance is greatly in favour of operating, as much the safer course. This bears out the generally recognized claim that, as far as possible, all cases should be treated in a properly equipped hospital, where complete investigation can be made, and where the patient has the best chance of being cured by other than operative means.

Much might have been said, in considering such a subject, on the advantages to be gained from a careful choice of anaesthetic, the employment of measures against shock, and the technique of operating, etc., but these would have required too much time, and have purposely been omitted.

What I hope to have been able to show, then, is that operation is not synonymous with surgery, that it is not the primary object of surgery, and that it is not even the first pillar of treatment on which the surgeon leans for support. On the other hand, with few exceptions, operative interference is employed because of the failure, or probability of failure, of other means of cure, whether of those utilized by Nature or of those non-operative measures which are commonly included under the term "medical treatment." Seeing, therefore, that the foundation on which operative treatment rests is constituted by the shortcomings of Nature and of medicine, true advance in the treatment of disease must lead to the progressive diminution in the number of operations and the gradual disappearance of the operating surgeon except in such conditions as accidental injuries and mechanical defects. Under such conditions medicine must temporarily find an increasing sphere of activity and importance, thanks almost entirely to the investigations of the laboratory worker; but as preventive medicine progresses towards the ideal, the physician, too, as accepted at present, must lose his material in an increasing degree and tend to disappear.

Pending the realization of this visionary ideal, however, the burden of our present imperfections has to be borne, and a very prominent part in the treatment of disease must continue to be played by surgery, the basis of which consists of:

1. *Good judgement*, with all it involves—of paramount importance; and, depending on this
2. *Rational treatment*, non-operative or operative, as already described.

When operative measures are indicated, then the outstanding features of good work are:

(*a*) *Conservatism consistent with efficiency;*
(*b*) *Simplicity of technique;* and
(*c*) *Operative skill*, which includes gentleness, manipulative dexterity, and careful speed.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor J. Lorrain Smith, M.D., F.R.S., President.

DISCUSSION ON THE PRESENT POSITION OF CANCER RESEARCH.

OPENING PAPER

BY

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CANCER research, the knight-errantry of medicine, presents "a restless complication of bold hazards and miserable disappointments." Formal tournaments and solitary encounters are the portion of its devotees to an extent unusual in other branches of scientific medicine, nor are the strong enchantments of its extinct prototype without their parallel. Strange remedies, potent as the balsam of Fierabras and as capricious, play their part and disappear. The medical and lay public contemplate with bored impatience the enigmatical actions of the combatants who, if they have their feet on solid earth, seem to have their heads in the clouds. Not a little of this want of comprehension is due to the conviction, almost universal among laymen and not unknown in the ranks of medicine, that knowing how to spell the word they know what cancer is. A natural impatience is felt, and sometimes expressed, at the apparently fictitious difficulties of definition which beset the investigator.

Two examples of these differences may be cited. In the first, in my opinion, the lay impatience is largely justified; in the second, not. In the first place, then, the nomenclature and classification of tumours seem to the outsider an unnecessary refinement absorbing far too much space in the publications on cancer. The excessively detailed systems of classification of tumours which have been proposed from time to time have no analogy with the natural classifications of animals and plants but are merely convenient aids to memory. This is at once seen to be so if we reflect that the new growths of men and animals are really new formations arising afresh from the non-neoplastic elements of the organism attacked. The basis of a natural classification—community of descent—is therefore absent, so that it is only metaphorically that it can be said that one tumour-form is derived from another. The derivation is from the normal mother tissues, but even a histogenetic classification, if too rigid, may be misleading. The human importance and the intellectual fascination of the subject compel the detailed analysis of all the cognate material, but the systems of nomenclature and classification can only be judged by their concise descriptiveness and convenience.

The second example of difference of standpoint is seen in the attitude of the research worker to reports in the lay and medical press of the cure of cancer. His first scrutiny is directed to the evidence that the patient really was the subject of cancer, and there must be few of any experience whose inquisitiveness in this direction has not been regarded as impertinent. Clinical history, the opinion of the medical attendants, and the report of an experienced pathologist when available, must all be passed in review. One desires to examine afresh the histological preparations if these can be had. If, as sometimes happens, doubt is thrown on the histological diagnosis, this is taken as an aspersion on the competence of the pathologist making the report, or as a disingenuous attempt to discredit a great discovery. It is neither. The standard by which a tumour-like new formation is judged must be different in the two cases. A pathologist to whom a specimen from an exploratory or primary operation is submitted must weight the evidence to the side demanded by the patient's interest. It is obviously, for the patient, less dangerous to recommend that a growth of doubtful malignancy be treated as cancerous than to take a chance on the portions not examined being more innocent than those which have been seen. Let us suppose the patient has been freed from his disease. The pathologist's opinion of the sections has now little interest for the patient, but may be critical for the welfare of thousands of sufferers. He must now weight the scales against the malignancy of the specimen and demand the most stringent proof. Reasonably satisfied in this preliminary inquiry, it is then proper to consider the evidence that a cure has been effected. When stated in this way this line of argument will probably appear quite reasonable, but it has been found singularly unsatisfying to the impatience of those who believe themselves on the track of a specific for cancer.

Considerations of the same kind are similarly in place when claims are made to have effected a cure of a propagated tumour in experimental animals. In fact, it is fairly strong evidence of the close parallelism of the transplantable tumours to naturally occurring cancer that none of the numerous claims to a successful specific therapy of them has been substantiated.

The experiments now being carried out by many workers on the production of cancer, call for a discussion of the criteria which ought to be exacted in work of this kind, before accepting the new formations produced as truly cancerous. It is as well to recognize at the outset that the definitions of cancer are still essentially clinical. Their progressive character is the most constant and abiding characteristic of the malignant new formations. Local infiltration, metastasis formation, and recurrence, are, to a large extent, dependent on local conditions which may easily be incompatible with the conditions of the experiments. Successful transplantation to normal animals of the same species is more and more being invoked as the only valid proof of malignancy, and this condition was accepted and fulfilled by the late Dr. Clunet in his classical experiments on the production of sarcoma in rats after severe *x*-ray dermatitis. This condition is probably too exacting, as there are now many instances on record in which new growths in mice have failed to grow in normal animals, even when hundreds have been inoculated. Artificial metastasis by autologous grafting in the primarily affected animal is in my opinion a more just test. It has also the advantage that it not only does not exclude transplantation to normal animals but makes it possible in many cases in which ulceration and infection of the greater part of the primary growth almost preclude success.

The necessity for secondary confirmatory experiments of some kind is well shown by a remark in Yamagiwa and Ischikawa's valuable monograph on epithelial tumours produced in the rabbit's ear by painting with tar. The authors record their astonishment that some of the tumours disappeared when the irritation of tar-painting was interrupted! The absence of evidence of this sort detracts from the value of Lazarus-Barlow's observations on the epithelial proliferations produced by radium, and of the earlier experiments of Fibiger on the production of tumours in the stomachs of rats infected with *Spiroptera neoplastica*. In his most recent publication Fibiger records successful transplantation in normal animals of these experimental new growths.

All these experiments, valuable as they are, fall short of the requirements of the cancer worker on the track of the etiology of the disease in that only a small percentage of the treated animals develop anything which can be regarded as reasonably resembling cancer, and that only after a considerable time interval in most cases. Until these shortcomings are remedied it will be futile to attempt the cytological and biological analysis of the changes leading up to malignant new growth on this material.

Before leaving this line of work attention may be drawn to the bearing of the results on the important statistical character of cancer, its increasing frequency with advancing age in man and animals. It is not easy to say to what extent this peculiar age-incidence is a consequence of the chronicity of the forms of irritation which most constantly lead to the development of cancer, and how far senile cellular changes are a necessary antecedent. The results of the culture of normal tissues *in vitro*, showing practically unlimited powers of growth under suitable conditions, would appear to relegate the senile failure of growth to the position of a secondary consequence of accidental cell damage inseparable from the chances of life. If this be so, then the age-incidence of cancer can be regarded as a consequence of the relative inefficiency of most of the forms of irritation associated with the origin of cancer in producing the disease. In support of this way of looking at things, it may be noted that L. N. Dublin records a higher incidence of cancer in the experience of the New York Equitable Insurance Company in industrial policy holders than in those in easier social circumstances. The former are of necessity more exposed to various forms of chronic irritation than the latter. Fibiger has developed the same argument in reply to the objections raised to the cancerous nature of the growths in rats' stomachs, namely, that they are not necessarily associated with old age. He claims that the spiroptera infection is so potent a cause of the disease that the long duration necessary with other forms of irritation is not required.

The low percentage of experimental animals in which the cancerous change can be induced still requires explanation. It is possible to assume that in this respect the short duration of life of the mouse and rat is a drawback, and that given a sufficiently prolonged irritation the majority would succumb to the disease. Natural predisposition would have to be invoked to account for the more rapid onset in the individuals which become cancerous in the experiments as at present devised. We have in the hereditary increased liability which has been demonstrated in strains of cancerous parentage a considerable ground for assuming the necessary predisposition, and it remains to be tested whether mice of cancerous stocks are more easily made the subjects of primary induced cancer than others.

The achievement of experimental cancer research in the period 1900-1914 which aroused the greatest hopes and most strongly attracted the energies of workers was unquestionably the discovery, by Jensen, of an acquired resistance to grafted cancer following on unsuccessful inoculation. It appeared as if here was to be found the basis of a rational treatment of cancer. The early work of Haaland and Russell practically destroyed this hope. Haaland recorded that the most intensive protection by [illegible] had no inhibitory effect on the development of spontaneous carcinomata of mice, nor did it hinder in the least the [illegible]. [illegible] experimental analysis of the process in transplanted tumours demonstrated the fact that the resistant condition was only effective during a short period immediately following transplantation. Animals bearing progressively growing tumours could be rendered resistant to a secondary inoculation of the same or another carcinoma without modifying in the smallest degree the progress of the established tumour. This curious discrepancy still lacks a satisfactory explanation.

The nature of the resistant or immune state is also still unexplained, but much work has been expended upon it, even after Haaland's and Russell's inoculation experiments had shown its futility in spontaneous cancer, the form which, as a therapeutic problem, duplicates human cancer. After Russell had shown that in resistant animals there was a failure of the fibroblastic and angioblastic reaction to implanted carcinoma, Da Fano found that the procedures which elicited the resistant state were accompanied by the appearance of plasma cells in the connective tissues throughout the body. They were absent after preliminary treatment which did not produce immunity—for example, after inoculation of killed normal tissue. J. B. Murphy in a series of papers contended that the essential factor was the production of an increase in the number of circulating lymphocytes. In conformity with this view he found that successful implantation of mouse tumours into developing hen's eggs could be prevented by a simultaneous inoculation of adult fowl spleen—an experiment which has been repeated on a large scale by Stevenson without confirmation. Similarly Bullock observed no inhibition of the growth of mouse tumours in baby rats when adult rat spleen was inoculated at the same time, either at the same site or at a distance.

On the other hand, Mottram and Russ and their collaborators found, following Murphy, that *x* radiation of rats and mice produced a lymphocytosis or a lymphopenia according to dose, and the increase in lymphocytes was accompanied by increased resistance, their diminution by diminished resistance.

So long as these observations were not extended to spontaneous tumours they were felt (by me at any rate) to bear only indirectly, or not at all, on the treatment of cancer in man. Great interest therefore attaches to the observations of the late H. D. Taylor, working in collaboration with Murphy, who found that autologous grafting failed in spontaneously affected mice if the animals were exposed to a hot dry atmosphere (60° C. for ten minutes) between the operative removal of the primary tumour and the autologous implantation. Should these observations be confirmed under rigid control they will constitute a new discovery of the first importance. Apart from severe disturbance of the general health no means has yet been found to influence the course of autologous grafts. This degree of heating trenches rather closely on the limits of survival of mice and produces a profound disturbance of the heat regulating mechanism. It is possible that the failure of the graft, when it does occur, is due to secondary effects of the treatment other than the lymphocytosis which, according to Taylor and Murphy, is produced by it.

The lines of investigation which have been discussed so far are in the nature of more or less direct attacks on the prophylactic or therapeutic problems of cancer. For some of us the conviction is gradually gaining strength that our knowledge of the fundamental processes of cell life is not yet sufficiently advanced for the special purposes of cancer research. The cancer cell is in some way different from the cells of the same kind among which it takes its origin and from which it arises. The nature of the change is still unknown. It is probably of a thorough-going kind and in most instances of a quite surprising degree of permanence. Nothing impresses this fact more strongly on the imagination than the behaviour of the Jensen mouse carcinoma which has now been propagated continuously in normal mice for twenty years and is structurally and biologically the same as when first transferred to normal animals.

All the differences which have been found so far between cancer cells and those of adult tissues can be paralleled in rapidly growing tissues of the embryo. Cancerous tissue, for example, contains more water of imbibition than adult tissue, and the most rapidly growing tumours have the highest proportion of water to solids. In consequence some slowly growing tumours are found to be less watery than foetal and embryonic tissues. The differences in this respect are therefore not absolute, so that one cannot say that no cancer has less than a certain percentage of water, and below this level are ranged all normal tissues, embryonic and adult. Cramer, who has carried out these estimations on an extensive scale, has also shown that an artificial reduction of the water of imbibition induced by exposure of tumour emulsions to isotonic solutions of calcium salts cuts down the rate of growth and percentage of takes on transplantation. The effect can be abolished and the yield restored by washing the treated emulsions free of calcium in normal salt solution. The action of calcium is therefore not a simple lethal one, but a reversible interference with the physico-chemical mechanism of growth.

Drew's experiments on the relative oxygen avidity of normal and tumour cells show that the calcium effect may in part be due to disturbance of the oxidation processes. The decolorization of methylene blue solution or the reduction of oxyhaemoglobin by intact cells *in vitro*, is reduced to a very low level by previous exposure to isotonic solutions of ionizable calcium salts. Just as in the transplantation experiments of Cramer, this action also can be reversed by washing in normal salt solution. The low oxygen avidity found for tumour cells by this method is usual in rapidly growing normal tissues, but the highly differentiated sluggish tumours in our material are not characterized by a correspondingly high oxygen avidity.

The elaborate and painstaking investigations of Drummond on the composition of tumour and normal proteins show a close correspondence amounting to identity between the two. His investigation of the effect of restricted dietaries reveals a corresponding dependence of both on identical nutritive substances, basal and accessory, so that to influence tumour growth it is necessary to jeopardize the life of the host. In fact increasing refinement of methods and accuracy tend to emphasize the similarity of the cancer cell-metabolism to the normal cell-metabolism.

The remaining line of investigation which is being pursued at present is the study of normal and tumour cells by the method of culture outside the body. When technical improvements have increased the flexibility of this method it should provide a powerful means of attack on the fundamental problems of the disease. At present the technical difficulties make the mere achievement of maintaining tissue cultures something of a *tour de force.* Woglom has pointed out that these difficulties are more in evidence in the culture of the easily transplantable malignant new growths than of normal tissues, a discrepancy as surprising as it may be significant.

The one positive character of new growths is their progressive proliferation, uninfluenced by the forces limiting the increase of the elements of healthy or diseased tissues. The transplantable tumours of laboratory animals present this feature and its insistent problem in its purest and most clamant form. The subtlety of the cellular derangement and its close contact with the fundamental problems of biology give an atmosphere of adventure to every attempt, however indirect it may seem, which human ingenuity devises to elucidate the harmonies and contradictions which lie on every side of the problems of cancer

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It seems to me that the occurrence of carcinoma is best explained as an abortive attempt of the organism to reproduce itself asexually. If this view be correct, then the tumour must be looked upon as a bud or outgrowth from the organism itself, and the problem of how to diminish the incidence of the disease must be one of avoidance or prevention of the conditions in which its formation is likely to be induced. The epithelial cells are the least differentiated of all the cells in the body, and consequently are those which can most easily revert to the ancestral germinal type. This reversion occurs normally in cases where there is an alternation of generations, as in certain hydrozoa, where, under varying states of nutritional environment, the animal reproduces itself by budding or by the development of sexual organs. Such a reversion may occur in localized areas of the human body. Under favourable conditions there may form a colony of actively dividing individuals, each one of which is capable of leading an independent existence. This view is strongly supported by the close resemblance shown by cancer cells, in their mode of division, to the cells of the germinal epithelium. The conditions favourable to this reversion of cells to the ancestral germinal type and to their active multiplication, with the consequent formation of a colony or growth, are the following: (1) Degeneration of epithelial cells, either from an inherited tendency or from the cessation of function of the gland of which they form a part—for example, breast or uterus; (2) abundant supply of nourishment; and (3) a local irritant which, by maintaining dilatation of vessels, etc., continues to keep up the supply of nutriment to the part. The hereditary tendency to early degeneration of epithelial cells may be compared to other well known familial characters such as the precocious occurrence of white hair or the premature disappearance of subcutaneous fat. Further, the fact that these conditions, usually associated with heredity, may be produced by unfavourable environment would account for cancer houses, streets, valleys, etc. The common sites for primary cancer are the breast, the cervix uteri, and the rectum. In the breast the time of occurrence coincides with the period in which the gland is ceasing to function, the cells are degenerating, and the blood supply is in consequence unnecessarily large. If now an irritant appears, whether it be from a fissure as in "Paget's nipple" or from the presence of a parasite, the over-nutrition of the part will be maintained and there will be danger of cell reversion and multiplication, with the consequent development of cancer. Should there be also in the individual an hereditary tendency to early cell degeneration, this danger will be greatly increased. Similar arguments are applicable to the other common sites for cancer, and also serve to explain the change from benign to malignant characters so often seen in pyloric or rectal ulcers. If the predisposing causes are present, then the exciting cause may be a rough tooth, a gall stone, a fissure, the gardener's straw, the sweep's soot, or a nematode parasite; but these exciting causes really only serve to make permanent a biological process which without their aid would probably be only a passing phenomenon.

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DR. MURRAY has very shrewdly touched every important aspect of the cancer problem. There is, however, one line of research of which I consider he takes an unduly despondent view—I refer to cancer resistance or immunity. I propose, therefore, to review very briefly the facts on which these contrary views are based. Considering first inoculated cancer: if a number of rats are inoculated with Jensen's sarcoma it will be observed that in some no tumour results, in others a small growth appears, which subsequently is absorbed, whilst in others large progressively growing tumours are found. Here there is every grade of resistance from the immune to the fully susceptible. Similarly, if the growth of a number of different tumours be studied every grade of virulence will be found, from one which takes in 100 per cent. to one which does not grow on inoculation. Turning now to produced cancer, a similar grading is seen: even in the most successful experiments, such as Fibiger's, only a small percentage of the animals are susceptible, in others an overgrowth occurs which is absorbed directly the exciting agent is removed, in others little or no change is observed.

Spontaneous cancer exhibits similar variation. Certain species are more susceptible than others, certain races more than others, and within the race certain families. In fact there is considerable evidence that heredity is an important factor. Further, the absorption of tumours so commonly seen in inoculated cancer is occasionally seen in spontaneous cancer. The resistance so far considered may be termed natural resistance, and like acquired and induced resistances it can be broken down by exposing the animal to *x*-radiation. For instance, a tumour of low virulence which will not grow in normal animals will grow in *x*-rayed animals, and further, mouse carcinoma will temporarily grow in *x*-rayed rats. Acquired resistance is found in animals which have absorbed an inoculated cancer, a second inoculation being invariably negative. If, however, they be exposed to *x*-radiation a tumour will result and persist until the effects of the radiation begin to be recovered from. Resistance can be induced against cancer inoculation by the inoculation of various tissues—embryo skin, spleen, blood, etc., and also by the exposure to small doses of *x* rays. This induced resistance is likewise destroyed by exposing the animal to comparatively large doses of *x* rays. It has been seen that these three kinds of resistance have some common feature. If now we study the rôle which the lymphocyte plays we can observe further similarities. Dealing first with inoculated cancer, in susceptible animals there is a decrease in the number of circulating lymphocytes, or a slight rise for a week after inoculation, and then a fall. In immune animals there is a lymphocytosis, as also there is in the artificially immunized animals. In animals bearing spontaneous tumours the lymphocytes are in normal numbers, but in man a lymphocytosis is usually found in the early stages of the disease, but later a leucopenia occurs. Prolonged exposure to x rays causes a profound leucopenia, and at the same time destroys the resistant condition. On the other hand, repeated small doses of x rays give rise to a lymphocytosis and an increased resistance to inoculation. Broadly speaking, therefore, the resistant conditions, whether naturally acquired or induced, are associated with a lymphocytosis, and the susceptible with a leucopenia. Numbers of circulating lymphocytes are not, however, the essential factor, for rats with 200,000 lymphocytes per cubic millimetre as the result of x-ray treatment, or with 100,000 as the result of splenectomy, or treatment with the pilocarpidine, have grown progressive tumours. It may be mentioned that in animals exhibiting acquired or artificial immunity there is a general increase of the lymphoid tissue throughout the body, and also of the plasma cells.

Finally there is a similarity between these conditions of resistance in respect of the local accumulation of lymphocytes. In induced immunity there is a local accumulation around the inoculated substance. In acquired immunity there is a marked accumulation of lymphocytes round the tumour during its absorption. Radiated tumour cells may be used for the production of induced resistance, and here also a local accumulation of lymphocytes occurs, but if a larger dose of x rays be given no induced immunity results, and no local accumulation of lymphocytes occurs. In man local accumulations are often seen around small primary growths, and in spontaneous cures a lymphocytic reaction accompanied by a fibrosis is the usual histological feature. Thus a considerable similarity between these resistant states is found, but complete identity has not been established; in fact, Dr. Murray instances the experiments of Haaland, which seem to be of a negative nature. Haaland showed that the methods of producing induced resistance are not effective for an animal against its own spontaneous tumour. This negative result becomes of less importance when it is made clear that induced resistance is never able completely to protect normal animals—there is always a small percentage which are susceptible to inoculation. The fact that an animal develops spontaneous cancer is evidence of its special susceptibility to that tumour; if so, it is clear why it fails to respond to the feeble methods of protection at present available.

In face of the many features which natural and induced resistance have in common, it appears to me that Haaland's negative results by no means indicate that spontaneous cancer will not respond to a more powerful induced resistance if such can be produced. Already certain experiments of Murphy, which I understand Dr. Russ will deal with, indicate that the growth of an autologous graft can be inhibited.

PROFESSOR SIDNEY RUSS, D.Sc.,
London.

DR. MURRAY has quoted the experiments of Tayler and Murphy, who showed that autologous grafting failed in [illegible] if the animal were exposed [illegible] between the operative removal of the primary tumour and [illegible] transplantation. [illegible] Dr. Murray considers this to be a [illegible]. I would like to quote [illegible] by Murphy and Morton in 1915, [illegible] These experiments, [illegible] with spontaneous tumours, [illegible] the animals a [illegible] dose of x rays, and [illegible] the animals with grafts of their own tumours; the result was that one half of the autologous grafts failed to grow, [illegible] out of [illegible] controls [illegible] graft took.

[illegible] Dr. Murray [illegible] Murphy and Morton is not [illegible] sufficient to

exert a stimulating action upon the circulating lymphocytes. The function of the lymphocyte in the body of an immunized rat or one bearing a tumour is doubtless very little understood, but, as far as our observations go, they show in immunized animals a variation from their behaviour in normal animals. There is seen to be a marked accumulation of these cells around a graft three or four days after an inoculation into an immunized animal; but further work has shown that this process is not at all conditioned by the number of lymphocytes in the circulation. The latter may be increased to ten times the normal number with no evidence of an increased resistance on the part of the animal, whereas a rat having no more than the average number of lymphocytes may be absolutely immune to inoculations. It looks as though some mechanism is brought into play whereby the lymphocyte is brought to the neighbourhood of growing cancer cells. In some cases, however, this does not happen.

Dr. Murray insists—and indeed, if I may say so, his view-point seems largely coloured by this consideration—that the immunity of an animal towards homologous grafting is essentially different from that towards the autologous inoculation of a spontaneous tumour; whereas to attain the first is easy, that of the latter is difficult, but both of the experiments just cited show that it is apparently possible. In some of our work at the Middlesex Hospital we have adopted the view-point that these differences are differences in degree, enormously different in degree, but not in kind. Consequently we think that the animal experiments which have been planned to show the dual effects of radiation upon tumour growth and upon animal resistance may have direct application to the question of the treatment of malignant disease by such form of radiation as x rays or the rays from radium.

It does not seem possible at present to gauge the potentiality of these agents either in the production of an immune condition or in the complete control of tumour growth. It seems certain, however, that recognition must come of the fact that these are agents which, in the last fifteen years of their application in the treatment of malignant disease, have been of great benefit, and that the subject of radio-therapy is likely to warrant a greatly increased interest by investigators.

ARCHIBALD LEITCH, M.B.,
Pathologist to the Cancer Hospital.

THE experiments with transplantable tumours of mice seemed at first to pave the way to the solution of many problems in cancer. Successful grafts could be obtained in a large proportion of cases, and one naturally turned to the means whereby the growth of these grafts could be prevented. It was found that previous inoculation with various living tissues from other mice, or the absorption of tumour tissue when the graft had failed to take, frequently protected the animals against subsequent inoculation of the tumour, and we seemed to be on the high road towards the elaboration of means of conferring immunity to tumour growth. If, for example, we inoculated tumour material into 100 mice we might find that tumours resulted in 50, whilst the others remained insusceptible; when again, the 50 negatives were given a second inoculation of tumour tissue only 10 might develop tumours, and if we gave a third inoculation to the remainder, 4 perhaps might prove positive. It was generally concluded that we had here to deal with a condition of gradually increasing immunity, as represented by the falling percentages 50, 20, and 10; but such a reading entails an obvious fallacy, for on each occasion we are cutting out the susceptible members of the groups, and if we assume, as would seem probable, that those animals which were once susceptible would remain so to subsequent inoculation, we ought to record the results in terms of percentages of successful inoculation, namely, 50, 60, and 64. In other words the resistance, so far from increasing, actually diminishes as the result of repeated inoculation. I investigated this question with several different strains of tumour, giving repeated [illegible] to mice which had proved refractory to a first inoculation or in which the original tumour had spontaneously disappeared, and I found that the so-called immunity was exceedingly variable; some animals which were negative to as many as six or seven inoculations might later develop a tumour from subsequent transplantations. In this respect the resistance is quite incomparable to the immunity of infective diseases. On the other hand, I found that though an animal might develop a tumour after the first inoculation, yet if that tumour were completely removed a subsequent transplantation of the same tumour strain did not necessarily give rise to a tumour. Thus the susceptibility as well as the resistance was a variable condition. Prolonged investigation of the serum of "immunized" animals failed to reveal anything resembling the known antibodies. If, for example, I took three sets of pooled serums (in order to get sufficient quantities)—namely, from tumour-bearing animals, from "immunized" animals, and from normal animals—and having mixed these with different portions of the same tumour emulsion and incubated the mixtures for varying periods of time, I inoculated the mixtures into three sets of fresh mice, I could never determine any appreciable difference in the results. Tumours resulted and grew just as well in one case as in the others. This has some critical bearing on the observations of Freund and Kaminer (on which they have built a method of sero-diagnosis) that the blood serum of normal or non-cancerous individuals contains a substance capable of disintegrating cancer cells, whilst the serum of cancer patients is devoid of such protective property. It was further shown, especially by Woglom, that whatever resistance might be induced to transplantations by the previous inoculation of living tissues, no resistance at all could be produced if the animal's own tissues were employed. Further, it was found to be impossible by any such means to protect an animal against the spontaneous development of a malignant tumour; and, finally, it was shown by Dr. Murray that an animal having once developed a spontaneous tumour, could not be protected against the autotransplantation of that tumour or the occurrence of metastases. From these and other experiments it is to be concluded that an animal does not develop an immunity to its own cells, normal or pathological. Such results have definitely closed certain avenues of hope in the treatment of the disease.

The observations made on the experimental tumours of animals have cleared our minds of many old encumbering fallacies and theories. They have taught us that, however attractive speculations may be about the origin and cause of cancer, it is idle to indulge in them. They have helped us to get rid of much useless histological classification of tumours. And they have led us to look upon the neoplastic process as a thing apart—a peculiar response, but only one of the possible responses, to widely different stimuli. Everyone who has had an extensive experience of tumours realizes how difficult, or even impossible, it is on occasion to separate simple tumours, or even hyperplasias, from malignant tumours. I need only instance the parotid mixed tumours. After all, the separation is quite artificial, and though, in the great majority of cases, the histological features enable one to place the tumour with a fair degree of certainty, yet occasionally our criteria fail us. Dr. Murray has proposed another criterion of malignancy—namely, the transplantability of the tissues. Unfortunately this is not applicable to human tumours, but even in the case of the lower animals the criterion cannot be accepted as certain. No one, I feel sure, would agree that the failure of transplantation was a proof of the innocency of the tumour. We know that many human tumours do not give rise to metastases. On the other hand we must take into account certain common features in the definitely transplantable tumours of mice: some of these spontaneous tumours seem so peculiarly localized, almost encapsuled, they run a clinical course so closely resembling that of simple tumours in the human subject, and they present such a finished histological picture, that if we encountered them in man we should be forgiven if we diagnosed them as benign growths. There is a possibility, therefore, that in the experimental work we have on occasion succeeded in transplanting simple neoplasms. It is well to bear in mind the experiments of Ehrlich and Apolant, in which the development of sarcoma occurred during the transplantations of a carcinoma, for in that case the sarcoma, as they pointed out, originated from the connective tissue stroma introduced.

Apart from the investigation of tumours propagated through animals which have given results more of academic than of practical value, laboratory researches have been conducted along other lines—(1) methods of diagnosis, (2) essays in chemiotherapy, and (3) surgical pathology. There has been a great cry for the earlier diagnosis of cancer. It is said by some surgeons unwilling to undertake radical operations in the disease that if cases came to them at an earlier stage much less serious measures would be successful. I am afraid there is not much prospect of hope in this direction. Patients will not seek medical advice before they experience symptoms, and symptoms are notoriously late in obtruding themselves in most cases of cancer. It is remarkable, too, how unobservant some patients are of signs and symptoms when they are well defined. But there is a field for research into possible laboratory methods of diagnosis where the clinical judgement cannot certainly be made. The very fact that in malignant disease no condition of immunity in the wide sense is ever established would induce one to hope that evidence of antibody formation might be found in the blood serum because the so-called antibodies found in the serum in infectious diseases are probably to be regarded as expressions of injury rather than signs of defence. During the last ten years I have put to the clinical test practically all the sero-diagnostic methods that have been proposed. Most of these, if not all, might have been rejected on *a priori* grounds, but it is sometimes the apparently irrational that succeeds in serology. Crile claimed to be able to diagnose cancer with a fair degree of certainty by the fact that the serum of cancer patients haemolysed normal red blood corpuscles, whilst the serum of non-cancerous cases produced no such change. It was then known that isohaemolysis was a fairly common phenomenon, and it is now general knowledge that all human bloods can be grouped accordingly. He must have worked with rather unusual corpuscles in his tests. At any rate we found in repeating his work that the method was utterly devoid of any diagnostic value. For the complement deviation action of v. Dungern great diagnostic worth was claimed, and the claims were substantiated by some of his pupils. He employed an extract of carcinoma and subsequently an extract of red corpuscles as antigen, and the reaction followed the lines of the Wassermann technique. Personally, I was unable to obtain any verification of the claims, and Coca, who worked in v. Dungern's laboratory, was unable to obtain successful results or even to have them demonstrated to him in that laboratory. The cancrolytic reaction of Freund and Kaminer, which I have already mentioned, has not been of any use to us: I have never succeeded in obtaining any emulsion of cancer cells, prepared according to their directions, which normal or other serums would "lyse." The meiostagmin reaction of Ascoli cost me a considerable amount of trouble. It was based on the observation that the union of toxin and antitoxin is accompanied by a diminution in the surface tension of the mixture. Ascoli took dilutions of cancer and non-cancer serums and added to them titrated quantities of extract of cancer or pancreas, or even certain unsaturated fatty acids. The surface tension was determined forthwith by means of Traube's stalagmometer and again after incubation. An increase in the number of drops indicated a diminution of the surface tension. It was agreed by Ascoli that many of the antigens, though prepared in exactly the same way, were quite ineffective. The titration of the antigens was very troublesome, and the only way to obtain an effective antigen was by testing various dilutions of many extracts with actual known serums. Further, a useful extract having at length been obtained by these means it could not be depended on to maintain its property over an extended series of tests. It was said to be exceedingly unstable. I suspect that the good results claimed were obtained by a summation of the favourable trial results and a neglect of the adverse readings. From my own experience with the reaction I was convinced that the results were purely fortuitous, and that the instability of the antigens was another expression for want of luck. The famous Abderhalden reaction was founded on a very attractive hypothesis; numerous papers from all parts of the world supported its great value in the diagnosis of cancer; my own results with this reaction, together with a destructive criticism of the theory, were published in the BRITISH MEDICAL JOURNAL (July 25th and August 15th, 1914). I need say nothing further here than that the Abderhalden reaction is devoid of any practical diagnostic value. Disappointing as these and many other serum reactions including several attempts of my own, have proved, one has still the hope that some useful laboratory reaction will yet be found.

The whole world, medical and lay, looks for the elaboration of some drug that will cure cancer, and many essays in the chemiotherapy of the disease have been made. The experiments of Wassermann and his collaborators with an eosin-selenium compound raised considerable expectations. The details of his experiments were far from convincing to anyone familiar with the behaviour of transplantable tumours, and he was apparently never able either to repeat his successes or even to elaborate the same chemical substance again. Neuberg and others reported successful attempts in the therapy of mouse tumours, but I have always regarded these results as due more to the physical properties than to the chemical constitution of the compounds. They were all protein precipitants, and they probably acted, not directly on the malignant cells, but on the blood within the tortuous and poorly developed capillaries of the tumour. It is difficult to conceive any chemical substance so selective in its action that it will destroy tumour cells and yet leave uninjured the normal cells from which they have sprung, seeing that chemical analyses fail to show any material or constant differences in constitution or metabolism between the one and the other. X rays and radium are supposed by some to have this selective property. While one cannot deny that these agents may occasionally produce a local temporary amelioration, reliable evidence is still awanting that they ever bring about cure even in such low malignant lesions as rodent ulcer.

Surgery is, and is likely long to remain, the only means at our disposal of eradicating the disease, but surgical procedures must be based on sound pathology. There is here a fruitful field for the co-operation of the surgeon and the pathologist. The routes by which the disease spreads have only been worked out with any degree of thoroughness in cancer of the breast, uterus, and rectum, and even there the observations are not complete. Much remains still to be done for other organs, but it is interesting to know that in the situations mentioned the radical operative treatment in the hands of those surgeons who are conversant with the facts of surgical pathology gives a cure rate of about 40 per cent., taking as our standard of cure a five years' immunity from recurrence. Fifteen years ago such a success could not have been hoped for. The pathological observations are slow in accumulating, and surgeons are perhaps slow in adopting them, but the results that have attended the operative measures built on pathological findings give encouragement for the future.

Professor Simon Flexner, M.D.,

Director of Laboratories, Rockefeller Institute for Medical Research, New York.

Dr. Simon Flexner, called upon by the President, said that although he had not himself been engaged on cancer research he would like to say a few words on Dr. Murphy's work at the Rockefeller Institute, work which he had followed with the deepest interest. He had unfortunately not been present during the earlier part of the discussion, but he gathered that it had been along the lines of the relationship of lymphocytosis to cancer immunity. Dr. Murphy's work showed that a definite relationship between the two could be worked out. The lymphocytosis could be induced in various ways. After small doses of x rays there was at first a diminution of lymphocytes, then followed a period of compensation which lasted two or three weeks. During this period the animals were refractory to cancer inoculation. As regarded the spontaneous disappearance of cancer in man he thought there were two factors which had to be taken into consideration, namely, a local and a general one. For example, a local tumour might disappear but metastases might continue to grow in other situations. It was premature to think of any reason in terms of immunology. But the body might perhaps be thought of as being in a different state of immunity in different regions. The immunity in that case would be in the nature of a tissue rather than of a general reaction. If this were true, there might be local immunity which would cause one tumour to regress while others in a different situation continued to grow.

Professor J. G. Adami, M.D., F.R.S.,

Liverpool.

Professor J. G. Adami said that he could not agree with the theory strongly held by Ribbert that cancer was due to a lessening of the forces acting upon the cell from without and restraining or inhibiting the growth of the potential cancer cell. Experiments *in vitro* showed that there did exist stimuli which Ross had termed auxetic. Warmth, for example, in stimulating increased cell growth, could not act as Ribbert suggested, but told upon the cell directly, increased its metabolic and other activities, so bringing about a greater interchange with resultant increase in substance. To explain cancerous growth he had predicated a similar direct stimulation which, continuing to act for some little time, set up in the cells the habit of growth.

Opener's Reply.

Dr. Murray, in his reply, first took up certain points that Dr. Mottram had raised. Dr. Mottram asked whether the subcutaneous tissues were the best site for tumour grafts. He thought more suitable sites might be found. He had seen cases in which when subcutaneous inoculation failed inoculation into the circulation had been successful. He asked whether there was any difference between the cells of lymphogenous tumours and lymphocytes? Dr. Murray in reply stated that the tumour cells were distinctly larger than lymphocytes but of the same type, as evidenced by the nuclear characters. As to inoculation the difficulty was that inoculation must not be practised in a site where metastases would naturally arise or the experiment would be inconclusive. In reply to Dr. Leitch, he said that sarcomatous elements in a transplanted tumour were derived from the host. He agreed that serological diagnosis of cancer is impracticable at present. In reply to Dr. Russ, he had repeated Murphy's experiments on heating, but, so far, had failed to obtain as much resistance as Murphy did. He considered that there was a fundamental difference between autologous and homologous grafts. This difference could be explained by the variations in the tissues of different animals.

In conclusion, Dr. Murray thanked the speakers for their interesting contributions. In the main the discussion had been along the line of the relation of lymphocytosis to immunity. He himself thought that in cancer we were faced with an alteration in the parenchyma of the cells. Everyone was entitled to his own opinion, but for himself he felt that until our knowledge of cell life was more complete we should make no great advance in cancer research.

THE SECONDARY FORMS OF POLYCYTHAEMIA RUBRA AYERZA'S DISEASE, ETC.*

BY

F. PARKES WEBER, M.A., M.D., F.R.C.P.

Cases of secondary lymphocytosis, leucocytosis, or myelocytosis, representing a lymphocytic, leucocytic, or myelocytic reaction of the haemopoietic tissues of the body, have been or may be occasionally mistaken for true leukaemia. So also may a secondary erythrocytosis (polycythaemia rubra), representing an erythroblastic reaction of the bone marrow, be mistaken for true erythraemia—that is to say, for polycythaemia rubra with splenomegaly dependent on an apparently primary myelopathic condition (primary hyperplasia of the erythroblastic elements of the bone marrow). It is open for any one to maintain that, as very many cases of polycythaemia rubra are obviously secondary to known causes, therefore the probability is that all cases of polycythaemia rubra are secondary to some cause, although the cause may be as yet undiscoverable—that, in fact, all cases of polycythaemia rubra are examples of erythrocytosis and are results of an erythroblastic reaction towards the exciting action of some known or unknown "agent." If this surmise be ultimately found to be correct, there will be no primary myelopathic disease left which can be termed erythraemia, and, indeed, the surmise may perhaps be correct. Perhaps it will be also proved that there is no primary myelopathic disease which can be termed leukaemia, and that all so-called leukaemias are really only manifestations of lymphoblastic, leucoblastic, or myeloblastic reactions towards the exciting actions of (as yet unknown) "agents." At present I wish to classify certain conditions accompanied by erythrocytosis (erythroblastic reaction) which may be mistaken for erythraemia—that is, for polycythaemia rubra of unknown cause, apparently due to primary hyperplasia of the erythroblastic tissues.

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* A paper read at the Medical Section of the Royal Society of Medicine on October 25th, 1920.

1. *So-called Polycythaemia Hypertonica, or Hypertonia Polycythaemica* (Geisböck, etc.).—In these cases there is no obvious splenomegaly and the brachial systolic blood pressure is high (usually 180 mm. Hg, or higher), whereas in true cases of erythraemia the blood pressure is not high (usually 120–150 mm. Hg), unless chronic interstitial nephritis is present as a complication. These cases are, in my experience, not very rare amongst the middle-aged male Hebrews of the east end of London. They may be mistaken for neurasthenia at first, and there is perhaps a neuropathic element in the etiology; but whatever the etiology may be, I believe that the polycythaemia rubra is in some way secondary to the high blood pressure, whether the latter is connected with granular kidney (as it not rarely is in these cases) or is an arterial "hyperpiesia" (without organic renal disease) of Sir Clifford Allbutt. Why it is not present in most cases I do not know, unless it represents a peculiar type of vital reaction.

2. *Splenomegalic Polycythaemia Rubra connected with Tuberculosis of the Spleen.*—That this association does really occur has been verified by *post-mortem* examinations, although it is possible that in some cases of erythraemia necrotic foci due to thrombotic infarction, or of syphilitic gummatous nature, have been mistaken for caseous tuberculous lesions. Owing to experimental and clinical observations, there can be no doubt that tuberculous infections do sometimes give rise to a condition of more or less polycythaemia rubra (an erythrocytosis due to secondary erythroblastic reaction) of longer or shorter duration. Tuberculosis in the spleen usually causes enlargement of the organ, and this, together with the just-mentioned tuberculous erythrocytosis, can quite well occasionally give rise to the clinical and pathological syndrome of splenomegalic polycythaemia. Moreover, one of the normal functions of the spleen is apparently to prevent excess of erythrocytes in the blood; and, whether this function does or does not depend mainly on the haemolytic action of the organ, it is certain that the operation of splenectomy (performed on account of injury or disease) is usually followed by increase of the erythrocyte count.* Tuberculosis, or other disease of the splenic pulp, may occasionally in some way upset this normal function of the organ, and thus (somewhat as splenectomy does) produce a rise in the erythrocyte count, quite apart from that due to the activating effect of small quantities of tuberculin in the circulating blood on the erythroblastic elements of the bone marrow.

3. *Secondary Polycythaemia Rubra (of Longer or Shorter Duration), with Splenomegaly, connected with a Condition of Visceral Blood Stasis of Chronic Thrombotic Origin in the Splenic and Portal Veins.*—Some cases of this kind have been clinically mistaken for erythraemia, and even after their true nature has ultimately been cleared up by *post-mortem* examination the term "erythraemia" has still been applied in a symptomatic sense.

Cases of this kind associated with polycythaemia rubra are exemplified by those of Van der Weyde and Van Ijzerem,[1] Lommel (his first case),[2] and Chauffard and Troisier.[3] The splenomegaly of chronic non-suppurative pylephlebitis, or, rather, of obstruction due to chronic thrombo-phlebitis in the portal vein or its tributaries,† is, however, not generally associated with a high erythrocyte count—at all events, not so high as the count often is in typical cases of erythraemia. Moreover, the polycythaemia rubra, when it does occur in these cases, is often present only for a period (cf. the case of Monro and Teacher[4]): it will probably be found to give place to a normal erythrocyte count later on, or to an anaemic condition of actual oligocythaemia rubra. In the latter event the clinical diagnosis is not unlikely to be "splenic anaemia" or "Banti's disease." Patients with thrombotic obstructive splenomegaly of this kind may live a relatively long while. There are usually more or less long intervals during which they seem fairly well excepting for the splenomegaly. One such case—a woman aged 2[illegible] years—I showed before the Clinical Section of the Royal Society of Medicine in 1912.[5] A blood count in July, 1911, had given 4,660,000 erythrocytes and 3,500 white cells, and perhaps the case might have been then taken for (if the term be permitted) "anaemia splenica sine anaemiâ"; there was, indeed, always leucopenia present. But relapses are likely sooner or later to occur with fresh thrombotic trouble in the portal circulation, and attacks of haematemesis may supervene. There were such attacks preceding the fatal termination in my case.[6] In these (thrombotic portal obstructive) cases of splenomegaly it seems to be a question of "individual vital reaction" (individual peculiarity in erythroblastic reaction) whether the erythrocyte count is high (polycythaemia rubra), or normal, or low (oligocythaemia rubra). As in most kinds of chronic non-leukaemic splenomegaly, the count of white blood cells tends to be low (leucopenia). But, whatever the blood count may be, the operation of splenectomy is contraindicated, or certainly not advisable, though it has been performed in certain cases, in which the correct diagnosis was not made until after the operation and the *post-mortem* examination.‡

4. *Chronic "Cardio-pulmonary" Cyanosis, with Secondary Polycythaemia Rubra ("Cardiacos Negros" of Ayerza—"Ayerza's Disease" or "Ayerza's Syndrome").*—Anyone who has seen much of Hebrew patients from the east end of London must have observed a clinical group—mostly males between 30 and 50 years of age—suffering from chronic cyanosis (varying in degree from time to time), with marked dilatation of the blood capillaries and venules (telangiectases) of the face. The condition is, however, certainly not confined to Hebrews, though I think that it is commoner among them than among others. There are diffuse chronic bronchitic sounds present, with evidence of pulmonary emphysema, dilatation of the right side of the heart, and passive congestion of the liver, which reaches down below the ribs. All these signs vary in degree from time to time, and the active bronchitis may temporarily disappear. The spleen, though it may be enlarged in some cases, can seldom be felt below the costal margin by ordinary palpation. The fingers are sometimes clubbed. The brachial systolic blood pressure is not raised (is relatively low rather than high) in cases not associated with chronic interstitial nephritis. Mostly the patient gives a history of having suffered for many years from "asthma" or from recurrent attacks of bronchitis. At last dyspnoea occurs on any slight muscular exertion or becomes continuous, and exacerbations of bronchitis are frequent; the cyanosis becomes deeper, of a dark purple colour; subcutaneous oedema, and often also more or less ascites, develop; signs of carbonic acid poisoning ("bronchite noire") and failure of the right side of the heart precede death. Hypertrophy and dilatation of the right side of the heart are found on *post-mortem* examination; the wall of the right ventricle is sometimes as thick (or nearly so) as that of the left ventricle.

The secondary polycythaemia rubra in these cases may be very considerable, and rival that of erythraemia ("Vaquez's disease") and cases of "congenital cyanosis" (due to congenital malformations of the heart). In at least two of my cases the erythrocyte count reached between 9 and 10 millions per cubic millimetre of blood. The bone marrow in one of my cases was examined after death, and a decided erythroblastic reaction was found present. The total blood volume in these cases has not, as far as I know, been estimated, but by analogy with cyanotic cases of congenital heart disease in adults, I have no doubt that it is above the normal, though, of course, to a much less extent than the total haemoglobin in the body.[7]

In 1913 I collected several cases of chronic cardio-pulmonary cyanosis with secondary polycythaemia rubra in a paper read before the Medical Section of the Royal Society of Medicine,[8] which was also published in French.[9] In this paper I wrote that, in regard to etiology, former abuse of beer or alcoholic drinks sometimes plays a part, in addition to asthma, pulmonary emphysema, chronic (and I might have added recurrent) bronchitis, old bilateral pleuritic adhesions, chronic interstitial pneumonia and pulmonary fibrosis (which last may be partly of chronic tuberculous origin). I had read a French abstract of a paper by Dr. F. C. Arrillaga (Buenos Aires) in 1912, and added: "Arrillaga attributes the onset of the cyanotic stage to the occurrence of secondary sclerosis in the pulmonary artery, but I think that this explanation can only occasionally be the correct one, possibly only in exceptional cases." (Owing, however, to obstruction in the circulation of blood through the lungs in these cases, there is increased blood pressure in the pulmonary artery, as confirmed by the presence of dilatation and hypertrophy of the right side of the heart, and therefore degenerative changes in the pulmonary artery, it must be admitted, are very likely to occur.) I also mentioned that, so far as I could judge, the best marked polycythaemic reactions occurred in individuals (especially asthmatics *) of Jewish race, and at about middle age, when the reactive power in the haemopoietic bone marrow is probably stronger than in old age. A feature of some diagnostic importance in these cases is that the cyanosis and erythrocytosis may exist for a long period before the patient's death.

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* Conversely, A. W. Downs and N. B Eddy have in rabbits experimentally produced a temporary decrease of the erythrocyte count by subcutaneous injections of a protein-free splenic extract.

† The splenic artery may be likewise affected, so that the condition becomes one of a visceral thrombo-angiitis, there being a certain amount of thrombo arteritis as well as thrombo-phlebitis.

‡ On the whole question of chronic thrombotic obstruction in the portal and splenic veins and their occasional cavernous-like (haemangioma-like) transformation owing to compensatory canalisation, etc., cf. the cases and writings of W. Oettinger and N. Fiessinger (1907), F. Dévé (1908), G. Dock and A. S. Warthin (1904), H. Curtis and P. W. P. Lawrence ([illegible]), Sir J. Bland Sutton (1902), W. Risel (1909), E. Bode (1909), L. Pick (1910), M. Versé (1910), M. Simmonds (1912), C. Hart (1913), C. A. Ewald (1913), Sir C. Gordon Watson (1913), Pio Foa, E. Stadelmann (1913), and F. Geppert and K. Siegfried (1914).

Dr. Arrillaga, who read the French translation of my paper (1913), kindly wrote to me (in April, 1913) and sent me a copy of his elaborate medical thesis (National University of Buenos Aires, 1912) entitled "Esclerosis secundaria de la arteria pulmonar y su cuadro clinico (*cardiacos negros*)." He wrote to me that my cases were examples (several of them certainly were) of so-called "black cardiac cases"—"cardiacos negros"—the clinical and pathological condition of which has been described in a clinical lecture, delivered in 1901, by Professor Abel Ayerza (whose pupil he was), of the National University of Buenos Aires; he especially drew my attention to the changes which had been found in the pulmonary artery.

The term "Ayerza's disease" for this group, "cardiacos negros," seems to have been first used in a medical thesis by Dr. C. A. Marty on "La tension arterial en la tuberculosis pulmonar" (Buenos Aires, 1909, p. 45), in which (according to A. S. Warthin—see further on) the author says that there is a special group of cases worthy of attention because of increased pulmonary artery tension associated with hypertrophy of the right heart, pulmonary arterio-sclerosis, and chronic cyanosis, described eight years previously by Ayerza as "cardiacos negros." According to Warthin (see further on), the term "Ayerza's disease" has also been used by Escudero and Garcia del Real, and in 1917 Barlaro (*Rev. Assoc. Argent.*, 1917, vol. xxvi, p. 121) reported a case of "Ayerza's disease" characterized by extreme cyanosis, asthma, intense dyspnoea, cardiac hypertrophy, polycythaemia rubra (an erythrocyte count of 6,600,000), enlargement of the liver, but no palpable enlargement of the spleen, a positive Wassermann reaction, and pulmonary arteriosclerosis. A. S. Warthin's case was described at the thirty-fourth annual meeting of the Association of American Physicians in June, 1919, as "a case of Ayerza's disease: chronic cyanosis, dyspnoea, and erythraemia, associated with syphilitic arteriosclerosis of the pulmonary arteries." The patient was a labourer, aged probably about 43 years. At the end he became very somnolent (I suppose from chronic carbonic acid poisoning). The necropsy showed (amongst the other findings) typical [illegible] of the pulmonary artery and aorta, [illegible] fibrosis and emphysema of the lungs, and extreme dilatation of the right heart. I should regard the so-called erythraemia in Warthin's case as an example of chronic cyanosis with secondary polycythaemia rubra of "cardio-pulmonary" origin, on an old syphilitic basis. I do not believe that syphilis is an essential factor in "cardiacos negros," and do not think it was present in most of my own cases. I think, moreover, that the word "erythrocytosis" (that is, secondary polycythaemia rubra) should be used instead of "erythraemia," because the polycythaemia rubra is obviously secondary and of "cardio-pulmonary" origin.

These cases are probably not likely to be often confused with typical erythraemia (Vaquez-Osler's disease). Nevertheless W. S. Lucas, in his elaborate and excellent paper of 1912,[11] has, I think, described two typical cases (the two original reports in his paper) of secondary polycythaemia rubra of cardio-pulmonary origin (without splenomegaly), that is to say, [illegible] of Ayerza, as examples of erythraemia. It is [illegible], that Warthin, who refers to Lucas's [illegible] of the subject of erythraemia, regarded cases of [illegible] or "Ayerza's syndrome" as examples of [illegible] "erythraemia."

Clinically, the obvious signs of disorder of the respiratory system (and the clubbed fingers when present), the usual absence of evidence of splenic enlargement to ordinary palpation and the very frequent presence of an enlarged liver (chronic passive congestion), should greatly help to differentiate Ayerza's syndrome from cases of true erythraemia.

[illegible] *Secondary Polycythaemia Rubra connected with Congenital or Acquired Heart Disease.*—These cases are so very [illegible] and of such common occurrence that I need scarcely mention them. The cyanotic condition of the blood, [illegible], is the main factor in exciting the erythrocytosis. The spleen is seldom palpable to ordinary clinical examination.

I have now briefly discussed the main groups of secondary polycythaemia rubra which should always be kept in mind in regard to the diagnosis of erythraemia. There are certainly other varieties of erythrocytosis (accompanied or not by enlargement of the spleen), which might be considered in a longer survey of the subject. Another paper could be devoted to the consideration of: (1) The temporary moderate polycythaemia rubra occasionally connected with tuberculosis, especially tuberculosis of lymphatic glands in young adults, with or without slight splenomegaly; (2) a form of "plethoric obesity" with endocrine disturbance, especially in women with positive Wassermann reaction, about the menopause period; (3) temporary polycythaemia rubra in children with inherited syphilis and with more or less splenomegaly, and in some rachitic children with or without splenomegaly.

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THE ACTION OF CHEMIOTHERAPY.*

BY

J. E. R. McDONAGH, F.R.C.S.

Resistance.

To understand the action of chemiotherapy in the body it is necessary to bear in mind that the parasite is attacked indirectly through the host's resisting substance, and not directly by the drug prescribed. The resisting substance is the protein in the serum and the protein which forms the protoplasm of such cells as lymphocytes and their offspring, the plasma cells. The action of the former is general, and of the latter local. The protein exists in the form of particles, which can be best visualized by calling to mind the picture produced when the sun enters a darkened room through a crevice in the blind and shows up the dust as minute motile particles. In the case of the serum the particles move about in a liquid medium, and not only is there a constant interchange between the solution itself and the particles suspended therein, but there is also a rigid balance maintained between the two, known as the normal hydrogen-ion concentration. Any disturbance of the normal hydrogen-ion concentration prevents the particles from fulfilling their functions. If we compare each particle with a man we shall be able to picture its action. A man is a complex machine moving and living, provided he has sufficient oxygen around him. There must be a balance between him and the air, if he is to do his work—the normal hydrogen-ion concentration of the protein particle. When one man is attacked by another man—the parasite—he will endeavour to overcome him by adjusting things around him and by calling others to his assistance, if the intruder has not been vanquished in the first onslaught. The same with the protein particle: it is ever ready to resist invasion unless its oxygen supply has been lessened by such substances as alcohol, etc.—hence the reason why a patient under the influence of alcohol is more likely than one sober to contract a venereal disease. Should the parasite win its first encounter and become implanted in the host, it has to guard its own oxygen supply very jealously, as it and its comrades are far outnumbered by the protein particles, which by this time have called others to their assistance. The fight between the parasites and the protein particles can be compared with trench warfare, as the fight is a surface one with an interspace between, like no-man's-land, and the fight is one of electrical neutralization, which corresponds to the arms of human combatants. The parasite exhibits on its surface not the oxygen necessary for its existence, but the means whereby this supply of oxygen is maintained. The host's protein particles, on the other hand, exhibit their oxygen on the surface, as there is not the same need to conserve it. As the oxygen on the surface of the protein particles electrically neutralizes the hydrogen which maintains the supply of the parasites' oxygen, then, provided sufficient of this oxygen is to hand, the parasites' means of living will be cut off and they will perish. This is the warfare practised in all parasitic invasions, but is only successful, generally speaking, from the host's point of view, in staphylococcic and streptococcic infections. As parasites became more advanced, they protected themselves by forming impregnable capsules and spores, while others have entered the cells of the host they were attacking, which have rendered them wellnigh invulnerable. The cancer parasite, which I take to be the host's cell itself, so physically altered as to become parasitic on its surrounding fellow creatures, has so far resisted all attempts to overcome it. The protein particles have advanced also in their methods of attack by increasing in number and size, and by building up their structure to approach as near as possible to that possessed by the parasite. These manœuvres not only enable more of the drug prescribed to be taken up by the particles, but they intensify the surface action between the parasites and themselves, just as two pieces of wood will fit better when dovetailed than when merely placed side by side. Should none of these efforts suffice to vanquish the parasites, and should the particles have spent themselves in forming their surface oxygen by the usual methods, they are obliged to resort to indirect methods to produce this oxygen, and this they do by calling into play their reducing action. It is the reducing action which prevails on the surface of the parasites and which conserves their oxygen beneath; therefore when the host's protein particles call upon their reducing action —the circumstance which marks the chronic stage of an infection—they themselves approach to the conditions under which the parasites are living. If the fight be mainly local, what has taken place in the protein particles of the serum takes place in the attacking cells. Should such cells still be unable to overcome the enemy, they are liable to undergo changes (nuclear division and nucleolar activity) in which the nucleoli, by division and budding, attempt to achieve what the cells themselves have failed to do. These changes destroy the relationship between such cells and those surrounding them as to make the former parasitic, and this is the way in which I think that chronic inflammation may lead to malignant disease. Therefore, in attempting to overcome an infection, the attacking cells may themselves become parasitic.

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* [illegible]

* A paper read before the Suffolk Branch of the British Medical Association, [illegible], 1920.

Oxidation and Reduction.

We must now discuss the maintenance and increase of the oxygen on the surface of the protein particles. The surface active oxygen, which appears most likely to be a modified hydroxyl group, with a negative electric charge, is maintained in the human body by the action of iron. In certain invertebrates copper fulfills this purpose, and in plants manganese. The metal acts as a catalyst—that is, it can produce an enormous amount of active oxygen without itself being used up in the process, but it requires a medium to work upon before its work is done, and success is not achieved in every case, partly because this medium is destroyed in the process. Most metals act as oxidizing agents, though with varying degrees of activity, but as most of them are particularly apt to destroy the medium just mentioned, toxic manifestations are liable to follow their use. The medium is formed in the reducing action—an action regulated in all plant and animal life by sulphur, a non-metal, and enhanced by iodine. Just as a metal forms oxygen in the form of hydroxyl, sulphur forms hydrogen which possesses a positive electric charge. The action of this hydrogen is to convert the metallic compound formed in the oxidase reaction back into the form in which it acts as a catalyst. Hence destruction of the hydrogen on the surface of the parasites by the hydroxyl group on the surface of the protein particles by electrical neutralization robs the parasites of their means of keeping up the active oxygen necessary for their existence. It will now be clear from these few sentences why metals are indicated before non-metals in the acute stage of an infection, and non-metals before metals in the chronic stage, why in *both* stages both metals and non-metals have their right place, and why a metal is an antidote for non-metallic poisoning, and a non-metal for metallic poisoning.

Chemotherapy.

We now come to discuss the choice of the element and the form in which it should best exist. Iron was one of the commonest metals which was found on the earth's crust when the ball of elements in the gaseous state had condensed on the surface so far as to render life possible. As iron has two hydroxides which are readily reversed by hydrogen, it is not to be wondered at that cellular activity was largely bound up with the metal iron, and that iron is the metal to-day which regulates the oxidizing action of our protein particles. The only other metal exactly akin to iron is manganese, hence my reason for having introduced this metal for the treatment of acute coccal infections. The action of a metal depends upon the amount which the protein particles can take up. The particles can take up little or none if the metal is incorporated in the form of a simple salt, it can take up much if in the simple colloidal form, and more still if the molecule be so increased in size and form as to approach that of the protein particle itself, just as the surface action between the protein particles and the parasites is increased as the former build up their molecules to simulate those of the latter. This is called an homologous stereo-chemical molecular configuration, and it is the cause of specificity. As the number of protein particles produced bears a ratio to the kind and severity of the infection—being few if the parasite is lowly developed and numerous if it is highly developed—it can readily be understood that the state in which the metal is needs to be more complex in protozoal infections than in bacterial infections. As the response on the part of the host is less the more lowly the organism, and as metals, if used in too large doses and too frequently, destroy the patient's protective substance, it becomes clear why simpler products should be used in bacterial than in protozoal infections, and why in all cases, especially in the former, so much attention should be given to the dose and frequency with which the injection is prescribed. In acute staphylococcic and streptococcic infections colloidal manganese, now supplied in the form of trimine, has produced results which far exceeded my expectations; but not more than three injections should be given at a time, and it is rarely necessary to exceed a dose of 2.0 c.cm. Trimine contains iron and zinc in addition to manganese; my reason for making this change was because I found that three injections of three different oxidizing agents gave better results than three injections of any one. When we come to gonorrhoea, we find that trimine is useful, especially in the acute stage of complications, such as periurethral abscess, cowperitis, prostatic abscess, and epididymitis, but not generally so efficacious as in the simple coccal infections. This is due, in my opinion, to the fact that the gonococci quickly take on an intracellular habitat, and live at the expense of the polymorphonuclear leucocytes, not vice versa as is usually thought to be the case. I take phagocytosis to be a laboratory phenomenon, and not one which occurs *in vivo*. The function of the polymorphonuclear leucocytes is to remove from the battlefield the bodies of organisms which have been killed in the way already described.

As gonorrhoea is a disease which is so likely to be contracted if the patient is under the influence of alcohol, owing to the effect alcohol has in depressing the oxidizing action of the protein particles, I introduced colloidal palladium for use in the acute stage of a first infection, with excellent results in those cases which are caught early enough. Palladium was chosen in view of its extraordinary power in temporarily occluding several thousand times its own volume of hydrogen—an action which might naturally be expected to increase for a time the oxidizing effect of the protein particles. The gonococcus is the organism *par excellence* for giving rise to the formation of fibrous tissue. Fibrous tissue formation is a sign that the infection has reached the chronic stage, and often—to use a loose term—that the blood is too acid. As this synchronizes with an increased reducing action of the protein particles, and as in the chronic stage of an infection relatively more of the drug prescribed has to be taken up before the effect desired is produced, it became necessary to have a preparation of a non metal with as large a molecule as possible, so as to enable the protein particles to take up the maximum quantity of the element. For this purpose I introduced intramine, which is an amino-compound of sulphur. Intramine has given results in gonorrhoeal rheumatism and in the chronic stage of gonococcal complications which can be achieved by no other preparation in use at present, and it is many times more powerful than plain colloidal sulphur, just as arseno-benzene is infinitely superior to plain colloidal arsenic. Iodine acts by increasing the sulphur metabolism, owing to the effect it has in converting a substance (mercaptan) formed in the reducing action back into catalytic sulphur. In other words, iodine doubles the action of sulphur, and acts in the reductase reaction as does hydrogen in the oxidase reaction. Owing to the disadvantages of the salts of iodine and to the inefficacy of most of the organic preparations, I introduced colloidal iodine, which can be injected intravenously in the same form as it is taken internally without ever producing symptoms of iodism. There being no specific action in my oxidation and reduction theory of chemiotherapy, it will be clear why intramine should be so valuable in the chronic stage of all infections, in the late stages of syphilis, in metallic and other acid intoxications, and applied locally to indolent and chronic sores. In mercurial and arsenical poisoning the combination of colloidal iodine and intramine will cause almost instantaneous amelioration, and it has already saved many lives. The use of intramine in early syphilis rids primary sores of their induration and diminishes the incidence of neuro-recurrences, while in certain forms of late syphilis—glossitis, for instance—intramine will frequently achieve what arseno-benzene has failed to do. The reason why arsenic was chosen for the basis of chemiotherapy was [illegible] of the easiest metals to work with; it has no specific action, and I am sure if suitable organic compounds of iron and manganese could be produced, no more arsenic would be employed, and we should be saved the hundreds of cases of arsenical poisoning which are occurring, and the [illegible] increase of nervous syphilis would be reduced to a minimum. The reason why arseno-benzene appears to be so efficacious in syphilis is merely because [illegible] more protein particles formed in this than in any other [illegible] consequently large amounts of a drug can be taken up, and the oxidizing action of the protein particles can be increased to the maximum. Mercury acts in syphilis in the way it does, first, because of the increased [illegible] and size of the protein particles in this disease, and secondly, because in virtue of its high atomic weight it has the properties approaching those of a colloid, and is therefore readily taken up by the protein particles. Any [illegible] high an atomic weight or higher will [illegible] the effect on a syphilitic lesion which mercury does. [illegible] will, for instance. This is probably the [illegible] radium, which have a high atomic weight, are useful in malignant disease. In treatment [illegible] destroying the patient's [illegible], which is so easily done by using too large doses and prescribing too many injections, will give the [illegible] the upper hand. Hence the reason why we are seeing so many cases of syphilis [illegible] which seem to get [illegible] and mercury is given, and [illegible]

[illegible]

[illegible] October, 1918, to March, 1919, [illegible]

[illegible] work on cataract.

THE EFFECTS OF THE EMOTIONS ON GASTRIC SECRETION AND MOTILITY IN THE HUMAN BEING.

BY

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DURING the past year the fractional method of gastric analysis, first introduced by Rehfuss in the United States, has been employed by one of us (T. I. B.) in conjunction with Dr. J. A. Ryle, in an extensive investigation into the secretion and motility of the gastro-intestinal tract in health and disease. The wide possibilities which the method offers for physiological research were soon apparent, and the present communication is a preliminary report concerning one branch of the inquiry.

That the emotions can moderate digestion to a notable degree has long been recognized; the work of Cannon on frightened animals, and Pavlov's observations on appetite juice are the best known examples. But the present is, we believe, the first occasion on which these effects have been demonstrated on the human subject, and we hope that this communication may lead others to continue an inquiry which, owing to the method employed, allows accurate data to be collected concerning emotions which cannot be evoked in mere animal experiments.

The Method.

The subjects of our experiments were all healthy medical students from the Physiological Department of Guy's Hospital. All experiments were carried out in the morning, beginning at 9.30 o'clock, the subject having taken nothing by the mouth since the previous evening.

In each subject the normal curve was first ascertained; a gruel meal was given, made by boiling two tablespoons of oatmeal in a quart of water until the bulk was reduced to one pint and then filtering through muslin. Samples of the gastric contents were then withdrawn every quarter of an hour through the Rehfuss tube, and the percentage of free and total acid estimated and plotted in a curve. Careful histories were taken from all cases in order to ascertain the most suitable emotive disturbance to be evoked. Each subject was several times interviewed and a light degree of hypnosis produced before the final experiment. The subject's normal curve and emptying rate being established, the latter by finding, by means of iodine, the point at which starch disappeared from the samples of gastric contents, he was told to come up, again without food or drink, on a subsequent morning. On arrival the Rehfuss tube was swallowed and the gruel meal given, the first few specimens were drawn off at the usual times and the subject was then hypnotized. One of us (J. F. V.) then made suggestions appropriate to evoke the required emotion, whilst the other continued to withdraw gastric samples at the regular intervals. Hypnosis was never continued for more than half an hour, nor was it ever pressed to a deep degree. The subjects were always able to remember everything that had happened and had been suggested to them, but were never informed before the experiment as to what emotion was going to be suggested.

It is not possible at the present time to give any precise definition of the hypnotic state; at the depths to which it was carried in our experiments it is very closely analogous to light sleep, the subject has cut off his sensory receptive system from all external stimuli, save those reaching him, via his ears, from the observer. His voluntary musculature receives no efferent impulses from his brain, which for the time being occupies itself solely with the transmission of those reflex and involuntary impulses which result from the suggestions of the observer.

After the hypnosis, on waking up, the subject passed the remainder of the morning in a manner as similar as possible to that of the previous [illegible] that is, he read a newspaper [illegible] on indifferent [illegible]. Specimens of the gastric contents were still withdrawn every quarter of an hour, [illegible] was empty. In this manner two curves were obtained, the first being the normal curve for the individual, the second [illegible] the suggested emotion. The emptying rate was also carefully recorded in each case.

Results.

1. *[illegible]*.—The subject selected for this experiment was a healthy man of athletic type, for experimental

purposes he had the advantage of possessing a motile stomach which normally empties itself of its gruel meal in three quarters of an hour. His normal curve being established, he was, after the meal, told that he was feeling exceedingly sick, with no tendency to vomit, but a perpetual intense nausea. On waking from the hypnosis he was able to give a clear account of his sensations and still felt rather sick; but this soon passed off and on the conclusion of the test meal he was able to eat a hearty meal as usual.

Fig. 1 shows the result of this experiment; it will be seen that the usual sharp rise in acidity is completely inhibited, only at the conclusion of hypnosis does it rise appreciably, but it then rises more rapidly than normally, and the last few drops of gastric contents were markedly acid. The alteration in emptying rate is equally marked; in the specimen withdrawn at the end of hypnosis there was a large proportion of gruel, though this subject's stomach is normally empty by this time. The effect is, probably, an example of pure sympathetic inhibition, the pyloric sphincter being tightly closed and the secretion of HCl checked by the emotion; the subsequent rise in acidity will be understood by reference to the law given in the next section.

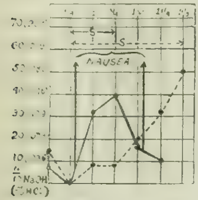


FIG. 1.—Effect of suggested nausea on gastric acidity and motility. Free HCl only plotted. Continuous line - normal curve. Broken line - experimental curve. Rate of emptying shown thus ← - S —→.

2. *Hunger.*—Our procedure was similar to that in the previous section, except that intense hunger was suggested. In preliminary experiments we had exhibited attractive food, had cooked eggs, etc., in the presence of subjects undergoing fractional tests, without ever having produced any definite alteration in their acidity curves. Salivation was indeed freely provoked, but even when the mouth was filled with absorbents so as to check the swallowing of saliva, no psychic flow from the stomach could be proved.

The first experiments we made with hunger suggested under hypnosis produced similar negative results, a curve apparently identically the same as the normal curve being produced. We then tried the effect of suggesting the satisfaction of hunger; the subject was told that he was enjoying the sensations experienced after finishing the first hearty meal for a long time. Again our results were negative. We then noticed that although the acid curve had not been appreciably affected by the hunger suggestion, there was in all these cases a notable quickening of the emptying rate.

We repeated our experiments, making the hunger suggestion at a rather later point, at a moment when the subject's normal curve is beginning to rise; we now got positive results, the most striking of which is shown in Fig. 2. Now, though the increase in acidity is marked in this case, the increased rapidity of emptying is perhaps still more striking.

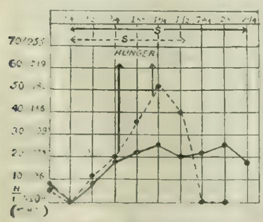


FIG. 2.—Effect of suggested hunger on gastric acidity and motility.

It was the consideration of these cases which led us to recognize the following fundamental law:

> "In a stomach which is secreting hydrochloric acid, any increase in the rapidity of emptying will by itself determine an increase in the acidity of the contents."

An examination of Fig. 3 will make this law evident. If the stomach be regarded as a reservoir fitted with a tap (the pylorus), and if the oxyntic cells be regarded as a second reservoir pouring acid into the main one, it is evident that if the main contents are escaping rapidly through the pyloric tap, their acidity will more rapidly increase than if the total bulk of the contents diminished more slowly.

Obvious though this conception be, it has hitherto escaped the attention of all the physiologists and gastrologists to whose work we have had access. This law accounts for our failure to cause an increase in acidity when the hunger suggestion was applied before the acid secretion was at its height. It also accounts for the marked rise of acidity following the removal of the nausea suggestion shown in Fig. 1.

A further interesting question raised by these experiments is that of the mechanism of the normal sensations associated with hunger. Carlson, in his admirable work on *Hunger in Health and Disease*, proves clearly that the sensation of hunger arises normally at the time when the normal peristaltic waves of the empty stomach are changed to a series of much more vigorous contractions. These contractions he regards as the primary factor causing the sensation. Our experiments show the reverse of this; they demonstrate clearly that when the brain is filled with the conception of hunger, vigorous gastric peristalsis is the result. In our opinion there is nothing contradictory in these results; what could be more logical than that so complicated a reflex should be reversible? The timid traveller sees a robber behind every bush.

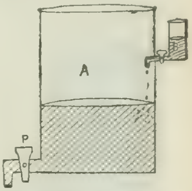


FIG. 3.—Diagram to illustrate the effect of rapid emptying on acidity. A, Stomach; B, Oxyntic cells; P, Pyloric tap.

3. *Anxiety.*—The effect of rage and fear on the gastric functions has long since been observed in animals; our observations can accordingly claim no originality beyond that of their method. We were lucky in this branch to secure the co-operation of two gentlemen who served with distinction in the Royal Flying Corps during the late war. Both were in good health, and had been discharged fit from the service; but both of them had, during their war experience, had sufficient association with extreme danger to know the meaning of the word anxiety. They had, in fact, "crashed" at various times, though happily without receiving serious permanent injury.

A curve from one of them is here shown (Fig. 4); under hypnosis it was suggested to him that he was again flying, that the weather was foggy, and that he was forced to attempt a landing, although in the vicinity of an enemy town. On recovering from the hypnotic state he said that he had "had the wind up" badly; indeed, he and his companion felt the physical effect of the suggestion for some hours afterwards, although very amused at the experiment. A strong sympathetic inhibition is seen in the curve, with a notable delay in the emptying rate, but the preliminary rise in acidity is less easily explained; can it be that the immediate effect of a hyperadrenalism caused by anxiety is a quickening of peristalsis, to be followed by arrest?

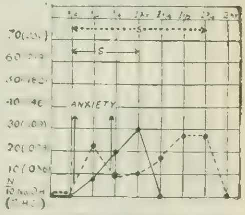


FIG. 4. Effect of suggested anxiety on gastric acidity and motility.

Such experiments as this last cannot, we feel, be frequently repeated on one subject without risk of establishing a noxious reflex; we have accordingly, with suggestions of this nature, limited our experiments to a single one in the case of any particular subject, taking care at the end of hypnosis to remove the suggestion as fully as possible. This has naturally limited the aggregate number of our results.

Further investigations, dealing with other emotions, are in progress.

In conclusion, we would here like to express our indebtedness to Messrs. Stoker, Currie, Taylor, Greenwood, Mitchell, Moffatt, Powell, Lane, and Wornum, of the physiological department of Guy's Hospital, without whose intelligent and often devoted co-operation this work could not have been attempted.

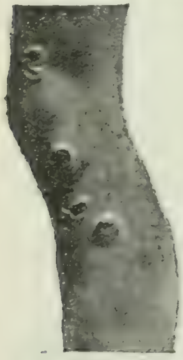
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF CASTELLANI'S ACLADIOSIS.

On June 8th, 1920, a Chinese coolie, working in a local rice mill, entered the out-patient clinic of the Central Hospital.

Clinical History.—About four months ago he first noticed a small red spot below the left knee; there was a very slight amount of itching but no pain, and within a month this spot had increased in size and developed into an ulcer. Several other spots appeared within the neighbourhood of the first one and passed through the same stages. At no time was there much discomfort, and only a very slight amount of itching. Upon close examination, lesions that very closely resembled yaws were observed on the left leg, as shown in the illustration. They were covered with a thin yellow scab, which revealed upon removal a collection of thick creamy pus. After thorough cleansing the lesions presented, instead of the mulberry appearance of yaws, a sharp depression of a red granulating tissue. The borders of these ulcers were clearly defined, with a rounded surface of normal tissue. There was no gland involvement whatever, and the rest of the body was free from any skin trouble. The blood examination was negative, except for a slight leucocytosis. The urine examination was negative. The physical examination except for the skin trouble was also negative.



[illegible] Various media were inoculated [illegible] and gave a creamy [illegible] in the course [illegible] also abundant. [illegible] the presence [illegible] The [illegible] micro- [illegible] in a future publication.

Large doses of mixed iodides and daily dressings at the clinic produced rapid and satisfactory results.

REFERENCES.

[illegible] Royal Society of Medicine, [illegible] Manual of Tropical Medicine, 1919, [illegible]

R. W. [illegible], M.D.,
[illegible] M.O. [illegible]

GUNSHOT IN THE APPENDIX.

The case reported by Dr. Leigh Spencer in the British Medical Journal of August 28th, 1920, is very similar to one I have just encountered.

[illegible]

operation was painless and rapid, and his colour and appearance are now much improved. Weekly examinations of his urine during the last six weeks have only once shown a trace of albumin and pus, and make me wonder if absorption of lead might have caused his condition.

From the state of his appendix at the time of the operation it seems remarkable that the patient had had no definite symptoms attributable to it; it was a lucky chance that it was discovered in time. He had eaten largely of game for many years.

Leeds. R. H. HALL, M.A., M.B.Camb.

Reports of Societies.

EFFECTS OF EXPOSURE TO RADIUM BROMIDE.

At a meeting of the Section of Pathology of the Royal Society of Medicine, held on October 19th, the President, Professor W. S. LAZARUS-BARLOW, M.D., delivered an address upon "Some pathological effects of exposure to the gamma rays of 5 grams of radium bromide." The large quantity of radium in question had been entrusted to Professors Lazarus-Barlow and Russ and the late Mr. Cecil Lyster for experimental purposes at the Middlesex Hospital. The entire report will be presented, when completed, to the Medical Research Council, by whom the loan was made, and by whose courtesy the present interim communication was possible. For the results now brought before the Section Professor Lazarus-Barlow alone was responsible. They were derived, in the main, from the histological examination of 20 frogs, 28 rats, 15 rabbits, and 9 cats. The address was illustrated by macroscopic and microscopic specimens and by lantern slides.

In respect of the lethal effects of gamma rays, it appeared that primary and secondary changes in the animal must be distinguished. A rat would die, if exposed continuously to the 5 grams, in about forty-eight hours, but he would also die about forty two hours after an exposure of six hours. Making allowances for distance from the source of irradiation, the minimal lethal dose of gamma radiation from this quantity of radium for the rat was about six hours, for the rabbit nine to ten hours, for the cat five hours, and for the frog some ninety six hours. Marked changes were seen in the blood, notably a diminution in number of lymphocytes. This was to be correlated with the presence of much nuclear débris in lymphatic glands and spleen in cases killed immediately after exposure, and with a marked cellular deficiency in the same organs in animals that had survived some days. This disappearance of cells was associated with a measurable diminution in size of the spleen. Hence it was now necessary to add irradiation to pressure and to disuse, as a cause of atrophy. Erythrocytes also diminished in number, and haemorrhages occurred in gastric and intestinal mucosae and in bone marrow. To a large degree the blood changes in animals were reflected in man.

In striated muscle a deposition of lipoid and loss of striation were sometimes noted, and a translucency of fibres was frequent. In unstriated muscle a vacuolation was not uncommon that generally affected the contractile material but also involved the nuclei. Cardiac muscle usually showed no change unless the exposure was very severe, but under this condition translucency of fibres, loss of striation, and great fragmentation might be found. In liver, nuclear and cytoplastic changes were often present. The nuclei might be ghost like, or represented by no more than a few granules of chromatin, and the cytoplasm might disappear almost entirely. The two conditions were apparently independent, and it was frequent in liver of animals or in new growths of man after exposure to this high degree of gamma irradiation to find the cell represented by a well marked cell membrane and a well marked nucleus, with a considerable space between the two. In kidney, the cells of the convoluted tubules were chiefly affected. In the cat, but in none of the other animals examined, the renal cells in this region were almost completely converted into lipoid, but the glomeruli and the cells of the conducting tubules showed no trace of lipoid. In the frog, the glomeruli seemed to be damaged to the greatest extent. Over the gastro-intestinal tract there was widespread disintegration of the mucosa associated with pronounced formation of mucus. The disintegration concerned the duodenum, jejunum, and upper part of ileum in particular, and the increased formation of mucus concerned the colon and rectum, and, to some degree, also the stomach.

Our knowledge of the effects of *x* rays upon the generative system would lead to the supposition that testicle and ovary would be profoundly affected by the large degree of irradiation in question. In point of fact this was not the case. There was an arrest of spermatogenesis and some impaired staining of spermatozoal heads in the male; and, in the female, the primordial ovules and Graafian follicles appeared to be the seat of a change resembling coagulation necrosis. But these effects were not associated with pronounced histological features. Probably the explanation lay in the relatively short survival of animals that underwent a prolonged exposure to the 5 grams of radium bromide.

OBSTETRICS AND GYNAECOLOGY.

At a meeting, held on October 7th, of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, the President (Professor Henry Briggs) read a short communication on a spoon-shaped, depressed fracture of the right frontal bone treated by elevation. He had recently been associated with Dr. W. McIntyre Brown and Mr. Craig Dun in the treatment of a female child which, after instrumental delivery, weighed 9 lb. and on the seventh day showed a spoon-shaped fracture of the right frontal bone, 2½ in. by 1½ in.; and ½ in. deep. There were no signs of cerebral pressure or irritation; the bulk of the depression was below the hair level and produced a most unsightly deformity.

Since no spontaneous elevation had occurred during three weeks Mr. Craig Dun decided on operation. Under ether two half-inch incisions were made in the upper part of the frontal bone, on either side of the depression, so that both lay in the hair-covered area. The incisions passed through the scalp and the thin membranous bone, which was easily cut with the knife. By means of two flat-bladed periosteal detachers, slightly curved upwards towards their ends, and inserted simultaneously through the incisions, the depressed bone was levered up. The small skin incisions were closed with a few horse-hair sutures.

No shock nor signs of cerebral disturbance followed the operation. Healing of the incisions occurred normally, and the result was most satisfactory.

Dr. McNair described a case of placenta praevia with vasa praevia, delivered by Caesarean section.

The patient, aged 39, was admitted to Guy's Hospital for haemorrhage in the thirty-fifth week of her hitherto uncomplicated first pregnancy. She was first seen by Dr. McNair after a plug had already been inserted in the vagina, the membranes having already ruptured. The patient was blanched and the pulse rate 140; the presentation was a vertex, and the fetus was alive; the cervix was rigid and dilated only to one finger, and a marginal placenta praevia was felt. Haemorrhage was profuse, and, after considering alternative methods of treatment, Dr. McNair decided to perform Caesarean section under gas and oxygen anaesthesia. The child was delivered in a condition of white asphyxia from which it was resuscitated, and mother and child subsequently recovered. Examination of the after birth showed that with a marginal placenta praevia there was a velamentous insertion of the cord so disposed that the spread-out vessels lay over the internal os, and also that the rupturing of the membranes had resulted in the tearing of a large vein.

The survival of the fetus was regarded as remarkable.

Professor J. M. Munro Kerr gave a short communication on the surgery of uterus bicornis unicollis, with a case of resection of the uterus followed by two normal pregnancies. After describing two cases of asymmetrical bicornual uterus, he discussed the variety of this malformation in which the two halves were symmetrical. He drew attention to the plastic operation for the condition, and recorded a satisfactory case of his own where resection was followed by two pregnancies.

The patient had had two abortions, and after the second curettage he obtained her permission to resect the uterus, as he had found on examination that the two halves were symmetrical. He excised a portion of each horn, and carefully stitched the two halves together. Some months later the patient became pregnant, with a first stage of labour lasting eighteen hours. When the second stage had continued for two and a half hours the patient was delivered with forceps, for fear of a rupture, but the pelvis was flattened and delivery difficult; the child was born asphyxiated, and lived only twelve days, dying as a result of cranial injuries. Professor Munro Kerr inserted his hand into the uterus to determine the condition of the cicatrix, and felt a longitudinal ridge running vertically along the anterior and posterior uterine wall.

Professor Munro Kerr described the technique of the operation, which could only be performed when absolute symmetry was present. The suture used for the principal stitches was linen thread, and for the intermediate stitches fine catgut. Professor Munro Kerr also gave a communication on the intravesical repair of inaccessible vesico-vaginal fistula.

Professor Briggs then delivered the President's address, taking as his subject "The female pelvic floor." He reviewed the past literature on the subject, and lucidly epitomized the views of Hart, Symington, and Thompson. He disagreed with the former writer's view that the rectum and bladder should be considered as parts of the pelvic floor, and deprecated the tendency to belittle by exclusive advocacy of any one constituent the harmonized co-operation of all the constituents of the pelvic floor.

STERILITY IN WOMEN.

At a meeting of the West London Medico-Chirurgical Society, held on October 8th, a paper was read by the President, Dr. F. J. McCann, on "The prevention of female sterility." He said that the observant family practitioner, from the nature of his calling, was destined to play a most important part in the study of the beginning of disease, the influence of heredity, habits, and environment. The potency of the male as regards coition and fertility should always be ascertained before treatment of the female was begun. The principal cause of male sterility was gonorrhoea, a preventable disease. Sexual incompatibility could neither be foreseen or prevented. Possibly the spermatic fluid was more than a germinating fluid and helped to bring about that evenly balanced interaction between the endocrine glands which favoured fertility. The failure to bring about this interglandular equilibrium might be the explanation of sexual incompatibility. Improvement of the general health, change of scene, of diet, or habits, were often of service in curing sterility. Extreme leanness and obesity, too, were sometimes factors favouring sterility and should be treated. Alcohol, though stimulating sexual desire, often interfered with the proper performance of the sexual act, apart from the far-reaching effects on the internal genital organs—for example, chronic metritis. Gonorrhoea was a potent cause of sterility in women. The speaker supported those who urged prophylactic measures, and referred to the thoroughness with which these measures were employed in the American army. If efficiently carried out the case for prophylaxis was overwhelming. Syphilis, though not a direct cause of female sterility, was a formidable destroyer of infant life and was largely a preventable disease. In connexion with gonorrhoea, women should be taught that the use of the syringe was dangerous, and medical men should remember that in the presence of this disease the passage of a uterine sound or curettage was also dangerous. When the abdominal ends of the Fallopian tubes were sealed, they could be opened up and fertility result. In properly selected cases this operation yielded gratifying results. When uterine or ovarian tumours were encountered in association with sterility, conservative measures should always be employed. Tuberculous infection of the tubes and ovaries was another potent cause of sterility, and much could be done to prevent this result by early treatment. Involvement of the uterine appendages in infections of neighbouring organs—for example, appendicitis and sigmoiditis—was yet another often preventable cause of sterility. The speaker urged early operation for these conditions before the tubes became occluded or the ovaries involved beyond recovery. Menstrual disorders should be treated early, as they were frequently due to causes easily removable, which, if neglected, often resulted in sterility. Sexual excess must be discouraged, and so also should the various means of preventing conception; these were all injurious to the female. The rare examples of true congenital malformation of the genital organs should not be overlooked; sterility due to these causes was of course incurable.

TREATMENT OF CHRONIC NON-INFECTIOUS DISEASES.

The first meeting of the session of the Sheffield Medico-Chirurgical Society was held at the University on October 14th, when Dr. F. J. **Sadler**, Physician to the Beckett Hospital, Barnsley, delivered the presidential address on the treatment of chronic non-infectious disease by modern methods. Dr. Sadler first referred to the importance of the diagnosis and treatment of chronic intestinal poisoning in its earliest stages. Following the recent writings of Danysz, the treatment was discussed under three headings: (1) The discouragement of the intestinal flora, whose excess or increasing virulence was the source of the toxins which did the damage, by the administration of intestinal antiseptics—for example, ichthyol, salol, benzo-naphthol, in addition to purgatives. (2) Neutralizing the poisons which had passed into the blood by injecting various forms of protein, whether intravenously or otherwise. (3) Making good an endocrine insufficiency, which might be the first cause of departure from health, by the administration of thyroid, suprarenal, or other endocrine gland extracts.

The value of intestinal antiseptics was illustrated by reference to numerous cases, one of which, a case of chronic parenchymatous nephritis, was described in detail. The albuminuria diminished and the general state improved during the administration of ichthyol in 2½ gr. doses twice daily, this treatment having been started only when improvement had ceased under the ordinary methods. The treatment of arthritis, sciatica, lumbago, neurasthenia, and chronic dyspepsia by doses of 10 to 50 million of killed *B. coli* had given satisfactory results, but had failed in a case of chronic nephritis in which ichthyol did good. Numerous instances were given in which the administration of thyroid extract had proved most satisfactory, more especially cases of neurasthenia, and climacteric disorders of women. In a number of cases of deafness this treatment had also brought about material improvement. In many cases a combination of these various methods had been found to give the best results.

The Leeds and West Riding Medico-Chirurgical Society held its first meeting of the new session at the General Infirmary, Leeds, on October 15th. The opening address was delivered by the President, Dr. F. H. **Mayo**, who dealt with some of the advances which had taken place in the practice of medicine during his own experience, and concluded by a reference to some of the problems which confront the profession in connexion with the proposed scheme for public health as outlined in the interim report of the Consultative Council. A hearty vote of thanks to the President for his address was passed, on the motion of Dr. [illegible], seconded by Dr. C. **Richardson**. A number of interesting cases and specimens were shown, including a specimen of fused kidneys situated in the right renal pouch, exhibited by Professor M. J. **Stewart** and Mr. S. D. [illegible]. The kidneys possessed separate pelves and ureters, the ureter of the fused kidneys opening into the bladder in the normal situation of that of the left kidney.

The annual meeting of the Pathological Society of Manchester was held in the Department of Pathology, Manchester University, on October 8th. Dr. A. [illegible] took the chair on his election as President for the year 1920-21, and expressed the hope that the society would play an increasing part in bridging the gulf between the whole-time pathologists and those engaged in clinical work. After the election of officers for the coming session, Professor [illegible] demonstrated specimens from a case of carcinoma of the [illegible], with secondaries in the heart and [illegible]. Mr. **Garnett Wright** showed a [illegible] of the liver removed by operation. Mr. [illegible] demonstrated a specimen of [illegible] of the pelvis of a hydronephrotic kidney of [illegible], and Mr. [illegible] showed two specimens of adeno-sarcoma of the kidney removed from young children.

[illegible] for the purpose of [illegible] public health, school hygiene, and allied subjects [illegible] at [illegible], Charlottenburg, and [illegible].

Reviews.

THE "NEM" SYSTEM OF NUTRITION.

For English readers, and indeed for all medical and scientific readers, the chief interest of the textbook of nutrition,[1] recently published in Vienna by Professor **von Pirquet** and Dr. **Mayerhofer**, will be the sections dealing with the "Nem" system of nutrition and its successful and economical application to the feeding of large communities, children or adults, in Austria. The book, which is concerned with all aspects of feeding, especially from the practical standpoint, consists of ten separate sections, each from the pen of Professor von Pirquet or of one of his colleagues. A short summary of the physiology of nutrition is contributed by Dr. E. Mayerhofer, who also gives a full descriptive account of all articles of food commonly consumed in Central Europe—their origin, method of preparation, conservation, and adulteration. The remaining chapters of the book describe the way in which the "Nem" system has been applied to cope with the food deprivation and under-nutrition in Vienna. The organization of a kitchen arranged to feed 10,000 children daily with a meal of fixed calorie value is described by Dr. Nobel and Frl. Helene Czimeg. Dr. Richard Wagner gives particulars of the method of control by which cooked dishes are sampled and analysed for fat content and dry weight. Other experts deal with the general control of food supplies for mass feeding and with the installation of large kitchens, the "Nem" system pervading all.

The principles upon which Professor v. Pirquet's "Nem" system is based are well summarized in a short chapter by Dr. E. Nobel. It was described fully in the three volumes of Professor Pirquet's *System der Ernährung*, published respectively in 1917, 1918, and 1919, but this book does not appear to have been noticed by many English readers, and it may not be out of place to recapitulate the salient points of the system. The "Nem" system may be described as a series of practical measures by means of which the feeding, whether of the individual, the family, or the community, may be regulated in strict accordance with the energy requirements. Such a system, therefore, naturally divides itself into two sections: (1) Determination of the energy value of the food as consumed, and (2) determination of the energy needs of the individual at all ages and under all circumstances. Professor Pirquet, for various reasons, has adopted a new unit of energy value of food in place of the calorie—namely, the "Nem," which is the energy value of 1 c.cm. of milk (0.66 calorie). The word is an abbreviation of "*Nahrungs Einheit Milch*" or "*Nutritions ElementuM*." It is immaterial whether 1 c.cm. of cow's milk or of human milk be regarded as the unit, since the two fluids are approximately equivalent in caloric value. The apology given for the invention of this new unit is that the concept of the calorie is too abstract and too difficult of comprehension by ordinary people without scientific training, and it is by such people that the system must be adopted and used, if at all. The "nem" represents the food value of something that can be seen, handled, consumed. The working unit for practical purposes becomes a "hectonem" = 100 nem, and can be visualized as a small cupful of milk. In this system the idea of concentration is also impressed upon the student. Milk being the unit, the cook learning the new system is led to realize that a milk pudding made from ½ litre of milk and 40 grams of rice or other cereal possesses twice the food value of the original milk, and that the addition of 35 grams of butter will treble it. Tables have been constructed giving the "nem" value per gram of all the ordinary articles of food and of many prepared dishes made from standard receipts. The relative prices of all foods in comparison with their fuel value have also been tabulated and reproduced in diagrams, so that the cost of a "hectonem" of various foods can be seen at a glance.

As regards the qualitative value of different kinds of food, two classes only are distinguished, protein as building material and carbohydrates and fats as fuel. The two last named are regarded as interchangeable, fat being regarded as an expensive and unnecessary luxury if the calorie equivalent of sugar or cereal can be obtained. Protein, it is held, should always compose at least 10 per cent. of the total nems consumed.

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[1] *Lehrbuch der Volksernährung nach dem Pirquet'schen System.* Bearbeitet von [illegible] E. Mayerhofer, [illegible] R. [illegible], E. Nobel, [illegible] R. Wagner. [illegible] Mayerhofer und Prof. Dr. C. [illegible]. Wien und Berlin: Urban und Schwarzenberg. 1920.

The energy requirements of the individual are calculated in relation to his sitting height (SH), according to the simple relations, deduced by Pirquet, between this measurement and body weight upon the one hand and the surface of the alimentary tract upon the other. According to Henning and others, the length of this tract = 10 SH and the mean width may be computed at 1/10 SH; the surface, therefore, is = SH^2. This value, termed the "*Ernährungs-fläche,*" is another conception which it is found can easily be grasped by the simple student. This number of square centimetres, expressed as nems, forms the basis of calculation for the daily need in food of the individual. The minimum amount required for an adult lying in bed is 3/10 SH^2 nem; for sedentary and quiet occupation 5/10 $(SH)^2$, and according as less or more hard manual work is required, the food intake must supply 7/10 SH^2 up to 10/10 SH^2 nem. The optimum daily allowance for young children, to allow for satisfactory growth, in addition to daily fuel requirements and repair of tissues, has been fixed at 7/10 $(SH)^2$ nem. All classes of the population have been divided into "*Ernährungs Klassen,*" according to their food requirements. A man with 80 cm. sitting height, if lying quietly in bed, would need 3/10 × 6,400 nem = 1,820 nem (1,210 calories) daily; if up and about doing light work 5/10 × 6,400 = 3,200 nem; and if on hard manual labour, 6,400 nem (4,300 calories). An infant six months old, of sitting height 40 cm., would require daily for optimum growth 7/10 × 1,600 nem = 1,120 nem (750 calories), or 1,120 c.cm. milk. Examination of large numbers of individuals has shown that under conditions of good nutrition the sitting height raised to the third power is equal to 10 × the body weight (W) expressed in grams.

$$(SH)^3 = 10\ W \text{ or the ratio } \frac{\sqrt[3]{10\ W}}{SH} = 1.$$

This ratio, known as the *Gelidusi,* is taken as indicative of the state of nutrition of the subject. The normal value should be in the neighbourhood of 1.00, and values less than 0.93 signify distinct under-nutrition.

The nem system is an invention against which a good deal may be said in theory. A substantial excuse will be demanded for the invention of a new unit of fuel value to replace the well-established calorie. Many physiologists also will deny the possibility of all fat in a diet being satisfactorily replaced by carbohydrates or sugar, and will regard this idea, conceived during a period of severe fat deprivation, as born of necessity. The system will also receive all the more opposition at the present time since the discovery of the fat soluble vitamine has shown the importance of certain fats for the diets of the young growing animal. The modern conception of accessory factors and their importance in diet is, however, new in Central Europe, where the knowledge of the subject stops at the classic researches on beri-beri, which comprised most of the knowledge available in 1914. The vast mass of the work upon this subject published in England and America during the war has not been available for Austrian readers, and even at the present time some journals containing these investigations are out of reach owing to the depreciation of their currency. This is a good example of the difficulties in which the medical and scientific professions in Vienna carry on their work.

No one, however, who has seen anything of the "nem" system in application can deny that it has been and is a brilliant success in practice. For example, Professor Pirquet and his colleagues have been responsible for the organization of the American child feeding in Vienna, which involves the provision of at least one meal daily for 160,000 children, and is run throughout upon the "nem" system. There is no doubt that the system can easily be grasped by the ordinary well-educated person with no previous knowledge of medical or scientific subjects. One of the most important links in the system as applied to communal feeding in Vienna are the "Nem Damen," young women of good education who have taken the "Nem Kurs" at the University Kinderklinik and passed the examination. Picked examples from this ever-increasing class are found in charge of the kitchens, where food is cooked for 10,000 and more meals daily, with strict regard to all quantitative measurements, with a maximum efficiency and with the simplest of organizations. The food is of excellent quality, is appetizing, and well cooked; each child over ten receives a portion of 1,000 nem (660 calories), under ten of 500 nem. The American child feeding in Vienna is a model of organization which would repay careful study by all those interested in school or other communal feeding.

The children receiving the free meals are selected from the schools after a medical examination in which determination of the *Gelidusi* is the most important part, values under 93 admitting any child without further examination. The condition of nutrition of the children in Vienna last spring may be gauged from an example given on page 278. Examination of 501 out of the 669 girls from a middle-grade school showed that 372, or 70 per cent., had a *Gelidusi* of less than 93.

The nem system in its most perfect expression can be studied best in the University Kinderklinik in Vienna, of which Professor Pirquet is the director. Here the entire diets of all the children are controlled in this way. A large ward of convalescent tuberculous children between the ages of 6 and 14, who lead a moderately normal life, is the most interesting example. The kitchens of the hospital, including the "milk kitchen" where the food of all infants is prepared, are presided over by expert sisters; all cooking is done on strict quantitative lines, so that the exact composition and calorie value of every cooked dish are accurately known. These kitchens serve as schools for teaching this branch of the nem system, and much of the time devoted to the training of the "Nem Damen" in the "Nem Kurs" is spent in these admirably managed kitchen laboratories.

NOTES ON WAR INJURIES.

IN *Chapitres Choisis de Chirurgie*[2] M. REGARD has done what many of us would like to do. He has written a book on the interesting cases that he saw during the war, the impressions that they made upon him, and the ideas they gave him. M. Regard has a catholic and a receptive mind; he has imagination, he has industry. Possessed of such qualities, the book before us cannot but be original. The author served with all manner of units; he has been everything from battalion medical officer to surgeon in a military hospital. In the course of his peregrinations he took notes of all cases of interest, and it is upon these that the book is founded. M. Regard opens with an account of some cerebral injuries. He is, however, only interested in these so far as they support a theory of cerebral commotion and contusion which he has formulated. According to this theory, the cranial contents are not only incompressible as water, but behave very much like it. Waves dance to and fro when the head is struck, breaking on the rocks (the basal ganglia) and beating against the cliffs (the falx and tentorium). However much or little there may be in this, M. Regard is correct in saying that the fissuration which occurs in many wounds of the brain is difficult to understand. We have next an account of the very successful removal of a rifle bullet from the lateral ventricle. The author believes that a projectile rarely comes to rest fairly and squarely within a ventricle; the more common method of entry is a slow progress; at first the missile only projects into the cavity, and works its way into it subsequently. M. Regard has had the good fortune to see a case of paralysis of the spinal accessory nerve occasioned by a fracture of the base of the skull, an uncommon complication.

After some remarks on shock, from which it appears that he believes it to be a complex phenomenon, the author passes on to the treatment of wounds, auto-vaccines, dyspnoea in gas gangrene, lesions of vessels. Under the last caption he coins a phrase, "hémorragie d'alarme," to denote the warning haemorrhages which are often the precursor of a severe and dangerous outburst of blood—especially if the source is a newly-formed aneurysm. He has something to say on osteogenesis, on the treatment of certain fractures, on the survival of bone grafts, on the resection of joints, and on amputations.

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[2] *Chapitres Choisis de Chirurgie.* Par G. L. Regard. Paris: A. Maloine et Fils. 1920. (Roy. 8vo, pp. 429; 40 figures, 10 plates. Fr. 20.)

It will be gathered that M. Regard has, in the realms of surgery, "many goodly states and kingdoms seen." Although one cannot always agree with him, the account of his journeyings is not without a certain freshness. As in so many French writings, there is a lamentable lack of any reference to the English literature of the many subjects discussed.

ELECTRICITY IN DIAGNOSIS AND TREATMENT.

THE *Atlas for Electro-diagnosis and Therapeutics*,[3] compiled by Dr. F. M. DE LAROQUETTE, has been translated into English by the late Miss M. G. Cheetham, and published with a eulogistic foreword from Dr. Robert Knox. The author is the chief of the electro-radiological service of North Africa at Algiers, and has aimed at placing before the profession an atlas-manual, in which are presented, in such a way as to be seen at a glance, the normal anatomical data that should be well in the mind in order to conduct an electro-diagnosis, or to draw any conclusions from it. Following a short description of the sensory motor nerve paths, the main portion of the atlas, profusely illustrated, deals with the muscles and nerves of the head and trunk, of the upper and of the lower limbs. There are two diagrams of each portion of the body under consideration, one showing the motor points of nerves and muscles as on the skin, and the other the muscles with their nerve supply and motor points with the skin, etc., removed. In the accompanying letterpress is given the origin and insertion of each muscle, its nerve supply, the motor point, and the average intensity in milliampères of the galvanic current required for obtaining the normal negative and positive closing contractions. There is a short chapter on the normal excitability of nerves and muscles, tables to show the normal coefficient, and a few other tables showing variations brought about by injury, etc. Everything is arranged in a very simple manner, the essentials are easily seen, and for easy reference this portion of the book should be invaluable. An interesting feature of the concluding portion, in which the various articulations are dealt with *in extenso*, is the use of radiographs for illustrative purposes. On each radiograph the lines of action of the various muscles are indicated by means of arrows and dotted lines. Taken as a whole this atlas-manual fulfils its purpose admirably. The illustrations are good and well chosen. The translation has been done very well indeed. As a handy book of reference it should find its place in every electro-therapeutic department and in the library of all specialists in this department of medicine.

Electro-therapy: Its Rationale and Indications[4] is the title of a short and concise book by Dr. J. CURTIS WEBB which has been written with the hope that it may find its way into the hands of medical men who themselves, perhaps, will never apply these treatments, but who should be in a position to know when their patients may be benefited by physio-therapy. This being the main object, it follows that all description of apparatus, and also descriptions of the actual methods of application, are practically entirely left out, and the reader is spared what is so usually a feature of books of this kind, namely, reproductions of numerous illustrations from the catalogues of instrument makers. The author starts with a chapter on theory and electrical treatment; its mode of action according to theory is regulated by these two fundamentals: (1) a change of vibration in nerve tissues, end-organs, etc., set up by vibratory influences from without will alter the amount of [illegible] along a nerve—that is, its conduction—and so consequently set up changes in nerve [illegible] the function of the organ supplied; (2) by subjecting nerve tissue to suitable currents a change of vibration [illegible] altering the [illegible] of the nerve [illegible]. The remainder of this first section deals with continuous and interrupted currents, high frequency, and diathermy currents, static electricity, [illegible] and x rays in separate chapters and some idea of the scope and conciseness may be gathered when it is realized that a chapter of three pages is found sufficient for radium and one of one page for x rays. Seven diagrams—the only illustrations—appear in this part of the book. Part II is designed to indicate the various morbid conditions which may be benefited by one or the other methods of electrical treatment, and it is expressly stated that only those diseases are mentioned for which "it has been proved" that electro-therapy can offer something superior or an addition to the ordinary treatments advised in textbooks of medicine. Some 120 to 130 different conditions are enumerated as being suitable for these methods of treatment and the method considered most suitable for each condition is stated.

NITROUS OXIDE-OXYGEN IN CHILDBIRTH.

Painless Childbirth[5] is the title of a small book by Dr. C. H. DAVIS of Chicago, which purports to introduce "an improvement on twilight sleep"—to wit, the use of nitrous oxide–oxygen analgesia. This method of relieving the sufferings of parturition is, of course, by no means new, but Dr. Davis's little book is interesting as giving the personal impressions of the writer after a fair experience of it. That experience has made him an enthusiast, but it does not appear that he has had an equal opportunity of trying the scopolamine-morphine method, and his claim that the gas method is an improvement on the latter is largely based on the statements of others as to its drawbacks.

Apparently the only drawbacks to the use of nitrous oxide–oxygen are the necessity of using an apparatus that is heavy and cumbersome, and the need of close and continuous personal supervision by the obstetrician. To have to carry a gas and oxygen apparatus from case to case will be almost like the old days of the obstetric chair! But the second objection can, it is said, be overcome to some extent in the case of intelligent patients, who can learn to give themselves a sufficiency of the gases to maintain a complete and perfect analgesia throughout. The number of cases upon which Dr. Davis's enthusiasm is based is not large enough to be very convincing as to the full measure of his claims, but the record is quite satisfactory as far as it goes. It is to be hoped that the method will be tried widely and without prejudice by scientific obstetricians, and that it may reach its proper level without the blundering assistance of the Sunday papers or the American monthly magazines.

To be frank, however, this little book makes one dubious as to this last aspiration, for in its arrangement and general "get up" it appears to be aimed almost as much at the lay public as at the medical profession. At least it is difficult otherwise to explain the devotion of a page to the definition of such common terms as analgesia, amnesia—and not only their definition and etymology, but careful instructions as to their pronunciation. Fifty per cent. of the letterpress is also more suitable for consumption by an impressionable laity than for the instruction of the profession. Chapters on the development of anaesthetics in general, and on puerperal sepsis, are not germane to the main thesis of the book, if it be directed to the medical profession, and they merely serve to obscure the point.

A desire to make short cuts through the English language may explain such sentences as the following: "Patients may precipitate [illegible] while under the analgesia without knowing that the baby is being born", but for such a remark as "From a long experience of nitrous oxide I doubted its being [illegible] . . ." there can surely be no excuse.

ZOOLOGY FOR MEDICAL MEN.

Mr. Borradaile's *Manual of Elementary Zoology*,[6] first published in 1912 and now in its third edition, is becoming widely used as an introduction to one of the sciences of which every medical man must have at least some knowledge. This book is written for students commencing the study of zoology, those working for the first M.B. among others,

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[3] *Atlas for Electro-diagnosis and Therapeutics.* By F. M. de Laroquette, M.D. Translated by Mary G. Cheetham. London: [illegible]

[4] *Electro-therapy: Its Rationale and Indications.* By J. Curtis Webb, M.B. [illegible] A. C[illegible]

[5] *Painless Childbirth.* By C. Henry Davis, A.B., M.D. [illegible] Cr. 8vo, pp. 179. 6s. net.)

[6] *A Manual of Elementary Zoology.* By L. A. Borradaile, M.A. [illegible] H. Frowde and Hodder and Stoughton. [illegible] 16s. net.)

but he does not attempt to deal with the animals included in any particular schedule. The first animal to which attention is directed is the frog, and this is wise, if only because, for the beginner, the technical difficulties of examining such a form as Amoeba are considerable. The frog, and all the other types chosen, are considered from many standpoints, but no opportunity is lost of illustrating some general biological principle. After a full consideration of the frog and its histology the author reviews all the types usually chosen in works of this nature, together with others, such as the nematodes and platyhelminthes, as illustrations of parasitism, and Obelia, one of the compound hydroids, as an introduction to a discussion on individuality among animals. There is a useful chapter on the embryology of amphioxus, the frog and the chick, and a number of more general chapters on the human parasitic protozoa, reproduction and sex, classification, evolution and heredity, and the relation between the organism and its environment. These are among the best chapters, but it is to be doubted whether the medical student will read them; his curriculum is very full, and they are not on his schedule; when we remember that he can hardly hope to be in a position to earn his living until he is 25, if then, we can hardly blame him if he passes them by. In our opinion the biological training given to medical students in this country is fundamentally wrong. The detailed study of some half-dozen types from the anatomical standpoint, and the committing to memory for the time being of the exact segmental position of the spermathecae of the earthworm, or the distinguishing characters of the maxilla of the crayfish or cockroach, is neither good zoology nor a useful foundation for a study of man. On the other hand, many medical men have very little acquaintance with that part of zoology which most closely affects them, and in which the student's interest could be aroused. Instruction should be given in such matters as heredity, the transmission of acquired characters, variation and evolution, and the student should be introduced to the Protozoa, the Nematodes, and Platyhelminthes. A certain number of types—the frog and rabbit—should be dissected as introductions to human anatomy, but the Invertebrates not so much for the sake of their pure anatomy as because they afford admirable illustrations of broad principles; the earthworm and cockroach should, for instance, be regarded as diagrams of segmentation, and the Amoeba as a type of generalized cell. We are grateful to Mr. Borradaile because, within the limits which bind him, and which bind also all biological teaching to elementary medical students at the present time, he has, as far as possible, interwoven the teaching of these principles with his description of the selected types, and we think that were the regulations brought more up to date he would be able to write a still better book. His facts appear to be accurate and clearly expressed, his index good and his illustrations admirable.

Professor GAMBLE's revision of Marshall and Hurst's *Practical Zoology*[7] is such a book as the student will have by his side in the laboratory, and there is no doubt that he will appreciate it. It was first published in 1887, and is now in its ninth edition. We feel, however, that it should hardly be needed except by the student dissecting alone; in the ordinary elementary laboratory such a book is most often seen in the hands of the man who crams his work and is for ever calling upon the demonstrator. As long as he has this well known work by his side he will, it is true, have small need of the demonstrator, but he will never acquire the truly scientific spirit of Rikki-tikki-tavi. Of its rather matter-of-fact sort, the book is of course thoroughly sound; it describes the anatomy and dissection of a large number of types, and contains some excellent information on methods of fixing, staining, and drawing, and on the cutting of sections and similar matters. It is curious to find in a book that has been revised so many times a reference to the "sporozoa or gregarines," as if the terms were synonymous, the use of "encystation" for "encystment," and mention now of the "meganucleus," now of the "macronucleus"; unless one word is used consistently the student will certainly think that the two words refer to different things.

SYPHILIS IN BRONCHITIS WITH EMPHYSEMA.

IN a recent critical study[8] of chronic bronchitis with apical sclerosis of the lungs and emphysema, Dr. DALSACE of Paris draws attention to the frequency with which syphilitic infection rather than the commonplace tuberculosis may be held accountable for an apical pulmonary fibrosis. He argues that such a patch of fibrosis is very commonly to be found in patients with bronchitis and emphysema, and is inclined to connect the development of the two latter with the presence of the former. While admitting that the majority of these patients owe their apical fibrosis to infection with the tubercle bacillus, he argues that if the sputum is, as often happens, invariably free from tubercle bacilli, the diagnosis of "apical syphilis" should be made rather than that the sclerotic changes should be put down to a previous apical pneumonia or a healed tuberculous lesion.

Dr. Dalsace bases these conclusions, perhaps a little slenderly, on certain *post-mortem* observations he has made, and supports them by a review of much of the recent literature of pulmonary syphilis; he further argues that pleural thickening is not rarely syphilitic in origin.

NOTES ON BOOKS.

THE sixth edition of Dr. DUDLEY BUXTON'S *Anaesthetics*[9] retains its now well known form and arrangement, but is enlarged and considerably altered. In his preface the writer refers to the effect of war experience upon our knowledge of anaesthetics, and this effect is plainly shown in the pages which deal with the treatment of shock as well as elsewhere. Dr. Buxton regards as the dominating factors of shock depression of circulation and diminished oxygen supply to the tissues. He believes, with Keith and Robertson, that there is reduction of the volume of the blood, which is of course exaggerated when haemorrhage is present. In discussing treatment of shock the author says, "The first step is to realize that simple acidosis does not itself cause shock of any kind; the second is to appreciate the fact that the reduction of the alkali reserve follows the circulatory impairment." However, the actual steps which he recommends are the wise measures of maintaining the temperature of the body by hot blankets, etc., and adoption of such a posture as facilitates blood circulation, and ensures the bulbar centres receiving a proper supply of oxygenated blood. During the operation the vapour of the anaesthetic should be warmed and kept moist. Infusion of gum arabic solution is approved of, and a good description furnished of direct and indirect blood transfusion. Warmed oxygen is to be ready for immediate use, and freely employed when required. The chapter on local anaesthetics is particularly well illustrated, full, and practical. An interesting chapter on medico-legal aspects of anaesthetics discusses whether anaesthetics may be administered without consent, and whether they can be administered during sleep, as well as many other points of abstract and practical importance. The lines on "covering" and on responsibility may be especially recommended to the perusal of the young practitioner. Dr. Buxton appears to favour "gas and ether" more than most other methods, though he is obviously catholic in his choice. He recommends the former for the operation of prostatectomy, a proceeding which is more commonly carried out, we fancy, during spinal analgesia, or an open administration, or both together. The author favours preliminary injections of morphine, scopolamine, and atropine, and is not averse to inducing anaesthesia with chloroform after their use. Generally speaking, he does not approve of rebreathing with the use of nitrous oxide, and he does approve of the addition of oxygen to most anaesthetics. This textbook shows throughout the results of experience and of reflection, and it is to be warmly recommended to any student of anaesthetics.

THE Universities Bureau of the British Empire has published a new edition of the *British Empire Universities' Yearbook*.[10] Owing to disorganization of the working of the universities during the war, no new issue has been made since 1916; for the same reason the present edition records numerous changes in staffs and far-reaching alterations in regulations and courses of study. In sections dealing with each of the forty universities and university colleges in the United Kingdom and of the sixty in the Dominions and Colonies the *Yearbook* furnishes, as well as a list of the staff, information relating to the foundation and development of the institution, its libraries and museums, residential accommodation for students, affiliated institutions, degrees, diplomas, certificates, fees and scholarships, and its regular publications; a summary is also given of new posts lately created and of recent alterations of curriculum. In an appendix outlines are given, so far as the confidential nature of much of the work will permit, of the various forms of non-combatant war service undertaken by the universities; even in their present incomplete state these records describe so extensive and successful a mobilization for war purposes of every kind of special knowledge and every type of trained intelligence that there is much to justify the assertion made that "brains, rather than arms, have been the determining factor in the Great War."

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[7] *A Junior Course of Practical Zoology.* By the late A. M. Marshall and the late C. H. Hurst. Ninth edition. Revised by Professor F. W. Gamble. London: John Murray. 1920. (8vo, pp. xxxv + 517; 94 figures. 12s. net.)

[8] *Étude Critique de l'Étiologie des Bronchites Chroniques* [illegible] *Sclérose Pulmonaire*. Par Dr Jacques Dalsace de la Faculté de Médecine de Paris. Paris: Felix Alcan. 1920. (Roy. 8vo, pp. 188. Fr. 5.)

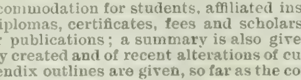
[9] *Anaesthetics, their Uses and Administration.* By Dudley Wilmot Buxton. Sixth edition. London: H. K. Lewis and Co., Ltd. 1920. (Demy 8vo, pp. 562; 89 figures, 8 plates. 21s. net.)

[10] *The Yearbook of the Universities of the Empire*, [illegible]. Edited by W. H. Dawson and published for the Universities' Bureau of the British Empire. London: G. Bell and Sons, Ltd. 1920. (Cr. 8vo, pp. 513. 15s. net.)

APPLIANCES AND PREPARATIONS.

Forceps for Intratracheal Anaesthesia.

DR. IVAN W. MAGILL (Anaesthetist, Queen's Hospital, Sidcup) writes: Following on Dr. Rowbotham's article in the JOURNAL of October 16th on intratracheal anaesthesia by the nasal route, the accompanying illustration of a forceps, made for me by Messrs. Meyer and Phelps for a similar purpose, may be of interest. The forceps are constructed with a bend to clear the field of vision, as in Heath's nasal forceps, the ends which grasp the catheter representing a cylinder split longitudinally and serrated on the inner surface. Introduction of the catheter per the trachea is carried out with the aid of an electrically illuminated speculum, as in Dr. Rowbotham's method, but I find in the forceps the following advantages over Dr. Rowbotham's [illegible]:



1. There is no [illegible] to the end of the catheter, and therefore no [illegible] of small pieces of the friable material being left in the trachea.
2. The catheter is more easily picked up in the oral pharynx, and the forceps hold it securely, without the necessity of holding the end which protrudes from the nose, as is the case with the [illegible].
3. The forceps can be used at the side of, as well as inside, the speculum.
4. The field of vision is always clear.

I need hardly add that in operations involving bleeding into the pharynx the fixation of a suitable suction pump to the [illegible] nasal tube provides even a clearer field for the surgeon by removing blood without continual swabbing.

MEDICINE AT THE UNIVERSITY OF LEEDS.

DR. T. WARDROP GRIFFITH, C.M.G., professor of medicine in the university and honorary physician to the Leeds General Infirmary, opened the session of the Leeds University Medical Society by an address in which he reminded his hearers that they were students of a university, and not merely members of a school of medicine. Although the university was not of ancient foundation, it could be recalled with pride that its genesis lay in the old school of medicine founded in 1831. Dr. Griffith continued:

I wish I could see a more intimate association than now exists between the different faculties of the university, both as regards staff and students. [illegible] Let us take a wide view of what a university should be and at the same time see what it should not be. [illegible] The true university in these days [illegible] may not be accepted [illegible] a university [illegible] those who guide the studies of the students, as well as perform the humbler function of imparting information to them. We require laboratories in the widest sense of the term, and here I include hospitals, with all that they imply; we require facilities which permit and encourage free association between the members of the different faculties—staff and students alike. The functions of a university have been described as comprising the acquisition, the development, and the dissemination of knowledge. Yes, this indeed at least; but one of the imperative duties of a university is to grant its students adequate and reasonable time and opportunity for recreation and athletics. The intercourse and the good-fellowship between the various faculties will be of benefit to the university as a whole, to each separate faculty, and to every individual student. We do not now impose so many lectures on our students; in this, I think, we are wise, but I am not one of those who deprecate this form of teaching.

In such subjects as medicine and surgery no man should try to vie with the textbooks in the mere enumeration of facts, but by lectures I think that much may be done, and is done, in the way of arresting the attention of the student and guiding him in his reading. Regularity, punctuality, and enthusiasm, on the part of the lecturer must be met, and must be aided and abetted by similar characteristics on the part of the students, but the lecturer must set the example. Under the direction of your teachers in your practical work, in the dissecting-rooms, in the laboratories, in the wards, and in the *post-mortem* room, you must work out your own salvation. Thus you may build up a secure platform for the acquisition of more real knowledge and for the utilization of that which you may already possess. Here I would impress upon you the advisability of associating yourselves with those who are investigating special points in your cases. It is infinitely better that, under the guidance of those in charge of the laboratory of clinical pathology, you personally should make an examination of a urinary deposit, or a suspected sputum, or of a doubtful blood count, than that you should merely await and read the reports of the special investigators. In private practice the cases in which you can call for information from these special sources must be few and will be confined to the opulent; do as much as you can, therefore, for yourselves, and do it now when you can expect and when you will receive willing assistance. While it is right that as students you should utilize every opportunity of obtaining practical acquaintance with the use of special methods and special instruments, the use of the sphygmographs, sphygmomanometers, polygraphs, endoscopes, string galvanometers, and other instruments of precision should in the overwhelming majority of cases be reserved till ordinary methods of investigation have been fully employed. First, there comes the complaint of the patient. He is the only man in the world who knows what his feelings are; let him tell you as best he can, and as far as possible without the influence of leading questions. Then question him as to details with as open a mind as you can, and with that patience which will breed accuracy, but which in the case of a garrulous or obtuse patient may be hard to exercise. Then will come your particular part of the business—the examination of the patient is undertaken; here again I would claim that what we understand by the ordinary methods should have our first attention. It is, for example, better and more conducive to the retention of an open mind that you should not know whether the patient has tubercle bacilli in his sputum or not before you have formed an opinion as to the physical signs in the chest—I do not say until you have made a diagnosis. It is better that by palpation you should try to gauge the size of a man's heart than that you should be biassed by information derived from the fluoroscopic screen. It is better, far better, that you should try to discriminate between the various forms of cardiac irregularity without the knowledge of what is revealed by the polygraph or, with greater authority, by the electrocardiograph. It is true that, until the advent of these instruments and the careful use which has been made of them clinically and in the methods of experimental physiology, our knowledge of cardiac irregularities was imperfect and chaotic; but now that they have been "worked out" and the field of inquiry appears to be almost complete except as to their causation and in some measure as to their prognosis, my experience is that year by year I become more and more independent of these instruments and their use in individual cases, though, of course, there are some in which, with our present knowledge, they provide the only source of information. What are termed instruments of precision should be treated as valuable servants and not accepted as masters.

There is probably no more fruitful method of widening knowledge and of confirming its possession than discussion among one's fellows. The discussion which arises on communications put forward with a due regard to verification of facts and clear logical arguments, tends to be conducted on reasonable and constructive grounds. Personally I distrust a man whose criticism is always of the kind that is termed destructive; he never seems to me to have any useful alternative policy, and I suspect him of harbouring the hope that he will be able to say "There, I told you so," while he himself sits ignoble but secure in virtue of the poverty of his constructive faculties. But, on the other hand, I sometimes feel that too sharp a distinction may be drawn between criticism which is constructive and that which is termed destructive, or more usually "purely destructive." It is sometimes necessary to destroy before beginning the work of reconstruction. If, therefore, any of you should find his communications roughly handled in the discussion, let him remember that, as Mr. Asquith has said, "Flagellation in the sphere of criticism is often not only a salutary discipline, but a duty of imperative obligation; and no one but a puling sentimentalist will deny that, in the armoury of a well equipped critic, room must be found for the bastinado and even for the knout."

Your discussions are by no means confined to questions of purely professional interest. This is as it should be. Let your general reading be wide, and try to make it wider as your outlook expands. Even to those to whom reading is a taste which has to be acquired I would say: "Try to develop the faculty, though it be only to a slight extent." Sir Clifford Allbutt, in his opening address given in 1883 to the students of this school, said:

> "You are anxiously charged by all your advisers to keep up your literary attainments. To give such advice is like urging all men to have a taste for music. Some, perhaps most, persons lack an ear for literature. Take up your Bible, or the Collects in the Prayer Book, and read them with a nice attention to the words as well as to the matter. If to power and melody of those words you find any answering delight in yourself, you have an ear for literature, a sense of style. It is a precious possession, and you may well cherish it. If you have it not, you cannot make it, and you had better take your pleasure in the breeding of fox-terriers. You must find comfort in the verdict of the old farmer in Artemus Ward's sketches, who 'never knowed a literary man that knowed anything.'"

A man may be devoid of literary taste, but even for him there is balm in Gilead. Tastes may be developed.

You will find that the happiest life is one that is active and full of varied interests, and that it is well to fight against idleness. There is indeed a time for everything; and, even apart from the hours of sleep and recreation, nature calls for periods of wakeful idleness, when, with or without tobacco, and at a time when there is no desire and no capacity for sleep, the human brain deals not with high problems, but with next to nothing at all. "Sir, you appear to be a very happy old man; I have often wondered how you pass your time," was the remark made to a smooth-browed patriarch, and the reply which was forthcoming was, "Well, sometimes I sits and thinks, and sometimes I just sits." Let those periods when you "just sit" be watched lest they grow upon you, and let that day be far distant when you will wish to say—

> We have had enough of action, and of motion we
>
> . . . . . .
>
> Let us swear an oath, and keep it with an equal mind,
> In the Hollow Lotos land, to live and lie reclined,
> On the hills like Gods together, careless of mankind.

THE FALL OF THE BIRTH RATE.

THE publication by Mr. G. Udny Yule, to which an incidental reference is made in a leading article on the birth rate, is a print, entitled *The Fall of the Birth Rate*, of a paper he read to the Cambridge University Eugenics Society last May. His conclusions are for the most part based on the statistics for the period ending 1911, the year of the last census. The fall in the birth rate since 1876 amounted roundly to one-third, but there was a countervailing fall in the death rate (including, after 1900, a considerable saving of infant life), so that an increase of population occurred. The fall of the birth rate since 1891 cannot be due to a fall in the proportion of married women to the population, since that proportion has risen; nor to a fall in the proportion of married women of fertile ages, for this proportion also has increased. On the other hand, the effect of the increasing proportion of the population of married women of fertile age may possibly have been nullified by their increasing average age. After full examination of these questions, Mr. Yule comes to the conclusion that the main factor in the fall of the birth-rate has been a decrease in the fertility of married women, and that this fall has been proceeding at an accelerated rate.

This fall is not evenly distributed over all classes of the community. In the Registrar-General's report for 1912 the births in the previous year were classified according to the occupation of the father, which has to be stated at the time of registration. The occupations were grouped into five main classes—Classes 1 and 2 representing broadly the upper and middle classes, and 3 to 5 the manual working classes, graduated from skilled to unskilled labour. These statistics show that, broadly speaking, married fertility is, on the whole, graduated continuously from a low figure for the upper and professional classes to a very much higher figure for unskilled labour, and that the social and occupational differentiation is now much greater than it was half a century ago. There are, however, some marked occupational differences which cut across the social gradation. The fertility of textile workers, for example, is low, falling between Classes 1 and 2, and that of miners is very high, higher than in any other class, agricultural labourers coming next. If the number of children surviving at the date of the census—the effective fertility—be taken for comparison, the difference between mining and agriculture disappears.

The view usually taken to account for the fall of the birth rate is that the decline in fertility of married women is, in the words of Dr. Stevenson, the Superintendent of Statistics in the General Registry Office, "due to increasing practice of contraceptive measures"; this theory only, Dr. Stevenson argues, is consonant with the fact that the decline apparently operated first on the more prosperous and educated classes, and can explain the actual date of the beginning of the fall as it corresponds in time with the opening of the Bradlaugh-Besant propaganda. The decline in the birth rate had, however, begun long before in France, and has been observable in Germany since 1876; there, as in this country, it started in the upper and middle classes and was most marked in the towns; the small family is characteristic of Germans with fixed incomes and is ascribed mainly to the voluntary restriction of families, though a slight decline in fertility and a diminished disposition to marry are recognized as immediate causes. In Germany it is believed that venereal diseases is an important element in the decline of the birth rate; it is estimated that 8 to 10 per cent. of all marriages are sterile or less fertile than they should be owing to the consequences of gonorrhoea, and that in 40 per cent. of sterile marriages the man is at fault. That in France and Germany the main cause of the decline is believed to be resort to contraceptive measures rather weakens Mr. Yule's dissent from applying the same conclusion to this country. He relies partly on some statistics collected by the Birth Rate Commission and by Mr. Sidney Webb, which showed that in the small number of families dealt with the "limited" had more children than the "unlimited." He quotes also inquiries by Dr. Brownlee and himself which afford some support for the view that fertility in a nation is not a fixed quantity, but subject to natural fluctuations. Dr. Brownlee believes them to be physiological and thinks he can detect rhythmic variations in germinal vitality, periods of rapid increase in nations being related with other symptoms of energy, such as remarkable literary output and "racial adventure." Mr. Yule believes that the fluctuations are related to changes in economic conditions, but the inquiry showed that the rise in prices from 1801 to 1911 coincided so nearly with the curve of intercensal population that similarity could not be accidental. The inquiry is very difficult, for, as Mr. Yule points out, though economic causes lead to a rise in the birth rate the infants are not available for economic production for some twenty years or more.

British Medical Journal.

SATURDAY, OCTOBER 30TH, 1920.

THE FERTILITY OF THE PROFESSIONAL CLASSES.

THAT the birth rate has declined, and that the decline has been greater in the professional than in the hand-labouring classes, are facts which nobody disputes; their interpretation, on the other hand, is matter of controversy. Most statisticians, including Dr. Stevenson and Professor Karl Pearson, have seemed to assign chief importance to the increased use of anti-conceptual methods, but some distinguished authorities, such as Dr. Brownlee and, as appears from his recent paper,[1] Mr. Udny Yule, doubt whether the phenomena can be described in such simple terms. Upon the social and racial consequences there is likewise a cleavage of opinion, as may be gathered from the divergent views expressed by witnesses before the unofficial Commission on the Birth Rate presided over by the Dean of St. Paul's.

The current number of the *Eugenics Review*[2] contains a paper by Mr. J. W. Brown, Dr. Major Greenwood, and the late Mrs. Frances Wood, which analyses in detail some data collected for a committee of the Birth Rate Commission and briefly summarized by Dr. Greenwood in his evidence before that body in 1915. The data relate to the families of nearly 500 women students in universities and to the families of 153 women (usually sisters of the former) who did not receive a university education. The authors address themselves in the first place to the determination of the question whether the women who passed through a university course were less fertile than their less highly educated sisters. They find, in agreement with the earlier results of the late Mrs. Sidgwick, that the whole difference between the actual sizes of family in the two classes may be accounted for by differences in age at and duration of marriage, the university woman marrying on the average a year later than the remainder. So far as actual size of family is concerned, it appears that for marriages commenced at age 26 of the wife and remaining in force to the age of 46, the average number of children would be 4[illegible]; if the age of wife at marriage were 2[illegible] it would be slightly more than 3[illegible]. In this sample as in the Scottish census material, the age of the husband was not a factor of statistical importance.

The authors devote much attention to the subject of artificial limitation and provide a large number of tables. The answers in many schedules were vague, but it is considered that at least half of the reporting wives limited or thought they limited the size of family. Of the [illegible] women who gave reasons for limiting the family, [illegible] (45 per cent.) adduced economic reasons, [illegible] per cent.) spoke of health. Of the methods of prevention used by the [illegible] wives, in only [illegible] cases were "artificial" means admitted. In [illegible] cases "continence" [illegible] [illegible].

We now come to the paradox of the results. However tabulated, the "limited" marriages are not less but slightly more fertile than the "unlimited" marriages. For instance, there were 133 marriages of "limited" or "doubtful" fertility which had lasted six to ten years and produced 2.31 children per marriage, or 2.58 when sterile marriages were excluded. The 63 "unlimited" marriages of the same duration produced 1.35 children per marriage, or 2.07 per fertile marriage. The authors remark: "We thought it probable that the result could be explained by supposing that the women who were naturally of greater than average fertility resorted in greater proportion to the use of artificial means and consequently emerged with an about average effective fertility. We have failed to obtain any statistical confirmation of this, either by a comparison of fertilities in the first years of marriage (that is, at an epoch when preventive measures would be less commonly used) or by correlating fertility with restriction for health constant. The schedules did not provide for a statement as to when restrictive measures were adopted, so that an analysis of fertilities before and after the introduction of preventive measures could not be made."

There are evidently three possible explanations of this result. The first (which the authors do not discuss) is that the sample is not a random sample so far as "unlimited" marriages in the middle class are concerned, and that consequently no inference at all should be drawn; the second is that the use of "preventives" is not a primary factor of the declining birth rate; the third is that some of the "unlimited" marriages were in fact "limited." The latter is the authors' preference. The question asked on the schedule was: "Was the family intentionally limited? If so, why? and how?" The authors comment as follows: "Logically this is exhaustive and should cover restricted intercourse. But it is to be remembered that on religious grounds many persons distinguish sharply between restriction of coitus and such interference *ab extra* as is involved in the use of pessaries or sheaths. It is also to be remembered that in current speech artificial limitation always means such interference (including here coitus interruptus). We also feel considerable doubt whether persons whose sexual appetites were almost absent or whose circumstances precluded them from intercourse would usually answer the scheduled question in the affirmative. Hence it seems to us probable that a large number of persons who were, from the physiological point of view, restricting their fertility, might bona fide enter 'no' in the schedule. We feel, therefore, very doubtful whether our statistical dichotomy of 'unlimited' and 'limited' marriages corresponds to a physical dichotomy." It seems impossible to decide between the suggested explanations, but the results published are of much interest.

The bulk of the paper was written some years ago, and the lamented death of Mrs. Frances Wood, which deprived statistical science of a brilliant student, together with the pressure of other duties upon the survivors of the collaboration, have precluded further extension of the analyses. In a summarizing note Dr. Greenwood observes that: "The sociological implications of these results are left to the discussion of others. Here the personal impression is recorded that the analysis of the sample of middle class families has led to no result incompatible with the conclusions reached by Professor Karl Pearson and his collaborators from wider data of a different kind. Whether these results, or any results of wider analyses, suggesting that neglect of eugenic principles is leading to a steady deterioration of the race, are likely to influence the reproductive habits of the educated classes or social legislation designed to modify those habits, is a question we need not attempt to answer."

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[1] [illegible]

[2] [illegible] By J. W. Brown, Major Greenwood, [illegible] and the late Frances Wood, O.B.E. Eugenics Review, [illegible]

THE THEORY OF VISION.

Dr. F. W. Edridge-Green, who is well known as an authority upon the subject of colour perception, has advanced a theory of vision which is opposed to the views of the large majority of physiologists. It has long been recognized that the rods and cones of the retina are the end-organs which have been differentiated to be acted upon by light and to give rise to impulses which, transmitted by the fibres of the optic nerve, ultimately reach the occipital cortex, where they are translated into visual perception. Each cone has a nerve fibre of its own, whereas one fibre serves several rods. This anatomical fact suggests that while both are important in the act of sight, the cones are of greater importance than the rods. It is generally believed that the cones are concerned in accurate form-vision which is the function of the macula alone. The share the rods take in vision is still a subject for research and discussion, but most physiologists have no doubt that they are true perceptive agents and are concerned in night vision. Gad and Nagel doubted whether they participated in the actual appreciation of light, and Edridge-Green has in several publications definitely stated that in his opinion the rods are not perceptive elements. Visual purple is abundantly found in the rods, but the cones contain none, and Edridge-Green's suggestion is that the rods are concerned in the supply of visual purple which is dispersed from the rods into the cones. The latter he imagines are the only end-organs which are sensitive to light.

This bold challenge of a generally accepted opinion has been taken up by Mr. J. Herbert Parsons in the *British Journal of Ophthalmology* for July, August, and September. He deals first with comparative anatomy, and points out that in most mammals, amphibia, and fishes there are both rods and cones, the former being most numerous. In most reptiles cones alone are found, and in birds they are present in large numbers. There are, however, certain vertebrates—rays, dog-fish, hedgehogs, bats, moles, and the night ape—which possess rods only, and owls, mice, and rats have only rudimentary cones. All these animals, including those with no cones, can see. Another point Mr. Parsons makes is that if the eye be dark-adapted, lights of low intensity appear colourless. As the intensity is increased colour is seen, first red, and then in succession colours of shorter wave-length. This photo-chromatic interval is practically absent at the fovea, the region of cones. It is greater in the peripheral than in the peri-foveal area of the retina. It is probable, therefore, that the cones are insensitive to light of low intensity, and are concerned among other things with colour vision, and that the rods are especially fitted for dark-adapted and achromatic vision. Again, with diminishing light and developing dark-adaptation, the brightness of the various colours alters. Colours at the red end of the spectrum become darker, those at the violet end brighter, so that eventually red appears black, and blue white. This phenomenon strongly supports the theory that two mechanisms are at work in light-adapted and dark-adapted vision, the former being carried out by the cones, the latter by the rods.

The theory that the rods are the agents of dark vision is supported by what is to be observed in night-blindness, a condition in which dark adaptation is absent or very slow. In retinitis pigmentosa, which is characterized by severe night-blindness, the area of the retina affected by the disease is that where the rods are frequent and the cones few.

The evidence drawn from the evolution and anatomical structure of the retina is considered to militate against the theory that two elements so similar in form and in anatomical structure as the rods and cones should have such diverse functions as Dr. Edridge-Green would attribute to them. Even in the human retina intermediate forms are seen of such a nature that it is difficult to decide whether they are rods or cones, and in the fovea itself the cones are elongated and rod-like. Of the two the cones are the more complex in nature and the rods are absent in the most highly differentiated portion of the retina. The conclusion, therefore, would seem to be that the rods are the more primitive visual element, and that the cones became differentiated from them in the course of evolution. It is consistent with this view that the rods in man retain the primitive function of mere light perception, whereas the more highly differentiated cones have acquired the complex functions which are carried out in the macula. Moreover, as Sherrington has pointed out, the hypothesis that the rods have no part in the perception of light, but are merely concerned with the distribution of the visual purple, leaves unexplained their linkage to the retino-optic nerve paths; in fact it denies to one-third or more of the fibres of the optic nerve the conduction of visual impulses.

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A GREAT GENERAL PRACTITIONER.

In his presidential address to the Section of the History of Medicine of the Royal Society of Medicine, delivered on October 20th, Dr. Charles Singer drew a charming picture of Francis Adams, perhaps best known to the general reader as the translator of Hippocrates, but whose commentary upon Paulus of Aegina was described by Haeser as *sehr werthvoll*—praise the Breslau scholar bestowed upon very few English medical-historical works. Few men have owed less than did Francis Adams to fortune, or have been, in the best sense of the term, more completely self-made. The son of poor parents, he received the elementary education open to the Scottish peasantry and won a bursary in the University of Aberdeen, where he graduated in Arts. The great superiority of the Scottish educational system did indeed confer upon him advantages which, had he been born 124 years ago in the same rank of society in England, he would not have enjoyed; but it appears that at the time he was a student in Aberdeen no instruction in Greek was provided, and that his subsequent mastery of that language was the fruit of self-tuition. Having graduated in Arts, Adams obtained the diploma of M.R.C.S. and settled down in Banchory as a general practitioner; in Banchory he remained until his death in 1861, and the scholarly labours which earned a European reputation were the recreation of a doctor who was always busied in professional work from breakfast to supper. The amount of work Adams got through was prodigious. When he was preparing his edition of Paulus he devoted ten hours a day to it, finding time by sleeping only four hours. He seems to have had the power attributed to the great Napoleon of commanding sleep, and the endurance of Frederic of Prussia, who also slept but four hours. The quality of Adams's researches was high, and he was also skilled in the lighter arts of classical scholarship which are generally only possessed by those who have served a very long apprenticeship. In later life he was offered the chair of Greek in his old university, but, far from complaining of the difficulties which medical practice put in his way, he loved his work as a doctor and refused to leave it. Macaulay said of Gibbon, who believed that part of his success as a historian was due to service in the militia and the House of Commons: "We have not the smallest doubt that his campaign, though he never saw an enemy, and his parliamentary attendance, though he never made a speech, were of far more use to him than years of retirement and study would have been. If the time that he spent on parade and at mess in Hampshire, or on the Treasury Bench and at Brookes's during the storms which overthrew Lord North and Lord Shelbourne, had been passed in the Bodleian Library, he might have avoided some inaccuracies; he might have enriched his notes with a greater number of references; but he would never have produced so lively a picture of the court, the camp, and the senate-house." This judgement is applicable to the work of a medical historian, and it is of interest to remember that the only important contribution to the history of general medicine made by an English writer before the time of Adams was Freind's book, which can still be read with pleasure. Freind had also practised his profession. Although, as this year's Harveian orator observed, "our debt to classical antiquity is one that never can be measured," the prestige attaching to classical erudition has diminished; it is felt, and rightly felt, that other studies are as truly humane as those which received the appellation. Perhaps we have deciphered the most important of the ancient messages. If not, if there is still something to be learned from our remote predecessors, their interpreter is likely to be not a cloistered scholar, but one who, like Adams, was a scholarly practitioner.

AIR TRANSPORT.

The possibilities of air transport, as a commercial undertaking comparable with rail and sea transport, are not as yet fully apprehended by the British public. The exploits of the fighting air services during the war are fresh in the minds of all, but we doubt if it is generally known how far the experience gained since 1914 has already been applied to commercial aviation. Air mails now fly every afternoon to Brussels and Amsterdam, and there is a daily passenger service between London and Paris. These regular services, and the commercial flight from Berlin to London on October 25th, foreshadow aerial connexions between this country and the principal cities of the Continent. On a recent visit to the Handley-Page aerodrome at Cricklewood we had an opportunity of seeing the present system at work. Precisely at 2.30 o'clock aeroplanes loaded with letters and packages began their rapid journeys, the one to Brussels and the other to Amsterdam; within two hours they had reached their destinations. A larger Handley-Page machine, of a type used two years ago in aerial warfare but now converted to civilian uses for the Continental service, was waiting to take us for a flight over London. This great aeroplane provides accommodation for ten passengers, two outside in front with the pilot and eight in the cabin. There is a gangway between the inside seats, which are so arranged that each traveller has a good view of the world below. There is a small lavatory with an automatically [illegible] seat, and beyond there is a freight hold for the air mails and for general cargo. On a Continental trip each passenger may carry thirty pounds of luggage for the price of his ticket. Two Rolls-Royce engines, each of 360 horse-power, provide the motive force, and an average speed of eighty miles an hour can be maintained. The machine rose imperceptibly into the calm air, and throughout the flight there was little sensation of movement, though the roar of the engines and propellers became a burden. The passenger's power of estimating height or speed was lost almost at once. To one who had never seen London from above the experience was of absorbing interest. The great city was bathed in the sunshine of a fine October afternoon, its beauty far surpassed anything that might have been imagined from a study of aeroplane photographs. No prospect from any terrestrial height gives an idea of the majestic panorama of London seen from an altitude of several thousand feet on a clear day—"all bright and glittering in the smokeless air." It was curious, on returning to earth after this experience, to pass through the aerodrome buildings and observe the *douane* neatly laid out in readiness for the passengers by air from Paris, the customs house official standing chalk in hand beside the luggage counters. The impression was one of orderly, businesslike routine, and of pilots working to a scheduled time-table with clockwork regularity. No one having seen this could believe that civil aviation is in danger, as it is said to be, of death from neglect during early childhood.

THE COMING DENTAL BILL.

THE promised Dental Bill which the Government has in preparation will greatly amend, or perhaps supersede, the existing Dentists Act. It has not yet been made public but is to be expected shortly. It is an open secret that it will follow pretty closely the recommendations of the Departmental Committee which reported about eighteen months ago. In anticipation of the appearance of the bill, which will be a Government measure, the British Dental Association has circulated a memorandum which, while summarizing the conclusions contained in the report, sets out certain alterations in the Departmental Committee's recommendations which the executive of the association desires. The memorandum is temperate in expression, and, for the most part, the alterations desired are not very drastic; its suggestions call for careful consideration. The outstanding feature of the bill will be complete prohibition of unregistered practice, and this will be an inestimable boon. But inseparable from such prohibition is the admission to the *Register* of a number of persons who, without breaking the letter of the law, have for some time carried on dental practice without qualification; to this the association "reluctantly" agrees, since there is no other way to a much needed reform. In so far as the association's suggestions go towards rendering this prohibition efficient, they may be sure of a sympathetic hearing, for it is the intention of the proposers of the bill to shut the door against evasion. Beyond this, a word of warning may not be out of place, for the smallest acquaintance with parliamentary procedure emphasizes the danger of anything approaching to opposition: an unopposed bill will go through quickly, whereas it is very easy to wreck a bill by numerous amendments; hence, where the main objects of a bill are agreed to be eminently desirable it should be recognized that unless the Government are willing to accept alterations, and agree to them, there is much risk in pressing them. It is not necessary at present to discuss all the points raised seriatim, but it may be pointed out that where the British Dental Association differs from the recommendations of the report, the report gives reasons for its conclusions, as does also the memorandum. In some cases the balance of argument seems to us to be on the side of the report, as is the case, for example, as to the question whether the persons admitted on the ground of having been in practice for a substantial number of years should be placed on the old *Register* or whether they should be in a separate list. On the other hand, we think that the association is right in taking exception to the provision that, where there is no medical man nor registered dentist accessible, a person extracting a tooth for the relief of pain may be entitled to make a charge not exceeding one shilling. This might result in the creation of a class of tooth extractors with no sort of qualification, yet recognized to a certain extent under the Act. Accessibility of registered persons is a vague term, and difficult of proof, but perhaps this provision may not appear in the bill. It should be remembered that the Departmental Committee contained representatives of various points of view, and that half of its members were laymen, some of whom, however, had previous knowledge of medical education, so that the unanimity of the Committee may be expected to carry much weight. If we may venture to offer a word of advice to the British Dental Association, it would be to try to get the Minister in charge of the bill to agree to insert amendments to meet the wishes of the association, but to be very chary of endeavouring to force anything upon him in Parliament, lest the essential boon of prohibition—a very real and great step in advance of previous medical legislation—be lost.

INCREASE OF WORLD POPULATION.

IT is a little over a century since Malthus formulated his theory of the conditions governing the increase or decrease of populations. Looking at the matter in a broad way he found no difficulty in maintaining that increase or decrease was determined by the ease or difficulty with which food was obtainable. This influence might operate by deterring persons from marrying or from marrying young, but he expected the adjustments to be made by catastrophes—war, pestilence, and famine; he paid less attention to the slower effects of continuous shortage of food. As a prophet he was before his time, for the world's food supplies have been increased through the opening up of new countries and have been more equably distributed owing to improvements in the means of transport. Experience during the war not only called attention to the dependence of the industrial nations on the importation of food, but also showed that the world's margin was dangerously small. Professor E. M. East, of Harvard, in his valedictory address to the American Society of Naturalists, of which we find an abstract in a recent issue of *Nature*, attempted a forecast of the results of the greater pressure of population in the not very distant future. He estimated the present population of the world at about 1,700 million people, and the annual increase at about 14 to 16 millions; most of this increase is in the white race, which is increasing much more rapidly than the yellow or black. Professor East accepted the view that China's population of 300 millions is practically stationary; that country, it may be observed, suffers periodically from famines, and from catastrophes such as the flooding of its rivers, but it would seem that the main reason why the population does not increase is that the soil is incapable of carrying a larger number of persons; domestic animals have almost disappeared and infanticide is practised. Professor East admits that the birth-rate in most civilized countries is steadily decreasing, but preventive medicine has lowered the death-rate in most such countries, and its progress may be expected to lower it still further; the net result is that most white nations are still increasing. Professor East therefore thinks that the decline in the birth-rate will have no great effect on the natural increase in the population of the world for many years to come. He estimates that if the rate of increase which existed in the United States during the nineteenth century should continue, the population within the span of life of the grandchildren of persons now living would number more than a billion. "Long before this eventuality the struggle for existence in those portions of the world at present more densely populated will be something beyond the imagination of those of us who have lived in a time of plenty." In America, thought to possess inexhaustible riches, returns are diminishing. The United States have a special problem, for the birth rate of the foreign population now coming largely from Eastern and Southern Europe is so much greater than the birth rate of the Anglo-Saxon stock that within a century the latter will be only a small fraction of the whole. Professor East expressed the belief that the United States will severely restrict immigration. He considered in detail what could be done by improved utilization of energy, improved agriculture, improved breeding, and so on; but he is not sanguine, and has no belief in a solution being found through better utilization of food from the sea. Professor East offers no general remedy, but looks to the spread of education, equitable readjustment of many economic customs, rational marriage selection which will tend to an increase of the birth rate in families of high civic value, and among the rank and file a restriction of births commensurate with the family resources and the mother's strength. He does not tell us how this last is to be achieved.

"UNPOPULAR CAUSES."

SIR GEORGE KEKEWICH has lately published *The Education Department and After.* He dedicates the book to the National Union of Teachers. It is certain that he enjoyed the loyalty and the gratitude of the members of this great National Union: and they were good judges of his work. But it seems that he did not always work well in harmony with the authorities of the Board of Education, and his book is rather heavily weighted with egoism and with invective. But these do not concern the medical profession. Nor is it our business to study the ins and outs of the past history of the Education Department and the Board of Education. Our only concern is with ten pages, near the end of the book, headed "Unpopular Causes"—five pages on "Antivivisection" and five on "Vaccination." (This, of course, is a slip for "Antivaccination.") We need not stay long over the five pages on vaccination, for they are altogether cheap and worthless. He says not one word about Gloucester and Dewsbury; not one about glycerinated lymph; not one about vaccination of contacts in Leicester. "I am not desirous here of entering upon the vexed controversy whether vaccination is or is not a preventive of small-pox." Was there ever such a foolish sentence! And again, "Public vaccinators are, as a body, by no means rich, and their belief is not likely to be modified by the fact that compulsory vaccination is a very valuable material asset to them." Unhappy man that he is, his pen runs away with him, and writes the most amazing remarks. In the five pages on antivivisection, we find one good sentence: "Probably the most unpopular cause I ever handled was that of antivivisection." We are glad to hear from him that it is so unpopular as all that. Few men in public life have done more than Sir George Kekewich to make it unpopular. It was he who quickened in it, at a meeting in London, the spirit of class hatred: he said, "Our hope is no longer in the idle rich; we must touch the heart of the democracy." His evidence before the Royal Commission, on December 18th, 1907, was pitiable. "We have no absolute proof that anaesthetics are ever used, because no antivivisection doctor has ever been allowed to witness any experiment." Again, he was asked whether his antivivisection society or he had accepted Professor Starling's long-standing invitation to them to come to a laboratory and see things for themselves. They had not. "What I should like to do would be to be able to see through a hole in the door without it being known that I was there." Thus he chattered to the Royal Commission, and in 1920 he is just as unwise as he was in 1907. Happily the members of the National Union of Teachers will not be gravely impressed by these ten pages: and there still remain three hundred and forty-eight pages from which they can learn his opinions on other subjects.

SIR GEORGE NEWMAN's first annual report as Chief Medical Officer of the Ministry of Health has just been published.[1] Part I consists of the Chief Medical Officer's general statement. Part II deals, in order, with the work of the six sections into which the Medical Department of the Ministry is divided, each report being signed by the senior medical officer of the section. The third part contains ten appendices on a variety of topics, including a summary of the Ministry of Health Act, 1919. The whole volume contains nearly 400 pages; some of its principal features will be discussed in a future issue.

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[1] Cmd. 978. H.M. Stationery Office. 3s. 6d. net.

A MEETING of the Victor Horsley Memorial Committee will be held at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1, on Wednesday next, November 3rd, at 5 p.m.

WE regret to announce the death, in his 86th year, of Dr. William Bruce of Dingwall, who was for twenty years the direct representative for Scotland on the General Medical Council.

Medical Notes in Parliament.

Proprietary Medicines Bill.

THIS measure, which was introduced in the House of Lords, and passed through all its stages except report before the summer adjournment, is to be taken on report in the course of a week or two. This will be done in all probability so soon as Lord Astor, who is in charge of the measure, returns to London. Several amendments promised by the Government have to be submitted, and notices have been given of several amendments to be moved by private members.

The Hospital Question.

DR. ADDISON'S ADDRESS TO THE HOUSE OF COMMONS MEDICAL COMMITTEE.

On the invitation of the medical and university members of the House of Commons, Dr. Addison, on October 26th, addressed a gathering of members of Parliament in one of the Committee rooms to explain the Hospital Clause in the Ministry of Health (Miscellaneous Provisions) Bill. Dr. Nathan Raw presided.

Dr. Addison expressed his pleasure at the opportunity afforded him, especially as there appeared to be much misapprehension [illegible] as to the nature of the proposals contained in [illegible] of the bill, and [illegible] to the proceeds which it had [illegible]. It had been suggested in the press that the Ministry [illegible] putting voluntary hospitals on the rates, and as [illegible] before the House of Commons for [illegible] to correct [illegible] that kind.

[illegible] Hospital [illegible]

In the early part of this year he appointed a number of [illegible] to examine the financial position of voluntary hospitals, [illegible] with representatives of those hospitals. He found that for the [illegible] up to 1918 the expenditure of [illegible] hospitals [illegible] and that the [illegible] of the London hospitals [illegible] for the same period. [illegible] [illegible] beam ends. In [illegible] [illegible] In meeting the [illegible]

had made to save the voluntary hospitals were a complete answer to the charge that his department was engaged in sinister conspiracy to put the hospitals on the rates.

Hospital Accommodation.

Dr. Addison then turned to another side of the question to justify the Government proposals. The voluntary hospitals did not provide half the hospital beds in the country, nor anything like a half. The number of hospital beds in the voluntary hospitals, general and special, was little over 45,000. Apart from these, the fever and small-pox hospitals of one kind and another provided 49,000 beds, and the beds in Poor Law infirmaries numbered 94,000. Thus, the number of beds provided by bodies other than voluntary institutions reached to 143,000. The country owed an unspeakable debt to the people who spent their lives in promoting the well-being of the voluntary hospitals. It was most desirable to keep the initiative, variety, and enterprise which attached to well-managed voluntary hospitals, and of course the administration brought in a great body of experience peculiar to such hospitals which it would be a catastrophe to lose. Therefore no Minister of Health in his senses would set about to destroy voluntary hospitals, apart from the fact that if he did so the country would have to bear the burden of several millions of additional expenditure. It had to be recognized, however, that the voluntary hospitals were not evenly distributed and that a large number were in financial difficulties. What made the matter worse was that the "new rich" had not yet learned to subscribe, and old subscribers could not do so as formerly because they found their taxation so very heavy.

In these circumstances he started, during the present year, an inquiry into the position of the Poor Law infirmaries. Experts examined 53 of these institutions, and the report was most encouraging. In a number there was much spare accommodation. In one at Camberwell, for instance, there were 200 empty beds, and at Withington near Manchester, out of a provision for 2,600 persons there were 1,100 empty beds. Further, he had a scientific examination made of the best of these Poor Law infirmaries, and the report of most of these places was most favourable.

The proposals which he was making were designed to secure the use of these empty beds. It was necessary to try to make the best use of all the accommodation available. A considerable number of guardians were receiving paying patients. He did not know whether it was an infraction of the Poor Law. It was being done, and he would be betraying his trust if he were to prevent its being done in face of the enormous shortage. Section 131 of the Public Health Act enabled public authorities to provide hospitals, and the question had arisen whether that meant non-infectious hospitals, or general hospitals. A considerable number of authorities had taken it that the powers under the Act were general powers. He could mention an authority within hail of Westminster which had made a Poor Law infirmary into a general hospital. Another classic case was that of Bradford. They had converted a Poor Law infirmary into a general hospital to help them meet the needs of the city. In proof that he was not going against the opinion of medical men in what he was doing Dr. Addison said that he obtained the views of the Bradford Division of the British Medical Association, and they agreed with the principles of the proposal as regards Bradford, with some modifications. The Ministry had the alternative of doing nothing but mark time and so allowing institutions to become bankrupt, in which case there would have been a great outcry at the burden put on the ratepayers; or else of allowing what was happening to take place. Under Section 131 of the Public Health Act, as he was advised, the only authority which had not power to deal with this kind of thing was the county council, and clearly, if these infirmaries were to be used, the county council should have authority to take them in hand. The object of the clause was to enable this to be done and to clear up the interpretation of the law.

Dr. Addison went on to say that he wanted to secure the help of the medical profession and looked forward to having it. But, of course, if an authority found the money for a particular service it naturally would have a determining voice in how the money should be spent. He [illegible], however, that before a scheme was definitely determined upon, they should be guided by the medical profession.

The Insurance Medical Service.

The Minister [illegible] the Committee on another [illegible] of the Insurance Medical Service. Statements had appeared to the effect that he had arranged that each medical practitioner [illegible] patients on his panel. [illegible] before the new Regulation [illegible] there was no limit to the number of persons who [illegible] the Insurance [illegible] 7,204 had less than 900.

In the course of the discussion which followed, Dr. Addison [illegible] from Captain [illegible] for hospitals. [illegible] asked Dr. Addison if he could guarantee that if the proposal [illegible] there would be no [illegible] to deal with the whole question [illegible]. Dr. Addison replied that [illegible] was contemplated and he [illegible]

Captain Elliot said the Committee did not wish to express any opinion on what the Minister had kindly stated to them, but the address showed the urgent necessity for a full debate in the House on the whole position of the health services. Mr. T. Myers asked whether, if the voluntary hospitals had adequate financial support, they would be equal to the needs of the community. Dr. Addison replied that, of course, they would not. Mr. Myers said that was the answer he had expected. People had a very definite objection to going into Poor Law institutions, and it would be a generation before that feeling had passed, whatever scheme was adopted. Some time ago a report had been issued in favour of the breaking up of these institutions and the transference of the functions of the guardians to other authorities. It was highly desirable that that should be proceeded with. The time had passed for voluntary institutions, maintained by going round with the hat. It was a public responsibility, and the Government should take the matter up on the lines suggested. Captain Elliot hoped the Labour Party representatives would not rashly decide in favour of a policy which would sweep away voluntary institutions, which were doing so great a work. That would entail a further increase in the rates, and the doctors, who had to pay so heavily, would not be able to give their services. Dr. Addison added that Sir George Newman (who was present) informed him that the number of empty beds in Poor Law infirmaries was about one-third of the accommodation.

The Dentists Bill.—About a hundred members of Parliament attended a meeting called by Mr. Raffan, on October 26th, to urge the Government to bring forward the proposed legislation as to the registration of dentists, on the lines of the report of the Select Committee over which Mr. Raffan presided some months ago. The proposal is that in establing the registration system dentists who have not qualified by examination shall be allowed to continue in practice if they have been in practice for five years, and that those who have begun in the last five years shall be able to do so on passing an examination. It was agreed to ask the Government to introduce the bill this session, and, if it proved uncontentious, to pass it within the session.

Pensions Appeal Tribunal.—A number of questions have been addressed to the Minister of Pensions with reference to the work of the Pensions Board and the Pensions Appeal Tribunal. Mr. Spencer inquired what relief there was for a disabled man who had on enlistment passed as A1, but was debarred from benefit on the opinion, first of a doctor and then of a medical board, that he was suffering from some ailment contracted before he entered the service. Mr. Macpherson replied that recourse could be had to the Medical Appeal Board, that would sit with the other additional board under the jurisdiction of the Lord Chancellor. He added, in reply to Mr. Newbould, that in 70 per cent. of the cases the Lord Chancellor's tribunal decided in favour of the appellants. In reply to Sir Henry Cowan, Mr. Macpherson said that if a man was discharged from the army or navy by reason of an ailment resulting from his service, that clearly would be a case within the jurisdiction of the Ministry of Pensions. Referring to a particular case that Sir Henry Cowan had brought before him, Mr. Macpherson said there was an appeal first of all to a medical board, and that had turned it down; then there was an appeal to an Appeal Tribunal, which also turned it down. In such circumstances, what could a Minister do except be guided by his technical advisers?

Ex-service Men receiving Poor Law Relief. In answer to several questions, on October 21st, touching the application by discharged soldiers and sailors for Poor Law relief, Mr. Macpherson said that discharged disabled men who held that their assessment for pension did not adequately represent the extent of their disablement were, under present arrangements, entitled to appeal and have their cases reviewed by a Medical Appeal Board and by the Ministry of Pensions. Mr. Lawson put it that medical boards were turning away without pensions many men who were suffering as the result of their war services, and he wanted to know whether any order had gone out to the medical boards on this subject with a view to turning men away. Mr. Macpherson maintained that the Ministry of Pensions had been legitimately generous in all cases in which disabled men had been assessed, and again referred to the resource provided in the Supreme Court of Appeal appointed by the Lord Chancellor.

Suicide Statistics.—Replying to Mr. Malone, on October 21st, who sought statistics regarding suicides of ex-service men since the termination of the war, Dr. Addison said the number of persons who had committed suicide in Great Britain during the period from the last quarter of 1918 to the first quarter of 1920, both inclusive, was 5,219. No figures were available as to what number or percentage of those persons were ex-service men.

Cost of Living.—The average increase in the comparative cost of living of the working classes since July, 1914, was 155 per cent. on July 31st, 161 per cent. on September 1st, and 164 per cent. on October 1st. Sir Montague Barlow stated that the increase during the months of August and September was largely due to seasonal increases in the price of milk, butter, and eggs, and to the increase of rents resulting from the recent Increase of Rent and Mortgage Interest (Restriction) Act.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Presidential Address.

AT the annual meeting of the Society of Medical Officers of Health, held on October 22nd, the new President, Lieut.-Colonel F. E. **FREMANTLE**, M.P., consulting medical officer of health for Herts, gave his presidential address on Parliament and Public Health. He referred to the share medical officers of health individually and as a body could take in the government of this country, with a view to the promotion of national health. No one, he said, who had been through the experience of a medical officer of health could fail to realize the unique opportunities that offered themselves in Parliament. In order to be of value in political life it was of great importance that a man should have a ground-work not merely of the functions and statistics, but of the habit of mind of a medical officer of health, who, in his professional work, had to go through the processes of reconnoitring the ground, as every public man should do. The President next considered the new outlook for preventive medicine and health work in the light of the experiences of the war and the discoveries of this century. The influence of medical officers of health on public opinion, he said, was indirect, subtle and hidden, but very great. He then discussed what the Government had done for public health in the past, what it might achieve in the future, and how, through Parliament, it could be helped to do this. Those who had served with the Army Medical Service in the war felt that the function of the Ministry of Health must be comparable with that of the A.M.S., which was responsible for the health and physical efficiency of all the troops. Coming to the health measures now before Parliament, Colonel Fremantle held that it was a mistake to suppose that the clause in the Ministry of Health (Miscellaneous Provisions) Bill allowing county councils to subscribe to voluntary hospitals, or to maintain hospitals of their own, was intended as a substitute for general action on the problems raised by the Consultative Council. He regarded it as merely a stop-gap proposal to continue the provision of medical aid until the problem could be dealt with as a whole. In conclusion, he referred to the value of co-operation with kindred bodies, remarking that the parliamentary work of the British Medical Association deserved the fullest recognition from the Society of Medical Officers of Health.

Annual Dinner.

The annual dinner of the Society was held at the Hotel Cecil, on the evening of the same day, with the **PRESIDENT** in the chair. Among those present, in addition to the speakers, were Sir George Newman, Major-General Sir William Macpherson, Air Commodore M. H. G. Fell, and Dr. W. H. Hamer, medical officer of health to the London County Council. The toast of "The Fighting Services" was proposed by Professor H. R. **KENWOOD**, who eulogized the splendid and successful efforts made during the war to overcome our enemies, microscopic and macroscopic. In responding, Brigadier-General W. W. O. **BEVERIDGE**, Director of Hygiene at the War Office, spoke of the great advances made in army hygiene. One of the most serious problems of the war was the loss of man power from disease caused by dirt and vermin, which accounted for 50 per cent. of the admissions to hospitals. The lessons then learnt had, however, borne fruit: the Royal Navy had its own sanitary service, with health officers in every port; the Royal Air Force, too, had its separate sanitary service. In the Regular Army a Directorate of Hygiene had been set up, and a corresponding directorate would form part of G.H.Q. when the army again took the field. Further, in every command there were now schools of hygiene for the instruction of all ranks in the preservation of health, and sanction had been given for the formation of four sanitary companies, each consisting of four sections, in the Territorial Army. The toast of "Parliament and the Public Health" was proposed by Professor E. W. **HOPE**, who spoke of the need for education in public health, and suggested that Parliament should exercise liberality in this and cognate matters. Sir **PHILIP MAGNUS**, M.P., in his reply, said that medical science had come under discussion more often during the last two or three years in Parliament than for many years previously; this was largely due to the active part taken by the medical members of Parliament. He referred to his personal debt to the medical profession and to the kindness shown by medical men towards all that he had tried to do on their behalf in the House of Commons. The **BISHOP OF ST. ALBANS** proposed "Prosperity to the Society of Medical Officers of Health," and took the opportunity to urge the need for co-operation between the doctor and the clergyman before the patient was past hope of recovery. The PRESIDENT, in his response gave an outline of the society's work in recent times, and congratulated his predecessor, Professor Kenwood, and the executive secretary, Mr. G. S. Elliston, on the success of their administration. The health of "The Visitors" was proposed by Dr. T. EUSTACE HILL, and was replied to by Sir ARTHUR ROBINSON, first secretary of the Ministry of Health, Sir ANTHONY BOWLBY, President of the Royal College of Surgeons of England, Mr. J. W. GILBERT, Chairman of the London County Council, LORD DAWSON OF PENN, and Dr. T. W. H. GARSTANG, Chairman of Representative Meetings of the British Medical Association.

School Medical Group.

The School Medical Group of the Society of Medical Officers of Health held its fourth annual meeting at the society's offices on October 23rd, with Dr. G. F. BUCHAN in the chair. School and assistant school medical officers attended from the North, the Midlands, and the South of England, representing the London County, counties, county boroughs, and municipal boroughs. Official recognition and representation on the council of the society having been obtained by the reconstitution of the society, new rules and constitution for the group were considered and adopted unanimously.

The objects of the reconstituted group are:

(a) To promote and safeguard the interests of all medical practitioners engaged in connexion with the medical inspection and treatment of diseases and defects affecting children of school age and to secure closer co-operation with other departments of preventive medicine.

(b) To arrange meetings in London and provinces for reading and discussion of papers on clinical, pathological, and administrative problems in connexion with the diseases and defects of children, including clinics, special schools, domiciliary and institutional treatment and after-care schemes.

A representative Group Council was elected. It will arrange meetings and organize provincial subgroups having similar objects for any area, on the application of twenty-five members of the group. Dr. George A. Auden (Birmingham) was elected president and representative on the council, and Dr. A. Ashkenny (Town Hall, West Bromwich) was re-elected honorary secretary, with whom those interested in the welfare of school children and the school medical service are invited to communicate.

Ireland.

MEETING OF MEDICAL DELEGATES.

REPORT OF PUBLIC HEALTH COUNCIL.

A meeting of medical delegates representative of the entire Irish medical profession was held in the Royal College of Surgeons, Dublin, on October 20th, when Mr. R. J. Johnstone, F.R.C.S., was in the chair. Notwithstanding the great difficulties in travelling at present in Ireland the meeting was the largest and most representative held for many years. Delegates were present from such remote counties as Donegal and Kerry. The principal item on the agenda paper was the report of the Irish Public Health Council, which gave rise to a long and interesting discussion. There is a very strong feeling amongst all classes of people in Ireland that their country has been very badly treated in the matter of medical legislation.

Historical Note.

One of the resolutions passed at the meeting points out that while Irish taxpayers contribute their full quota towards the Treasury grants for health services in Great Britain, Ireland does not receive its fair share from the common purse. This state of affairs is mainly due to the fact that Parliament has always availed itself of some pretext to shelve Irish medical legislation with the result that Ireland is fully half a century behind the countries of Western Europe as regards its health services. The Irish press is insistent that if Ireland is to receive its proper share for health services it should be paid about another million sterling per annum from the public funds. It must be admitted the Irish medical profession has ample reason to be dissatisfied with the treatment it has received from Parliament. There are few to question that the Irish Poor Law medical officers, who constitute the chief public medical service in Ireland and who, in numbers are more than 50 per cent of the Irish medical profession, are the worst paid in almost any country. Until recently they derived their salaries in equal proportions from the local rates and Treasury grants. In 1900 the inadequacy of the salaries became a very burning question, and in their efforts to improve their position the Poor Law medical officers received the active support of the British and Irish Medical Associations. The BRITISH MEDICAL JOURNAL devoted, at the time, much of its space to the grievances of the Irish Poor Law medical officers, and extracts from it were regularly quoted in the Irish daily and local weekly press. In the majority of dispensary districts Poor Law medical officers are still liable to render gratuitous medical relief to 60 per cent. of the population of their extensive districts. That so many of the population were and are entitled to free treatment under the Medical Charities Act is due to the fact that these Acts provided for the famine conditions that existed in Ireland in 1847 and 1848, when as many as 70 per cent. of the population were not only destitute, but in a starving or semi-starving condition. Irish medical legislation is so antiquated that the Medical Charities Acts are practically the same to-day as they were in 1847, when they completely failed to provide for the needs of that time. It is only just to say, however, that as far back as twenty years ago the majority of boards of guardians in Ireland realized that their medical officers were in receipt of salaries in many cases not equal to the working expenses of their extensive districts and voted increased remuneration, half of which fell on the local rates and the other half on grants from the Treasury, which was a statutory provision. The Local Government Board, however, rarely sanctioned the full amount of these increases, though they seldom exceeded £15 or £20 a year. This action of the Local Government Board was generally attributed to the refusal of the Treasury to provide its moiety of the increases.

Present Position.

In 1902 the position of the Treasury was made quite clear, as the Government passed an Act relieving the Treasury, amongst other matters, of its obligation to contribute any portion of the increases in the salaries of Irish Poor Law medical officers. In recent years the Treasury, as the result of the 1902 Act, does not pay one-fifth of the salary of an Irish Poor Law medical officer. This, in particular, is the case where doctors' salaries have been recently substantially increased by boards of guardians. The passing this year of the Malicious Injuries (Ireland) Amendment Act and the Restoration of Order in Ireland Act provides that the treasurers of the Irish local authorities shall out of the first moneys under their control meet decrees under the amending Malicious Injuries Act. The effect of this legislation will be as in Limerick Union; when the doctors recently presented their cheques for payment, the treasurers informed them that there was no money to the credit of the guardians.

In connexion with the report of the Irish Public Health Council the following resolutions were unanimously passed by the meeting of delegates:

1. That this meeting of medical delegates approve generally of the Report of the Irish Public Health Council, including the outlines of an Irish Medical Service, which, with the modifications suggested in the report to meet local conditions, should meet all the requirements of an efficient health scheme for the Irish people. A rider was adopted that, in industrial areas, such as Belfast, medical benefits, as in England, should be applied.
2. That, while this meeting approves the fundamental principles of the financial suggestions of the report, namely, that in all expenditure on health services the State and local authorities should share responsibility equally, we are not satisfied that the report contemplates an adequate expenditure on the medical services, and we desire to emphasize the fact that without adequate remuneration of medical officers the desired result of an efficient medical service cannot be attained. That when the proposed Ministry of Health comes to formulate its scheme for an Irish Medical Service, in consultation with representatives of the medical profession, as is suggested in the report, these representatives be directed to press this point on the Ministry.
3. That this meeting desires to point out that, while Irish taxpayers contribute their full quota towards Treasury grants for health services in Great Britain, Ireland at present draws much less than its fair share from the common purse.

Dr. Hickey, in proposing the resolutions, said that it was quite clear that the chief concern of the Irish Public Health Council was to formulate a scheme for a Ministry of Health for Ireland which would suit this country in every respect, and he was of opinion that the Council had very well achieved that object. Though the Irish Public Health Council in the report kept the health interests of the people all the time to the front it was not forgotten that for that purpose it would be necessary to secure the hearty co-operation of the Irish medical profession. Without such co-operation no medical reform could bring any advantages to the people. The financial arrangements of the report were, he said, somewhat disappointing, and, though an improvement on existing remuneration, fell short of the legitimate expectations of the doctors.

Dr. Murphy, in seconding, endorsed what Dr. Hickey had said. Medical representatives of the Irish Public Health Council had done very excellent work, and though naturally as members of the medical profession they felt bound to formulate a scheme for a Ministry of Health for Ireland to give first place to the interests of the people, he was fully convinced they did their best in every way for their profession, who should be under a deep debt of gratitude to them.

A warm vote of thanks to Dr. Rowlette and the other medical representatives on the Public Health Council was carried with acclamation.

WITHHOLDING OF PUBLIC HEALTH GRANTS.

Regarding the action of the Government in withholding the grants for the public health services the following resolution was unanimously passed:

> That this meeting of delegates strongly protests against the diversion of the existing grants to the Irish Public Health services (including portion of the salaries of Poor Law and other medical officials) to any other purpose as inflicting great hardship on the helpless sick poor, as well as depriving those responsible for their medical treatment of the necessary means to render them efficient professional services.

MEDICAL ATTENDANCE ON ROYAL IRISH CONSTABULARY.

The terms accepted by the Irish Medical Association for medical attendance on the Royal Irish Constabulary were approved. The new remuneration is £1 4s. per annum for each police constable, without attendance, as heretofore, on the dependants. The capitation fee covers cost of medicine and surgical appliances. In addition to the capitation fee there is a mileage allowance of 6s. per annum for all constables residing over two miles from the doctor's residence.

Regarding the terms of appointment of medical attendants to the police, and arising out of representations made by the Irish Committee of the British Medical Association to the Inspector-General of the Royal Irish Constabulary, the following resolutions were unanimously adopted:

> That any settlement of the question of medical attendance on the constabulary should provide in the case of the dismissal of a medical attendant that the reasons for such removal be fully stated and, if demanded, an open inquiry should be granted.
>
> That in any case where a doctor recently resigned his office as medical attendant on the police, owing to the unsatisfactory conditions of the service, and if the position is now held by another doctor he should resign if the former medical attendant is willing to resume his office.
>
> That this resolution should also apply, in similar circumstances, to the medical attendants on postmen, coastguards, railway employees and others, as well as in the case of registrars of births, deaths, and marriages.

AMALGAMATION OF IRISH MEDICAL ORGANIZATIONS.

The Chairman, Mr. R. J. Johnstone, who is also chairman of the Joint Organization Committee appointed in July, 1919, to consider the question of uniting the Irish medical profession in one representative organization, gave an account of the work done by the Organization Committee (in accordance with its terms of reference), including the interview which took place on November 5th, 1919, between the Council of the British Medical Association and the deputation appointed by the Joint Organization Committee. The Chairman, however, was of opinion that, owing to the present very unsettled condition of Irish affairs, much further advance could not be made until the political situation became more settled; he suggested that the Joint Organization Committee be reappointed, and that it should meet and report when it considered the time was suitable to resume negotiations for the amalgamation of existing Irish medical bodies. The suggestion of the Chairman was unanimously adopted by the delegates.

FEES FOR MEDICAL EXAMINATION FOR LIFE INSURANCE.

The question of fees for medical examination in the case of life insurance gave rise to a somewhat warm discussion, and the action of city consultants who accept the medical examination of cases refused by provincial practitioners, owing to the inadequacy of the fee, was adversely criticized. The "lock-out threat" conveyed to the meeting on behalf of the insurance companies was warmly resented as being uncalled-for and high-handed. The position of the insurance companies is that they will not pay a scale of fees in Ireland higher than in England, and that the English scale was accepted by the British Medical Association. To that the Irish doctors reply that the increased fees given to English doctors by the intermediate offices in industrial insurance cases is undoubtedly substantial for the class of medical examination required. These increased fees, however, do not apply in the case of nine out of every ten doctors in Ireland, where the number of industrial insurances are negligible from the point of view of the average medical practitioner.

It was explained to the delegates that the British Medical Association neither accepted nor recommended the scale of fees as applicable or suitable to conditions in Ireland. The Irish Committee of the British Medical Association, at its meeting on October 20th, strongly condemned the unjustifiable use the insurance companies were making in Ireland of the Association's acceptance of fees meant to be applicable to Great Britain.

The delegates decided to adopt the scale of fees agreed upon at a recent meeting of the medical practitioners in Dublin—namely, £1 1s. for medical examination and report for proposals under £500, and £2 2s. for proposals of £500 and upwards. A deputation was appointed to confer with the insurance companies, and it was decided that if an amicable arrangement was not come to between the insurance companies and the doctors, steps should be taken for a thorough organization of the profession to secure their demands.

IRISH NATIONAL HEALTH INSURANCE COMMISSION.

The delegates agreed to appoint, as suggested by the Irish Insurance Commission, subcommittees of each Local Medical Committee to investigate complaints in regard to medical certification under the Insurance Act, the medical treatment of ex-service men, and any other business which Local Medical Committees, for their convenience, might assign to the subcommittees.

OTHER BUSINESS.

The question of the payment of the salaries of Poor Law medical officers is receiving special consideration, but so far the proceedings are of a confidential character, as it is considered it would not be helpful to have such matters at the present time the subject of public discussion.

The delegates considered several other matters on the agenda paper, many of which had been discussed at previous meetings.

A very cordial vote of thanks was passed to the chairman, Mr. R. J. Johnstone.

England and Wales.

LIVERPOOL MEDICAL INSTITUTION.

THE first meeting of the eighty-second session of the Liverpool Medical Institution was held on October 14th, 1920. There was a large attendance of members and associates, and war medals and decorations were worn. The president, Dr. John E. Gemmell, delivered an inaugural address on literature and medicine. Rapidly passing in review the intimate connexion between letters and the healing art, he remarked incidentally how much more famed in literature than for their contributions to medical knowledge were the majority of those whose names he brought before his hearers. An exception was the case of Dr. Oliver Wendell Holmes, who contributed observations of great value to the elucidation of the cause of puerperal fever. The cultivation of literature was a real recreative influence, freeing the mind from the trials of practice at the close of a day's work. A vote of thanks to the president for his address, proposed by Dr. T. R. Glynn and seconded by Mr. Rushton Parker (both ex-presidents), was passed with loud applause. Afterwards Dr. Gemmell entertained the members to refreshments and a musical programme. It is gratifying to be able to record a notable increase in the membership and associateship of the Institution during the past nine months.

ANNUAL MEDICAL SERVICE IN LIVERPOOL.

The annual medical service, held on October 17th, was conducted by the Bishop of Liverpool; the sermon was preached by Dr. J. H. Bernard, Provost of Trinity College, Dublin, who took his text from 1 John v. 21, "Keep yourselves from idols." Dr. Bernard pointed out that the object of theology and of science was the attainment and realization of truth. Seekers after truth were liable to be misled by the same false idols, the same prejudices, and the same weaknesses. The day was past for the repudiation of science by theology, and vice versa. Both spheres of knowledge were mutually subservient, and it was recognized that the mysteries of nature could not be explained completely by the researches of the laboratory. There was a good congregation, and a larger number of the profession than on previous occasions wore academic dress. The collection was made on behalf of the Royal Medical Benevolent Fund, and amounted to £49 5s. The Honorary Treasurer, Dr. J. E. Nevius, 32 Prince's Avenue, Liverpool, would be grateful if those medical men who were unavoidably absent would send their donations to him at their earliest convenience.

AN X-RAY DEPARTMENT AT BETHLEM HOSPITAL.

The *x*-ray apparatus which has been given to the Bethlem Hospital by Sir Charles C. Wakefield, president of the hospital, was formally installed on October 22nd. Sir Charles Wakefield, in welcoming the Lord Mayor, alluded to the old-standing connexions which united the ancient foundation of the Bethlem Hospital with the City of London. Mr. Lionel Faudel-Phillips, in accepting the gift on behalf of the governors, said that Bethlem and Bridewell Hospitals were very little known to the outside world. Many appeals were made for other hospitals, but few on behalf of those which dealt with the mentally afflicted. Dr. J. G. Porter Phillips, the physician and medical superintendent, said that the good work inaugurated there by Simon FitzMary had been carried out continuously since 1247. The sinister atmosphere of mystery and superstition which so often cloaked cases of mental disorder in mediaeval times had slowly given way to the common-sense teachings of medical science. Since 1865 the policy of the hospital had been to admit only cases that were presumably incurable, occurring in the educated classes. During recent years, with the aid of generous benefactions from the Goldsmiths' Company, the pathological department and its laboratories had been remodelled and research therein had been greatly facilitated. Lectures and clinical demonstrations were given at the hospital to students of St. Thomas's, University College, Guy's, the London, and the Royal Free Hospitals. It was proposed in the near future to appoint a staff of teachers and to establish the hospital as a teaching centre for those desirous of specializing in mental diseases. With the inauguration in November, 1919 of the new hospital, or department for nervous diseases, situated on the former site of the Royal South London Dispensary, the dawn of a new era in the history of the hospital had been heralded, and a means had been provided for the better [illegible] of neurology and psychiatry, [illegible] apart from each other, to [illegible]. Here, in conformity with the teaching of modern medicine, prophylactic treatment could be carried out, and cases of the borderland type could be [illegible] treated. The x-ray apparatus presented by Sir Charles Wakefield was much needed and, in the care of Dr. Russell Reynolds, the honorary radiologist, would undoubtedly play an important part in treatment and research.

MANCHESTER EDINBURGH UNIVERSITY CLUB.

The annual dinner of the Manchester Edinburgh University Club was held on October 21st at the Queen's Hotel, Manchester, when about eighty members and guests sat down to dinner under the presidency of Dr. J. Arthur Helme. The guest of the club was Professor G. Lovell Gulland of Edinburgh University, and among the guests from the Manchester Medical School were Professors [illegible] and Dean, Dr. [illegible], Dr. [illegible], and [illegible] while Professors Harold and J. W. Smith, Dr. [illegible], Mr. [illegible] Wright, and others, were present as members of the club. In reply to the toast of "The University of Edinburgh," proposed in a happy speech by Dr. David Orr, Professor Lovell Gulland outlined the difficulties the university authorities were having in dealing with the enormous increase of medical students, and how the number of beds available for clinical instruction was being augmented by bringing every available hospital in the area within the scope of the teaching school, while a new convalescent hospital of 300 beds and great new laboratories were being built. The toast of "The Club" was proposed by Professor Wild of Manchester and replied to by the President, Dr. Helme; and Dr. Williams and Professor Wild replied to the toast of "The New Members and Guests," proposed in an amusing speech by Dr. Scott Stevenson. Old college songs, sung by Dr. Spencer Watkins and Dr. Corsar Sturrock, contributed to the gaiety of a very successful reunion.

Scotland.

THE NEW GLASGOW CLINICAL SCHOOL.

ON October 18th a school for clinical teaching in connexion with the Glasgow Victoria Infirmary was opened. The ceremony was presided over by Mr. William Gray, who explained that owing to the pressure upon the Royal and Western Infirmaries the governors of the Victoria Infirmary had been approached by the university authorities and asked whether they could provide facilities in that institution for clinical teaching. The governors at once took the matter up and obtained the ready co-operation of the medical and surgical staff. With the help of a donation of £20,000 from Mr. M'Beth the scheme had now been carried through. Sir James Mackenzie, M.D., F.R.S., then gave an address on medical education. He understood that after the pressure had been taken off the university a post-graduate school would be started. There was, he said, a widely held belief that during the last quarter of a century medicine had made great progress, but unfortunately much of what was considered progress was but change and movement without any clear understanding of what constituted science as applied to medicine. He directed attention to instances of confusion which were to be found in medicine, in education and research. The discovery of auscultation and the use of the stethoscope in detecting the sounds of the heart afforded an illustration. Though much labour had been spent in detecting the murmurs and finding out the mechanism of their production, the nature of the knowledge revealed and how it should be applied had not been understood. A similar lack of understanding would be found in the history of almost any discovery. Lister's discovery, though it had benefited humanity, had had an injurious effect upon the progress of surgery inasmuch as it had rendered surgeons careless as to the meaning of the signs and symptoms of the disease. The first step in research was the differentiation of diseases by means of the symptoms produced, and the next was the study of the circumstances which favoured or induced the onset of the disease. The clinical worker must place before the laboratory worker a clearly defined problem. Sir James Mackenzie emphasized the importance of the out-patient department in connexion with the teaching of the student. Referring to his own experience of heart affections, he said that to understand the subject of prognosis the observer had to undergo a long training and then to have the opportunity of studying not only acute cases, but those that proceeded gradually for ten or twenty or more years. When the laws governing the production of symptoms were recognized the discovery of one would guide the practitioner to search for others so that the group of symptoms peculiar to different diseases could be distinguished. Sir Donald MacAlister, in proposing a vote of thanks to Sir James Mackenzie, said that it did them good to be shaken up by such an address; it made them look to their foundations to see whether these were sound or not. He emphasized the importance of paying the closest attention to symptomatic research.

TYPHUS IN PAISLEY.

It was reported last week that there were twelve cases of typhus fever under treatment in hospital at Paisley. The outbreak is understood to be confined to the northern district of the town; several deaths have already taken place. The public health authorities have taken precautionary measures to prevent the further spread of the disease.

Correspondence.

A SOLUTION OF THE HOSPITAL PROBLEM.

SIR,—All are agreed that (1) more money and (2) more accommodation for the treatment of patients are needed. When the bill now before Parliament becomes an Act, the Ministry of Health will, it is presumed, proceed to direct the local bodies—county councils—to do its bidding, whatever it may amount to, for the provision of more hospital accommodation wherever wanted. But the Ministry, as it will not supply the money, will not be able to dictate to a local statutory body, and therefore it will be as helpless as its predecessor, the Local Government Board.

The crux of the whole problem is, Where is the money to come from? There are several sources.

1. *From Imperial Taxes.*—This source would relieve those who derive benefit from hospitals from any obligation to make provision for themselves; the injustice of this would not, under the present system of taxation, I think, be tolerated for long.
2. *From Local Rates.*—Here again the burden would be very unequally distributed, and this inequality would rapidly lead to injustice and consequent difficulties.
3. *From Voluntary Subscriptions and Donations.* This source is dwindling, and it is likely to do so with greater and greater rapidity as the present economic changes proceed; therefore the revenue of hospitals must become less able to meet the extra expenditure on living and wages.
4. *From Compulsory Contributions out of Employers and Employees.*—This is now possible by an extension of the National Insurance Act, and it is the only source which can be made adequate and which possesses the power of elasticity varying with the hospital needs and with any increase or decrease in the population in a given area. If each of the 13,000,000 insured persons contributed 1d. per week and the employers a like sum, £5,633,333 6s. 8d., more or less, would be available each year in addition to about £1,200,000 (*Burdett's Hospitals and Charities, 1917*) derived from endowments specifically left for the benefit of the sick. In this way money could be got regularly and the sum available for a given period could be estimated and the future expenditure based upon it. The present total annual expenditure on the voluntary hospitals cannot be estimated at less than £4,000,000.

This last appears to me the only source of revenue for the hospitals that gives promise of adequate support and proper provision for all our sick and injured, and, in addition, suitable accommodation for children and for maternity cases which should no longer be entirely left to the care of a midwife, and often in a house totally unfit for the woman to be in during her recovery and convalescence.

If the money were obtained from employers and employees by direction of the State, thus ensuring that each worker and each employer paid their proportion, the government of the hospitals should be shared by each party. The Ministry should, I think, take up the control and maintenance of buildings, the erection of new ones, the appointment of managers, of doctors and nurses, and of supplies of all kinds. The insured and the employers should, on the other hand, undertake the social care of the patients, and see to all amenities that help to reduce the disadvantages attending residence in hospital. Thus the hospital needs of insured persons would be provided for.

There would, however, appear to be no reason why all employers of labour, the professional classes and others should not avail themselves of the advantages such hospitals would afford. For this all that these classes would need do is to co-operate and ask under what conditions and circumstances they could insure under an extended national insurance scheme. They could thus share with the working classes the enormous advantages of treatment for disease or injury in large and well equipped public institutions, and at a very moderate cost. Special provision might be made to meet their social needs; if so an adequate addition to their premium would be necessary.

I believe a sound hospital service could be arranged on some such lines for all members of the community that desired to avail themselves of it; and with hospitals of large size in suitable and convenient centres, and the easy transport facilities of to-day the treatment of serious injuries and disease would no doubt be very greatly improved. In such a scheme the general practitioner should be able to retain contact with the patient of whatever grade in social life, and he should be given facilities to watch the treatment in the hands of the specialist. Hospital service should, I believe, be arranged so that the general practitioner feels he is an integral part of the organization. He should have the right to visit his patient and to consult with the specialist concerned in the treatment of his case; this would, I am convinced, be advantageous to both patients and doctors. The general practitioner could in such large hospitals be afforded, from time to time, facilities for clinical practice, observation, and opportunities for study without expense and with no loss of income.

In conclusion, may I say that I sincerely trust the above suggestion will receive due consideration from the Ministry of Health and from the profession; for upon the right solution of the hospital problem largely depends the future progress of medicine and surgery in all their branches in this country.—I am, etc.,

Cambridge, Oct. 25th. JOSEPH GRIFFITHS.

THE FUNCTION OF MUCUS.

SIR,—The remarks on this subject by Mr. Benians and by Dr. Crookshank suggest the difficulties encountered in connexion with the mucins and "mucoids," which have such a wide distribution in the animal body. That Mr. Benians is right in attributing to the surface mucus a barrier action in respect of toxic ferments and bacteria is proved by the fact that glucosamin—the nitrogen-containing carbohydrate of mucin—is not fermentable with yeast, and is not affected by the oxidizing and dissociating ferments of mammals (Fabian and others). The mucins are also very resistant to putrefaction, and it was affirmed by Cohnheim that "their peculiar physiological property makes the entrance of putrefactive bacteria a difficult matter, while bactericidal bodies may also play a part." It is a curious fact, however, that certain bacteria secrete a true mucus.

But a consideration of the structure of mucin and its distribution in the organism leads one to adopt a wider conception of its functions. In a paper published in the JOURNAL, vol. i, 1908, p. 369, I ventured to express the opinion that the mucous glands (which are deeply embedded in the mucous membrane) minister in some way to the growth and development of the pertaining organs, and thereafter assist in maintaining their physiological fitness—possibly by an internal secretion, or by regulating the cell ferments by some internal action. It was also pointed out how mucus differed in its relative component parts and in its reactions in different situations, and how the structure of mucin was of such a complexity as to suggest a recondite function. As a matter of fact, the structure of mucin has not yet been elucidated. We know that it contains a protein radical *plus* glucosamin, but the glucosamin is not contained in the molecule as such, only in a more complex form. This carbohydrate group is very rich in oxygen. Mucin also contains a large amount of sulphur. The precise stereo-chemical position of the amino group is as yet undetermined.

Again, we find that in the body mucin is present not only as a product of epithelial cells, but also (often referred to as "mucoid") in the interstices of connective tissue, between individual cells, in cartilage, in bone, in the blood serum, in the eye, etc.; and it exists in white of egg as ovi-mucoid.

Evidently, therefore, the domain of mucin is of high importance and of unusual range. And yet there is no substance or secretion about which we know less.—I am, etc.,

London, W., Oct. 23rd. A. G. AULD.

EMETINE IN BILHARZIASIS.

SIR,—In reply to Dr. Esser's letter which appeared in the JOURNAL for October 23rd I append a list of references to papers dealing with the use of emetine in bilharziasis, both in Egypt and elsewhere.

It is evident that the drug has been given a considerable trial, but possibly sufficient evidence has not yet been adduced to warrant its substitution for antimony. Of the observations cited the most suggestive would appear to be those of Erian, who states that in Egypt he has had fifty recoveries with not a single failure, *in cases suitable for treatment*. (The italics are not in the original.) In many instances although a period of more than a year had elapsed since treatment was commenced there had been no return of the haematuria. The drug was given by intramuscular injection in doses which apparently varied from 0.1 gram (1.54 grains) to 0.2 gram (3.08 grains). The author believes that emetine actually kills the worms, for they [illegible] disappear from the urine.

Emetine can be administered intravenously, but is not very suitable for this form of medication and must be given with care. The dosage is ½ to ⅔ grain in 5 c.cm. normal saline. Dale has pointed out that when given in this way emetine exhibits its greatest toxicity, while there is no advantage from the standpoint of therapeutic efficacy. Still it may be noted that Diamantis of Cairo treated his cases by intravenous injection, giving doses varying from 0.02 to 0.1 gram at intervals of two or three days, fifteen to twenty injections in all being usually given. He considers simple, non-septic cases suitable for this method.

I note that Dr. Esser thinks the intravenous route more convenient than the subcutaneous or intramuscular. I confess one of the reasons which made me refer to the emetine treatment of bilharziasis was that I felt it would be helpful and convenient if we possessed a reliable drug which could be administered by some other method than intravenously, especially in countries where facilities for such a line of treatment are poor or lacking. Both Erian and Debbas prefer intramuscular injections.

As I said at the meeting of the British Medical Association, the fact that such very different substances as emetine and antimony have apparently a similar action in schistosomiasis and leishmaniasis is of great pharmacological interest and certainly merits further inquiry. At the same time more extended observations are required as regards the value of emetine in bilharziasis, and if Dr. Esser and others working in bilharzia-stricken districts in South Africa would give the drug a trial and record their results, it would be helpful, whether the latter confirm or confute those already published.—I am, etc.,

ANDREW BALFOUR.

Wellcome Bureau of Scientific Research, [illegible] Gardens, N.W.1, Oct. [illegible]th.

[illegible] Trans. [illegible]

[illegible] traité par [illegible] Bull. et Mém. [illegible] Rev. in Tropical [illegible]

[illegible] émétine. [illegible]

[illegible] en Egypte. Journ. d'Urologie, 1917, vol. 7, p. 17. (Rev. Trop. Dis. [illegible] February 28th, 1920, p. 35.)

[illegible] of [illegible] Trop. Dis. Bull., [illegible]

[illegible] Bull., 1918, [illegible]

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS

SIR,—I have read with great interest Dr. Charles [illegible] communication on "The place of muscle re-education in the treatment of anterior poliomyelitis," which appeared in the BRITISH MEDICAL JOURNAL of October 2nd, and am very glad to see that he once again draws attention to the treatment of the condition. I cannot, however, agree with him when he states (p. 511) that

> [illegible] is an entirely "new departure" from the [illegible] physical therapeutic procedures of . . . and Swedish [illegible].

He goes on to say that the term "muscle re-education" means (p. 511):

> [illegible]

[illegible] excellent description is exactly the aim of [illegible] when applied to infantile paralysis. They are, then, for the most part applied in the [illegible] and to my mind are the best method of muscle re-education yet devised.

He then goes on (p. 511):

> [illegible]

and he considers that the conception of the importance of muscles is new. This is not the case; it has been known to the Swedish school for nearly a century, and was one of the fundamental bases on which Ling and Branting modelled their gymnastic exercises (mostly resisted movements) in the treatment of the disease under consideration.

For further details on mechano-therapeutics in infantile paralysis I refer the reader to an article by myself, published in the *British Journal of Children's Diseases* for 1914 (ix, 155).—I am, etc.,

London, W., Oct. 20th. EDGAR F. CYRIAX, M.D.Edin.

TUBERCULOUS MILK.

SIR,—If I may judge from conversations I have had with medical men in recent years on this subject, the view "that the ingestion of a moderate amount of tuberculous poison during childhood may have an immunizing effect in the long run" appears to be more widely held than one would at first imagine. Dr. Nicol Galbraith aptly calls attention to the 10,000 children under five years of age who die annually in England and Wales from tuberculosis, who have evidently ingested an immoderate amount of tuberculous poison. There is no way, however, of ensuring that children should ingest only the moderate amount of poison suggested by Dr. Paterson. If immunization from this source takes place in childhood, why should it not also continue to take place in adult life?

About fifteen years ago bovine tuberculosis was introduced into Guernsey by some cattle which had been sent to a show in England and afterwards returned to the island. Drastic legislation has now stamped it out. Under no circumstances whatever can cattle be landed in Guernsey save from Alderney and Sark, unless taken immediately to the States' abattoir for slaughter, and no cattle can be exported, sold, or transferred from one farm or island to another unless they have been tested and found to be free within the preceding four months.

The results have been most satisfactory, for in the year ended August 31st, 1920, 1,582 cattle were tested for tuberculosis, and there was not a single reaction. Our population, therefore, drinks now no tuberculous milk, and even fifteen years ago drank only a very small proportion of the quantity which is consumed in England. It is therefore deprived of the benefit (?) of immunization; yet abdominal, joint, and glandular tuberculosis is conspicuous by its absence, and death rates from tuberculosis in Guernsey are much lower than in countries which enjoy the benefits of tuberculous milk.

I entirely agree with Dr. Nicol Galbraith's letter. The last paragraph of it is non-controversial; it is just sound common sense.—I am, etc.,

H. D. BISHOP,
October 18th. M.O.H. States of Guernsey.

GOVERNMENT SUBSIDIES AND THE NATIONAL HEALTH.

SIR,—Dr. Addison's bill—the Ministry of Health (Miscellaneous Provisions) Bill—which proposes to subsidize the hospitals from the rates, raises for us two questions: (1) What is the total effect (the partial effect being obvious) on the health of the community at large of such subsidies? and (2) What should be the attitude of the medical profession to such proposal—if, indeed, the profession has been consulted at all?

I had hoped that there might have been at the Representative Meeting a discussion on first principles as to whether the undeniable and the foreseen rise in our tuberculous mortality was related to the Insurance Act. The hope was for the time baffled; as a whole, Representatives seemed content to accept without question the measures of a party which, so far from "educating our masters" as Lowe advised, humbly sits at their feet and learns. But I found a gratifying number of sympathizers, and learned, moreover, that everyone who had gone into the subject saw that in measures of that kind there must be a menace to the very class—the poor—which they are meant to help. There are written large in history the facts that every fall in the death rate has been preceded by a rise in real wages, and that every fall in real wages has been followed by a rise, at least relative, in that rate, and I have found no fair-minded man cognizant of the facts who does not advocate a scientific inquiry. What is true of tuberculosis is plainly true of other diseases dependent on malnutrition.

The Insurance Act was meant to check consumption: if its premisses were correct, it should have done so; it has disastrously failed. It is childish to blame the war for the culmination of a process nearly twenty years old. The war has, indeed, illustrated our position, while it has glossed over the effects of the Insurance Act. Other classes—for example, the inmates of the lunatic asylums—died faster in the later years; but evidence is constantly accumulating that after 1915 (that is, after money wages had overtaken prices so that poverty was abolished) among "the poor" the tuberculosis mortality (civil) actually diminished up to the end of the war. Under such conditions a wise man would pause to investigate before he extended the principle of governmental subsidies, by way of improving national health. But the deputies of Providence "who sit up aloft" round about Whitehall and "watch over our lives" have no need of mundane wisdom. The poor were dying of consumption; they must have a series of Insurance Acts; whereupon the ingrates died faster still. Taxation has made us all poorer, commodities dearer, and thrown the hospitals into straits; *ergo*, we must be taxed more. The hospitals were meant for the poor; they used to cost the poor no penny which they did not voluntarily spare: therefore an extra burden must be put on the poor; they are to be chastised with scorpions instead of whips.

For that, in plain English, is what the Ministry's bill means; it proposes to throw a burden on the poor which had been voluntarily shouldered by the well-to-do. No means of keeping taxation off the shoulders of the poor has ever been found; the miners are poorer to-day *because* the Government nine months ago cut of taxes raised their money wages. Until the question of the incidence of taxation is settled, to put the hospitals on the rates is a wicked wrong to the poor. Until they have explained the inevitable association of rising poverty with rising rates or taxes, or the gradual slackening of the rate of fall of our tuberculous mortality as taxation rose, the Ministry of Health are bound by the very pity which prompts them to these megalomaniac schemes to inquire what will be their total effect.

I have reason to believe that Dr. Addison's bill has not been referred to the Consultative Council. If that is so, may I beg those who sympathize with the position that no measures (especially at this awful time) which act in restraint of real wages can possibly effect an improvement in the national health, to do all they possibly can to ensure that that Council shall be consulted without delay? or, failing that, to ensure that the Council should ultroneously advise the Ministry?—I am, etc.,

Rayleigh, Essex, Oct. 21st. B. G. M. BASKETT.

THE MOBILE PROXIMAL COLON.

SIR,—I recently had occasion to resect a portion of the transverse colon on account of the presence of a deep ulcer which was so evidently caused by mechanical traction that it may be taken as affording indirect support to Mr. Waugh's theory that the drag of an abnormally mobile ascending colon may be a cause of ulceration of the duodenum. A man of 50 complained of symptoms that made one suspect the presence of a malignant growth in the colon; he also had an irreducible inguinal hernia of long standing. At the operation a mass of omentum was found incarcerated in the right inguinal canal and the omentum itself was thickened into a stout band along the line of traction between the herniated portion and the transverse colon. The latter was drawn downwards and sharply kinked at the point of attachment of this thickened band. A deep ulcer was found in the kinked portion. In this case it seems clear that traction was responsible for the formation of the ulcer. A somewhat similar mechanical effect, though less extreme, might be exerted upon the duodenum by a mobile proximal colon, and predispose to ulceration.—I am, etc.,

Leicester, Oct. 25th. T. C. CLARE.

SIR,—May I ask you to be good enough to correct a misprint that has crept into my letter in reply to Mr. Waugh, which appears in to-day's issue of the JOURNAL? The sentence, "The distribution of duodenal ulcers in his series, and Mr. Waugh's definite statement as to their usual distribution, are so much at variance with the experience of *the* surgeons," etc., should read, "the experience of *other* surgeons."

The error is obviously due to the fact that you had not sufficient time to send me a proof, but the effect of it is most unfortunate, and I should be glad if you would correct it in your next issue.—I am, etc.,

Manchester, Oct 23rd. JOHN MORLEY.

Obituary.

SAMUEL SLOAN, M.D.,

Glasgow.

WE regret to record the death of Dr. Samuel Sloan, which took place at his residence in Glasgow on October 17th, after a brief illness. Born in Glasgow in 1843, Dr. Sloan received his education at the High School and University of Glasgow; he graduated M.B., C.M. in 1866 with commendation, M.D. in 1870, and F.R.F.P.S.Glasg. in 1877. For many years he enjoyed an extensive practice in Glasgow and the neighbourhood. Dr. Sloan had special interests in many branches of medical science—notably midwifery, gynaecology, and electro-therapeutics; he was connected with the Glasgow Hospital for Diseases of Women as a teacher and as a visiting physician, and was consulting physician successively to the Samaritan and Maternity Hospitals. His numerous students bear testimony to the benefits they derived from his tuition. He had acted as examiner in midwifery and gynaecology at Glasgow University, and in the Royal Faculty of Physicians and Surgeons, and was a past president of the Electro-therapeutic Section of the Royal Society of Medicine. He was President of the Glasgow Obstetrical and Gynaecological Society from 1908 to 1912. Dr. Sloan was the author of "Treatment of labour delayed by obstruction at pelvic brim," "Ionic medication in treatment of obstinate cases of pelvic diseases in women," "Physiological effects of high-frequency currents in disease," as well as numerous other papers on kindred subjects. His book on *Electro-therapy in Gynaecology*, published in 1917, is a well known and standard work containing a record of much valuable original investigation. At the time of his last illness he was busily engaged in revising a new edition of this book. He was an excellent mechanic and constructed many of his own instruments; one of his pleasures was to survey the planets with a telescope to which he had adapted various mechanical appliances with his own hands. Dr. Sloan was a man of most exceptional energy, and in the leisure left him by the very exacting demands of his practice he found recreation in the study of zoology, astronomy, and scientific photography. He was a genial, unassuming, and kindly man, and highly respected by a large circle of friends. He is survived by his widow and a numerous family, three of whom are well known members of the medical profession—his namesake, Dr. Samuel Macfarlane Sloan of Birmingham, Colonel John Macfarlane Sloan, C.M.G., D.S.O., and Mrs. Elizabeth Sloan Chesser, M.D., of Harley Street, London. One of his sons was killed in the late war. Dr. Sloan was buried in the Glasgow Necropolis.

Dr. JOHN RITCHIE writes: As one who had for many years acted for Dr. Samuel Sloan during his annual summer holiday, who had derived counsel and inspiration from his bright and cheering advice, and had received many kindnesses at his hands, I should like to pay a brief tribute to his memory. Dr. Sloan's capacity and zeal for work were enormous. Possessed of good health, a retentive memory, exact and methodical habits, he overtook the duties of a large and widely scattered practice in a way that many of us failed to comprehend. It was said of him at one time that he lived in his carriage. At all events, it sometimes taxed the powers of three pairs of horses to carry him over his rounds in a day. He was a very well-read man, and there were few subjects, not only in medicine, but in most of the allied subjects, regarding which he was not able to speak, and to speak well and fluently. During his later years he devoted great attention to electro-therapeutics. Dr. Sloan used to say that the real object of a holiday was to make oneself better able to do his duty, and that if the holiday did not produce this effect it had better not be taken. He was pure and upright in his ways, and he was deeply religious, though some were surprised at the views which he expressed. He was a living sermon on the text "Whatsoever thy hand findeth to do, do it with all thy might."

Another colleague, "W. G. D.," sends the following personal appreciation: Dr. Samuel Sloan was a man of striking physical appearance, tall, erect, and quick and active in his movements. He certainly looked ten years younger than his age, and many of us must have been astonished to learn that he was in his 78th year. He was of a bright, happy disposition, and while he, like Dr. Peter Low, "cured many while he lived . . . of his God he got the grace to live in mirth and die in peace." I am sure that by his bright and hopeful manner Dr. Sloan brought comfort and healing to many a stricken soul. Whilst distinguished as an obstetrician and electrical therapeutist, Dr. Sloan took a great interest in biological questions, and particularly in marine biology, making a practical study of this on the shores of the Island of Bute, where he had a house, and where he regularly spent the week-end all the year round. He made a study also of astronomy, and nothing pleased him more than, in the company of a congenial friend, to survey with his astronomical telescope the starry heavens. He was an excellent conversationalist, and his friendship will be missed by many.

ROBERT KIRK, M.D.Edin.

Dr. Robert Kirk of Rowan Bank, Bathgate, Linlithgowshire, was one of a number of distinguished men who during the last forty years settled in country practices in the neighbourhood of Edinburgh.

After studying in Edinburgh University he took the degrees of M.B. and C.M. in 1876, and in the same year became a Licentiate of the Royal College of Physicians; in 1879 he graduated M.D. with honours, and two years later he became a Fellow of the Royal College of Surgeons of Edinburgh. He was a president of the Royal Medical Society, and held various posts in the Royal Infirmary. His interest in the scholarly aspects of medicine was shown by his being a member of the Harveian, the Obstetrical, and of the Botanical Societies of Edinburgh. He settled in Bathgate, the birthplace of Sir James Simpson and of John Reid, the physiologist, and soon established a great reputation there. He was parochial medical officer, medical officer of health, and public vaccinator for Bathgate, and a J.P. for Linlithgowshire, as well as surgeon to the post office; and he took a great interest in the R.A.M.C., in which he was lieutenant-colonel and had a Volunteer Decoration. He also had a large and influential private practice in and around Bathgate. He was a keen curler, and greatly enjoyed his game of golf.

Dr. Kirk died at Crieff on October 16th, and was buried on the 19th at Bathgate. He will be greatly missed by the many patients who made up his practice.

Universities and Colleges.

UNIVERSITY OF LONDON.

Bloomsbury Site.

At its meeting on October [illegible], 1920, the Senate, after considering a report of [illegible] Committee and the [illegible] the Vice-Chancellor, [illegible] and the Chairman of the Board of [illegible], accepted [illegible] the offer of His Majesty's Government [illegible] of the site in the north of the [illegible]. [illegible] April [illegible], 1920.

[illegible] of the University's [illegible] Treasury [illegible] of [illegible] and in the [illegible] letters [illegible] 6th, 1920, to the [illegible]

[illegible] shall not be [illegible] of the grants made to universities for [illegible]

[illegible] the [illegible] of the Senate [illegible] of [illegible]

3. That the University shall retain, and King's College shall retain, full possession of their present sites and buildings under the conditions under which they now hold them until such time as the new buildings are ready for occupation and are free from debt.

4. That the buildings to be erected for the University head quarters shall be, as regards dimensions and design, in accordance with plans to be agreed upon between the Senate and His Majesty's Treasury, and shall afford not less than 50 per cent. more floor space than is now allocated in the buildings at South Kensington for the separate use of the University.

5. That the terms of the removal of King's College from the Strand to the Bloomsbury site shall be a matter of subsequent negotiation between His Majesty's Government, the council of King's College, and the Senate of the University, and that an agreement shall be concluded between the said parties.

The Senate, in accepting, subject to the above conditions, the Government's offer of a site in Bloomsbury, assume that the offer does not incidentally involve a policy of curtailing the development of the work of those colleges and schools of the University which are not now, nor in the future will be, situated in the neighbourhood of the Bloomsbury site, and that these institutions will not receive less favourable consideration at the hands of the Government than would otherwise have been the case.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The annual meeting of Fellows and Members will be held at the College in Lincoln's Inn Fields on Thursday, November 18th, at 3 p.m., when a report of the Council will be laid before the meeting. Fellows and Members can obtain copies of the report on application to the secretary. Motions to be brought forward at the meeting must be signed by the mover, and be received by the secretary not later than November 8th. A printed copy of the agenda will be issued to any Fellow or Member who applies for it.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the Royal College of Surgeons of Edinburgh, held on October 20th, Dr. George Mackay was re-elected president, Dr. R. McKenzie Johnston vice-president, and Mr. Alexander Miles secretary and treasurer.

The following candidates, having passed the requisite examinations, have been admitted as Fellows:

E. G. Anderson, Captain N.Z.M.C., W. B. G. Angus, O.B.E., M.C., S. Batchelor, A. J. Caird, C. L. Chapman, D.S.O., Lieut.-Colonel A.A.M.C., G. W. Christie, B. K. T. Collins, W. F. Currie, J. K. Datta, N. H. Dempster, H. M. Desai, J. L. Diggle, O. Ellis, D. S. Falconer, K. G. Fraser, A. Goodwin, E. A. Guymer, Major A.A.M.C., Alice M. Headwards, J. M'A. Holmes, Surgeon Commander R.N., A. M. Jones, J. T. Kyle, J. H. Lechler, J. Lyons, D. McIntyre, D. McVicker, Captain R.A.M.C., H. H. McWilliams, Major A.A.M.C., G. E. Martin, T. A. Milroy, Captain N.Z.M.C., A. R. Moodie, W. Morris, K. D. Panton, Lieut.-Colonel C.A.M.C., W. C. Paton, Brevet Major I.M.S., R. Richards, G. Richardson, J. S. Taylor, J. H. Tennent, B. Thomas, W. A. Thompson, C. H. Vernon, D. G. Wishart, M. Yuille, Major A.A.M.C.

Miss Alice M. Headwards is the first woman admitted to the Fellowship of the Royal College of Surgeons of Edinburgh.

The Services.

HONOURS.

FOREIGN DECORATIONS.

The following decorations have been conferred by the Allied Powers in recognition of valuable services during the war:

By the King of the Belgians.—Cross of Officer of the Crown of Belgium: Sir George T. Beatson, K.C.B., K.B.E. (for services rendered as President of the Scottish Branch of the British Red Cross Society).

By the President of the French Republic.—Croix de Guerre: Colonel Arthur M. [illegible], A.M.S. (retired), Surgeon Lieutenant E. G. S. [illegible], O.B.E., R.N. *By the King of the Hellenes.*—Order of George I, Commander: [illegible] R.A.M.C.(T.F.), ex-Lord Mayor of Liverpool. *By the King of Roumania.*—Order of the Crown of Roumania, Commander: Sir W. E. [illegible], Sheriff of the City of London. *By the King of the Serbs, Croats, and Slovenes.*—Order of the White Eagle (Fifth Class): Brevet Major [illegible] Bentley Purchase, M.C., R.A.M.C. Order of St. Sava (Third Class): Brevet Colonel Harold [illegible], R.A.M.C., Lieut.-Colonel Robert James William Oswald, O.B.E., R.A.M.C.(T.F.), Alexander Brodie Seton Stewart, R.A.M.C.(T.F.), [illegible], late R.A.M.C.(T.F.), temporary [illegible] Lieut.-Colonel H. W. [illegible], O.B.E., R.A.M.C. (*Fourth Class*): Temporary Captain [illegible] William [illegible], R.A.M.C. (*Fifth Class*): Temporary Captain Eustace [illegible], R.A.M.C.

DEATHS IN THE SERVICES.

Lieut.-Colonel Thomas Edward Noding, R.A.M.C. (retired), died in London on September 28th. He was born in Trinidad on May [illegible], 18[illegible], took the M.R.C.S. and the L.R.C.P.Ed. in 18[illegible], and entered the army as surgeon on July 30th, 1881, becoming lieutenant-colonel after twenty years' service, and retired on May [illegible], 1913. He served in the Egyptian war of 188[illegible], earning the medal and the Khedive's bronze star; and on the North-West Frontier of India in the Waziristan campaign of 189[illegible], receiving the Frontier medal with a clasp. He also rejoined for service during the recent war.

Medical News.

THE Home Secretary is about to appoint a whole-time inspector under the Cruelty to Animals Act, 1876. The appointment will be for a term of three years in the first instance. The salary will be £800 a year, together with war bonus on the Civil Service scale, and travelling allowances at the usual Civil Service rate. Candidates who possess the scientific qualifications required for the work, and are not over 50 years of age, should apply, before November 10th, to the Private Secretary, Home Office, Whitehall, London, S.W.1., from whom further information may be obtained. Applications should be accompanied by one or two testimonials and particulars of the candidate's qualifications.

LORD PHILLIMORE presided recently at a conference of representatives of professional institutions and benevolent funds and other bodies in touch with the professional classes. It was reported that the Professional Classes War Relief Council had decided upon a scheme of reconstruction in order to become a permanent body for dealing with post-war distress among professional men and women and others of the more highly educated classes. The conference warmly supported this action on their part, and a resolution was adopted, urging all bodies in touch with the professional classes to recognize the council and to avail themselves of its services when likely to be of use.

THE winter session of the Liverpool Literary and Philosophical Society was opened on October 18th by a presidential address by Sir James Barr on "The philosophy of Immanuel Kant"—a thoughtful analysis of the higher conception of life to which men are led by intuition and of the grounds for belief in a future existence, made with characteristic vigour and fertility of illustration.

THE Glasgow Post-Graduate Medical Association has arranged a programme of weekly demonstrations for practitioners during the session 1920–21. The demonstrations will be given on Wednesday afternoons at 4.15 o'clock from November 17th to December 22nd, and from January 12th to May 25th inclusive. The fee for the series is £3 3s., payable to the Secretary, Dr. A. M. Kennedy, Post-Graduate Medical Association, The University, Glasgow.

DR. TEMISTOCLE ZAMMIT, C.M.G., Rector of the University of Malta, has been appointed a member of the Executive Council and of the Council of Government of Malta.

THE Kingston-on-Thames Town Council has unanimously resolved to put forward the name of Alderman W. E. St.L. Finny, J.P., M.D., M.Ch., for election as mayor. Dr. Finny has previously been mayor in 1898, 1901, and 1908.

DR. ARTHUR KEITH, F.R.S., will be the chief guest at the Authors' Club dinner on November 8th, to be presided over by Mr. Morley Roberts, and will speak on the antiquity of man.

SIR WILLIAM and LADY LISTER have sent a donation of £5,000 to the Royal London Ophthalmic Hospital for the purpose of starting an ophthalmic convalescent home in connexion with the hospital.

MESSRS. CHRISTOPHERS will shortly publish a book by Mr. A. H. Tubby, entitled *A Consulting Surgeon in the Near East*. The work details his experiences as a consulting surgeon in Gallipoli and Egypt from 1915–1919.

CHAIRS of oto rhino-laryngology have been recently created at the Universities of Lyons, Montpellier, and Nancy, Drs. Jacques, Lannois, and Mouret having been appointed professors.

THE second International Congress of Comparative Pathology will be held at Rome in April, 1921. An organizing committee has been established under the presidency of Professor Perroncito, composed of Professors Ascoli, Golgi, Grassi, Lustig, Marchiafava, Paterno, Raffaele, Sanarelli, and Colonel Bertoletti. Among the subjects to be discussed are influenza in man and animals, foot-and-mouth disease, recent researches in sarcoma and carcinoma, rabies and antirabic vaccination, piroplasmosis, acari, and scabies in man and animals, and phylloxera. Subscriptions of membership (20 lire) and abstracts of papers should be sent to the secretary, Professor Mario Levi della Vida, Via Palermo 58, Rome, by December 15th.

A MONUMENT has been erected at Castera-Verduzan, Gers, France, to the memory of the celebrated French surgeon and pathologist, Lannelongue, who died in 1911.

A SCHOOL of dental medicine and dental prosthesis will be opened at the University of Bologna on November 5th.

THE opening of the winter session at the Central London Throat and Ear Hospital, Gray's Inn Road, will take place at 4 p.m. on Wednesday, November 3rd, when Sir James Dundas-Grant will deliver the introductory address, "Oto-laryngological Reminiscences and their Lessons." The annual dinner of the medical staff will take place on the same evening at the Trocadero Restaurant.

PROFESSOR F. F. ROGET of Geneva gave his second Chadwick Lecture on October 25th, in continuation of the topic "Health, the Red Cross, and the League of Nations" (BRITISH MEDICAL JOURNAL, October 23rd, p. 639). Sir James Crichton-Browne, Chadwick Trustee, presided. The lecturer examined further the views set forth at the Cannes Conference of 1919 for the turning of the activities of the Red Cross Societies from the path of military emergencies into the channel opened up by the covenanted peace of the world projected by the League of Nations. He showed the health experts assembled at Cannes taking into consideration the obstacles which ignorance and prejudice put in the way of any direct attack upon many bad habits of the public in the matter of hygiene and sanitation. The whole scheme had in view the building up of a collective "hygienic conscience" in the multitude. The public showed itself indifferent to the contracting of certain widespread diseases. Those who knowingly contracted or spread diseases should be penalized. A sense of moral wrong done to the community ought to attach to the neglect of precautions calculated to limit the incidence of disease. A complete care of public health was not possible unless one conceived, in this respect, each human being as forming a single unit, through combination of soul, conscience, and body. Public sanitation rested upon universal and anthropological facts. Neither racial characteristics nor nationalistic prepossession could find room in the work of the League of Red Cross Societies.

THE eleventh meeting of the Italian Society of Orthopaedics will be held at Rome on November 5th in the Policlinico Umberto I. The following subjects will be discussed: The orthopaedic treatment of rigidity and ankylosis, the treatment of spastic paralysis, and the modern treatment of the sequelae of acute anterior poliomyelitis.

A MEMORIAL in honour of the Belgian medical men killed in the war is to be erected in the Parc Leopold, Brussels.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. L. A. FRANCIS (Uxbridge) wishes for information as to the working of an x ray apparatus in a small cottage hospital, more particularly (1) the initial cost, and (2) the annual expense.

CAPTAIN W. R. D. HAMILTON, R.A.M.C. (Clonakilty, co. Cork), writes: Could any reader give me a method of removing or partially obliterating tattoo marks with the least possible disfigurement?

"S. C." inquires where the kata thermometer, used by Professor Leonard Hill in his investigations on ventilation and described in his report, may be obtained.

. We are informed that the maker of this instrument is J. Hicks, 8, Hatton Garden, London, E.C.

INCOME TAX.

"INDIAN PENSIONER" inquires whether the relief to earned income applies to a pension received for twenty years' service under a foreign government: no pecuniary contributions were made towards the pension by our correspondent.

** We do not think that there can be much doubt about the point. The pension is clearly "earned" in respect of past services, and the fact that it is paid by a foreign government and not from British funds seems quite immaterial. That fact may very well necessitate its assessment under Schedule D Case VI instead of under Schedule E, but the rule as to earned income would still apply.

"C. C. F." (Soton) has received an assessment notice showing that the gross amounts assessed are in accordance with his return, but not showing the deduction of various allowances due to him.

** The return, so far as civil earnings are concerned, was based on the amount receivable for the period from November 27th, 1919, the date of demobilization, to April 5th, 1920. If our correspondent's practice was kept in being during his period of military service, either by a locumtenent or by the assistance of his colleagues, the amount to be returned for assessment would be the average profits of the practice for the three years 1917, 1918, and 1919; if not, then the liability is in respect of twelve months' earnings at the present rate. It may well be that £110, the amount returned, is sufficiently near to the average liability for practical purposes. On that assumption the assessment should work out as follows:

			£ s. d.
Earned income—Earned £110, less £11 (one-tenth)	...		99 0 0
From investments	...		109 0 0
			208 0 0
Allowances—Self and wife	...	£225 0 0	
Child	...	36 0 0	—261 0 0
Life assurance £27 at 3s.		£4 1 0	

On these figures no tax is due in respect of the untaxed income, but, on the other hand, tax, deducted at the source on the other investment income, is due for repayment at the end of this financial year as follows:

[illegible]		
[illegible]	...	[illegible]
[illegible]	.	[illegible] 1 0
		[illegible]
[illegible]	...	[illegible]
Total	...	[illegible]

TREATMENT OF ANTERIOR NARES.

DR. LEONARD J. KIDD (London, N.W.) writes: Let "M.D." who asks for suggestions as to the treatment of staphylococcal lesions of the vestibule try calcium sulphide gr. [illegible] t.d.s., p.c., either in pill, or preferably as powder triturated with gr. [illegible] of sacch. lactis and gr. v of sacch. alb. Oil of cinnamon disguises the taste to some extent. Many persons find [illegible] laxative, sometimes after even one dose. [illegible] is often seen after the first dose.

LETTERS, NOTES, ETC.

WE [illegible]

[illegible]

"[illegible]

OBSTETRICAL RARITIES.

DR. D. S. RICHMOND (Johnstone, Renfrewshire) writes, with reference to Dr. Gilbertson's memorandum on expulsion of full-term fetus with unruptured membranes (BRITISH MEDICAL JOURNAL, October 23rd, p. 630): I had an experience much similar about eight years ago. I was called to a 3-para, and just as I entered the room the child was expelled with membranes intact. I ruptured the membranes; the child, a girl, 7½ lb., was, and still is, alive. Last week I delivered two primiparae. The first was a case of breech presentation; the child, a female, had a small, very imperfect skull with an encephalocele. It lived nine days. The next primipara was seen two days after. This was an occipital presentation; the child, a male, had spina bifida, with meningo-myelocele; the child was dead.

PARACENTESIS ABDOMINIS.

DR. CHARLES C. ELLIOTT (Capetown) writes: I should like to know whether the number of tappings in the following case approaches a record. About nine years ago a lady of 50 was found at operation to have large soft growths of the ovary and peritoneum, reported by the Government pathologist to be non-malignant. Since then she has been tapped at gradually diminishing intervals until now she is relieved every week; the amount drawn off is about 18 pints. Up to August she had been tapped 397 times, and the process still continues.

HOLDING THE DOOR AJAR.

WE know how jealously the French Legislature closes the portals of the medical profession to foreigners, and we note that this policy tends to be more strictly enforced as time goes by. Circumstances, however, have proved too strong in respect of German-qualified practitioners in the newly recovered provinces. After a good deal of hesitation the French Government has decided to introduce a bill authorizing medical men practising in Alsace and Lorraine to continue to follow their profession in spite of their non-compliance with the law restricting the practice of medicine to the possessors of a French university diploma. It is, indeed, difficult to see what else could be done except, perhaps, to insist upon their passing nominal examinations in a French faculty of medicine, but that would have been as illegal as the recognition of the German diploma. The benefit of the law, however, only extends to such as have applied for "reintegration of nationality," which amounts to saying, "Be one of us or go your way."

BRITISH RESEARCH CHEMICALS.

THE Association of British Chemical Manufacturers (166, Piccadilly, W.1) has issued a pamphlet giving a list of the research chemicals now manufactured or supplied by a group of twenty-one British firms. We observe that a good many of the compounds are used for therapeutic purposes. An appendix gives a list of further chemicals which members of the association are prepared to make if there is sufficient demand. It is stated that the pamphlet has been compiled at the request of the Chemical Society and the Institute of Chemistry, acting on behalf of research chemists. Revised lists will be issued from time to time.

ERRATUM.

THERE was an obvious slip in the last issue of the JOURNAL (p. 634). In the footnote to the review of the new Year Book of the Learned World, *Minerva*, the publishers were stated to be "A. and C. Blake, Ltd." This should, of course, be A. and C. Black, Ltd.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 40, 45, 44, [illegible], 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 41, 42, and 43.

The appointments of certifying factory surgeons at Aberystwyth [illegible] are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

		£ s. d.
[illegible]	...	0 7 6
[illegible]	...	0 1 3
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[illegible] made payable to [illegible] General Post Office, London. [illegible]

[illegible] addressed to the Manager, [illegible] morning [illegible] should be [illegible]

[illegible] the rules of the Post Office to [illegible] *poste restante* [illegible] in initials or numbers.

A British Medical Association Lecture

ON

THE PRINCIPLES OF INTERNAL SECRETION.*

BY

W. LANGDON BROWN, M.A., M.D.Cantab., F.R.C.P.,
PHYSICIAN WITH CHARGE OF OUT-PATIENTS TO
ST. BARTHOLOMEW'S HOSPITAL.

I take it we all believe, though perhaps to a varying extent, that the functions of the body can be controlled by chemical means. Otherwise we could hardly justify to ourselves our daily administration of drugs. And justification can be found in the fact that the body regulates itself by drugs which it specially prepares.

To a certain extent every product of cell activity has an effect on every other tissue. It is of interest to note that the more widely tissues differ, the more they can make use of the end products of the other's metabolism. Thus while animals ultimately depend on vegetables for their food, the CO_2 excreted by animals is actually a food for plants, and their urea, once it has undergone ammoniacal decomposition, acts as an important source of nitrogen to them. For animals such substances are merely stimulant in the sense that they contribute to the process of their own removal. Thus CO_2 is a respiratory stimulant and in small doses actually improves the contractions of the heart. By this action on respiration and circulation its excretion is facilitated. Similarly urea is a diuretic, which is an obvious advantage. But neither CO_2 nor urea can act as a food to animals, or quicken their vital processes in any other way. It is true that an intermediate product of metabolism, creatin, which is produced by muscles, is a stimulant to gastric secretion and increases the rate of growth. But it may be asserted in general terms that the more similar tissues are the less can the one make use of the other's end products of metabolism. They require a specially elaborated secretion to produce a beneficial action. Of such secretions the hormones produced by ductless and other glands are outstanding examples. Another thing which we can learn from comparing animal and vegetable processes is the powerful effect of even infinitesimal doses. In recent years we have found that, in addition to a proper ration of protein, carbohydrates, fats, and salts, animals require minute doses of vitamines. Such vitamines appear to be produced solely by vegetable tissues, though they may remain stored up in the tissues of animals that have consumed such vegetables. In the absence of such vitamines certain deficiency diseases develop, showing again the dependence of animal upon plant life. Vitamines are as characteristic of vegetable as are hormones of animal life, and chemically they are not greatly dissimilar, while both are intensely effective in minute doses. That the lack of either may produce somewhat similar effects can be seen on comparing (1) rickets (due to the absence of vitamine A) with osteomalacia; (2) the neuritis of beri-beri (due to the absence of vitamine B) with that of diabetes; and (3) scurvy (due to the absence of vitamine C), with the form of purpura due to acute adrenal deficiency. McCarrison's recent observation on the endocrine changes produced by vitamine defect are interesting in this connexion. He showed that while the adrenals and pituitary enlarged, the other endocrine glands showed more or less atrophy. Whether such enlargement is compensatory or not we cannot say as yet, but it illustrates, at any rate, the close relationship between hormones and vitamines.

Yet another *a priori* proposition I would commend to your notice is that response to chemical stimuli is only to be expected when we remember that before a nervous system developed it was to such stimuli alone that primitive animals could react. As Starling pointed out in enunciating his hormone theory, the development of a nervous system enabled much more rapid reactions to occur. We might express it by saying that a nervous system is to a multicellular organism what the telegraph is to an organized community. As I have elsewhere pointed out, the first and most essential purpose for which such rapid reactions would be required would be for self defence. In accordance with this the lowest level of the nervous system, the sympathetic, is pre-eminently defensive in its action. But we should expect that the newer rapid method would remain associated with the older slower methods, so that as the chemical reactions became specialized in the endocrine glands, these glands interacted especially with the sympathetic nervous system. This association is particularly well seen in the case of the adrenals. In a former lecture[1] I pointed out that originally there were cells in the central nervous system which were the common ancestor of both the sympathetic ganglion and the adrenalin-secreting cell. As the sympathetic system develops in higher vertebrates the adrenalin-secreting cells become gradually restricted to the medulla of the adrenals. Thus the nervous element steadily acquires predominance over the chemical element in the partnership.

Another generalization we can make is that many of the endocrine glands are closely associated with the reproductive organs. The moment animal life passed from unicellular to multicellular forms it lost its personal physical immortality. When a protozoön multiplies by simple fission, as Milnes Marshall said, the parent disappears without having died, and the children appear without having been born. But in all multicellular organisms special cells are set apart for carrying on the race. Multicellular animals having appeared before a nervous system was developed, we should expect the reproductive glands to remain closely associated with the older chemical reactions now specialized in the endocrine glands. The endocrine glands, the reproductive organs, and the sympathetic nervous system therefore remain as a basic tripod, and it is not likely that a disturbance will occur for long in one limb of this tripod without affecting the other two. As this relationship is most clearly seen in the endocrine group of adrenal, thyroid, and pituitary, I will deal with these first.

ADRENALS.

While the medulla is an outgrowth of the sympathetic nervous system, the cortex is developed from the Wolffian body which also provides the interstitial cells of the reproductive glands. Conformably with their origin, disturbances of the medulla chiefly affect the sympathetic nervous system, and of the cortex the reproductive system. The influence of tumours of the adrenal cortex in producing premature sexual development is an example of the latter.

Stimulation of the sympathetic nervous system produces a whole series of effects all calculated to facilitate violent action in the direction of fight or flight. The pupil dilates to increase perception of light, the blood pressure rises to assist circulation, and the heart beats faster. The skin sweats to cool the body heated by exertion, and the blood sugar increases the better to feed the active muscles, even overflowing into the urine if it is not made use of. In some animals the hairs become erect to render them more formidable. Now an injection of adrenalin, which is a secretion purely of the medullary part of the gland, produces in every particular the same effect as the stimulation of the sympathetic. Their action is reciprocal, for the sympathetic stimulates the secretion of adrenalin, while adrenalin increases the sympathetic response. We have little evidence in disease of overaction of adrenalin, though it is possible that some conditions of raised blood pressure with glycosuria in later life are due to this, since they may be induced by overstrain and worry, which irritate the sympathetic, and adrenalin excess would raise both the pressure and the sugar of the blood. But we have a clear-cut example of adrenalin defect in Addison's disease, in which all the symptoms can be attributed to loss of sympathetic action. Failure of its inhibitory action on the stomach would tend to vomiting, and of its stimulating effect on the vaso-constrictor nerves to low blood pressure and a relaxed condition of the peripheral vessels which would lead to pigmentation. The asthenia is not only due to low blood pressure, for adrenalin has a tonic effect on striped muscle. Conformably with all this we find in Addison's disease a rise in sugar tolerance—the reverse of the condition exciting glycosuria. When the medulla of the adrenals is destroyed suddenly by haemorrhage instead of gradually by tuberculosis, an acute condition arises instead of the more chronic condition of Addison's disease. But the conditions are strictly comparable—purpura replacing pigmentation.

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* Delivered to the Suffolk Branch.

It has generally happened that the fully developed form of a morbid condition has been recognized before the minor degrees. Thus ataxia was first regarded as a necessary part of tabes, and slighter non-progressive forms escaped diagnosis. Thus also myxoedema and cretinism were identified long before the minor forms of hypothyroidism. The same is true of hypo-adrenalism. Remembering the strain thrown on the sympathetic in responding to prolonged mental and physical conflict or to infection, it is only to be expected that adrenalin exhaustion might ensue. This has actually been proved in an acute infection such as diphtheria (Elliott and Tuckett), as well as in more chronic diseases. It has been suggested with every show of reason that adrenalin exhaustion enters into many war neuroses and other functional states characterized by lack of vascular tone, vasomotor instability, and myasthenia, especially when accompanied by a low blood pressure.

THYROID.

There is an equally close association between the thyroid gland, the reproductive organs, and the sympathetic. The thyroid tends to enlarge at puberty, marriage, and in pregnancy, while myxoedema is most apt to occur just after the climacteric. Amenorrhoea is common, even in the minor forms of hypothyroidism. The effect of sympathetic irritation in producing thyroid enlargement and Graves's disease is now recognized. Cushing showed that if in cats he sutured the phrenic nerve to the cervical sympathetic so that every respiration stimulated the latter, he could produce the symptoms of Graves's disease. The influence of distressing emotions in producing hyperthyroidism was well shown during the air raids on London. Epidemics of Graves's disease also followed the Kishineff massacres and the San Francisco earthquake. Again, if a distressing emotion has a matrimonial origin it is particularly likely to induce Graves's disease, for here each limb of the basic tripod is involved. The disease has been compared with a state of continuous fear, a description which tallies with its general appearance.

But not only does the sympathetic stimulate the thyroid; the thyroid secretion also lowers the threshold to sympathetic stimulation. Thus a vicious circle is established. In time the thyroid gland may become exhausted, and symptoms of myxoedema become combined with those of Graves's disease. This accounts for those remarkable cases of thyroid instability described by Rothschild and Leopold Levi, striking instances of which I have seen myself. The impending thyroid exhaustion shows itself in little spurts of over-secretion imposed upon a background of continuing myxoedema. It is a condition of irritable weakness, as seen in various other nervous disorders, particularly the occupation neuroses, and it calls for the cautious administration of small doses of thyroid extract to steady the fluctuating secretion. Like adrenalin, thyroid secretion mobilizes the blood sugar; in hyperthyroidism the sugar tolerance is lowered, and there may be glycosuria. As is well known, it is easy to produce glycosuria by over-dosage with thyroid extract.

Fully developed thyroid insufficiency, as expressed in myxoedema and cretinism, are too well known to detain us. We are chiefly indebted to Hertoghe for our knowledge of its minor degrees. He pointed out that the thyroid both governed the building up of the cells and regulated the destruction of the protein molecule and its elimination. Therefore with thyroid insufficiency there will be defective growth, which will be most noticeable in the young subject, while in the adult there will be accumulation of material which should be katabolized. He attributed to a minor degree of thyroid insufficiency such symptoms as relaxation of the articular ligaments, particularly in the knee, heel, ankle, and thoracic vertebrae, causing knock-knee, painful heel, flat foot, and kyphosis. Infiltration of tendons and fasciae, etc., produce rheumatoid pains. He attaches considerable importance to the loss of hair in the outer half of the eyebrows. Insomnia he believes to be frequently due to the same cause. Thyroid inadequacy diminishes the coagulability of the blood, which explains the tendency to haemorrhage. Infiltration of the nerve centres causes mental dullness, partial or entire loss of memory, and difficulty in expressing ideas. Sometimes there are hallucinations of sight and hearing. Headache, giddiness, and somnolence are not uncommon. The liability of myxoedematous subjects to develop atheroma suggests the use of thyroid extract in premature arterial degeneration.

PITUITARY.

The pituitary body also shows the twofold association with the reproductive organs and the sympathetic nervous system. Like the adrenals, it has a double origin, a glandular portion growing up from the epithelium of the buccal cavity, partly surrounding an outgrowth from the central nervous system. In both cases it is the nervous part which produces a well-recognized secretion. The anterior glandular part of the pituitary appears to have an effect on body temperature, growth, the cutaneous tissues, and the reproductive organs. Removal or disease of this lobe leads to a subnormal temperature, and an injection of its extract then causes a febrile reaction, a point of diagnostic value. If the anterior lobe be removed in young animals, the development of both primary and secondary sexual characters is much interfered with, while that infantile gland, the thymus, remains large. In human beings over-secretion shows itself, as in acromegaly, by overgrowth of the skeleton and the skin, and hypertrichosis, while under-secretion leads to a smooth, hairless, plump condition of the skin, with amenorrhoea or impotence.

I am sure that minor degrees of hypopituitarism of this type are not uncommon. The condition of the skin and subcutaneous tissues recalls myxoedema, but the mental state remains active. The obesity is very marked. A curious point, to which I have not seen attention called, is the frequent occurrence of polycythaemia. I believe adiposis dolorosa is a related condition, and I recently saw an example of it in which a skiagram showed an enlargement of the pituitary fossa into which the anterior clinoid process dipped down.

The intermediate part of the gland, though closely adherent to the posterior, is derived from the anterior lobe. It influences carbohydrate metabolism. In excess its secretion lowers sugar tolerance, and may excite glycosuria; when it is in defect, giving even very large amounts of sugar will not cause glycosuria.

The secretion of the posterior lobe, pituitrin, is mainly a stimulant to plain muscle, and also to the secretion of milk. Its action on plain muscle is better seen in an emergency than under normal conditions. Thus it does not usually influence a normal blood pressure, but raises it when lowered by shock; it acts on a failing heart, but not on a normal one; it has little effect on the plain muscle of the bowel, except when it is paralysed as in post-operative conditions; it does not cause contractions of the uterus until labour has begun and inertia is present. The way it acts on diuresis is still a matter of controversy, but it is clear that disease of the posterior lobe is often the cause of diabetes insipidus. Stimulation of the sympathetic nerves to the gland may cause both glycosuria and polyuria. Probably hysterical polyuria is thus produced. But the reciprocal action of the gland on the sympathetic is not so clearly seen as in the adrenals and thyroid, unless the examples quoted above may be taken as instances. Like the thyroid it enlarges in pregnancy, producing a curious and characteristic effect on the facies. The glycosuria of pregnancy is no doubt due to its stimulating effect both on the thyroid and pituitary.

Some of the main functions of this group of endocrine glands may be expressed in tabular form thus:

	Sex.	Growth	Vasomotor System	Glycosuria.
Thyroid	+	+	Dilator	+
Adrenal				
Cortex	+	+	0	0
Medulla . .	0	0	Constrictor	+
Pituitary				
Anterior	+	+	0	0
Intermediate ...	0	0	[illegible]	+
Posterior	Galacto-gogue	0	Constrictor	0

It will be noted that the main functions of these glands are katabolic. They throw sugar into the blood stream for active consumption, they cooperate with the sympathetic;

in defensive activities, they divert the stream of energy outwards, they are accelerators.

Stomach, Duodenum, and Pancreas.

I now turn to a group of glands whose main functions are anabolic. These co-operate with the vagus—that is, the parasympathetic rather than the sympathetic—they divert the stream of energy inwards, they are not spendthrifts, but economizers. I refer to the endocrines of the stomach, duodenum, and pancreas, and also to the parathyroids. Gastric digestion is started by the appetite and the taste of food reflexly stimulating the vagus, but it is continued by a hormone in the pyloric glands, which spur the fundus glands on to renewed effort. Thus gastric secretion is continued after the hunger is appeased and the appetite satisfied. In its turn the acid gastric juice, entering the duodenum, acts on its mucosa to form *secretin*, which is the hormone for the secretion of pancreatic juice. But, as is well known, the pancreas forms an internal secretion as well—it is bipolar in its activity. This secretion promotes the assimilation of sugar, probably by linking it on to larger molecules both in the blood and in the tissues. Quantitative reductions in this secretion may give us all the stages between a slight lowering of the carbohydrate tolerance and a "total" diabetes. Co-operating with the parasympathetic as these glands do, they assist in its task, which Cannon has defined as the quiet building up of reserves against a time of strain and stress.

Parathyroids.

The evidence is not quite so clear as to the parathyroids. Some have held that they are merely adjuvant to the thyroid, but at the present time they are generally regarded as antagonistic. The varying results of thyroidectomy in different animals can be explained according to whether the parathyroids were simultaneously removed or not. Severe nervous symptoms only occurred with their removal. MacCallum showed that the parathyroids in some way controlled the distribution of calcium in the body. When their secretion is deficient the tissues lose some of their calcium. As this calcium has a sedative action on nerve cells, this loss increases nervous excitability, which is particularly apt to express itself in tetany. Parathyroid extract has been found, both in animals and man, to be helpful in controlling tetany due to injury or removal of these glands. There are a number of other conditions in which tetany occurs, but it would appear probable that here, too, the symptom is due either to a deficiency of calcium salts or some impairment of parathyroid function, possibly of toxic origin.

Other Endocrine Glands.

I need refer but briefly to the other endocrine glands. The interstitial cells of the reproductive glands no doubt form an internal secretion of great importance, particularly in the development of secondary sexual characters, but they have not been definitely isolated, and they appear to interact chiefly with the first group of ductless glands I described. The obesity which follows loss of such internal secretions is very likely due to their interaction with the thyroid and pituitary. A comparison of the results following ligature of the whole spermatic cord, with those of tying the vas deferens only, gives us the most definite idea of the action of such an internal secretion. In so far as the carotid and coccygeal glands have any action they would appear to be adjuvant to the adrenals. The thymus may be looked upon as mainly an infantile blood-forming organ. But overaction of the thyroid appears to cause hypertrophy of the thymus, particularly of its Hassell's corpuscles, which may possibly be of an antagonistic character. It is, at any rate, of interest to note that in exophthalmic goitre the thymus always hypertrophies. Its persistence in infantilism, and its disappearance with sexual maturity, points to a function which usually ends with childhood. The acquisition of the adult blood picture and the disappearance of the thymus are generally simultaneous. The enlargement of the thymus in status lymphaticus is usually only a part of a general adenoid enlargement. It may be regarded as part of an abnormally sensitive reaction to foreign proteins, such as is generally met with in those whose vagus response is increased. The extreme vulnerability of persons suffering from such a condition is shown in their liability to sudden death from trivial causes. But this throws no light on any internal secretion formed by the gland, of which, indeed, there is no evidence.

The liver, as the most important metabolic workshop of the body, throws many substances into the blood stream, such as sugar from the stored glycogen, urea, unsaturated fats which it has prepared for combustion, antitoxins, and something which influences the coagulability of the blood, but none of these can be regarded as hormones in the sense here defined. The spleen, although the largest of the ductless glands, appears to form no internal secretion. Hence it is that diseases of the spleen have so few symptoms apart from the enlargement of the organ, unless of such a character as to set up splenic anaemia. And it would appear that not one but several diseases of the spleen are capable of producing this destructive change in the blood.

Classification of Endocrine Glands.

The endocrine glands would therefore appear to fall into two main groups: (1) the adrenals with other chromaffin cells, the pituitary, thyroid and interstitial cells of the reproductive glands; (2) the mucosa of certain parts of the alimentary tract, the pancreas, and the parathyroids. The first group interact chiefly with the sympathetic and are accelerators, the latter with the parasympathetic, and are retarders. The former display kinetic energy, the latter store potential energy.

General Principles of Internal Secretion.

To get a general conception of the principles of internal secretion it is necessary to start from the premise that the development of each individual recapitulates, briefly and with modifications, the history of the race. And it is helpful to remember that while life has been present on the earth for millions of years, man did not appear more than a comparatively few thousand years ago. Every time an individual repeats the history of the race he does it more easily as the result of practice. Thus it happens that the fetus in nine short months of pre-natal life recapitulates the history of millions of years, while his longer infantile life only repeats the history of a few thousand years. That even an adult may speedily revert to the instincts and habits of a cave man the war has abundantly shown. Later veneers of civilization are easily cast aside.

Now the most primitive forms of life multiplied by simple fission. The unfertilized ovum is the nearest approach to the primordial cell that we know. Like the primordial cell it starts to divide by simple fission, forming two polar bodies. Millions of years ago simple fission was found inadequate for a complex animal, yet every ovum starts on this course till it is abruptly brought up by the consequent exhaustion of its powers of growth. But when fertilization has remade its nuclear network a tremendous impetus is given to growth. When growth is expressed as a fractional increase of body weight it will be found that its curve continuously diminishes from fertilization onwards. In other words, the impetus thus derived gradually wears itself out. A new life may be compared to a projectile travelling with a constantly diminishing acceleration. But unlike an ordinary projectile it is supplied by intrinsic regulators, capable of increasing or diminishing its velocity. These regulators are the two groups of endocrine glands and their associated nervous mechanisms. In the first few years of life the original impetus is so enormous that a brake is needed—which seems to act through the thymus. By seven years of age this brake is needed no longer, and should it continue to be applied from any cause, infantile features persist. With the aid particularly of the thyroid and pituitary, active growth continues until puberty gives another twist to the mechanism from the active development of another set of glands—a new position of equilibrium has to be found. With adult years a part of the energy is diverted from growth of the individual to providing a supply for the next generation; and again the regulators have to provide a new adjustment. Another jolt—often a violent one—is given to the mechanism by the climacteric, and yet a new position of equilibrium has to be acquired. From this point on, the dying down of the initial velocity is marked; the accelerating thyroid seems to die down before the sedative parathyroid—calcium fixation goes on unchecked, therefore; the intercostal cartilages grow rigid, the chest becomes emphysematous, greatly diminishing the bodily activities by restricting respiratory exchange, the arteries become calcareous, diminishing the blood flow to every part of the body, while childish and even infantile characters may reappear as the organism slows down for the terminus.

This may be considered the normal course of events. That everybody should ultimately only die from senile decay is the goal of medicine. But apart from violent death, the regulators may become worn out, with consequent great increase of friction to the mechanism. Invasion by bacteria and their toxins may prematurely exhaust the endocrine glands, or endogenous poisons may produce a similar effect; metabolism becomes balanced on a razor edge, the sport of every wind that blows. Nervous shocks and strains excite a reaction of the sympathetic nervous system and, through it, of its associated chain of endocrine glands, with consequent exhaustion of them. And these two sources of endocrine exhaustion may interact, so that a psychic conflict may be produced because the body cannot adjust itself to a difficult environment largely because of an endocrine deficiency. Thus the two newest methods in medicine, psychotherapy and endocrinology become not opposed, but different aspects of the same problem. Or a body may start out ill equipped with a supply of endocrines, so that its growth curve suffers a steep descent, as in that rare condition progeria, where senility comes on in childhood and the patient dies "an enfeebled old dotard of five." In dementia praecox we probably have a mixture of such causes at work—an atavistic reversion in bodily structure, as shown in the monkey-like hands; a multiple endocrine deficiency, with a consequent persistence of the infantile outlook, hence a total failure of adjustment to the conditions of adult life; the mind defensively withdraws itself from its environment, and hence undergoes rapid involution.

But you will forgive me if I do not go further into conditions of pluriglandular disease. Fascinating though the subject is, it is still in a speculative stage, and it is essential to keep clear ideas on the simpler and better known phases. Suffice it to say that I look upon diabetes as probably of pluriglandular origin initiated through the sympathetic, which stimulates into activity those endocrine glands which mobilize the blood sugar, while inhibiting the pancreas, the one which leads to its assimilation. Hence the gravity of glycosuria in early life when the accelerator group of endocrines are already called into full play, compared with its comparative mildness in later life when their activity is becoming a thing of the past. Hence also, in all probability, the frequently sterilizing effect of diabetes.

ORGANOTHERAPY.

Before we can apply organotherapy rationally we must have some clear ideas as to the chemistry of the hormones that the endocrine glands produce. Hormones appear to be bodies of comparatively small molecular weight, which, unlike ferments, are not destroyed by simple heating although they are rapidly destroyed by oxidizing agents. They do not appear in any of the excretions because they are destroyed in the tissues they excite. Unlike antibodies, they belong to the permanent and not the acquired defences of the body. Although hormones probably have a relatively simple chemical constitution, only those of the thyroid and adrenals have been isolated. It has been suggested that an application of the methods employed for the separation of the active principles of plants would yield valuable results. Recent work by Kendall goes to show that the active principle of thyroid secretion is an iodine compound of indol. Now indol is a decomposition product of tryptophan, a constituent of the protein molecule. Hopkins, in studying the effect of depriving animals of certain protein fractions, found that although tryptophan only constitutes 1½ per cent. of casein, its removal had a profound effect in checking growth, far more so than removing certain other fractions which constituted nearly 20 per cent. of the molecule. He concluded that it is possible, and even likely, that tryptophan may be required for something other than structural purposes—that is [illegible], for instance, in relation to some dynamic function in the body. Now, thyroid secretion has such a dynamic function. The formation of the indol nucleus appears to be beyond the powers of the body; it requires it ready-made. It is interesting to recall that indol is ordinarily split off by the action of intestinal bacteria; this raises the speculation as to whether we do not depend on these parasites, particularly *B. coli*, for the first step in the preparation of one of the most active and important hormones for us, a hormone that is essential to adult development—whether, in fact, we have not here another example of the interdependence of animal and vegetable life. Now, during the nursling period the child gets thyroid secretion from its mother's milk, and during that period *B. coli* are hardly present in its bowel. Herter has attributed one form of infantilism to persistence of the intestinal flora of the nursling period. We know that the suckling child has not a very active pancreatic secretion. Tryptophan is split off from protein by the pancreatic juice, and indol from tryptophan by bacteria. Normally, then, *B. coli* enter the bowel just about the time pancreatic juice becomes more active, and the child has to manufacture its own thyroid secretion. In this connexion I might refer also to McCarrison's observations on intestinal intoxication as a cause of thyroid enlargement, which on the hypothesis here suggested would be an example of a pathological exaggeration of a physiological process.

Tyrosin, another protein fraction, is chemically related to adrenalin, and it is tempting to relate the formation of adrenalin to the tyrosin of the food. A former house-physician of mine, Dr. Everard Williams, has made some interesting observations on the occurrence of pellagra in prisoners of war. Pellagra is accompanied by changes in the sympathetic nervous system, and he has suggested that a diet poor in tyrosin and tryptophan is specially liable to induce pellagra. Since the sympathetic nervous system depends on adrenalin for its activity, this association is of interest. But on the other hand the body is capable of making its own tyrosin, and Hopkins has shown that deprivation of tyrosin hardly influences growth. Moreover, in that congenital error of metabolism known as alkaptonuria, the body is unable to utilize the tyrosin of the food, yet no sympathetic symptoms appear. The evidence is, therefore, against the formation of adrenalin from the tyrosin of the food. Hormone therapy won its first triumphs with thyroid extract. There are two reasons for this: in the first place, the thyroid contains a larger reserve of secretion than any of the other endocrine glands; and in the second, its secretion was originally poured by the thyro-glossal duct into the alimentary tract, hence it can be readily absorbed from it. It is probably for the same reason that the parathyroid can be similarly absorbed; at any rate, quite small doses, such as $\frac{1}{10}$ grain, seem to produce a marked effect. That formerly thyroid was given in much too large doses is a clinical observation we owe to Leonard Williams. I always start with only ½ grain twice a day, and seldom exceed 2 grains three times a day. In this way all its therapeutical effects can be obtained without exciting such toxic effects as tachycardia, tremors, and glycosuria. Its administration is indicated in all such minor degrees of hypothyroidism as I have described. Incidentally I might add that among the cases referred to me for an opinion I find that failures to recognize these minor degrees of thyroid insufficiency are still quite common.

One has no such confidence that adrenalin will be assimilated from the alimentary tract. Its administration by that route should therefore be restricted to cases where we wish to obtain its astringent effect on the gastric vessels, as in haematemesis, or its inhibitory effects on peristalsis, as in vomiting. Otherwise it must be used topically on mucous membranes or by injection. In this latter instance its effect is so sudden and so transient that its usefulness is limited. But in asthma and to restrict the spread of a local anaesthetic it is most useful. Its use in vasomotor paralysis has been largely replaced by pituitrin. Pituitrin, again, is probably scarcely assimilated from the alimentary tract, but when injected in vasomotor and intestinal paralysis is very helpful. Given thus its influence on diabetes insipidus is marked. Of its effect in labour I have no experience. The combined injection of adrenalin and pituitrin is sometimes very successful in asthma.

When we come to the other endocrine glands, our ignorance as to their active principles is a great hindrance to intelligent therapy. That they must be used with care is well illustrated by the disastrous effects of experimental injections of secretin into animals—the resulting liberation of active pancreatic juice into a fasting intestine produced extensive self-digestion of its walls. Administration by the mouth is freer from risk, but possibly because of the uncertainty of absorption. But I do not wish to discourage the clinical use of such extracts, either singly or in combination, if it is made cautiously, and with due consideration of physiological principles. Empiricism has often won success where rational therapy has lagged behind, but I do deprecate the giving of extracts of glands that are known to have no internal secretion, such as the spleen and kidney.

If I have been able to give any guide to the principles which underlie organotherapy my object is achieved. That I have only been able to give a rough outline of those principles is inevitable, for the variety of endocrine activity is only exceeded by the infinite variety of life itself.

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HENRY HEAD, M.D., F.R.S., President.

DISCUSSION ON EARLY SYMPTOMS AND SIGNS OF NERVOUS DISEASE AND THEIR INTERPRETATION.

OPENING PAPER

BY

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WHEN attempting to elicit the history from a patient it is a common experience to find that some early but significant symptom has been entirely omitted. For this he offers the excuse, "It was so slight and passed away so quickly that I did not think anything of it"; and this belief in the unimportance of slight transitory manifestations is not confined to the patient, but is frequently shared by his medical attendant.

Such symptoms as double vision or a passing weakness of one limb may have been of supreme diagnostic importance in the light of subsequent events. But the experience and outlook of the family physician leads him of necessity to a different attitude towards early signs and symptoms from that of the specialist. The former has seen so many apparently serious conditions pass away that he tends to become sceptical with regard to minor manifestations, which so often cause no permanent disability. On the other hand, the knowledge of the consultant leads him confidently to anticipate the worst. In many instances he is not told whether his Cassandra-like prophecies have been fulfilled or falsified, and he rarely knows if the signs and symptoms on which he laid such stress turned out to be important or not.

This sitting of the Section of Neurology and Psychiatry has been devoted to the early signs and symptoms of nervous diseases, in the hope that the combined experience of the meeting may show which of them are of diagnostic and prognostic value. Amongst nervous diseases we do not intend to include the results of gross organic destruction only; we hope that the discussion will touch on the early symptoms of those morbid conditions usually classified as the neuropsychoses. For in the early stages it is often extremely difficult to determine whether the symptoms are due to a primary psychosis or to some structural change in the central nervous system. Thus cerebral syphilis may show itself first in a change of character or produce a condition which exactly simulates paranoia or dementia praecox.

Early symptoms frequently produce so little discomfort that a medical man is not consulted. Nearly all histories of illness taken from the labouring population start from the moment when the patient was forced to leave his work. Amongst the well-to-do the story usually begins with the first visit of the doctor. But such symptoms as precipitate micturition or slight changes in articulation, though trivial manifestations, may be of profound diagnostic importance. How many patients in the early stage of a spinal lesion have been thought to be hysterical because the first signs of defective control over micturition were neglected! Women rarely confess to this symptom; but not uncommonly its occurrence can be elicited by asking "How long is it since you were able to go out to tea?" For a woman who suffers in this way cannot face the strain of sitting for some hours under the influence of a diuretic.

Early signs are not only neglected because they seem trivial, but the physician frequently omits to establish their true nature during the short period of their existence. For example, a patient suffering from a cerebral tumour may have had a slight convulsive attack, followed by transitory "weakness" of one hand. Careful examination would have shown that this was a definite loss of motor power accompanied by some changes in the reflexes, or that the defect was a disturbance of sensation of the cortical type. A few days later the hand may have recovered its normal functions, and the opportunity has been lost for discovering the true nature of this post-convulsive disorder.

On the other hand, any morbid condition with an acute or fulminating onset is liable to be accompanied by signs and symptoms far in excess of the structural changes on which it is based. Thus, embolism of one of the minute arteries supplying the internal capsule may produce severe paralysis of the opposite half of the body: this sometimes clears away so completely that little evidence of the stroke remains. The shock to the central nervous system was so profound that the functional activity of parts outside the area supplied by the blocked artery suffered severely.

Any sudden injury to the brain produces widely radiating effects within the structures of the nervous system. Sometimes a blow on the head or a cerebral wound may be followed by loss of motion and sensation so severe that it is difficult to believe the mid-brain has not been affected. The whole of one half of the body may be in a condition of flaccid paralysis, insensitive to touch, pain, heat and cold; and yet the rapidity with which this loss of function disappears shows that it was not due to gross structural changes in the lower centres.

All aspects of cerebral activity are liable to undergo similar profound and extensive changes in consequence of trauma; these are particularly evident in the phenomena which follow cerebral concussion. At first the patient lies in flaccid unconsciousness, with shallow breathing, scarcely able to swallow fluid placed in his mouth. Then the lower centres recover from the shock and he becomes restless and even violent. As consciousness returns he grows more amenable to control, and his conduct is no longer dominated by the activity of his lower functional levels; but his memory and power of concentrated attention long remain defective.

The widespread distribution and severity [illegible] shock-effects tend to lead to a mistaken idea of the permanent extent of the lesion. After a cerebral haemorrhage producing a complete hemiplegia, the patient's friends are frequently told that he will never walk again. But, provided he can recognize the posture of the limb with his eyes closed, he usually recovers sufficient power to walk with the help of a stick. The leg always tends to recover to a greater amount than the arm, unless the structures which govern its motor and sensory functions are more directly affected than any other centres.

Frequently the significance of some symptom or sign is not appreciated owing to the adoption of a misleading general diagnosis. The early pains of spinal syphilis are thought to be due to "fibrositis." Disseminated sclerosis not unusually begins with short attacks of what is called "influenza"; the temperature is little if at all raised, but the patient feels ill, with a general sense of powerlessness. This may be accompanied by transitory loss of vision, diplopia, or incontinence of urine. But the diagnosis of "influenza" has misled the physician with regard to the condition with which he has to deal.

Sometimes the history, though accurate in every particular, may be almost perversely misleading. A cervical rib is a congenital abnormality; and yet the symptoms and signs it produces may become manifest for the first time at almost any age. One of my patients suffered from no pain or loss of power in her hand until after her marriage, with the natural inference that her trouble was due to syphilitic infection. But like most women of the hospital class, it was not until after marriage that she was forced to scrub the floor, to carry about a heavy baby, and habitually to perform other work necessitating continuous strain on the arms. Another patient, the son of a rich man, began to experience discomfort at about sixteen years of age, when he exchanged his quiet pony for a pulling horse. This was thought to be the hysteria of puberty. Again, a master baker, who consulted me during the war, noticed pain and wasting in his hand at the age of fifty. All his workmen had been called up, and for the first time in his life he was compelled, himself, to carry on the strenuous and exacting work of his bakehouse. This patient was thought to be suffering from "neuritis" brought on by the air-raids.

"Functional" and "Organic."

All disease of the nervous system manifests itself in loss of function. Not only does the patient complain of some lack of functional capacity, but the physician has to arrange his tests to elicit such defects. Let me therefore protest against the perverted use of the word "functional." Many employ it as a euphemism for "hysterical," and the subtle effect of this false use of the word sooner or later corrupts their diagnostic thinking. Some condition for which they cannot determine a cause is labelled "functional," and treatment is carried out on the negligent and irrational lines usually considered suitable for hysteria.

An even more insidious danger in the careless use of this word arises from an antithesis in the physician's mind between "functional" and "organic." As far as the nervous system is concerned, morbid conditions can express themselves solely through disturbance of function. The grossest destruction is evident in some paralysis or overaction only. But experience has associated certain signs with destruction of certain parts of the nervous system, and these we speak of by prolepsis as "organic" signs. They are, however, in reality, evidence of disturbed function, and not of structural changes. When the great toe moves upwards and the inner hamstrings contract on scratching the sole of the foot, we can assume that the normal activity of the pyramidal tract is disturbed; but the sign is no evidence of the existence of organic changes. It may be an early indication of structural disease or, on the other hand, a purely transitory disorder of function, as, for example, after an epileptic convulsion. In both cases the reaction is identical but its prognostic significance is fundamentally different.

The tendency to jump a step in logical diagnosis is responsible for an even more disastrous error. Pain is not always a pathological state, it may be a physiological response to noxious stimuli, and a necessary preliminary to a defensive reaction. But the physician tends to evaluate the sufferings of his patient solely by the nature and intensity of the external stimulus; should the destruction of tissue be severe, he accepts the pain as "organic" in origin. If, however, the "cause" is in his opinion insufficient, it is said to be "functional." He does not consider that there are always two factors in the production of painful sensation, either of which may vary independently. The peripheral mechanism can be reduced to such a condition that it responds excessively to the painful aspect of a stimulus of constant intensity; this occurs during recovery in many cases of injury to the principal nerve trunks. On the other hand the central receptive centres, concerned with painful impulses, may be no longer under complete control of the higher functional levels, and therefore respond with abnormal vehemence. What is known as "thalamic over-reaction" is a good example of excessive pain produced in this manner, and yet in the past it was frequently thought to be "functional." All pain is nothing but a change in function, and to divide painful manifestations into "organic" and "functional" is not only a solecism, but is an impediment to clear diagnostic thinking.

Some Early Indications of Nervous Disease.

One of the earliest changes associated with disease of the central nervous system may be an alteration in the *personality* of the patient. Cerebro-spinal syphilis is particularly associated with some change in character. A skilled workman ceases to be worth his high wages; the steward of a golf course failed because he could not remember the many little details necessary to the success of his day's work, and a fireman on the railway lost his job because he used to fall asleep during his hours of duty. Many instances occurred during the war, where, for example, an able non-commissioned officer became obviously incompetent, before any gross signs could be discovered of the underlying syphilitic infection of the central nervous system from which he suffered.

Frontal tumours are notoriously liable to change the personality of the patient. A modest and retiring Nonconformist minister, who was in hospital for observation cracked foolish jokes with the nurses, and insisted on accompanying the matron through the wards, clad in dressing-gown and slippers.

The disproportionate cheeriness, associated in so many instances with disseminated sclerosis, is less often recognized and escapes notice because of the insidiousness of the change. It is a great asset in combating the progressive loss of function, and care should be taken to avoid depressing the spirits of the patient, even though they may seem to be excessive.

Memory may be profoundly affected; and one of the most interesting diagnostic problems presented by the injuries of war, has been the distinction between the amnesia of cerebral concussion and that due to mental dissociation. The first is a true lack of memory: the mind fails to register events following the trauma, and even those which preceded it by some hours may be wiped out. But with a hysterical loss of memory the experiences which appear to have been forgotten are still in existence and can be recalled, in many instances, by suitable treatment. In this form the retrograde amnesia usually extends over a much longer period than in the case of a concussion; a soldier may not be able to recall his service in France, and the loss of memory may even extend back into boyhood.

Sleep is disturbed with the onset of many nervous affections. Sometimes, with cerebro-spinal syphilis, the patient falls asleep on the most inopportune occasions; more often, however, he tends to become sleepless. Insomnia is a characteristic manifestation of that emotional irritability usually mistaken for "neurasthenia," but due to syphilitic infection. At night the condition becomes a slight delirium and the patient may fall into a state resembling a mild confusional psychosis. Such nocturnal conditions are commoner amongst sane persons suffering from syphilis of the central nervous system than is usually supposed.

A peculiar tendency to lethargy and sleepiness in the daytime may be one of the symptoms of pituitary affection. The patient breaks off his conversation to yawn in your face and falls asleep on the most unexpected occasions.

Changes in *articulation* are amongst the earliest symptoms of many nervous diseases, but it is remarkable how often they pass unnoticed by those in close contact with the patient. Fortunately they become more evident under the emotional strain of an interview with the physician. I remember a woman, in an asylum to which I was attached, who appeared to be perfectly normal. The short attack of excitement for which she had been certified had passed away, and she was about to be sent home. But the bread served to the ward had been badly baked, and when she stepped forward to make her complaint to the superintendent, her articulation was for the first time profoundly affected. I need scarcely mention the changes in speech which not uncommonly appear among the early signs of paralysis agitans or disseminated sclerosis.

Headache is sometimes treated as if all pains in the head were of similar diagnostic import. But although we are far from comprehending the significance of the various forms of headache, we can class them roughly according to certain broad rules. First, it is important to determine whether the pain is referred from some affected organ in the head, thorax or abdomen. For it must not be forgotten that morbid states of the thoracic or abdominal viscera can cause localized pain not only over various parts of the trunk, but also in the head. Such referred pain is usually associated with areas of superficial tenderness, which mark out its distribution and give the key to its causation.

During the war we have had many opportunities of becoming familiar with the headache due to contusion or concussion. It is paroxysmal, intense, and the patient complains that he feels as if his head was bursting; coughing, sneezing, stooping, exertion, or anything that increases intracranial tension aggravates the pain. It is diminished after rest, and is usually absent on waking in the morning; but it not infrequently appears by the time the patient has finished his dressing and has begun to move about. Sometimes, when extremely severe, it can be relieved by lumbar puncture, even though the fluid withdrawn from the spine does not appear to be under greatly increased pressure.

From this the so-called "neurasthenic" headache can be diagnosed without difficulty. It is present in the morning on waking, and passes off during the day; but it is liable to return at night, and is evoked by anything that causes fatigue, bodily or intellectual. When dealing with airmen, invalided on account of war-strain or accident, we found that those who suffered from pure concussion were unable to visit the theatre with pleasure in the afternoon on account of headache; but those in whom it was the result of nervous exhaustion enjoyed the performance, although it might be followed by headache on their return.

All clinicians have laid stress on the frequency with which headache appears amongst the first symptoms of syphilis of the central nervous system, and its tendency to occur at night is well known. It is usually severe, paroxysmal, and lasts for several hours. The whole scalp may become tender, so that the patient cannot wear a hard hat. Occasionally it is accompanied by nausea which may culminate in vomiting. This leads to considerable difficulty in differential diagnosis from cerebral tumour if the serum gives a positive and the cerebro-spinal fluid a negative Wassermann reaction.

What constitutes a "Disease" of the Nervous System?

I must leave to other members of this Section the detailed consideration of such signs as abnormal reflexes, disturbances of motion or sensation, and affections of the cranial nerves. But before closing this address I should like to say a few words as to what constitutes a "disease" of the nervous system. Many physicians seem to consider that morbid manifestations can be divided into definite "diseases," and discuss their distinctive characters with the solemnity of a botanist of the old school debating the limits of species. They assume that when they have given a name to some morbid condition a diagnosis has been made. This fallacy is apparent in all official nomenclature of disease.

Diagnosis to be complete must be a threefold process. First, by careful examination, we elucidate the nature and extent of the loss of function which constitutes the morbid condition. Next, we translate these symptoms and signs into terms of some local affection; if there is reason to believe that they are due to organic destruction, we seek to determine the situation of such gross changes. Finally, if possible, we must discover the nature of the underlying pathological process. We must not be satisfied at one time with such a name as "locomotor ataxy," implying a loss of function, and at another with "tabes dorsalis," which signifies, in its technical sense, wasting of the posterior columns of the spinal cord.

Let us take as an example of the diagnostic methods I am advocating the case of a patient who is both spastic and ataxic. He walks stiffly, his knee-jerks are exaggerated, ankle-clonus may be present, and the plantar reflexes give an upward response. His ataxy is shown not only in his gait, but by his tendency to fall when the eyes are closed. He has difficulty in recognizing the position of his feet, and examination with the tuning-fork shows that the power of appreciating vibration is defective.

These morbid conditions point to interference with the functions of the pyramidal tracts and of the long extrinsic fibres of the posterior columns of the spinal cord. The patient may be said to suffer from a "postero-lateral" affection; but this is not a diagnosis. It is simply the translation into local terms of the disorders of function revealed by examination. In order to discover the nature of these local manifestations we must carefully collate them with other signs and symptoms discovered elsewhere.

Thus, the patient who suffers from postero-lateral disease may complain of a sensation as if a band were tied round his body, or show an area of over-reaction to pinprick, marking out the distribution of one or more posterior roots. Should there be no abnormal signs above this level, the spasticity and ataxy of the lower extremities are probably due to pressure on the cord, either from a new growth or from some affection of the meninges. On the other hand, the presence of nystagmus, temporary loss of vision or diplopia, point to some more widely disseminated lesion, however local the disease of the spinal cord may seem to be.

Postero-lateral destruction is a common manifestation of cerebro-spinal syphilis; but here some want of reaction of the pupils or other nerve signs and symptoms in the territory of the cranial nerves are usually present to help the diagnosis. This is clinched by the result of the Wassermann reaction.

In some instances where the patient is both spastic and ataxic, the nature of the destruction in the lateral and posterior columns may be revealed by morbid changes outside the nervous system. Thus, in "subacute combined sclerosis," the key to the destructive process may be given by blood changes resembling those seen in progressive anaemia.

In all these examples the functional disorders could be translated into terms of organic destruction; but in cerebro-spinal syphilis alone was the diagnosis of the disease complete. For in every other case we were ignorant of the pathological process responsible for the anatomical changes.*

All such names as "tabes dorsalis" and "general paralysis" should be avoided or employed solely as a part of the full diagnosis. They are considered by some as "diseases"; but they are nothing but shorthand titles for groups of signs and symptoms evoked by the action of the *Spirochaeta pallida* on different structures of the central nervous system. They do not tell us whether the morbid process affects mainly the meninges and vessels and is amenable to treatment, or whether it is acting on the essential nervous structures, shut off from all contact with metallic compounds circulating in the blood stream. Such terms are consequently insufficient for diagnosis, treatment, and prognosis.

An organic disease of the nervous system is produced by the action of some pathological process upon one or more of the constituent elements of that complex structure the central nervous system. This is followed by certain anatomical changes in vessels, meninges, nerve-fibres or cells; and these in turn cause certain disorders of function. All these aspects of the "disease" must be specified as far as possible, if the diagnosis is to be of any value as a means of scientific thought or practical treatment.

JAMES COLLIER, M.D., F.R.C.P.,

Physician to St George's Hospital and to the Hospital for the Paralysed and Epileptic, Queen Square, London.

Dr. Collier referred to the diagnosis of asthenopic diplopia—a condition elicited only on examination and on lateral deviation of the eyes. The diagnosis of migrainous ophthalmoplegia was touched upon. Ophthalmoplegia occurs, he said, only in long-standing cases of migraine. The onset is sudden, following a headache of greater severity than usual. The weakness of the ocular muscles may last for years, lessening between the attacks and being exacerbated by each succeeding attack. With regard to ophthalmoplegia from inflammatory lesions of the orbit, the sixth, fourth, third, and the first and second divisions of the fifth nerves are affected. The condition is not due to syphilis nor to septic conditions of the sinuses. It invariably recovers. This form of ophthalmoplegia is comparable to Bell's paralysis of the facial nerve. Any cranial nerve may be affected in a similar manner. Ophthalmoplegia due to congenital absence of an oculo-motor nerve may be diagnosed by the absence of diplopia and by the perfect vision in the erring eye.

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* The necessity for expressing a diagnosis [illegible] is even better exemplified by cardiac disease. [illegible] to say only that the patient suffers from [illegible] The full diagnosis should be expressed [illegible] "Auricular fibrillation," the disorder of function; "stenosis of the mitral valve," the organic destruction; and "acute rheumatism," the pathological process responsible for the condition of the heart.

GORDON HOLMES, C.M.G., M.D., F.R.C.P.,
Physician to Out-patients, Hospital for the Paralysed and Epileptic, Queen Square, London.

IN dealing with the early signs of nervous disease we are too much dominated by clinical signs and syndromes to which some name is attached—as Romberg's sign, Babinski's sign, or even the knee-jerk—while we neglect to observe and give their proper significance to minor disturbances of function and slight deviations from the normal which can be best seen in ordinary actions and movements. In the early stages of paralysis agitans, for instance, where there may be no characteristic tremor or rigidity, the absence of changes in the reflexes frequently leads to the diagnosis of hysteria, while observation of the slowness and awkwardness of movements and the uselessness of the limbs, which is not merely subjective, would make the recognition of the disease easy. Similarly, the apparently normal reflexes and the absence of such obvious symptoms as gross loss of power or rigidity in cerebellar disease, and in local lesions that produce slight sensory disturbances, often lead to these conditions being regarded as hysterical.

In the second place the ordinary clinical signs on which diagnosis is usually based are regarded as too absolute. It is, for example, frequently said that Babinski's sign is absent if all the reflex movements that it includes are not present, though the reflex is obviously abnormal; the [illegible] point is to decide whether the reflex is normal or not, and if not normal, whether it has a pathological significance. Similarly, the knee-jerk is frequently described as increased, exaggerated, or brisk, which it may be in either organic or neurotic diseases, while the type of the jerk, which is of great pathological significance, is generally neglected.

F. M. R. W[illegible], M.D., F.R.C.P.
[illegible]

As Dr. Head has emphasized, disease of the nervous system manifests itself by disorder of function. In addition to these disorders of function [illegible] organic disease, there is a large group of disorders of function [illegible] that [illegible] functional pathology. In the majority of [illegible] at some stage of their history clinical [illegible] to differentiate the forms of disorder belonging to these two classes. The so-called [illegible] largely, though fortunately we [illegible] of the nervous system [illegible] only [illegible] of disordered function and [illegible] structural alterations, but their value [illegible] in the fact that they [illegible] of disordered function [illegible] physiological [illegible] we have [illegible] comprehensive knowledge; in other words, their [illegible] and form are governed by well established physiological laws.

On the other hand, the physical signs of hysterical [illegible] physiological [illegible] hysteria [illegible] and [illegible] upon the patient's own conception of [illegible] of his body. However [illegible] there are very few physical [illegible] capable of [illegible] the [illegible] types [illegible] Unfortunately, [illegible] of the [illegible] physiological [illegible] nervous system [illegible] what are the earliest [illegible] of impaired activity of the [illegible] Are any of these present when the patient himself first becomes aware of a dawning disability, and what are the initial manifestations of this disability? I do not think that the terms of the problem before us can be too often or too variously stated, for with this as with most of the problems that confront us, half the difficulty of their solution vanishes once they have been clearly formulated.

Hughlings Jackson pointed out that disease of the nervous system may be regarded as a progressive dissolution of its functions in which the highest and most recently acquired activities (in the individual and in the species) are the most vulnerable and the first to be lost. Therefore, when we consider the refinements of motor co-ordination that are initiated and carried out through the activity of the cortico-spinal efferent path, it is clear that our ordinary clinical tests can scarcely be expected to discover defects until these are already gross and very evident to the patient himself. The first signs of impairment of some skilled acquired movement can be evident to the patient alone, and with the comparative crudity of our methods it is not surprising that we know so little, but rather that we have found out so much. In a case of slow-growing endothelioma overlying the left frontal and Rolandic cortex, clinical examination in respect of the arm and hand was negative, yet the patient had long been aware that his handwriting had deteriorated in quality; while a skilled amateur musician, who had apparently made a complete recovery from a small cortical thrombosis, found nothing to complain of in his left arm except that his fingers had lost their old cunning on the strings of his 'cello. Such slight disorders of co-ordination can be brought to our notice only by the patient himself, and unless he has sufficient intelligence to describe them accurately, and the clinician the judgement to assess their value and significance, they must always be liable to misinterpretation.

In the case of peripheral nerve disease I was fortunate in being able to investigate the initial subjective and objective manifestations of polyneuritis in a series of cases of diphtheria, and in a few of chronic alcoholic excess. In many instances the patient was aware of ready fatigue of the legs, of aching in the calf muscles on exertion, and of painful cramps in these muscles during the night, at a stage when examination revealed only tenderness of these muscles on pressure. As the disease developed, the tendon jerks underwent a preliminary and transient exaltation before diminishing in facility and finally disappearing. The ankle-jerk was the first to show these changes, and the earliest to disappear. In slowly developing cases these subjective manifestations may precede by some weeks the disappearance of the tendon jerks, though in diphtheria the evolution of polyneuritis is more rapid. As far as I have been able to discover, the minimal signs of an injury of the internal popliteal division of the sciatic nerve from a gunshot wound is a diminished ankle-jerk and pain in walking from tenderness of the calf muscles on stretching when the foot is dorsiflexed. Certainly these symptoms precede the appearance of paresis or sensory loss.

These few examples, which doubtless most clinicians could parallel, seem to me to indicate the necessity of ever increasing carefulness of clinical examination and of a much closer attention to apparently trivial symptoms if we are to achieve an early and accurate diagnosis, and to differentiate organic from hysterical elements in what at times are commonly dismissed as trifling ailments with little or no physical basis. In this connexion it seems profitable to refer to a recently manifested and unfortunate tendency to deprecate close clinical investigation, on the grounds that it is as apt to suggest symptoms to the patient as to reveal those already present. For example, it has been stated that areas of referred tenderness, both superficial and deep, in visceral disease are merely hysterical phenomena implanted in abnormally suggestible individuals by clinical examination, and that, having endowed his patient with them, the observer is in turn deluded by these creations of his own mind into believing that his patient has some organic lesion.

Perhaps the [illegible] of the [illegible] do well to distrust their own clinical observations, but that the observer of [illegible] should be expected to pursue his labours in perpetual dread of creating a hysteria of his patient [illegible] is scarcely a serious proposition. Nor [illegible] namely, that the clinician should be encouraged to substitute psychotherapy as a diagnostic method for the safer paths of careful clinical analysis of the early signs and symptoms of disease.

Theodore Thompson, M.D., F.R.C.P.,

Physician to the London Hospital.

Nervous exhaustion, or neurasthenia, may be an early sign of defect in the nutrition of the nervous system. The modern view that nervous exhaustion is always a result of psychical disturbances is undoubtedly incorrect. In many cases mental causes are dominant, and such cases are to be treated by psychic methods. But a very large number of cases of neurasthenia are the result of a defect in nutrition in the nervous system. Such disorders in nutrition may result from disturbance in the ductless glands, such as myxoedema. During the past year I have had four cases referred to me as neurasthenia in whom I recognized the early symptoms of myxoedema, and whose nervous exhaustion was at once cured by thyroid medication. Intestinal toxaemia is another cause of a nutritional defect in the nervous system which may give rise to nervous exhaustion. But gross vascular and inflammatory lesions of the nervous system may have as an early manifestation the usual symptoms of nervous exhaustion, as in a case that has recently come under my notice. In this case the early signs of gross vascular disease, so severe as to result in death, were manifested as nervous exhaustion. Again, in syphilitic disease of the nervous system the earliest symptoms may be those of nervous exhaustion, and it is only by careful examination of the blood and cerebro-spinal fluid that the disturbance in the nutrition of the nervous system can be detected.

Sir Frederick Mott, M.D., F.R.S.,

Consulting Physician, Charing Cross Hospital, London.

Sir Frederick Mott called attention to the importance of subjective sensory symptoms in the form of paraesthesia and pains due to root irritation in vertebral disease, tumours, and especially syphilitic meningitis. For some time these sensory symptoms might be the sole evidence of disease for which the patient comes to the doctor. He cited a case he had recently seen of syphilitic meningo-myelitis in which disseminated sclerosis had been diagnosed. For some days before the onset of paraplegia this patient had had numbness, pins-and-needles, and pains of a root character. Had a Wassermann reaction of the blood and examination of the cerebro-spinal fluid been made the syphilitic nature of the disease would have been diagnosed, and if treatment had in consequence been employed the specific inflammation would have been prevented from spreading to the spinal cord, and a focal myelitis thereby averted. No treatment would repair the damage to the afferent and efferent tracts which connect the brain with the parts below the lesion. This patient, a soldier, would suffer with a permanent spastic paralysis in consequence of neglect of this obvious procedure.

He also called attention to a fact which had not been mentioned in relation to the knee-jerks—namely, its absence on one side and presence on the other may indicate tabo-paralysis. He had seen such cases, and he accounted for it by the fact that one cerebral hemisphere might be the seat of the disease to such a degree that at death the difference in the weight might be as much as 50 or 60 grams. The presence of the knee-jerk on the opposite side was due to the suspension of the inhibitory influence of the brain. This fact was noted by Hughlings Jackson in return of the knee-jerk in hemiplegia.

E. S. Reynolds, M.D., F.R.C.P.,

Professor of Clinical Medicine, University of Manchester.

A communication from Professor Reynolds of Manchester was read by Dr. E. D. Adrian.

The remarks referred not to any new facts but to signs and symptoms in the early stages of common nervous diseases which Professor Reynolds had found from experience to be either not sufficiently known or not sufficiently regarded.

Paralysis agitans sometimes starts with pain and stiffness of one arm, which almost exactly resemble those of a brachial neuritis, and can only be diagnosed from such a condition by noting the slow movements, the mask-like face, and the posture which may be present; for in these early stages tremor may be entirely absent.

General paralysis of the insane may start almost like a "bolt from the blue" by a general epileptic fit, with no previous history and with no other symptoms for many months, although a skilled observer may be able to detect a very slight alteration of speech, which, to my mind, is the most diagnostic single sign of general paralysis: or the fit may be of an apoplectic nature affecting one side, the paralysis recovering completely in a few days. Other cases of general paralysis start merely with depression and loss of energy, and especially with a lessened capacity for business, somewhat resembling what may occur in neurasthenia.

In *brain tumour* there may be in the early stage nothing to be found but headache, the persistence of which, even in the absence of any other sign (such as vomiting or optic neuritis), should always be regarded with suspicion. Other cases of brain tumour start with a sudden generalized epileptic attack, with no other sign or symptom perhaps for months, and a guarded prognosis should be given in such a case, especially in an adult with no history of a previous fit and no family history of epilepsy, and in whom cerebral arterio-sclerotic changes can be excluded.

In *tabes dorsalis* early and isolated symptoms which may simulate other conditions are notorious; the lightning pains simulating "rheumatism" or neuritis, or even angina pectoris or intercostal neuralgia; the gastric crises mimicking stomach disorders, or the nephralgic attacks, stone in the kidney. The routine examination of the knee-jerks in all patients is as important as the routine examination of the heart.

In early stages of *peripheral neuritis* such as occurs in alcoholic or arsenical poisoning the muscles may be exalted rather than depressed in function so that the reflexes are increased, and the great toe extended rather than drooping.

It is especially in *disseminated sclerosis* that symptoms are so diverse and so difficult to interpret as precursors of so serious an affection. I refer to the quite temporary blindness (often unilateral), to the temporary double vision, to the occasional sudden and momentary giving way of the leg causing the patient to fall without apparent cause; to the slight feeling of loss of sensation in patches and areas very difficult to find by objective examination; to sudden attacks of hemiplegia which may entirely recover in a few days or weeks. And I particularly wish to point out that rarely in this disease there may be severe pains, neuralgic in type and of root distribution, either in the trunk or limbs; and one must not forget how completely these early signs may disappear, only to recur perhaps years later. One is not surprised to find many of these cases diagnosed in the early stage as "hysteria."

In early stages of *myasthenia gravis* the temporary drooping of the lids, or the temporary double vision, may suggest hysteria, as I have known occur in three or four cases.

Finally, I wish to mention the frequency with which the symptoms caused by *secondary growths in the vertebrae* are mistaken in the early stage for other affections. For the symptoms may be quite indefinite, may merely consist of apparent bad temper, or the vague pains of a spinal neurasthenia, the patient all the time remaining fat and apparently fairly well in general health, and it may be months before the true nature of the affection is diagnosed. Such odd signs and symptoms occurring in women who have previously, even so long a time as five years before, had the breast removed, must always be looked upon with great suspicion.

Tom Williams, M.D.,

Washington, D.C., U.S.A.

Disease, even when serious, may fail to be manifested functionally. Familiar instances are chronic nephritis, latent tuberculosis, cerebro-spinal syphilis, cerebral neoplasm. On the contrary, function may be disturbed long before we are able by signs to affirm physical disease. As regards the nervous system the first diagnostic issue is the region or structure affected. The second is the etiology or nature of the disease processes; either of these may be the primary problem to the clinician. When function is disturbed without focal disease of the nervous system the issue lies between disturbance of material source elsewhere, and dynamic interference with integration. This latter may be reflex, but is far more frequently psychogenetic, even when the primitive stimulus may be a physical disturbance.

It is folly to attempt to nosologize before formulating those issues, mentally at least. Most of the errors have arisen from acceptance of the premise that when one cannot find physical disease, hysteria is a justifiable diagnosis. Far more pragmatical, at least, is the postulate that when one cannot find a psychogenetic mechanism adequate to account for the symptoms, then physical disease must be present, even although we are unable to elicit its signs. This statement is particularly true regarding pain, disorders of sleep, asthenia, alterations of character, emotional disturbances.

Regarding paraesthesia, it is particularly frequent to be asked to examine a patient diagnosed as a case of hysteria in whom one finds the characteristic paraesthesiae which occur in the spinal disturbances of pernicious anaemia before there can be detected any change in the blood. To ascertain disturbance of the attitude sense is a speedy process to confirm the diagnosis. Many milder cases of encephalitis are labelled neurotic because of the marked changes in character, the slight agitation, the euphoria and insomnia, and the absence of lethargy and paralyses. Frequently in patients sent to me as neurasthenics do I find endocrine disorders, the inertia of hypothyroidism and its headaches. This is the form of headache which improves during the day in consequence of the stimulus of activity and food, which is so different from the genus of headache which is aggravated by activity, increased by food, or brought on by posture, the toxic or migrainous type, which conforms in many characters to the post-commotional headache, the asthenia of hypo-adrenia, the agitatedness, irascibility or fatiguability of mild hyperthyroidism, the indolence and vague feelings of dyspituitarism. Finally, neurotic behaviour is often the first sign of a state of mild toxicosis or of an infective focus.

Spontaneous disappearance of symptoms is far from a proof that they are hysterical; indeed it is a presumption that they are not, although asthenia consequent upon emotional disturbance is usually of short duration. Apparent success of psychotherapy is no criterion of hysteria; for symptoms of grave organic disease may be overpowered by suggestion for considerable periods. A good example is that of the woman who was kept ambulant and well for a year, at the end of which a necropsy showed nephritis, myocardial degeneration and valvular disease, pulmonary tuberculosis, hepatic cirrhosis, ulcer of the stomach, and carcinoma of the uterus. Ecclesiastical healers have caused thousands of incapables to functionate for a time in the belief that they are healed. Hence the great danger of confiding patients, even when labelled functional or neurotic, to individuals, even though medical graduates, who are not highly skilled in neurological diagnosis. This is not to exaggerate the importance of the clinical sign; it can never lose its place, but its superiority as an objective fact should not permit the physician to ignore the subjective facts set forth by the patient. This does not mean the uncritical acceptance at face valuation of every complaint. The complaint is often a faulty interpretation, erroneous and fallacious. What we really seek is a subjective fact of the patient's experience, that is a mental fact, a percept, but none the less real when we know how to clean it of the accretions to which it is so subject, more especially when it is being distorted by friends and perhaps doctors.

DISCUSSION.

Dr. Helen Boyle (Honorary Medical Officer, Lady Chichester Hospital for Women and Children, Hove) said that it was with some diffidence that she addressed the meeting, being unable to label herself a neurologist any more than she would willingly label herself a psychiatrist. She would like to enter a protest against the separation of neurology and psychiatry, and [illegible] the Section [illegible] both. It was many years since she first urged that the cerebro-spinal nervous system should be considered as a whole and, as a matter of [illegible] mental and nervous [illegible]. With regard to [illegible] discussion she had [illegible] the importance of [illegible]. With a small hospital of [illegible] patients [illegible] of patients sent to them from the [illegible] hospitals. She recalled one who was sent as [illegible] the patient needed firmness and discipline for a hysterical condition, and he thought it was more desirable that this should be done by a woman than by himself. She could not walk, and he pointed out that this must be hysterical, for it had come on three months after the injury, which was caused by a fall on the back on a slippery pavement. Dr. Boyle got a general past history from the girl, which pointed very strongly against hysteria, and on inquiring when she had first found that she could not walk, she replied, "Three months after the accident." On further asking what she had been doing during that three months, Dr. Boyle found that the patient had never been allowed to put her feet to the ground. As a matter of fact the girl had a fracture of a vertebra. The war had done a great deal towards rousing interest and keenness in mental and nervous diseases, and this had been largely due to the fact that to a great extent nervous and mental cases had perforce to be treated together, and that the nervous system, including the brain, was taken as a whole. This important advantage should not now be lost.

Dr. Hildred Carlill (London) said that in these days, when we were saturated with the literature of hysteria, he thought some were apt to forget the elementary lessons in diagnosis. He had lately seen a case of myotonia congenita and one of paralysis agitans which had been considered hysterical. Bearing upon Dr. Head's remarks on the misuse of terms, he mentioned the case of a patient whose fits it was thought might be hysterical. The history pointed to epilepsy, and the doctor remarked about "ordinary epilepsy." Dr. Carlill informed him that such an expression was not permissible, and urged him to keep the optic discs under constant supervision. Four years later the patient was again examined, and hemiparesis and papilloedema were found. The cause was a cerebral glioma.

Dr. Astley Clarke mentioned conditions and practical difficulties met with in a "Home of Recovery for Functional Diseases" at Leicester Frith, and the varying conditions discovered from day to day in certain of the cases on the border line between "organic and functional." He protested against the present use by the medical profession and laity of the term "neurasthenia."

Dr. Henry Devine (Portsmouth) emphasized the fallacy of regarding too closely a given symptom-complex as the expression of a definite morbid entity. He referred to general paralysis, which was usually regarded as a definite disease with an invariable outcome in an unfavourable sense. From the clinical point of view cases diagnosed under this category, on the basis of certain mental symptoms associated with signs of organic nervous disease, often were found to clear up in respect to their mental symptoms. He referred to a tabetic in which a transient mental episode occurred as a result of an unusual physical and mental stress. He felt that in all this wide group of cases the diagnosis of cerebro-spinal syphilis should be first made and then those factors determined which suggested that the case would run the course of a slow tabetic or the rapid form known as general paralysis. The mere existence of mental symptoms did not necessarily indicate the latter course.

Dr. Grainger Stewart (London) referred to the value of careful observation of the abdominal reflexes. This was specially valuable in cases of slow growing intracranial tumours, especially in cases of extracerebral tumours—endotheliomata and fibromata—opposite silent areas of the brain. In the very early stages before definite signs had arisen, and more especially on those days on which the patient was not feeling so well, probably because of a temporary rise in his intracranial pressure, examination would reveal that the abdominal and epigastric reflexes were abolished or diminished on one side, the side opposite the lesion, and that this change was constantly associated with a modification of the corresponding plantar reflex. The plantar reflex might not be altered in type but might be less easily obtained when compared with the corresponding reflex on the opposite side.

Dr. Farquhar Buzzard (London) regretted that more attention had not been paid in the course of the discussion to Dr. Head's reference to the importance of the history of disease. He had noticed the eagerness with which the audience listened to any suggestion of a new physical sign. Further knowledge of diseases must follow on the more exact study of early subjective symptoms. Dr. Buzzard gave as an instance the pains of tabes dorsalis, and pointed out the characters by which they could be distinguished long before there were any physical signs of the disease. The developments of modern psychology constituted an attempt to apply to mental disease the close study of its history on the lines which had been followed with such good results in organic neurology.

Dr. J. P. Lowson (London) insisted upon the need for a word to distinguish between disturbances of function whose origin was mental from disturbances of function whose origin was a structural change. Hysterical amnesia corresponded to the patient's notion of "memory."

Mr. Archibald Stanley Percival (Newcastle-on-Tyne) had seen one case of retrobulbar neuritis which he afterwards heard suffered from a temporary paresis of the sixth and fourth nerves. He would like to ask whether retrobulbar neuritis had not been observed in such cases as those to which allusion was made by Dr. Collier. In early retrobulbar neuritis there were no objective signs; one had to rely on the presence of a central scotoma (partial or complete) and on light-sense tests. Further, retrobulbar neuritis might have just the same significance as choked disc; if there were an adhesion in the nerve sheath at the site of the optic foramen so that there was a block in the perineural (potential) canal at this site, signs of choked disc could not occur, but they were replaced by signs of retrobulbar neuritis. It was essential that examination for the symptoms of this condition should be made early, before the patient's mental processes became dull. He had seen a case of retrobulbar neuritis in which the diagnosis of a cerebral tumour was controverted on the ground that there was no ophthalmoscopic evidence of an optic neuritis. The patient died, and a cerebral tumour was found. In a small proportion of cases (about 1 per cent. or so) an anatomical peculiarity existed in which retrobulbar neuritis would replace the ordinary choked disc of cerebral tumour.

Dr. Bedford Pierce (York) wished to ascertain the significance of certain common symptoms. Many patients said that their illness began with the feeling of "something snapping in the head," or of "the brain moving or turning over," or of "water running inside the head." What, he asked, was the physiological meaning of these abnormal sensations?

Dr. R. N. Goodman (Kingston) said that, as far as the outlook of the general practitioner was concerned, the use of the term hysteria should be given up or severely limited. The distinction between organic and functional conditions was that the former persisted and the latter cleared up. He instanced the occurrence of angio-neurotic conditions of headache with prolonged course and ultimate recovery which were only saved from being called hysterical because the tender points and swellings could be felt by the finger. Hysteria might safely be used in cases where the exaggeration of symptoms took new forms from time to time, and so were indications of a mental disturbance. In all other cases the use of the term hysteria was a confession of ignorance.

Blacklock and Carter, of the Liverpool School of Tropical Medicine, showed last year that *Anopheles plumbeus* may become infected with the malarial parasite, if kept at 82° F. after its infecting meal. It is possible, therefore, that the species may act as a carrier of malaria in this country. It frequents woods, and breeds in rot-holes in branches of trees or in hollows in their roots. At the request of the Ministry of Health the Mosquito Investigation Committee of the South-Eastern Union of Scientific Societies is inquiring into the distribution of the species, and as to the stages and situations in which it survives the winter. It hopes to present an interim report on the larvae before the end of this year. *A. plumbeus* has borne several other names, including *A. nigripes*.

It is reported that magnesium sulphate and calcium carbonate are used extensively in Italy for the adulteration of cocaine. Some specimens do not contain even a trace of cocaine.

NOTES ON BLACKWATER FEVER.*

BY

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During my service as officer in charge of a medical division in Macedonia I saw a large number of cases of blackwater fever. Some of the chief points in 14 of these cases are tabulated:

Case.	Previous Malaria.	Malaria Parasites.	Quinine.	Result.
1	+	+	V	Recovered.
2	+	+	V	,,
3	+	+	V	,,
4	+	+	M	Died.
5	?	+	V	,,
6	+	0	V	Recovered.
7	+	0	V	,,
8	+	+	M	,,
9	0	+	V	,,
10	?	+	V	,,
11	+	+	O M	,,
12	0	+	V	,,
13	0	+	O	,,
14	+	+	M	,,

O = oral, M = intramuscular; V = intravenous.

All the patients were Serb except Cases 6 (Greek) and 11, 12 and 13 (British); all recovered except Cases 4 and 5.

It may be noted that 9 of the 14 cases had had malaria previously, 3 had not, while in two cases the facts could not be ascertained. Case 12 arrived from England at the end of August. She had not had malaria, and had not taken quinine. She began to suffer from blackwater fever on October 10th. In 12 of the 14 cases malaria parasites were found. They were all of the malignant tertian type. Case 13 is interesting in this respect. Very numerous young malignant rings were present in the blood at 11.30 a.m., and blackwater began at 3 p.m. the same day.

The cases were of all degrees of severity. In the majority there was only one attack, which lasted for two days, and then the urine became clear. A few of the cases had a second attack. Case 11 had three attacks, and had a desperate struggle for life each time. The temperature was only slightly raised in all the cases. They all showed jaundice, and albuminuria usually persisted for a few days after the haematuria.

Notes on the Two Fatal Cases.

Case 4.

A Serb, aged 46, admitted to hospital on September 5th, 1918, complaining of headache, pains and cough. He had been ill for four days. The temperature was 97°. He had suffered from malaria in 1917. He was jaundiced, anaemic, and appeared to suffer from profound toxaemia. He passed urine in bed, and it was not till September 10th that a sample was obtained. This contained haemoglobin, broken-down red corpuscles, epithelial cells, and blood and epithelial casts. He was treated with intramuscular injections of quinine, but signs of pneumonia supervened. The spleen became palpable. Vomiting was severe, and death occurred on September 12th. The temperature never reached 99°.

A *post-mortem* examination showed a flabby, dilated and fatty heart, with blood-stained endocardium and some recent vegetations on the mitral cusps. The lungs were oedematous. The right lower lobe showed red and grey hepatization. The liver was enlarged and fatty. The gall bladder was distended. The spleen was three times its normal size. There was an increase of fibrous tissue with soft pulp and obscure Malpighian bodies. The kidneys were congested with cortex and papillae swollen and congested. The pancreas was hard and blanched. The alimentary canal presented nothing noteworthy.

On microscopic examination the liver showed a moderate degree of fatty degeneration. There was a golden coloured pigment in many of the liver cells, and part of this gave the free iron reaction. The spleen contained pigment in leucocytes and endothelial cells and also free. The kidneys showed some pigment, probably malarial, in some of the glomerular capillaries. The tubules were catarrhal and contained much broken-down material, evidently consisting of partially disintegrated red corpuscles. There were also numerous casts. The broken-down material was most abundant in the collecting tubules. The bone marrow was myelocytic but showed no great change. The heart muscle was atrophic; there were a few haemorrhages between the fibres. The right lung showed croupous pneumonia.

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* A contribution to the Pathological Society of Great Britain and Ireland.

Case 5.

A Greek, admitted on September 25th, 1918, after four days' journey. He was anaemic and yellow, and passed blood-stained urine in bed. The spleen was enlarged, the lungs seemed healthy, but the heart was dilated and the pulse was almost imperceptible. He received an intramuscular injection of quinine bihydrochloride, 20 grains, at 2 p.m., and as the pulse had improved he received an intravenous injection of 20 grains at 6 p.m. This was repeated the next day in a pint of saline solution. Malignant tertian parasites were found in the blood. He died at 2.50 p.m. The temperature had never exceeded 99° F.

Post-mortem examination showed a dilated heart with flabby muscle. The lungs were congested, the liver pale and fatty, and the gall bladder distended. The spleen was six times the normal size. The kidneys were dark in colour.

Microscopic examination of the liver showed extreme fatty degeneration. Every here and there were necrotic areas. The cells contained much brown pigment, and a small portion of this gave the free iron reaction. The spleen showed fibrosis and great masses of brown pigment in endothelial cells and large leucocytes. The kidneys showed catarrh of the convoluted tubules. There were blood corpuscles and detritus in the collecting tubes and ascending limbs of Henle's loops—most in the former. The bone marrow was myelocytic. The giant cells were numerous and appeared healthy. The heart muscle was extremely atrophic with exudation between the fibres.

I wish to submit that these cases strongly support the view that blackwater fever is a manifestation of malaria, and that the onset of the haematuria or haemoglobinuria may be determined by exposure to cold. The majority of my Serb patients had taken part in the attack that led to the Bulgar capitulation, and all of them had suffered cold and privation.

Tropical haemoglobinuria or haematuria is commonly recognized in three forms—(1) malarial haematuria, (2) quinine haemoglobinuria, (3) blackwater fever.

Malarial haematuria is characterized by the presence of malarial parasites and the absence of jaundice. In an experience of some 20,000 cases of malaria[1] I have only seen one example, and I regard the condition as due to a localization of parasites in the urinary passages or a local lesion resulting from the parasite or its toxins, and comparable to malarial appendicitis, pneumonia, or keratitis.

Quinine haemoglobinuria is widely recognized, but I have never met with it in spite of the fact that all my malaria cases never received less than 30 grains of quinine daily for many successive days, and I have given as much as 60 grains intravenously within an hour.

The arguments advanced against the malarial origin of blackwater fever are the following:

1. The rarity of blackwater fever in places where severe malaria is prevalent. This seems to me a doubtful proposition. The incidence of blackwater is often transient, and I agree with Ross and Forbes[2] that it is often overlooked.

2. The seasonal incidence of blackwater fever differed from that of malaria in Macedonia, blackwater being most common in the winter months. I think that this may be accounted for by the factor of exposure to cold.

3. It is frequently stated that the administration of quinine often causes blackwater fever and that blackwater fever is not benefited by quinine. I am prepared to controvert both statements. Of course blackwater fever may follow the administration of quinine if the [illegible] or if a sufficient number of corpuscles has been affected before it is given. I have administered quinine intravenously in large doses in blackwater fever at every stage and have never seen harm follow, and latterly intravenous quinine in saline was my routine treatment. In that practice I was by no means alone.[3]

4. It is frequently stated that malaria parasites are rarely found in blackwater fever. This is contrary to my experience.

Noel Paton[4] and I pointed out in 1903 that haemolytic agents fall into two groups:

1. *True haemolytics*, such as glycerin and distilled water, dissolve out haemoglobin, which is set free in the plasma and appears in the Bowman's capsules in the kidneys.

2. *Toxic agents*, such as toluylen-diamine and phenylhydrazin, poison the corpuscles but do not liberate haemoglobin. Very large doses of phenylhydrazin kill animals with the formation of a brown pigment in the blood resembling but not identical with methaemoglobin and with haematuria. Haemoglobin does not appear in the Bowman's capsules, but blood pigment appears in the urinary tubules and in their epithelium. In smaller doses there is no haematuria, but pigmentary changes occur in the liver, spleen, and kidneys.

The distribution of damaged blood corpuscles and pigment appears to be identical in blackwater fever with that found in animals poisoned with the second class of haemolytics. Blackwater fever is therefore regarded as due to destruction of blood corpuscles by the malarial parasite. The parasites associated with blackwater fever are the malignant type which does most damage to the corpuscles, has the greatest tendency to cause local symptoms, and sporulates and liberates toxins mainly in the internal organs. A moderate amount of damage may lead to jaundice only. A greater destruction of red corpuscles may be more than the usual haemolytic organs can deal with, and blackwater fever results. The influence of cold is, I think, an important causal factor. W. Hunter[5] showed that normal animals became more deeply jaundiced than spleenless animals after poisoning with the second class of haemolytics. Paton[4] and I confirmed this observation, and concluded that the greater jaundice in the normal animals was simply due to a more rapid fixing of the poisoned corpuscles in the portal system.

One does not overlook the important influence that cold has been shown to exert in determining an attack of paroxysmal haemoglobinuria, but it is unnecessary, I think, to invoke immunity reactions to explain its influence in blackwater fever. Cold may be regarded as acting much in the same way as the spleen does in the experimental animals, by retaining a larger proportion of corpuscles in the internal organs, and thereby exposing them to a larger contact with the haemolytic organs. Such a view might afford a simple explanation of apparent anomalies in the incidence of blackwater fever both as regards time and place.

Summary.

Fourteen cases are tabulated. In twelve of these malaria parasites were found. All the cases were treated with large doses of quinine and twelve recovered. It is contended that malaria is the essential cause of blackwater fever, and that exposure to cold may be an important factor in determining its onset.

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RESUSCITATION IN DEATH UNDER ANAESTHESIA.

BY

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There appears to be a need for the greater advocacy of cardiac massage as a measure of resuscitation in death and impending death under anaesthesia. Records of fatalities still appear with no mention of cardiac massage having been practised, and without any reason for its non-employment being advanced. Such a case, for instance, was described last year, and not one of the twenty-six contributors to the correspondence which followed made any comment upon the statement that "artificial respiration was carried on for nearly two hours, but there was never the slightest response." It is true that the means employed for resuscitation in this case (death occurring during an adenoid operation) was not the issue particularly raised for discussion, but the absence of comment could not but have implied acquiescence in the correctness and adequacy of the treatment. To those, however, who have proved the merit of cardiac massage the case is but one of many which clearly indicates that this operation ha not yet received the recognition which it deserves as being the only measure that can with any reliance be counted upon to re-establish the heart's action when it has been suddenly arrested under anaesthesia.

The living tissues of the body, according to their nature, retain a varying measure of vital force and survive for varying periods the suspension of their blood supply. The more lowly their origin the more durable is their life. The connective tissue and epithelial elements may survive for days, as is shown by their preservation if kept cool for purposes of grafting. Muscle may preserve its vitality for hours, but the delicate fabric of the central nervous system, upon which vital systemic processes depend, does not survive for more than thirty minutes at the most deprivation of its vascular nutrient supply. Accordingly, experience of cardiac massage has shown that cessation of the circulation for thirty minutes means inevitably the termination of life, so that after a longer period cardiac massage and artificial respiration alike are futile.

If early and appropriate treatment is pursued the patient, upon recovery from the effects of the anaesthetic, will often appear to be none the worse for his adventure, except for a protracted period of somnolence, which would seem invariable. So grave is the cerebral irritation set up by a prolonged cerebral anaemia, however, that a state of unconsciousness with incontinence may occur, and mental disturbance and convulsive rigidity and choreic movements will ensue, which either prove temporary and controllable by depressant drugs, or increase in frequency and force until death occurs. A case has been graphically recorded by Mr. Mollison[1] of a boy aged 6 who, after suddenly expiring during a tonsil and adenoid operation, was revived by cardiac massage instituted about twenty minutes later. It was about five weeks before his nervous system recovered and he entirely regained his normal mental standard. If such a state of dangerous nervous disturbance is to be avoided, cardiac massage must be begun earlier than in this case, probably within ten minutes at latest. Every medical man should familiarize himself, by practice on the cadaver, with the procedure of cardiac massage, as with that of tracheotomy, which all are schooled to perform and which requires greater skill.

Many medical men are unfamiliar with cardiac massage: some are prejudiced against it. There is also a fear of peritoneal contamination consequent upon hasty and inadequate preparation; but such a contingency is extremely unlikely, even though the skin of the epigastrium be unprepared or only smeared with iodine. Such a consideration should not influence the decision of the surgeon who is confronted with an occasion of grim emergency that imperatively demands quick intervention if life is to be restored. Undue time is apt to be lost by the preliminary trial of other measures, particularly of artificial respiration, which has so long been the accepted practice that it is still resorted to, even when the heart has ceased beating. In such a case there is scant likelihood of artificial respiration meeting with any success.

Beyond a period of half an hour no measure whatsoever will avail.

The question arises as to whether the external manipulations of artificial respiration are ever capable of restarting the heart-beat. Conceivably they are, for doubtless the chest movements have some effect (especially in young subjects with pliable thoracic walls), by reason of the rhythmic variations of intrathoracic pressure which they produce, in mechanically promoting a blood flow, and by reason of transmitted pressure, in stimulating the heart. This conception affords sufficient justification for artificial respiration to be given a trial for a minute or two, not longer. Argand's finding that mechanical stimulation of the heart acts best when applied to the auricular region has led to a practice of applying jabbing intermittent pressure over the upper epigastrium during the performance of artificial respiration. But it would be vain to place reliance on such external means, whose success at best has proved rare and haphazard. The case of new-born infants is different. Mr. E. Ward[2] advocates and vouches for a method of external cardiac massage which, owing to the pliability of the chest wall, would appear to be an invaluable and successful innovation in the treatment of asphyxia neonatorum, especially the white form with weakened or imperceptible umbilical pulse. On the operating table it is customary to employ either Sylvester's method of artificial respiration or a method of grasping and compressing the chest which has a similar if not more beneficial effect. These manipulated movements do not of themselves suffice to afford an adequate respiratory tide; it will be profitable to examine their influence and to assess their value.

In the inanimate state the diaphragm is inactive, atonic, and relaxed, and moves only passively, subject to mechanical laws; consequently the normal chest capacity is reduced by the increased response of the diaphragm to negative pressure above and positive pressure below; this reduction is greater when the subject is in the inclined plane. When Sylvester's inspiratory manipulation is made the chest is expanded, but the advantage gained is less than would at first sight appear; the diaphragm rises further in consequence of the increased negativity of the thoracic pressure brought about by the expansion of the chest and of the increased intra-abdominal pressure consequent upon stretching of the abdominal parietes as the arms are raised and pulled. At the expiratory manipulation the amount of air expelled is less than might be anticipated, for whereas the capacity of the chest is reduced by its compression, the diaphragm descends, as is seen by the bulging abdomen; here again there is a discount to the advantage gained. Thus, contrary to normal action, the diaphragm moves upwards at inspiration and downwards at expiration—a to-and-fro movement that weighs against effective costal respiration, upon which Sylvester's method depends entirely for its success. This tends to respiratory stasis, and—in the young with pliable chest walls, by the superabounding effect of compression—finally to lung collapse. A case was narrated to me by Dr. Charles Hadfield of death due to respiratory failure under anaesthesia. Sylvester's unaided method of artificial respiration was employed upon a child for a long period without any evidence throughout of lung ventilation being obtained. At the autopsy there was no sign of obstruction in the air passages, and the lungs were found in a state of collapse. I think the interpretation I have given is applicable—that owing to contrary movement of the diaphragm the influence of costal movements was negatived, and chest compression prevailing, the air was gradually eliminated and finally expressed from the lungs. I have seen a similar condition of the lungs at autopsy in a baby which succumbed to severe rickets, with extreme costal recession from marked softening of the ribs.

It is imperative, therefore, when employing Sylvester's method to augment lung ventilation by Howard's modified plan, an assistant making expiration more effective by the application of pressure over the epigastric zone and so elevating the diaphragm, and supplementing the inspiratory movement by suddenly removing the pressure exerted; this effects a simultaneous descent of the diaphragm and costal elastic recoil.

It may seem paradoxical, but it is nevertheless true, that the manipulations of cardiac massage fortuitously produce a better amplitude of respiration than is obtainable by the external artificial methods. It is difficult, therefore, to understand the reason for carrying on artificial respiration concurrently with cardiac massage, as is so frequently reported. If cardiac massage is being performed lung ventilation at once ceases to be a matter of concern; any accessory means employed is redundant. In the bimanual manipulation of cardiac massage the dome of the diaphragm is forcibly raised simultaneously with compression of the front of the chest, and a forced and complete expiration is thus brought about. This is followed, as the pressure is suddenly released and the descent of the diaphragm is aided by that of the liver (which is levered down by the back of the hand) by a deep inspiration. In comparison with Sylvester's method, given previous trial in a case, the effect upon the freedom of respiration is audibly greater; this is what would be expected if one considers that the diaphragm, the chief factor in the respiratory act, is directly brought into play. It is important to bear in mind this contingent incident of cardiac massage, for in cases of respiratory arrest with gradually weakening heart-beat an earlier decision can be made to undertake a procedure by which not only the circulation but the respiration will derive advantage.

Cardiac massage has an influence upon the circulation that I have not seen previously described. Well before a first heart-beat is initiated a change in the appearance of the patient is witnessed, the pallor of the skin gradually being replaced by a perceptible flush. This indicates in the first place that the manipulations supply a part of the necessary force—previously in abeyance—to propel the blood stream, and by the agency of the intracardiac valvular arrangements set in motion an artificial circulation that is comparable to a physiological model made up with tubing and a Higginson's syringe. In one of my cases the intraocular tension was observed to improve, and in Mr. Mollison's published case the pupil of the eye was observed at this time to become smaller. The heart is at first uncertainly palpable in its extreme diastolic flabbiness, but prior to the occurrence of its first contraction it is felt gradually to become more firm. The first heart-beat is minimal, and of the character of a "twisting kick," and the contractions, once started, assume regularity and gain strength as the manipulations proceed, until after some six to twelve contractions a maximum excursion is reached, which remains constant, at remarkable vigour. The staircase phenomenon of progressive augmentation is attributed to the beneficial effect of contraction. The extraordinary force of the maximal cardiac contractions is regarded as dependent upon increase of muscle fibre length that occurs with exceptional ventricular relaxation and distension. Other influences that may work to the same end are the unprecedented cardiac rest, the enhanced coronary circulation consequent upon massage, the persisting abeyance of governing inhibition, and cumulative muscular and augmentor stimulation mechanically induced. However this may be there appears reason to continue with massage until automatic contractions are well established at maximum vigour, as reflected in the radial pulse. In a case in which I ceased massage before the heart-beats had become maximal they again stopped, and failed to recur in spite of renewed intervention. In cardiac massage the auricular parts of the heart are not accessible to the manipulating hand, approach being hindered mesially by the inferior vena cava, and from before by the coronary ligament. Practically it is the ventricular part of the heart only which is squeezed; if an attempt is made to include the auricular portion within the scope of the operation, the heart is lost from the grasp, and the respirations become inadequate or cease.

It would appear that in the initiation of the heart-beat artificial circulation must constitute an initial causal factor that is of paramount importance whatever may be the actual determining exciting cause. Possibly an artificial circulation through the cardiac and central nervous tissues is all-sufficient, by its influence upon elimination and supply, to reconstitute a normal state in which functional activity becomes spontaneous. The cause of the heart-beat according to present physiological teaching is said to lie in the cardiac muscle, the salts of the blood supplying the osmotic conditions that lead to its irritability and contractility, and affording the necessary constant stimulus for the heart's automatic action. But it is difficult to conceive in cases such as emotional syncope, where these conditions have been little disturbed, why the heart should remain permanently arrested in action and not spontaneously restart beating. Some other than an inherent exciting factor would seem, therefore, not to be precluded. It is possible that once nutritive conditions are restored and the irritability of the heart is raised again to a susceptible threshold, it responds by a first beat to the mechanical stimulation of the hand or to an artificially produced intracardiac tension, as demonstrated experimentally by Gaskell with the apex of a frog's heart.

Further observations, corroborative and otherwise, are required of clinicians who have occasion to resuscitate by cardiac massage in [illegible] death under anaesthesia, and it would be of great help if an understanding of the processes concerned [illegible] by a clear pronouncement by physiologists to whom we must look for guidance and [illegible] direction.

[illegible] Cardiac Massage.

[illegible] Massage.—An opening [illegible] in the epigastrium to the left of the middle line, and large enough to [illegible] between the left [illegible] and the diaphragm. The [illegible] [illegible] the [illegible] The compressions are repeated [illegible] in the [illegible] The abdominal wound is then sutured.

[illegible] Massage.—[illegible] devised by Captain Bost. [illegible] The abdomen is opened as before and [illegible] diaphragmatic [illegible] the diaphragm [illegible] pericardial [illegible] and the heart grasped and [illegible] pericardial sac.

Artificial respiration must be carried on throughout the operation. In the case recorded by Captain Bost the measure met with success after failure of the subdiaphragmatic method.

Transpericardial Massage.—This very difficult method has not in practice met with gratifying results. A flap of the precordial thoracic wall is raised, the pericardium opened, and the heart directly squeezed.

Supradiaphragmatic Massage.—This method affords ready access. A lower intercostal space on the left side is quickly opened by a lengthy incision, well retracted, and a hand is introduced into the left pleural cavity. The heart, enclosed in its pericardial sac, is grasped and squeezed. I have seen no mention of such an operation being designed to meet the occasion. With failure by subdiaphragmatic massage it arises as an alternative to the method designed by Captain Bost, who claims as an advantage of his plan that occurrence of pneumothorax is practically precluded by the close fit of the diaphragmatic opening to the wrist, and that artificial respiration can be efficiently carried on.

Record of Cases.

CASE I.

On April 14th, 1917, a man aged 54 was brought to the theatre for radical excision of an advanced epithelioma of the chin. He struggled somewhat whilst being anaesthetized with chloroform, and as the chin and neck were being smeared with iodine he became pallid, the heart stopped beating, and respiration ceased. Artificial respiration, begun at once, was practised for a time without avail. As slight tremulous epigastric movements were observable (probably from ventricular fibrillation) artificial respiration was resumed, but it became evident that the man was dead, for there was not the slightest sign of respiratory movement, heart-beat, or pulse. Eye reflexes were unobtainable, the lids open, pupils dilated, and eyeballs flaccid. At this stage the epigastrium was rapidly smeared with iodine, an opening made into the abdomen, and cardiac massage begun. At first no cardiac contraction could be felt, but in a minute or two a first beat was felt, and the beats that followed increased in strength and became regular. With the establishment of a strong bounding pulse the massage was stopped and the abdomen sewn up. Free respirations occurred with the manipulations, and prior to the initiation of the heart-beat surface flushing was observed to take the place of extreme pallor. The man's condition remained good, and in view of his unhappy history I resolved to proceed with the operation. This took nearly two hours, being an extensive procedure necessitating excision of a portion of the mandible together with the soft structures and glands implicated, the whole being removed *en masse*.

There was some loss of blood and the patient was weak, but after a lengthy period of somnolence he made a good recovery, and was ultimately discharged well. Animation was computed to be suspended for a period of about ten minutes. The catastrophe occurred during induction by chloroform, and appears to have been a cardiac syncope precipitated by undue haste in preparation of the operation area in a subject afflicted with fears. Inhalation of iodine vapour may have been the deciding factor.

CASE II.

On May 5th, 1917, a soldier, aged 30, was prepared for amputation of the right thigh, which had become necessary on account of prolonged suppuration, with recurring secondary haemorrhages, attending severe offensive sloughing gunshot wounds of the leg with comminuted fracture of the tibia. The femoral artery and vein in Hunter's canal had been tied on March 28th, but the septic condition of the limb had become aggravated and haemorrhages had recurred. When the patient was brought to the theatre he was pallid and in a septic state. After he had been lightly anaesthetized with ether, Clover's inhaler being used, he suddenly ceased breathing, the heart stopped beating, and the pupils dilated widely. Artificial respiration was at once performed and saline was infused. Much time was expended in employing the usual means towards resuscitation, but they all failed, and after about twenty minutes the patient was left as dead. The surgeon in charge of the case acceded to my solicitation that cardiac massage might be performed. Without any preparation, I rapidly opened the abdomen and began the manipulations, which met with success after they had been practised for about three minutes; the same sequence of events was observed as in the previous case during their performance. The heart was beating with great force and regularity and the pulse was strong before the manipulations were stopped. The abdominal wound was then sewn up and I myself continued the anaesthetic whilst the thigh was amputated at the lower third, the operation being completed with success. The patient left the ward for the theatre at 1.30 p.m. and returned to the ward at 4 p.m. His temperature was then 96° F., and he was collapsed. A rectal injection of 1 drachm of spirit of ammonia in 5 oz. of water was then given. Twenty minutes later [illegible] grain strychnine hydrochloride was injected hypodermically and 10 oz. of saline were ordered per rectum, [illegible] hourly. About 5 p.m. spasmodic convulsions commenced and continued until 6 p.m., when they became less frequent. At 6.30 p.m. the temperature was 102° F. One ounce of brandy was ordered three-hourly. The seizures recurred half-hourly, the spasmodic rigidity affecting chiefly the left arm and the neck muscles. Respirations became increasingly rapid and [illegible], the pulse imperceptible, and the patient died at 10.28 p.m., about six hours after resuscitation. Consciousness was never regained. He exhibited slight movement at times and opened his eyes, which were turned to the ceiling. Prolonged suffering illness, sepsis, and repeated haemorrhages must have rendered the case particularly vulnerable, and it is doubtful under the circumstances if the cerebrum could have withstood a less protracted arrest of its circulation. As there had been a good deal of muscular tremor prior to the operation, an investigation was made after death as to the presence of tetanus, but this was excluded. The operation had not been begun at the time of the catastrophe.

CASE III.

An elderly woman in a state of collapse was undergoing operation for strangulated femoral hernia when the heart stopped beating. Cardiac massage was at once performed and spontaneous contractions recurred. As the abdomen was being closed the heart again stopped beating, and a second attempt with cardiac massage then failed. Although the patient was a poor subject, this experience seems to indicate that massage should be carried on until contractions are established at maximal strength, the task not being considered complete merely upon their reappearance.

CASE IV.

In this case general adhesions were found in the upper abdomen, and it was not possible to insert the hand below the diaphragm or below the liver. Pressure below the stomach immediately forced gastric contents out of the mouth. Methods 2, 3, or 4 were indicated but not tried.

CASE V.

On February 7th, 1918, a case of perforated gastric ulcer in a man aged 38 years came under my care. The operation was performed fourteen hours after perforation, and the abdomen was found full of gastric contents. There was a large opening in an indurated ulcer at the lesser curvature of the stomach. It was impracticable to treat this otherwise than by passing a tube to the opening. Suprapubic and loin drainage was provided. Whilst the wound was being sewn up the patient expired. Cardiac massage was unsuccessful. Success was not to be anticipated, as the subject was devitalized.

CASE VI.

On June 13th, 1917, a glass cutter, aged 43 years, was struck on the left leg during an air raid. Severe bleeding, which preceded admission, continued from two deep contused wounds. There was tearing of muscle and comminuted fracture of tibia and fibula at their upper third. The patient was restless and anxious, and had no feeling in the toes. Operation was performed, shrapnel being removed and the punctured anterior tibial artery ligated. Gangrene appeared on the second day and amputation was performed at the middle of the thigh, the flaps appearing suspicious. The patient sank during the operation, pulse and respiration ceasing. All methods to revive him, including cardiac massage, failed, as was to be expected in such a case of toxaemia.

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HEAD OF RYE GRASS IN THE LUNG REMOVED FROM PLEURA.

BY

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THE following is a case in which an ear of rye grass (*Lolium perenne*) was inhaled, and after producing symptoms of an unusual character was extracted from the pleura.

Children, in this part of the country at least, play games with ears of rye grass. If one of the ears is placed on the back of the neck, bristles upwards, it gradually disappears down the back. Another game is to throw the grass at one another, the sharp bristles readily adhering to the hair or clothing. A third, and more dangerous game, is to place the grass on the tongue, when it slowly creeps backwards towards the throat.

The patient in this case, a boy aged 14 years, having put an ear of rye grass into his mouth, felt it pass into the throat, and was aware of a strong prickling sensation in the pharynx. The prickling suddenly disappeared after some hours. As there was no coughing or disturbance of any kind it was assumed that the grass had been swallowed.

Twenty hours later he was seized with acute pain in the right side of the chest in the area corresponding to the lower lobe of the lung, and was forced to go to bed. The pain continued, and remained severe up to about sixty hours from the onset, and then abated. His medical attendant was called seventy-two hours after the swallowing of the grass. At this time the physical signs suggested consolidation of the lower lobe, and with free fluid in the pleural cavity at the level of the limit of the lower lobe. There was no cough and no sputum and the picture was one of a pleuro-pneumonia with the pleural element predominating. The temperature was 104°, and kept steadily on this line up to admission to hospital, eleven days after it reached this level. The fluid in the chest increased until the whole right pleural cavity was filled. Only on the eleventh day was a little blood and a few spots of very foul pus brought up by coughing. Exploration of the chest proved the fluid to be very foul pus, and he was referred to me for the drainage of an empyema.

On admission his general condition was very grave, with great dyspnoea and much toxic absorption. Resecting the ninth rib in the scapula line, I evacuated about three pints of very foul pus. At the end, a complete ear of rye grass was floated out of the pleural cavity, covered with débris. No cavity could be felt in the lower lobe of the lung. Continuous drainage and lavage by Dakin's solution through a Dobson's cannula completed the operation.

On the eighth day a large slough of lung tissue was extruded from the pleural cavity, followed in two days by a similar one, at least three inches long and a quarter to half an inch thick.

The boy is making an excellent recovery. There is practically no sputum, and very little cough to be noted.

On direct examination of smears from the pus, large numbers of bacilli, Gram-positive and negative, were found, together with staphylococci and streptococci. Cultures were all overgrown with saprophytic organisms. No branching fungi of the actinomycosis order were discovered.

The following points in this case are of interest:

1. Its rarity in view of the fact that the games mentioned, especially that concerning the tongue, are so common.

2. The inhalation of the grass with the absence of the usual intense paroxysm of coughing.

3. The entire lack of cough and sputum for eleven days.

4. The rapidity of involvement of the pleura, which is almost suggestive that the ear of rye grass "forcibly crept" its way through the lung tissue and involved the pleura at so early a date that the damaged lung tissue and consequent abscess drained into the pleural cavity instead of being expectorated by way of the bronchus.

INTRANASAL DACRYOCYSTOSTOMY.*

BY

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IN summarizing the history of the various plans which have been adopted for making a permanent opening from the lacrymal excretory system into the nasal cavity, the earlier efforts may be neglected. These were designed to provide a new outlet from the nasal duct, but experience has proved that the lesion to be circumvented is rarely, if ever, situated so low down that such methods could succeed. The abnormality, usually a stenosis, is practically never at a lower horizontal level than the junction of the lacrymal sac and the nasal duct. The sac, not the nasal duct, must be attacked; to open the duct only is useless.

The first reported case of such a sac operation was that of Strazza in 1903. The technique adopted by different surgeons has varied. Yankauer's operation may be described as a plastic reconstruction of the nasal duct right up to the sac, and so approximates to the principle of an attack directed on the sac itself. Mosher removes the anterior end of the middle turbinate, and then approaches the sac via the unciform process. Beck devised two operations, in one of which he opened the sac into the nose by means of a burr introduced through a canaliculus. Von Eicken works from the antrum; but, as West remarks, only the nasal duct is accessible, and, in order to expose the sac from the antrum, a piece of the orbital floor must be removed. Choronshitzky, Wiener and Sauer force a probe through canaliculus and sac into the nose, and then remove, with the probe as guide, the débris of bone and mucosa; it will be noted that these surgeons do not undertake any formal preliminary removal of bone and mucosa so as to make a window. West, Halle and Polyak perform a formal window operation intranasally, then seize the sac and deal with it by partial excision. Of these window operations West's may be regarded as the prototype.

Broadly speaking, and apart from combined operations in which the sac is approached from both inside and outside, all intranasal manoeuvres for draining the lacrymal sac fall into one of three types.

The first is the most ambitious undertaking, in that it aims at reconstructing the lumen of the nasal duct right up into the sac. This form of operation, of which Yankauer's is the only instance, is not generally favoured. It is technically difficult of performance, and in any case is likely to fall short of its object because the lesion may lie in the sac itself, too high for access by this operation. The second type is the least ambitious in design, and the simplest to perform. Briefly it consists in creating a compound comminuted fracture of the lacrymal bone by forcing a probe through a canaliculus into the nose. This type commends itself on account of its ease of performance, but the amount of bone comminuted and subsequently removed from the nose, and the area of mucosa simultaneously excised piecemeal, are variable. In my experience of several cases of this operation the opening has not remained permanently large enough for drainage. The third type is a compromise between the first two. It attempts nothing so ambitious as the reconstruction of the duct, but is not satisfied with the rougher method of driving an instrument from the punctum through the sac into the nose. In this third species of operation a window resection is performed, over the nasal aspect of the sac, which is then seized and partially excised. In his first seven cases West resected the bone over the nasal duct; finding this inadequate, he devoted his attention thenceforth to the sac itself, thus elaborating the operation known by his name.

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* A summary of a paper read at the Annual Summer Congress of the Laryngological Section, Royal Society of Medicine.

Indications.

The selection of suitable cases rests less with the rhinologist than the ophthalmologist; the latter sees the patients first, and it is only some of the cases which he thinks wise to hand on to a colleague. It appears that ophthalmologists are often profoundly dissatisfied with the results of external excision, and it may be mentioned that attempts to cure an epiphora persisting after this operation by excision of the lacrymal gland have been considered disappointing. Intranasal drainage does at least hold out a hope of curing epiphora—a hope which is often fulfilled. As regards complaints other than epiphora—blepharitis, conjunctivitis, mucocele, or recurrent empyema of the sac—if the drainage is permanent, the prospect is at least as good as after the external procedure. If, then, the ophthalmologist refer these cases to us *faute de mieux*, it may be argued that West's operation is indicated in any case for which external operation had been considered advisable.

This generalization is subject to certain exceptions or reservations, which amount to *contraindications.* In the case of an acute empyema it is advisable to wait. There are also cases in which the persistence of an epiphora is less serious than the risk of putting the eye into communication with a neighbouring septic focus; for instance, when subsequent operation on a cataract is intended. But Silex operated on cataract after West's operation in two cases, both of which healed without complications. If an obstruction exists in the puncta or lacrymal ducts, these must be slit or dilated by the ophthalmologist before West's operation is considered. Certain contraindications are obviously temporary and surmountable. A high deviation of the septum towards the affected side precludes access; in such cases a limited submucous resection is required, and a fortnight or more later West's operation is performed. It may be necessary to remove the bulbous anterior end of a middle turbinate either at an earlier session or as part of the dacryocystostomy. A sinusitis will sometimes require previous attention; in particular, it may be necessary to open and drain ethmoidal cells. And, quite apart from this and in the absence of any sinusitis, a cell in the ethmoidal bulla may be an anatomical obstruction and have to be punched out before the window can be cut. Should a frontal sinusitis require preliminary attention, the internal operation may be found most suitable.

Technique.

The most important point is to remove sufficient bone, otherwise granulations will block the opening. As regards the mucous membrane, the manner of its treatment is less important. A small opening is not likely to close if the opening in the bone is generous. If the mucosal window is smaller than the bony, the edges of the soft tissue may be everted round the free edges of the bone. This small manœuvre is deliberately aimed at by some operators. In shape the bone removed is roughly oblong, with rounded corners, and comprises a flimsy piece of the lacrymal bone and a tough piece of the nasal process of the superior maxilla. In making the four cuts—two horizontal and two vertical—to separate the bone, the gouge tends repeatedly to slip off the bone without getting a purchase. To obviate this, which is due to the fact that in the narrow cavity the gouge necessarily lies almost parallel with the bone, West's set of instruments include some gouges curved back on themselves. To these I have added another, turned back at a still sharper curve; and I find I use this gouge more often than all the other six in the set put together. In traumatic cases of stenosis of the sac or duct, which were not uncommon in the war, the nasal process of the maxilla has often suffered fracture which has joined only by fibrous union. The fragment then rocks when struck with the chisel, and it is increasingly difficult to get a grip with the cutting edge; unless the bone be firmly supported by external counter-pressure a serious dislocation is probable.

If the services of an oculist to pass a canaliculus probe are not available at the operation, the less practised rhinologist may more easily make a false passage; this applies especially to old strictured and fibrosed canaliculi and tough fibrous sacs. Sometimes a small subcutaneous or subconjunctival haemorrhage shows itself as a black eye; this disappears within a week. If insufficient bone has been removed the opening will close. The mucous membrane of the septum may be abraded during the operation; in such cases, if it also happens that it has been necessary to remove the anterior end of the middle turbinal, an adhesion may form. I have never seen such an adhesion cause any trouble. One cause of disappointment, often anticipated, feared and discussed, is absent. There is not any macroscopic escape of nasal mucus into the eye, even on raising the intranasal pressure. The patient does not "blow his nose into his eye" in any case which I have ever seen or received an authentic report of.

In my series of 25 cases the percentage results in those I have been able to trace is 63 per cent. complete cures, that is, not lacrymating even in a keen wind; 25 per cent. failures, that is, still lacrymating intermittently even when indoors; and 12 per cent. partly cured, that is, having slight epiphora only when out in a keen wind. The longest duration of a perfect cure which I am able to show is six years. I think the results obtained by most operators in this country are sufficiently encouraging to justify a greater amount of attention being given to the West type of operation.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF BROMOFORM POISONING, WITH RECOVERY.

The following case seems of interest, both because it shows how easily bromoform poisoning may occur, and on account of the interesting phenomena displayed during treatment.

L. T., a weakly child of [illegible] months, suffering from whooping-cough, received the usual dose of a mixture containing bromoform at 7 a.m. shortly after having had her morning meal. She appeared to fall asleep, but nothing untoward was noticed by the nurse until 8.10 a.m., when it was found that she could not be roused. On my arrival I found the child unconscious and unresponsive to any stimulation, but of a good colour and with respiration well maintained, although a little rapid, and pulse good. The pupils were contracted and would not respond to light; the corneal reflex was absent. Drug poisoning was at once suspected, and upon inquiry it was found that the bottle containing the bromoform mixture, which was being administered to aid the children's recovery from whooping-cough, had been emptied at the [illegible] administration, so that bromoform [illegible]. Strychnine sulphate, gr. [illegible], was given hypodermically, followed by black coffee [illegible] by the rectum, [illegible] hypodermically, and amyl nitrite to inhale. There seemed to be a temporary response to amyl nitrite and to the injection of [illegible]. The pupils momentarily dilated and the child moved its arms, but unfortunately a spasm of whooping-cough [illegible] ending, after a few expiratory efforts, in cessation of respiration and cyanosis. Artificial respiration restored the breathing after about [illegible] seconds. As it was impossible to say how much bromoform the child had received, it was difficult to give a fair prospect of recovery, but as the pulse remained good and there was no respiratory difficulty, apart from the spasms due to whooping-cough, it seemed best to adopt a waiting policy. The patient remained in the same condition, which [illegible] a good level [illegible] unconsciousness with [illegible] until about 12.30 p.m., when the corneal reflex was found to be brisk, and she gradually came round. By about 3 p.m. she was bright and active. There was no vomiting.

The mixture that was being given to all the children in the ward was labelled prominently in several places on the bottle: "Shake the Bottle." It was dispensed as follows:

Bromoform 30 minims; tinct. senegae 3½ drachms; syrup. aurant., ⅜ fluid ounce. Shake well and add water gradually, rubbing up in a mortar, to 3 fluid ounces. Sig.: 1 drachm to be given to babies up to 12 months, 2 drachms to those over 12 months, every four hours. Each drachm should contain 1¼ minims of bromoform.

This mixture has been used for some time with excellent results, and no untoward symptoms have been noted. But this case shows that persons having to administer this medicine (which, dispensed as above, is in poor emulsion) should be specially cautioned to shake the bottle immediately before pouring out the dose: they should be told also either to discard the last few doses entirely or to return them to the dispenser. The alcohol content of the mixture is not sufficient to take up the bromoform completely.

I am indebted to Dr. E. C. Hadley, Medical Superintendent, for permission to publish this case.

William B. Watson, L.R.C.P. and S.Edin.,
Assistant Medical Officer, North Evington Infirmary,
Leicester.

SPONTANEOUS EXTRUSION OF FIBROID.

The discussion on puerperal sepsis, at the recent annual meeting of the British Medical Association, has been of more than ordinary value to the general practitioner in his daily work. Mr. Bonney evidently looks upon autogenous infection as being more common than heterogenous. The following case is one in which infection of the uterus—probably autogenous—was responsible for the natural cure of a fibroid.

Mrs. X., four months pregnant, and who had distinct thyroid enlargement of three years' standing, gave a history of old chronic pelvic inflammatory trouble. She crossed the Irish Sea on July 31st, was violently sea-sick, but soon recovered. On August 4th I was called to see her and found threatened abortion. She was moved to hospital on the same day. On August 6th a four months fetus was expelled. As the placenta was adherent and could not be expressed, it was removed piecemeal under an anaesthetic with a blunt curette. For ten days she made good progress, but thereafter began to complain of pain in the left iliac region. The temperature rose to 100° F.

On August 23rd, after consultation with Dr. Pantin, she was again anaesthetized and an intrauterine examination made. Several small fragments of placenta were removed; a fibroid the size of a cricket ball was found in the posterior wall of the uterus. Following the operation a rigor occurred, and the temperature rapidly rose to 106° F. From August 24th to 27th inclusive she was seriously ill, showing symptoms of septicaemia. On August 28th, at 3 a.m., she was seized suddenly with uterine pains, and a large fibroid—not polypoid—was passed by the vagina, followed by a considerable quantity of pus. The temperature became normal next day. She then made an uninterrupted recovery.

In this case an abscess probably formed in the uterine wall. The gradual process of suppuration must have loosened (or sloughed) the tumour from its bed and so rendered it capable of extrusion from the uterine cavity as a foreign body. Focal infection in the uterus may have accounted for the goitre, and it will be interesting to note if the acute sepsis from which the patient has suffered is followed by any improvement in this condition.

Dr. J. Squires has drawn attention in the *American Journal of the Medical Sciences* (September, 1920) to cases in which considerable improvement in Graves's disease followed severe focal infection.

G. C. Gell, M.R.C.S., L.R.C.P.

Ramsey, Isle of Man.

The League of Red Cross Societies, whose head quarters are at Geneva, has compiled a list of children who, early in 1918 (their parents having become alarmed for their safety), were sent from their homes in Moscow and Petrograd to the Ural Mountains. Subsequently the Government failed to transmit the sums contributed by the parents towards the children's support, and towards the end of the year the American Red Cross undertook the care of over a thousand of these children. Military and political considerations in Russia have necessitated several removals, and now 800 are being brought to Bordeaux, where they will be accommodated in barracks. Publicity is sought in order that the parents may be discovered.

Reviews.

VAN GEHUCHTEN'S "NEUROLOGY."

Professor van Gehuchten, of the University of Louvain, was engaged in preparing for the press a systematic course of lectures in neurology when his work was rudely interrupted by the war. The first portion of the book, including text and illustrations, had already gone to press, the remainder was in manuscript.

With the help of Sir Clifford Allbutt and Sir William Osler, van Gehuchten found congenial work in Cambridge, but he had barely resumed his researches when his life was cut short in December, 1914, by cardiac failure following laparotomy for volvulus. What had happened to his book was not then known, but fortunately both the printed matter and the remainder of the text have been recovered, although the collections he had made during long years of study were destroyed when his house was burnt down by the Germans. The book was to have made its appearance in 1915, and, as has been said, the first two-thirds had been revised by the author; the last third has now been prepared for the press by his son, Dr. Paul van Gehuchten.[1]

Professor van Gehuchten intended this clinical volume on diseases of the nervous system to be complementary to the course of anatomy of the nervous system; it was written not so much for neurological specialists as for students preparing for the degree of Doctor of Medicine and for practitioners. He classified disease of the nervous system into two great groups—organic and functional. For the former he adopted an anatomical subdivision according as the disease affects the peripheral nerves, the muscles, or any part of the central nervous system, including the meninges. The functional diseases he terms neuroses.

The author's profound knowledge of the anatomy of the nervous system gives a special value to the work. Before dealing with the clinical signs and symptoms of disease of a particular part of the nervous system, he gives a clear exposition of the normal anatomy and physiology; he then discusses the physiology, pathology and etiology, and finally the symptomatology, diagnosis, prognosis and treatment. The systematic and lucid exposition of the various organic and functional diseases of the nervous system under these several headings, the description of typical clinical cases, and the excellent plan the author followed of emphasizing salient facts by italics, makes the work especially intelligible and readable for students and practitioners.

The omission of a bibliography is quite excusable, but we are of opinion that students preparing for the degree of Doctor of Medicine, and practitioners also, should know a little about the evolution of our knowledge of this department of medical science and the association of certain diseases with the names of some of the great neurologists. Throughout the work a large number of admirable diagrams are given of the anatomical relations bearing on the disease under discussion; they cannot fail to be most helpful to the student in grasping the clinical consequences of organic lesions. These diagrams have the merit of simplicity combined with scientific accuracy. There are in addition a large number of excellent photographs of patients, illustrating the objective clinical phenomena of nervous disease, together with photographs and microphotographs of the pathological anatomy.

The author did not live long enough after the sack of Louvain to see the prominent part the psycho-neuroses played in the Great War and its aftermath. Hence he does not discuss many of the important problems raised by the war regarding the causation and treatment of war psycho-neuroses. The grouping of cases of psycho-neuroses according to the views of Janet, Freud, Dejerine, and Babinski would doubtless have been compared, together with the respective values of treatment by psycho-analyses and persuasion. It would, moreover, have been interesting to have known the view Professor van Gehuchten would have taken regarding the theory of reflex contracture of Babinski that has led to so much discussion. Again; his opinion regarding the importance and significance of dreams in elucidating the causation of psychic trauma, and thereby the uprooting of a hidden complex causing a mental conflict in the subconscious mind, by Freud's method of "free association" or Jung's method of "word association," would have been valuable.

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[1] *Les Maladies Nerveuses.* Cours Professé à l'Université de Louvain. Par A. van Gehuchten, Professeur Ordinaire. Louvain: Libraire Universitaire. 1920. (Imp. 8vo, pp. 645; 402 figures.)

Had Professor van Gehuchten lived to see the widespread application of these methods in the treatment of the psycho-neuroses, he would doubtless have critically examined the theories and the facts, and especially interesting would have been his estimation of the value of the methods of Freud and Jung in cures which have been claimed by these two masters and their apostles.

In conclusion it may be said that while the author did not claim that these lectures are sufficient to satisfy the neurological specialist, yet there is not, in our opinion, much to be added to this admirable textbook, and we can with confidence strongly recommend it to all students and practitioners.

F. W. Mott.

A NEW TEXTBOOK OF SURGERY.

The new *Surgery*,[2] edited by Gask and Wilson, is a textbook for students written by the Surgical Staff of St. Bartholomew's Hospital. There is one exception, Mr. Spencer, and he, it may be supposed, plays godfather to the lineal descendant of his adopted child "Walsham." *Surgery* is a good book, showing but few traces of multiplicity of authorship, little or no overlapping, and a new sense of proportion. Perhaps it would be more correct to say a sense of new proportions; and let us hasten to add that we do not mean by this a reflection of the proportions prevalent in the years of war, but of those in current practice.

The word "amputation," unqualified, does not appear in the index; in the early part of the book deformities are allotted a hundred pages, or one-twelfth of the whole; diseases of the ear and eye have about seventy-five pages, which, though not the measure of the importance of these specialties, represents a fair share of attention from the student reading his first book. Mr. Ernest West and Mr. Foster Moore respectively have seen to it that the reader shall have no lacunae in his knowledge of their stretches of the field of surgery.

Mr. Gask, who had so great an experience of operative work on the chest in France, has been as self-restrained in the space he allows himself for diseases of the chest as he has been careful not to permit war freedom to warp his judgement in peace surgery; his is an excellent article that would bear a little expansion. Much the same may be said of his section on abdominal surgery; it is concise and lucid, sound and interesting. Of course, it is easy to pick holes, but not over anything that matters. For example, "well propped up with pillows" is not the Fowler position; in what percentage of cases does the tubercle bacillus reach the peritoneum "from the pleura"? Is it not time that Bier's was clearly indicated as a method, not of treatment, but of diagnosis? It is perhaps a pity that so many pictures of hernia are given, for they will tend to give the student a wrong idea of the importance of the truss and also of the appearance of a femoral hernia. If for no other reason than the great number of strangulated hernias in old people, Mr. Gask might have insisted even more strongly on the propriety of operation. Duodenal ulcer receives the equivalent of thirty lines. Judging by subsequent pages it would seem that he did not intend the frivolous to read when he wrote the paragraph on the course of appendicitis "if left alone." It will be seen that the blemishes, if so they may be termed, are trivial, and in no way likely to mislead the student seriously. Mr. Harold Wilson, the other editor, has written the section on the surgery of the urinary and male genital systems; he has done it clearly, carefully, and fully, an admirable presentment of the subject for the student. It was a fortunate chance that put the general review of venereal diseases into the hands of Sir D'Arcy Power; it is so much the fashion to run after [illegible] and [illegible] gods, and to worship, more or less ignorantly, laboratory "tests" that it is just as well to allow the novice initiation at the hands of one wise in all the clinical wickedness of these maladies.

It is unnecessary to mention all the contributors by name, for every member of the general surgical staff is among them. The general level is well maintained, but there are, of course, some sections to which exception may be taken; that on haemorrhage is less successful than the majority. The definition "loss of blood which occurs when the wall of a blood vessel is penetrated or cut across" might be improved upon, for if it be comprehensive, then by the word "penetrated" is meant all that appears on the surface and a good deal more. It is said that "Simple acute arteritis occurs when an artery is wounded or contused aseptically, and is the process whereby the repair of the vessel takes place." Surely the justification for that assertion needs some special pleading. "The process [establishment of collateral circulation] may be delayed or prevented altogether by . . . venous stasis in the distal parts owing to the simultaneous occlusion of the main vein." The author had better settle this question with Sir George Makins.

Scattered through the book are a good many *obiter dicta* subversive of hitherto accepted notions, but to this we need take no serious exception, provided the examiners in surgery do not. The book is good, not too big, well printed and illustrated, and worthy of the school from which it comes.

THE DUODENAL TUBE.

In his recent handbook on *The Duodenal Tube and Its Possibilities*[3] Dr. Max Einhorn of New York brings to our notice a means of investigation which has been rather neglected in this country. In America its practical applications have been recognized, especially by Dr. B. B. V. Lyon of Philadelphia, who has employed it in drainage of the gall bladder, in the treatment of catarrhal jaundice, cholecystitis and cholelithiasis. It is now eleven years since Dr. Einhorn first described the duodenal tube, as is set out in his historical sketch of its development. In principle it is an extension of the gastric tube, and by its use the contents of the duodenum can be aspirated for chemical examination. After an account of the methods of testing for the pancreatic ferments, the fractional examination of the duodenal contents, similar to the fractional examination of the gastric contents, is described. The chapter on the diagnostic import of the duodenal tube contains a coloured plate showing eight samples of the duodenal contents in various conditions—namely, health, cholelithiasis, cholecystitis, and duodenal ulcer. The therapeutic use of the duodenal tube includes (1) feeding every two hours during the day with a standard meal of milk (7 to 8 oz.), one raw egg, and a tablespoonful of lactose, the apparatus being left *in situ* in the alimentary canal for the entire period of duodenal alimentation; (2) the introduction of large quantities of fluid, as in Raynaud's disease and thrombo-angiitis obliterans, and of oxygen in severe intestinal catarrh; and (3) duodenal lavage and the instillation of various remedies, such as purgatives, protargol, or argyrol or ichthyol in chronic duodenitis and cholecystitis, and benzyl benzoate in duodenal ulcer with pylorospasm. The principle of the duodenal tube has led to the invention of a number of instruments for the investigation and treatment of the alimentary canal; several forms of pyloric dilator are figured: among them is the pyloric dilator and diaphane which has a tantalum lamp at the end so that the position can be determined by simply connecting it with a weak electric current and looking at the patient's abdomen in a dark room. The intestinal delineator consists of a thin very flexible rubber tube with two wires and a silk thread, two to three metres long, and is employed in conjunction with x rays to show the condition of the small intestine; it is withdrawn by the mouth. But another form of delineator for the whole of the intestinal tract, which is eventually passed per rectum, has been devised. There are numerous x-ray pictures illustrating these new methods of examination, and it seems probable that by their application much new information may be obtained.

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[2] *Surgery*: A Textbook for Students. Edited by [illegible]

[3] *The Duodenal Tube and Its Possibilities.* By Max Einhorn, M.D. Philadelphia and London: W. B. Saunders Co. 1920. (Med. 8vo, pp. 122; 51 figures. 13s. net.)

EPIDEMIC ENCEPHALITIS.

The book by Professor Frederick Tilney and Dr. Hubert S. Howe entitled *Epidemic Encephalitis*[4] consists of two parts dealing with two separate groups of cases, the first reported by Professor Tilney and Dr. H. A. Riley, and the second by Dr. H. S. Howe. In the first part, based on the observation of twenty cases, the authors recognize nine fairly well marked subgroups or clinical types—namely, the lethargic, the cataleptic, the paralysis agitans, the polioencephalitic, the anterior poliomyelitic, the posterior poliomyelitic, the epilepto-maniacal, the acute psychotic, and the infantile. The second part contains well-worked-up reports of eleven cases, occupying 134 pages, or more than half the volume; and in his brief concluding chapter Dr. H. S. Howe states that an extensive observation of epidemic encephalitis warrants a classification into fourteen clinical groups—namely, the lethargic, the cataleptic, the hemiplegic, the paralysis agitans, the polioencephalitic, the choreiform, the myoclonic, the multiform, the meningitic, the anterior poliomyelitic, the epilepto-maniacal, the acute psychotic, the sympathetic system, and the abortive types, of which the first eight are the most common.

These two parts are certainly complementary, and illustrate the essentially protean clinical characters of the disease, but the ordinary reader will probably regret that the authors have not combined their separate contributions into one well considered presentation of their subject. As it is stated at the end of the bibliography that the volume also includes articles on epidemic encephalitis and on special cases by Drs. F. Tilney, H. A. Riley, and H. S. Howe, which appeared in the *Neurological Bulletin* for 1919, the suspicion may arise in the reader's mind that, with some additions, the present work is mainly a reprint of these articles.

The volume is very well got up, the illustrations are successful, and there is much clinical and pathological observation; but, as already hinted, the arrangement is unsuitable, and there is some repetition. The title "epidemic encephalitis" is preferred to that of "lethargic encephalitis" on the ground that the patient and not the disease is lethargic; but on the next page the paralysis agitans type of epidemic encephalitis, to which a similar criticism might equally apply, is mentioned without any obvious qualm.

TEXTBOOKS OF OPHTHALMOLOGY.

Mr. Mayou, in the preface to the third edition of his *Diseases of the Eye*,[5] points out that the student's curriculum is already overloaded, and states that only the alterations necessary to bring the work up to date have been made in this edition. All teachers will agree with him as to the overloading of the curriculum, and students will be grateful to him for presenting the subject of diseases of the eye so clearly, in such a moderate compass. The book fits comfortably into the pocket. The subject is dealt with on conventional lines, the pathology and bacteriology being particularly well done, as was to be expected from the author's high reputation as an eye pathologist. Students will find in this little book an excellent guide to the qualifying examinations; if they need more they can consult larger textbooks. The book is one of the best on its special subject with which we are acquainted, and can be recommended with confidence.

Lieut.-Colonel F. P. Maynard, I.M.S.(ret.), has recently published two companion volumes on ophthalmic operations and ophthalmic practice. The *Manual of Ophthalmic Operations*[6] is the second edition of a work which appeared in 1908, and its issue has been delayed by the Great War. As a record of the practice of one who has been in a very extensive operating practice in India it is interesting and valuable. On the larger questions of cataract and glaucoma operations, the author conforms more to the practice of this country, perhaps, than to that in vogue in India. Smith's intracapsular expression is briefly described, but Maynard appears to favour the ordinary extraction, with or without iridectomy. Certain modifications of Elliot's trephining operation for glaucoma are described, but the advantages claimed for them appear to us to be theoretical rather than practical. We must confess that the impression left by a perusal of the book is that it has been written in a hurry. The author's proof-reading has been at fault; many minor mistakes in spelling—such as "cystitome" for cystotome, "Mule's" for Mules's, "Spencer Well's" for Spencer Wells's, "milk" for silk, etc.—have crept into the text, and we are sorry to see that Colonel Maynard takes a very free licence in splitting the infinitive.

The *Manual of Ophthalmic Practice*[7] is based on lectures delivered at the Medical College, Calcutta, and deals with the subject on the customary lines. The descriptions are rather superficial and are written mainly from the clinical standpoint, and pathological details are very briefly, though accurately, mentioned; this drawback is to some extent minimized by the inclusion of a large number of good illustrations borrowed from Duane's translation of Fuchs's well known *Lehrbuch*. Colonel Maynard acknowledges in his preface the presence of an occasional colloquialism, and it has always seemed to us that this is one of the drawbacks to publishing lectures much as they are delivered. The numerous coloured illustrations must have added considerably to the cost of the book, and on the whole they do not strike us as being good. It is, of course, possible that the work of the Indian artists may have suffered in reproduction, but we confess that had it not been for the letterpress under many of them we should not have known what condition they were meant to represent.

NOTES ON BOOKS.

The demand for a fifth edition of Mr. Comyns Berkeley's *Handbook of Midwifery*,[8] for midwives, maternity nurses, and obstetric dressers, within a little more than fourteen years of its first publication is testimony to its worth which makes the work of the reviewer simple. Obviously it fills a want, and when one looks into its pages its popularity is not surprising. Written with the author's usual lucidity, it contains enough but not too much. Also it is really well illustrated, and is of a size and lightness suitable for the pocket. In the present edition the sections on breast-feeding and on artificial feeding have been rewritten, and seem in all respects adequate.

Practical Hints on Minor Operations[9] is a useful and practical little book on minor surgery, which Mr. G. Percival Mills has prepared for students and practitioners, and particularly for country practitioners who have to do their own minor operations. The book covers the field of minor surgery, but as it is intended mainly for the use of occasional operators it would have been more valuable if it could have been more fully illustrated. Such operations as, for instance, that for strangulated hernia (if it must be included in a book on minor surgery) and tracheotomy require illustration quite as much as the operation for hammer-toe. However, within the limits of its intentions, it is a work that can be recommended.

The 1920 edition of *Paton's List of Schools and Tutors*[10] has just been published. It contains the usual particulars of a very large number of schools for boys and girls throughout the country, and a selected list of Continental schools, with classified indexes. As an uncritical guide book for parents and guardians it will no doubt prove as useful as its many predecessors.

Dr. Charles J. Whitby of Bath has contributed to a series of small books one to which he gives the title

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[4] *Epidemic Encephalitis [Encephalitis Lethargica]*. By Frederick Tilney, M.D., Ph.D., Professor of Neurology, Columbia University, and Hubert S. Howe, M.D., Instructor in Neurology, Columbia University. New York: Paul B. Hoeber. 1920. (Demy 8vo, pp. 170; 58 figures. 3.00 dols.)

[5] *Diseases of the Eye*. By M. Stephen Mayou. Third edition. Oxford Medical Manuals. London: Henry Frowde, and Hodder and Stoughton. 1920. (Cr. 8vo, pp. xv + 326; 146 figures, 5 plates. 10s. 6d. net.)

[6] *Manual of Ophthalmic Operations*. By F. P. Maynard. Calcutta and Simla: Thacker, Spink and Co. Edinburgh: E. and S. Livingstone. 1920. Second edition. (Roy. 8vo, pp. xix + 248; 6 stereoscopic plates, 136 figures. 21s. net.)

[7] *Manual of Ophthalmic Practice*. By F. P. Maynard. Calcutta and Simla: Thacker, Spink and Co. Edinburgh: E. and S. Livingstone. 1920. (Roy. 8vo, pp. xxi + 315; 12 coloured plates, 151 figures. 25s. net.)

[8] *A Handbook of Midwifery*. For Midwives, Maternity Nurses, and Obstetric Dressers. By Comyns Berkeley, M.A., M.D., F.R.C.P., M.R.C.S. Fifth edition, enlarged. London: Cassell and Co., Ltd. 1920. (Fcap 8vo, pp. xv + 250; 75 figures. 7s. 6d. net.)

[9] *Practical Hints on Minor Operations*. By G. Percival Mills, F.R.C.S. Birmingham: Cornish Brothers, Ltd. 1920. (Pp. 111. 5s. net.)

[10] *Paton's List of Schools and Tutors*. Twenty-third annual edition. London: J. and J. Paton. 1920. [illegible]s. net.)

Captain-Jewels.[11] It may fairly be described as a commonplace book, containing seven hundred entries arranged under a dozen different heads; but it is a commonplace book of a rather unusual kind, inasmuch as the author's choice is eclectic, and while he does not neglect such well known makers of aphorisms as Samuel Johnson and La Rochefoucauld, he finds his quarry also in men of action such as Napoleon, exotic philosophers such as Lao Tzu, and a whole host of modern writers and novelists from Meredith to Locke. One of the aphorisms from Johnson is "A man ought to read just as inclination leads him, for what he reads as a task will do him little good," and Dr. Whitby's selection may serve not only to fill spare moments but also to suggest new lines of reading for mental refreshment.

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[11] *Captain-Jewels.* Seven Hundred Aphorisms gathered and strung together by Charles J. Whitby, M.D. London: George Harrap and Co., Ltd. (Fcap 8vo, pp. 207. 2s. 6d. net.)

PUBLIC HEALTH, 1919-20.

As was announced in our last issue, the first annual report[1] of the chief medical officer of the Ministry of Health, Sir George Newman, has been presented to Parliament. Sir George Newman's account of the organization of medical work within the Ministry, and of its co ordination with other departments, has to a large extent been summarized in our report, given on October 23rd (p. 635), of his Hunterian Lecture.

The chief medical officer's introduction is followed by a series of articles from the several departments of the Ministry—namely, on general health and epidemiology, by Dr. G. S. Buchanan; on maternity and child welfare, by Dr. Janet Campbell; on tuberculosis and venereal disease, by Dr. F. J. H. Coutts; on the supervision of food supplies, by Dr. A. W. J. MacFadden; on general practitioners' services, by Mr. Smith Whitaker; and on sanitary administration in relation to infectious disease, by Dr. R. J. Reece.

In his introduction Sir George Newman states that the intention is to prefix to each annual report a general outline and review of the health of the English people as a whole during the year. In this volume he dwells on the magnitude of the organization to be set up by the Ministry and on the deliberation with which it must move. The success of its working, he points out, can be judged only over a long period of time, and its success depends not only on the central supervising department, but on local authorities, on voluntary agencies, on an education of public opinion in health matters, and on the co operation of the medical practitioner, who is "the instrument, the outpost, the interpreter . . . an integral and active force in the physical well being of the nation."

In the review of the vital statistics for 1919 it is pointed out that the steady decline of the death rate, which previously to the nineties of last century (apart from infant mortality) chiefly affected the lower ages, has more recently been due in part to diminished mortality in the middle years of life. The decline of infantile mortality is attributed to improved sanitation, and maternal and infant welfare work; during the last twenty years the decline has most noticeably affected infants older than three months, and has been chiefly due to diminished deaths from diarrhoeal and respiratory diseases.

THE SERVICES OF THE MEDICAL PRACTITIONER.

Sir George Newman observes that the creation of a Ministry of Health and the inclusion in it of the National Health Insurance Commission established a new relation between State medicine and the general medical practitioner, who must become an integral part of the national organization of preventive medicine. It will neither "nationalize" him nor absorb him into a whole-time national service. It will provide him with opportunity in the public service instead of excluding him, or creating a practitioner service of whole-time medical officers. The practitioner must be adequately trained in preventive as well as curative medicine, and must maintain freedom of individual action in the practice of his profession and in his relation with his patients. Progress has been made during the year with machinery for securing this end; amendment regulations were issued for insurance practitioners, the scale of remuneration was improved, revised record cards were introduced, and a considerable number of whole time medical officers appointed under the Ministry to act as medical referees. The Health Insurance scheme of medical practice comprises 12,000,000 patients in England and Wales and 12,000 medical practitioners. In relation to medical services close attention has been given to the whole question of hospitals, as follows:

> Adequacy in accommodation and character, location, decentralization; co-operative working; medical staff; its relation to general and insurance practice; methods of financial support, whether out of rates and taxes, or by means of voluntary contributions, or both; the interrelation of hospitals, clinics, and convalescent homes; relation to the specialized services of the State (maternity and child welfare, tuberculosis, venereal disease, etc.); the problem of the waiting list; the recognition of sociological factors; provision for paying patients; records; the reorganization of after-care; the paramount importance of the out patient department in the detection of the beginnings of disease, correct diagnosis, the classification of disease, and prognosis; investigation of disease by individuals or groups of workers; the training and education of the medical student; the training of nurses and midwives.

MATERNITY AND CHILD WELFARE.

A scheme has now been inaugurated in every county (with one exception) and county borough, and in many of the larger urban districts. On March 31st, 1920, there were in existence 1,754 maternity and child welfare centres, 221 day nurseries or crèches, and 89 maternity homes, with 1,360 beds. The total number of health visitors increased in 1920 from 3,074 to 3,359, of whom 350 were employed by voluntary societies, and 3,009 (comprising 877 whole-time and 1,002 part-time workers, together with 1,130 district nurses) by local authorities. The grants paid to local authorities and voluntary bodies in connexion with maternity and child welfare amounted to £526,217. It is recognized that these services are still inadequate, and that persistent efforts are called for in every district in order that puerperal, fetal, and infant mortality, as well as the incidence of ophthalmia neonatorum and many other preventable infantile diseases, may be diminished. Few authorities have made serious attempts to deal with ophthalmia neonatorum, measles, whooping-cough, epidemic diarrhoea, and poliomyelitis, although the Ministry is empowered to make grants in aid of nursing and treatment of these conditions. It is recorded that at St. Margaret's Hospital, established by the Metropolitan Asylums Board for the treatment of ophthalmia neonatorum, among 372 babies admitted, 85 eyes were already ulcerated; 28 had already perforated, and 53 perforated later.

INFECTIOUS DISEASES.

Typhus Fever and Cholera.

The Ministry has been fully alive to the dangers of introduction into this country of typhus or of cholera. Dr. G. S. Buchanan visited Poland as a member of an international committee of medical men investigating the typhus outbreak, which is likely to continue and increase during the ensuing winter. Subsequently an international conference of health experts was organized by the Ministry at the request of the Council of the League of Nations. Funds are now being sought for the carrying out of the recommendations of the conference; these include equipment of hospitals and disinfection stations, fixed and mobile, within the epidemic areas and along the main lines of approach to Poland. In Great Britain recent orders require immediate notification to the Ministry, and place special duties of inspection and disinfection on port sanitary authorities.[2] The introduction during 1919 of typhus into Holland, where it was extinguished with difficulty, shows that even adequately fed and comparatively clean communities require to take special precautionary measures against typhus. An important starting point of European outbreaks of cholera has been the dispersal of pilgrims from the Arabian holy places. In view of the resumption in 1919 of the pilgrimages to Mecca one of the medical officers of the Ministry visited the Red Sea and reported on the existing sanitary stations on the main pilgrim routes. As a consequence it was possible temporarily to secure adequate preventive measures, but the position is said still to be dangerous.

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[1] [illegible]

[2] British Medical Journal, August 14th, 1920, p. [illegible]

Influenza and Encephalitis Lethargica.

The account given in the concluding report of the Medical Department of the Local Government Board[8] of the influenza epidemic of 1918–19 is supplemented by particulars of the recrudescence which occurred in the early months of 1920; although of slight proportions in Great Britain, it was comparatively severe in Poland, Austria, and the United States. An account is given of the precautionary measures taken by the Ministry in this country and of inquiries made into certain localized outbreaks. A separate volume dealing with the whole pandemic is being prepared. It is reported that in Italy nearly 4,000 cases of encephalitis lethargica (with 1,013 deaths) and in France 321 cases (100 fatal) have occurred; this disease has also been reported in Austria, Belgium, Germany, Greece, Holland, Norway, Poland, Portugal, Spain, Switzerland, India, Canada, New Zealand, North Africa, the Argentine, Peru, and Uruguay. During 1919, 524 cases occurred in England—87 in London, 368 in urban and 69 in rural districts; in the current year up to May somewhat larger numbers have been reported. The period of maximal seasonal prevalence, in contrast with that of poliomyelitis, is the winter months. A report, by Dr. McNalty, on an outbreak of encephalitis lethargica in a girls' school at Derby, is given in an appendix; Professor McIntosh, using a filtered emulsion of cerebral tissue from the first case, succeeded in transmitting a fatal lethargic illness to a monkey, the brain of which exhibited lesions similar to those found in human cases.

Dysentery: Malaria: Plague: Rabies.

From the reports of the medical officers of health who followed up the dysentery carriers discharged from the army, it appears that these men should not, in the conditions prevalent in this country, constitute a danger to others; in the year ending March 31st, 1920, their numbers were 782 amoebic as against 26 bacillary carriers. The total number of indigenous cases of malaria known at the end of 1919 was 433, of which 231 were discovered in 1917, 99 in 1918, and 103 in 1919. Of the last-named group, 38 were detected in the Isle of Sheppey, and 37 in the Isle of Grain. In these districts, where, as is well known, there are old-standing endemic areas, medical men have been appointed by the local authority to act as malaria officers under the Ministry's regulations. Several of the new cases, especially those occurring in children, might soon have been fatal, it is believed, had they not been promptly diagnosed and treated with quinine. During 1919, seven plague-infected ships put into British ports, and cases of plague occurred on three vessels on their outward voyage. In an appendix Dr. R. J. Reece describes the circumstances which favour the introduction of plague into this country, and the precautions which can be taken to avoid it. In another appendix Sir David Semple summarizes the history, pathology, and treatment of rabies, and describes the treatment of forty persons at local centres in England by the carbolized vaccine method; this has the advantage of doing away with the necessity for special Pasteur institutes, the vaccine being easily prepared by any skilled bacteriologist who has adequate laboratory equipment. Dr. S. Monckton Compton contributes an account, illustrated by photographs, of the characters of an outbreak of "alastrim" which occurred on the borders of Suffolk and Norfolk during 1919.

Tuberculosis.

The provision of treatment for tuberculosis increased during 1919–20. At the end of March, 1920, there were 388 residential institutions, 190 provided by local authorities and 198 by voluntary bodies. The total number of beds available in these institutions was 15,781, an increase of 2,258 on those in existence at the end of March, 1919; of the new beds, 1,807 were provided by local authorities. Tuberculosis dispensaries increased during the year from 383 to 398, of which 362 were provided by local authorities. The Treasury, acting on the recommendations of the Barlow Committee, consented to increase the capital contributions towards additional sanatorium accommodation, and local authorities by March 31st, 1920, had submitted proposals for the provision of 7,845 additional beds. By the same date preliminary arrangements had been made for the provision of occupational training, in colonies connected with sanatoriums, for 850 tuberculous ex-service men; those only are considered suitable who have undergone a preliminary course of sanatorium treatment, are afebrile, and are capable of doing at least four hours' work a day under medical supervision. The Ministry is communicating with the Treasury on the question of financial assistance for the provision of village settlements, and has under consideration schemes for the provision of industrial settlements, providing sheltered conditions of work for men living in their own homes and districts, at Wimbledon and Greenwich.

Venereal Diseases.

Venereal disease schemes have been approved for 61 counties and 78 county boroughs in England and Wales, and for the City of London; the population of these areas is about 36 millions. There are now 176 clinics for diagnosis and treatment; attendances in 1919 numbered 1,000,300, and there were 98,000 new patients, of whom 42,000 suffered from syphilis. Roughly, these figures are double those of the previous year; the increase may well be due to the increased efficiency of the clinics, and their greater appreciation by the public. The report quotes a description by Colonel Harrison of the clinic at St. Thomas's Hospital, and a plan is given which indicates how army huts may be converted for the purpose of venereal disease work. In an account of the disinfection station provided as an experiment in Manchester, it is stated that the place is open at all hours of the day and night; three specially trained attendants work under the supervision of a medical officer. During three months 925 persons attended; of these, 635 came within three hours after exposure, 22 between three and six hours after, and 51 more than six hours after; it was found that 217 were already suffering from venereal disease.

INTERNATIONAL HYGIENE.

In a section dealing with imperial and international hygiene, Sir George Newman points out how responsibilities have been increased of late years by the development of world-wide intercommunication, by the growth of British overseas commerce, and by the progress of our knowledge of exotic diseases; latterly these responsibilities have been emphasized by the expansion of the Red Cross Societies during the war, and the emergence of a League of Nations. Articles 23, 24, and 25 of the Covenant of the League of Nations bind the members to take steps in matters of international concern for the prevention and control of disease, and to encourage the activities of voluntary national Red Cross Societies; they provide also that existing and prospective international health bureaux should be placed under the direction of the League. The English Health Minister and his officers have participated in two important international conferences, the second of which, held in April, 1920, drew up a scheme which was designed to provide a general commission, a permanent committee, and a general medical secretariat (International Health Bureau). These organizations will complete and revise the existing conventions, advise the League on matters of public health, and establish co-operation between States; in association with the Red Cross they will organize scientific missions.

INTERNATIONAL UNION AGAINST TUBERCULOSIS.

A CONFERENCE of representatives from countries included in the League of Nations and from the United States of America was held in Paris from October 17th to 21st for the purpose of forming an International Union against Tuberculosis, which will continue the work of the old international association that existed prior to the war. The British representatives were Sir Robert Philip, representing the National Association for the Prevention of Tuberculosis and the Ministry of Pensions, Dr. Nathan Raw (National Association), and Dr. Halliday Sutherland (Ministry of Pensions). The president of the conference was Professor LÉON BOURGEOIS (Paris).

The first meeting was held in the grand amphitheatre of the Sorbonne on the afternoon of October 17th, when the Minister of Hygiene presided over an audience which numbered over 3,000 people. On behalf of the French

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[8] BRITISH MEDICAL JOURNAL, January 31st, 1920, p. 164.

Government the Minister, M. BRETON, extended a cordial welcome to the international delegates, and thereafter invited Sir Robert Philip to deliver the opening address.

Sir ROBERT PHILIP, who spoke in French, welcomed the presence of the Minister of Public Health at the renaissance of an international organization for the prevention of tuberculosis. Having dealt with the problem of infection, he said that there was much in favour of the suggestion that if, after infection, the environment of the individual remained healthy, his natural resistance would be sufficient to overcome the infection. The ideal of healthy surroundings was seldom realized, partly through ignorance, and partly owing to various forces which influenced modern life. There were many factors definitely unfavourable to establishing an effective resistance against infection. In one sense it was right to say of an individual that once tuberculous always tuberculous. If the most accurate diagnostic methods were applied to those present, the majority would be found to have been infected. But the very fact that they had survived this infection was proof of the power of natural resistance and of the influence of a healthy environment. The knowledge that the ultimate results of infection in any individual are largely governed by his state of resistance to infection has entirely changed the outlook of modern medicine on this disease, both as regards its treatment and prevention. The tuberculous patient was now treated as the victim of a specific infection which, arising as a local lesion, tends to have a toxic influence on every system of the body. The local lesion was merely an incident in the course of the disease, which, once established, was apt to make its malign influence felt for months or years, or maybe for a lifetime. This showed the necessity for prolonged supervision in the treatment of the malady. Cases should be under medical supervision until it was reasonably certain that the disease had been arrested.

In regard to prognosis the attitude of medicine had also changed. Hippocrates placed "phthisis" first in the list of fatal diseases, but "phthisis," as known to Hippocrates, represented the last stage of infection in an individual whose resistance had been overcome. To-day we sought for those first and early symptoms and physical signs which accompanied the slow and gradual change from health to disease. The known facts warranted the statement that tuberculosis was easily curable when diagnosed in time. On these grounds the ultimate aim of the conference and of the international movement which it represented could be nothing less than the passing of tuberculosis from the list of diseases which entail death or prolonged suffering. In the light of scientific facts they had a right to expect the detuberculization of the world. The sooner the various forces in social life were ranged beside them in this war, the sooner would victory come.

Diagnostic Methods.

A scientific session was held at the Faculty of Medicine on October 18th, at which the clinical diagnosis of tuberculosis was discussed. Dr. RIST presented the Report of the French Scientific Commission to which the leading French clinicians had contributed. The report was a *précis* of such papers, which will be published in the *Transactions* of the Conference. As the only certain sign of tuberculosis was the tubercle bacillus every effort should be made to demonstrate its presence in sputum. When sputum was scanty the [illegible] could be increased by exhibiting [illegible] in conjunction with the white oxide of antimony. Sputum could be made homogeneous by heating with soda, and the centrifuged deposit examined. When these methods gave persistent negative results a [illegible] should be inoculated. Dr. [illegible] advocated the establishment of laboratories for the special study of tuberculosis in all large cities, and that the sputum in all cases of catarrhal diseases of the respiratory system, especially in old people, should be examined. Dr. CHARLES MINOR (United States of America) presented a report on the methods of diagnosis in North America and agreed that the early signs of [illegible] should be better recognized. Dr. [illegible] [illegible] so long as mankind lived under conditions which bred tuberculosis, the key to the eradication [illegible] and adequate diagnosis. Even if every [illegible] the complete [illegible] [illegible] would [illegible] unless individuals [illegible] before [illegible] had been [illegible]. [illegible] to be [illegible] from the [illegible] when [illegible] and interpreted [illegible] to determine the presence of infection as distinct from active disease in the body.

On October 19th, at the second scientific session, the question of tuberculosis as a social problem was discussed. The report on the work in Great Britain was presented by Sir ROBERT PHILIP, who the same evening gave a popular address in French at a meeting at the "Cinema Select" under the auspices of the Rockefeller Commission for the Prevention of Tuberculosis in France.

The next meeting of the International Union against Tuberculosis will be held in London in 1921.

CALL TO THE BAR.

FROM time to time we receive inquiries as to the steps which must be taken in order to become a barrister, and the subject may therefore be of sufficient interest to members of the medical profession to warrant a general statement.

The first preliminary is to become a member of one of the four Inns of Court, and in order to do this the candidate must either pass a simple general examination in English subjects, or be a graduate of one of the universities in the British Dominions, or have passed one of certain public examinations such as Responsions at Oxford, the Cambridge Little Go, or the London Matriculation. He must also procure certificates of good character from two responsible persons, and sign a form of declaration as to his qualification to be a member of an Inn of Court—briefly, that he is not engaged in certain occupations such as those of a solicitor, clerk of the peace, surveyor, or in trade, and is not an undischarged bankrupt. These must be produced to the under treasurer of the Inn to which admission is sought.

One other thing is necessary, and that is the payment of fees. These vary slightly at the four Inns, but the fees payable at the Inner Temple may serve as a guide. They are:

		£	s.	d.
Inland revenue stamps	... ...	25	1	5
Admission fee	... ...	21	0	0
Lecture fee	... ...	5	5	0
		£51	6	5

Two deposits, of £100 and £50, are also required. Graduates or members of a British university are, however, excused the first, and a bond with two sureties may be offered in lieu of the second.

Apart from the slight difference in the fees payable at the Inns the choice of Inn is of little consequence. For those intending ultimately to practise at the Bar it is probably of advantage to become members of Lincoln's Inn for Chancery work, or of the Inner or Middle Temple for Common Law work. Gray's Inn fees are, however, the lowest.

Having joined an Inn, the rest consists in keeping the necessary number of terms and passing examinations. The first is simple. A term consists of a certain number of days, and keeping a term consists merely in dining in the Hall of the Inn on any six evenings during that period; a university member is let off with only three. There are four terms in every year, and before his call to the Bar the student must have kept twelve terms in this way.

Dues amounting, in the case of the Inner Temple, to 6s. 3d. are payable each term until call, and commons amounting to £1 3s. in respect of each of the twelve terms kept. The examinations fall into two parts:

Part I consists of papers in Roman law, constitutional law and legal history, criminal law and real property. These papers may be taken either consecutively or at separate times as the student wishes.

Part II is the final examination and consists of papers, which must be taken consecutively, on common law, equity, evidence, and a general paper.

Examination fees are payable: 10s. 6d. for each section of Part I and £1 1s. for Part II.

The student, having passed his examinations and kept the necessary number of terms, is now ready for his call to the Bar. This involves the making of a further declaration and the payment of more fees. The latter, at the Inner Temple, are as follows:

Inland Revenue stamp	... ...	£50
Call fee	... ...	[illegible]
Composition fees	... ...	12
		£112

The "call" itself consists in the student being introduced by one of the Benchers of his Inn on a fixed night during term to the Bench of the Inn assembled after Hall, a short address by the Treasurer, the drinking of a toast, and it is over.

British Medical Journal.

SATURDAY, NOVEMBER 6TH, 1920.

PREVENTION IN DOMESTIC PRACTICE.

The first annual report of the Chief Medical Officer to the Ministry of Health will be read in the expectation of finding not so much a record of achievement as indications of the aims of those responsible for the conduct of that department and of the machinery devised for carrying out the work. Sir George Newman is no doubt right when he says that the Ministry has suffered from injudicious friends who have shown a disposition to expect too much, forgetting that it is in fact a reform in central health government — an improvement, that is, in the machinery of government, and therefore a means, not an end. It does not solve, and was not meant to solve, problems of local self-government, and it cannot be a substitute for medical science or for an enlightened public opinion and a national health conscience. If we ask what the Ministry is, the answer will be that it is, in the first place, an intelligence department possessing special facilities for gathering information both at home and abroad; it receives returns and reports from British consular agents through the Foreign Office, and on public health legislation and international conventions through the Office International d'Hygiène Publique, on which this country is ably represented by Dr. G. S. Buchanan, the senior medical officer of the Ministry's department of general health and epidemiology. The office will eventually become a part of the international health organization of the League of Nations. The Ministry has its home sources of information in the returns of the Registrar-General and in the reports of medical officers of health and school medical officers.

As will be gathered from the extended notice at p. 706, much of the time and energy of the Medical Department and its officers have been occupied with the investigation of infectious diseases, at home and abroad. This was of course inevitable, but the striking feature of the report, and one in which it differs from the annual reports issued by the Medical Department of the Local Government Board, is the prominence given to the services rendered by the medical practitioner. Sir George Newman gives the section in which he deals with this matter an early place in his report. "The professional foundation of any medical service," he says, "must be the medical practitioner, but he can only make his full contribution if he be adequately trained in preventive as well as curative medicine, if the necessary equipment for effective practice be available, and if he be in possession of that freedom of individual action in relation to the practice of his profession which is necessary to its proper fulfilment. There must always be a full recognition of this relation, which must obtain between doctor and patient if the unique value of the medical practitioner is to be maintained." The Ministry has sought to facilitate the attainment of this result by making more convenient regulations for insurance practitioners, by improving the scale of their remuneration, by simplifying records, and by appointing thirty-five whole-time special medical officers to act as medical referees to assist in the working of the system.

We should have been glad to have had a clearer definition of the nature of the practitioner's various duties under the heading "prevention." No one will deny the proposition that curative and preventive medicine are inseparable, but the statement that "in a large degree prevention is cure and cure is prevention" is a hard saying. The Ministry believes that the full value of the scheme of medical treatment it has in mind will not be obtained unless the medical practitioner, in addition to being "an agent of treatment of obvious disease," also recognizes the beginning of disease, treats it effectually in its early stages, and becomes an exponent or missionary of personal hygiene in its preventive aspects. If this is to be taken as a definition of the preventive work of the family practitioner no one will disagree, but it does not carry us very far, for every practitioner worth his salt has always been a missionary of domestic hygiene. While most of us will be disposed to accept Sir James Mackenzie's doctrine that the study of the beginnings of disease is the principal concern of medicine at the present time, those who have given most thought to the subject will best realize the very great difficulty of the task. To fulfil it, Sir George Newman says, there must be improved education, undergraduate and graduate, and an extension of facilities for diagnosis and treatment—clinics, hospitals, and provision for after-care. All this is no doubt true. Such facilities are essential if medicine is to make progress along the old lines which have brought us so far—brought us, indeed, to the point where we recognize that for prevention we must begin earlier. If it has cost so much labour to bring the art of diagnosis of developed disease to its present excellence, how much more laborious will it not be to devise a system of anticipatory diagnosis? The methods by which this new inquiry must be pursued are not yet developed; Sir James Mackenzie and his staff at St. Andrews are working at them, but it must be long before they can be brought to perfection, even were his staff to be trebled.

Meanwhile we must be content to polish the weapons we have, and we are told in this report that the Ministry of Health has given much time and labour to the provision of more clinics and hospital beds, and to the relation of the State with their establishment and maintenance. Reference is made to the report of the Consultative Council on the future provision of medical and allied services, but no intimation is given of what scheme the Ministry favours, and it is perhaps too soon to expect such definite information in the report of the first year's working. The Ministry, as its chief medical officer says, is a complex piece of machinery, which can be judged only by its working over a long period of time. Moreover, it is but one element of an organized scheme for the national health, the others being local authorities, voluntary agencies, and an educated people "willing and able to practise the way of health." To these four factors is to be added a fifth—the medical practitioner—"the instrument, the outpost, the interpreter. Upon him the State has been steadily imposing for many years specific duties in regard to the communal health, though it has been slow to associate him closely with its operations." One of the principal objects of the Ministry of Health is, we are assured, to secure his co-operation as an integral and active force in the physical well-being of the nation.

FOUNDERS OF NAVAL HYGIENE.

In a scholarly historical article with the title "The Founders of Naval Hygiene," Captain J. S. Taylor,[1] of the United States Navy Medical Corps, describes the lives and labours on behalf of the British Navy of James Lind (1716-1794), Thomas Trotter (1760-1832), and Sir Gilbert Blane (1749-1834), with many quotations from their works. He speaks of them as tireless leaders in a noble cause, struggling against stupidity, ignorance, prejudice, and indifference in high places and low, the Admiralty and the forecastle, to break down the immemorial custom of a hierarchy as soul-chilling and iron-bound as any Brahmin caste. They were all three eminently practical and at the same time cultivated and erudite, thus furnishing a splendid refutation of the modern view that great learning, especially of the classical type, militates against practical accomplishment. Lind was the pioneer with a genius for observation and deduction, but did not live to reap the fruits of his labours and had the vexation of seeing others win the rewards to which he was entitled.

Sir Gilbert Blane had tact, patience, and the happy faculty of producing a pleasing impression, and so succeeded both in realizing many of the reforms he advocated and in attaining high honours in the profession and a baronetcy. Trotter, the most interesting of the three, was certainly their equal in ability, but his wit, satire, and bitterness were ill calculated to win the favour of his executive superiors, and hence, though his writings seem convincing to the reader of a later century, it is not surprising that he often failed to obtain help and satisfactory co-operation from his contemporaries. Blane's career is a good illustration of the value of diversified types of men in every organization. Lind and Trotter were perhaps more original, and the latter showed a noble readiness to suffer for his "beloved navy," but it is obvious to every reader of his writings that Blane attained success not only through his "external graces" and "artificial attractions," but because of conspicuous results, and it was his influence that made the labours of his predecessors and contemporaries available for the benefit of the sick of the service. Special credit is due to him for asserting that no naval organization can have any satisfactory system of health conservation so long as the subject is left to the discretion of individual commanders, some of whom may be zealous but ignorant, while too many are quite indifferent, and to combat the [illegible] of the naval surgeon's [illegible] in the [illegible]. My [illegible] has been [illegible].

James Lind [illegible] the [illegible] and not the originator of the treatment of scurvy by lemon and orange [illegible], first began the [illegible] which convinced him of the [illegible] in May, 1747, [illegible] but it was not [illegible] Lind's death, [illegible] Admiralty, [illegible] Blane's [illegible] made the use of lemon juice official. [illegible] recognized as the first [illegible] of tropical diseases on account of his *Essay on Diseases of Europeans in Hot Climates* [illegible] [illegible] were paid also in his lifetime. Lind was long [illegible] by the [illegible] of "G. W." [illegible] Dr. Charles [illegible] George Watson [illegible] George Whetstone [illegible] a typical Elizabethan poet and soldier without [illegible] the [illegible] of those spacious times by spelling his own name in three different ways in the same book.

Thomas Trotter, like the other two a native of Scotland, was the most versatile of the three, had a vigorous and pointed style, lacking the elegance and simple charm of Blane's writings, and was quite fearless in his criticism of the Admiralty and of the Government. He insisted on ventilation, on the need for proper hygiene in ships and hospitals, on the evils of the press-gang, on the need for compulsory vaccination, on the suppression of alcoholism, and on other reforms now happily accomplished. As a most interesting footnote to the history of naval medicine Captain Taylor's essay has the highest claim.

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ALCOHOL, FATIGUE, AND MENTAL ACTIVITY.

The Medical Research Council has published a third memoir[1] dealing with experimental investigations of the influence of alcohol on mental activities. The experiments recorded were performed at the Psychological Laboratory, Oxford, by Dr. William McDougall, F.R.S., and Miss May Smith, M.A.; some of them dealt with the action of chloroform, opium, strychnine, and caffeine, but we confine ourselves here to a description of those concerning alcohol. These investigations, like Dr. Vernon's experiments, described in our issue of October 23rd (p. 638), are open to the criticism that they were made on two subjects only; against this must be set the fact that the writers, following Dr. Rivers's example, disguised the drugs taken and employed control mixtures indistinguishable from them, so that it was possible to eliminate any suggestion which might arise from knowledge as to which drug (if any) was being taken. Three methods of measurement of the effects of drugs were employed. The first test was the marking (by a pen) of red circles, and (by a mechanical device) of blue circles, printed on a continuous band of paper tape, which was made to pass at the rate of 5.8 circles a second behind a window in the top of a desk. In the second test the subject was required to reproduce verbally in correct sequence a complete list of forty words previously dictated to him at the rate of thirty a minute; each pair of words had some association, the appreciation and recollection of which formed an important part of the mental test—for example, mountain, plain, ugly, beauty, Venus, Greece, oil, smooth, etc. In one series of experiments the first and second tests were combined. The third test was the counting of the rate of reversal of the apparent direction of rotation of the shadow of a laboratory "windmill." Dr. McDougall has previously shown that an observer has a certain power of favouring one or other phase of such an alternating perception, of which the ambiguous cube and stereoscopic figures are more familiar examples. For the purpose of the present study the plan was adopted of holding fast each phase for the longest possible period, and when in spite of the mental effort the direction changed, of endeavouring to maintain the new phase. Using the "dotting machine," Dr. McDougall and Miss Smith found that absolute alcohol mixed with water increased the mean number of errors from [illegible] to [illegible] when 10 c.cm. had been swallowed, from 77 to 109 after 15 c.cm., and from 70 to 97 after 20 c.cm. Similarly, the ingestion of alcohol was followed in memory tests (although here the experiments were fewer) by a well marked loss of power of recall, and in the windmill tests, which appeared to afford a specially delicate index, by a striking reduction in the number of phase alternations, which was taken to denote a raised resistance of the cerebral synapses. It will cause no surprise to learn that the taking of alcohol was followed in all the tests by a subjective feeling of greater ease in the "dotting test," for example, by a "pleasing conviction" (later found to be erroneous) that the work done was unusually good. Experiments were also undertaken to determine the effect of different dilutions of alcohol and of variations in the period which had intervened between its ingestion and that of a meal. In one set of experiments the errors increased 160 per cent. after taking 20 c.cm. alcohol in 33 per cent. solution, compared with 22 per cent. after taking the same amount in 10 per cent. solution. When 30 c.cm. of alcohol diluted to 60 c.cm. was taken directly after a meal, the increase of errors was 6 per cent.; the same dose taken from two to eleven hours after a meal was followed by an increase of errors amounting to 118 per cent. These results are in accord with those recently published by Dr. Vernon. It appears, however, that in one specially limited and sharply defined set of circumstances alcohol may exert a beneficial effect on mental activity. Using the "dotting machine," these investigators, in the course of an examination of the fatigue which ensues from a voluntary cutting down (for three nights) of the usual amount of sleep, found that during the first three days the average errors became fewer; during the succeeding thirteen days the errors gradually rose to a number considerably higher than normal, the return to normal being somewhat irregular. In the first two phases of this cycle the increase in the number of errors following an ingestion of alcohol was well marked; towards the end of the fatigue cycle, however (on the thirteenth and fourteenth days, for example), the number of mistakes made was considerably diminished after 15 c.cm. of alcohol had been taken. Similar results, which could be shown not to be due to habituation to the drug, were obtained in experiments in which the memory test was employed. In examining the effect of alcohol in the normal, non-fatigued state, a few instances were encountered in which a decrease in the number of errors followed the taking of alcohol; in these cases, with one exception, the statement (recorded before the test) of subjective feeling was to the effect that the experimenter felt "very tired." In certain stages of recovery from fatigue the taking of alcohol would therefore appear to be followed by an increased mental activity, as illustrated by these tests. The writers suggest that if these results are not purely personal, "then probably one reason for the very uncertain and contradictory results that investigators record with alcohol is the varying condition of the body with regard to fatigue."

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[1] [illegible] *United States Naval Medical Bulletin*, Washington, [illegible]

[1] The Effects of Alcohol and some other Drugs during Normal and Fatigued Conditions. H.M. Stationery Office. 1920, 1s. net.

SPECIALISTS IN OTO-LARYNGOLOGY.

It was found during the war, in the American army, that there was difficulty in providing oto-laryngological specialists of the same standard as in other departments of medicine, and a committee was formed, representing the American Medical Association and all the oto-laryngological societies of North America, to investigate the question of the special education of oto-laryngologists. This committee, which sat under the chairmanship of Dr. D. J. Gibb Wishart of Toronto, has recommended a minimum curriculum for oto-laryngologists. It proposes that a candidate should have practised, after qualification, for four years or have acted as a resident house-surgeon or house-physician in a first-class general hospital for at least one year; that he should then spend six to nine months in post-graduate study in anatomy, pathology, operative surgery, neurology, etc., in their bearing on diseases of the ear, nose, and throat, with the remainder of the day during this period spent in an ear, nose, and throat out-patient clinic; that subsequently he should spend not less than sixteen months as house-surgeon in the ear, nose, and throat department of a recognized hospital; and that it is desirable that he should further pursue special study at home or abroad. Possibly, as the general standard of those claiming to be oto-laryngological specialists appears to have been somewhat low, the number of oto-laryngologists demanded in the American army may have been proportionately greater than in the British, for there is no doubt that in this country the standard of the specialist in oto-laryngology is not beneath any other branch of medicine, but the suggestion of a special qualification in the subject, obtained after a recognized curriculum, is one that is worthy of notice. Judging from the leading oto-laryngologists in this country, there appears to be no one qualification recognized as essential, as is, for instance, the F.R.C.S. in general surgery or the D.P.H. in public health. A very usual special qualification appears to be the F.R.C.S. of Edinburgh, in which, we believe, ear, nose, and throat surgery may be taken as the special subject instead of the more usual one of operative surgery; but many well-known oto-laryngologists of lengthy specialized education and wide experience hold no special qualification that shows this, although their position in their own branch of the profession speaks for itself. Junior specialists, however, have felt the need for a special diploma, to be obtained after a prescribed curriculum. In this country such diplomas are now given in public health, in psychiatry, in ophthalmology, in tropical medicine and hygiene, and in radiology. The propriety of instituting other certificates on similar lines is, we believe, under consideration by some of the licensing authorities. If any extension is sanctioned we do not doubt that the claim of oto-laryngologists will receive recognition.

DANCES, DRILL, AND GAMES FOR CHILDREN.

There have been many regrets at the loss of the old English village games and dances, and truly their loss is a matter for sorrow. There is too little of the picturesque in life; and modern life, whether in village or town, might well be made more beautiful by the revival of some form of everyday pageantry. But there is growing up in the great elementary schools of the country a new form of game and dance which is as full of vitality as any of the old Morris dances—perhaps it is more full of life, for these new games and dances bring more performers into its sway than ever did the old-world dance. To those who would wish to enjoy one of the prettiest sights in our country of to-day we commend a visit to a large elementary school such as is provided and controlled by the education committee of one of the county councils. If one in London be chosen the greatness of the schools and the variety of children attending them will give ample scope for variety of experience. If the searcher after the beautiful attends one of these schools at the time of "physical drill," the sight that will be presented to his gaze will be well worth any trouble he may have taken; nay, it will be too enchanting to balance against time and trouble. And he will find the same whether he makes his visit to a school in crowded Hoxton or Bethnal Green or in the more salubrious regions of Clapton or Tooting. He will have seen hundreds of children, from the tiny tots of the infants' department to the lads and lasses of the boys' and girls' departments, performing evolutions in drill, in bodily movement, or in a near kin to dancing, with a grace and perfection of attainment that will fill the stranger with surprise. The children he had before seen playing and screaming in the back street will be transformed before him and show a development of order and community of feeling that will amaze him. How has all this been brought about? During the past fifty years great attention has been given to the development of physical education for children. Different countries have evolved their own systems. The Swedes have won renown for the perfection to which they have developed a system of drill which is calculated to bring into action every combination of muscular movement from the simplest and easiest to those involving high skill and endurance. But its very perfection is to English eyes a defect, for the Swedish drill has been brought to a pitch of [illegible] excellence that has almost made it lacking in human interest. Alongside this development there has been a growth of English practice; it has boldly assimilated the best of the ideas of other systems, and has, according to the belief of those most experienced in these matters, secured for the English schools a system which is both efficient and graceful, practical yet full of the joy of life. It is such a performance the visitor to a London County Council school will see. Some recent publications on British physical education may be commended to readers interested. The textbook for teachers by Miss Beatrice E. Bear[1] is admirable in its arrangement and execution, the descriptions of the forms of drill are clear and sufficient, and the silhouette illustrations beautiful. The Board of Education has published three excellent books on the subject—one for the schools generally, another for the use of teachers of children under 7 years of age, and a further book giving description and suggestion for a great number of organized games for children. These three books are admirable.[2] The illustrations of the largest of them, both the photographic reproductions and the line drawings, are excellent, and the literary work of all three good. Their small price is no criterion of their value to those who have the oversight of children. The four books—that of Miss Bear and those of the Board of Education—are well worthy the study of all school doctors.

DIET IN POOR LAW INSTITUTIONS.

The dietary of inmates in Poor Law institutions, other than those occupied solely by persons suffering from bodily or mental disease, has been controlled since 1913 by the Poor Law Institutions Order, made in that year by the Local Government Board. According to the Order the diet of inmates (infants, the sick, and the mentally defective being excepted) was determined by the guardians after consultation with the medical officer to the institution; a weekly dietary table was drawn up by selection from alternative schemes of scheduled rations. The exigencies of war, and the introduction of national rationing caused dietary schemes to be subjected from time to time to modifications. In view of the experience so gained, and in consequence of the large reduction in the number of able-bodied inmates of Poor Law institutions since 1913, the Ministry of Health has decided to relax the existing regulations. In the new Statutory Rules and Orders[3] much of the control of the central department in matters of diet is removed, and the regulations of 1913 are rescinded so far as they required the guardians to adopt selections from scheduled diet tables, to limit the number of daily meals, and to submit to the Minister copies of the tables selected. The new Order, which is made applicable also to institutions receiving children other than the sick, infirm, or mentally deficient, does not relieve the guardians of the responsibility of framing, with the guidance of the medical officer, suitable dietaries for the inmates. In a memorandum by the Medical Department of the Ministry of Health medical officers are asked to consider the sufficiency of the present rations; the interval between the last meal of one day and the first of the next is said to be much too long as a rule; in many Poor Law schools the amount of fat given to children is inadequate, and it is [illegible] 'greens' [illegible] in children's dinner. Attention is drawn to the [illegible] and to the importance of [illegible] that children should receive enough fresh vegetables, milk, brown bread, dripping, etc. One of the statutory rules enables the guardians, instead of framing a separate dietary table for each class of children, to allow children to be dieted at the discretion of the officers in charge, so long as the weekly issues per head of any food are within the maximum scale approved by the guardians on the advice of the medical officer; where this system is adopted the guardians must take special precautions to prevent any underfeeding of the children, and it is the duty of the medical officer to report any case in which the dietary seems inadequate or unsuitable.

A NEW JOURNAL OF STATISTICS.

Statistical methods are now utilized in so many branches of science that it is hard for the ordinary reader to keep abreast of the subject; important novelties of method which might be applicable to, for instance, epidemiological data are first published in journals of psychology and conversely. With the object of focussing the scattered rays of arithmetical truth, an international review, entitled *Metron* and under the general editorship of Professor Corrado Gini of Padua, has been established; amongst the co-editors we notice the names of M. Lucien March (France), Professor Raymond Pearl (America), Mr. G. H. Knibbs (Australia), and Dr. Major Greenwood (England). The first number[1] contains contributions from many eminent statisticians, including M. March, Professor Edgeworth, Professor Czuber, Mr. Knibbs, and Professor Gini. The subjects dealt with cover a wide range, but, with the exception perhaps of Professor Gini's paper, "La conscrizione militare dal punto di vista eugenico," are not of direct medical interest. Professor Gini, as the result of an analysis of the vital statistics of Italian recruits, infers that the supposed prejudicial effects of compulsory military service upon fertility do not exist. It would appear that the postponement of marriage necessitated by service with the colours (of course Professor Gini is concerned with the data of peace time) is set off by a more favourable sexual selection; the completed fertility of those who served is not less than that of those males who were exempted from service for reasons which would not effect their reproductive powers. We shall look forward to the issue of further parts of the new review, which is clearly printed and attractively produced.

STANDARDIZATION OF OPTICAL INSTRUMENTS.

The advisory council of the Department of Scientific and Industrial Research has published a report of the Inquiry Committee on the standardization of optical instruments. The committee was appointed in 1918, and included representatives of the Admiralty, the Air Ministry, the War Office, the National Physical Laboratory, the optical department of the Imperial College of Science and Technology, and the British Optical Instrument Manufacturers' Association. The committee remarks that two generations ago England led the world in the invention and making of optical and scientific instruments, but that subsequently other countries, notably Germany, acquired, in many instances, the bulk of the work. In reconstructing, after the war, the industries connected with these instruments, greater attention must be given, it is held, to specialization, so that manufacturers shall not each make a large variety of instruments in relatively small quantities but shall each construct fewer kinds of instruments in relatively larger quantities. For this aim, as has been generally recognized by the manufacturers, standardization is of vital importance. The committee has tried to reduce the existing great variety of sizes of some of the components of optical instruments, and to appoint limiting dimensions so as to procure interchangeability and reasonable closeness of fit. It is recommended that the British inch, rather than the metric measure, should be retained as the unit of length for standardization of manufacture. The report sets forth the standard measurements recommended for telescope objectives, for diameters of lenses, for constructional and fine motion screws, for metal tubing, for screw threads, and for certain other parts.

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[1] [illegible]

[2] [illegible]

[3] [illegible]

[1] Metron. Vol. I, No. 1. [illegible] Industrie Grafiche Italiane, [illegible]

THE USE OF MILK.

THE Ministry of Health has prepared for the local health services a pamphlet with regard to the use of milk. In the circular letter accompanying it the opinion is expressed that if any material improvement in the milk supply of the country is to be effected, and if the consumption of milk per head is to be increased as it should be, especially in the case of expectant and nursing mothers and young children, it is important that knowledge should be disseminated regarding the special value of milk as a food, and the precautions which should be taken against its contamination in the home. The letter goes on to draw attention to the existing arrangements under which the Food Controller, on the advice of the Ministry of Health, issues licences permitting and regulating the use of the designations "Grade A (Certified) Milk" and "Grade A Milk,"[1] for milk produced and handled with special precautions as to purity and cleanliness. The Ministry desires that increased publicity should be given to these arrangements, of which comparatively little advantage has hitherto been taken. The Ministry, in accordance with approved schemes under the Maternity and Child Welfare Act, is prepared to sanction (and to pay a grant towards) the distribution by local authorities of high grade milk to expectant and nursing mothers and to children under 5. It is suggested that steps should be taken, where practicable, to secure by periodic tests and analyses that such milk is of a guaranteed standard in regard to chemical content. In the pamphlet are set forth in simple language the reasons why milk is a valuable and relatively cheap food, specially necessary for nursing and expectant mothers, infants, and little children; the dangers arising from the consumption of impure milk are described, and the measures are stated by which household contamination may as far as possible be avoided. The wisdom of buying Grade A milk, particularly for infants and little children, is also indicated. The average consumption of milk in many industrial districts is stated to be as low as 2 ounces a head a day; the average amount taken by the population of Great Britain at all ages is about 5 ounces. The Ministry desires to draw attention to the educational work undertaken with regard to the cleanliness of milk by the National Clean Milk Society, of 2, Soho Square, W.1.

AMERICAN CONFERENCE ON VENEREAL DISEASES.

AN American conference on venereal diseases will be held at Washington from December 6th to 11th, 1920, under the joint auspices of the United States Interdepartmental Social Hygiene Board, the United States Public Health Service, the American Red Cross, and the American Social Hygiene Association, each appointing a member of the administrative committee. The president will be Dr. W. H. Welch of Johns Hopkins University. The main object of the conference is to bring together recognized authorities on this subject with a view to comparing and evaluating the methods now being employed in various parts of the world for the control of venereal diseases. In general the morning sessions will be devoted to discussion of the scientific basis underlying the campaign, the afternoons to discussion of administrative methods, while general meetings will be held in the evening for consideration by the conference as a whole of the various findings of the delegates. The problems proposed for discussion have been grouped under five heads, each comprising ten or a dozen questions. Thus, the first group of questions relate to medical investigations, the second to education as a means of controlling venereal diseases, the third to law enforcement and protective social measures amongst individuals, the fourth to social influences in the control of venereal disease, and the fifth to administrative measures. The executive secretary of the conference is Dr. Charles Bolduan, and the head quarters are at 411, 18th Street, N.W., Washington, D.C., U.S.A.

THE Nobel Prize in Medicine for 1919 has been awarded to Professor Jules Bordet, M.D., LL.D., President of the Faculty of Medicine, and Director of the Pasteur Institute, Brussels; and the prize for 1920 to Professor August Krogh of the University of Copenhagen.

THE Thomas Vicary Lecture will be delivered in the theatre of the Royal College of Surgeons of England in Lincoln's Inn Fields by Sir D'Arcy Power on Thursday, November 11th, at 5 o'clock. The subject of the lecture will be "The education of a surgeon under Thomas Vicary." Fellows and Members of the College are invited to attend. Students and others who are not Fellows or Members will be admitted on presenting their private visiting cards.

A JOINT conference on "The care of invalid and crippled children" will be held by the Invalid Children's Aid Association and the Central Committee for the Care of Cripples on Tuesday and Wednesday, November 16th and 17th, in the Council Chamber of the Guildhall, London. The Lord Mayor will open the conference, and the Right Hon. H. A. L. Fisher, President of the Board of Education, will give an address. The chair will be taken at the four sessions by Sir William Bennett, Sir Arthur Stanley, Sir Robert Jones, and Sir Napier Burnett. The subjects for discussion include the bearing of recent legislation on the work for physically defective children; co-operation between the State and voluntary bodies; existing institutions for the treatment and education of these children in the United Kingdom, in America, and on the Continent; the treatment of heart cases, and the scheme for future development suggested by the Central Committee for the Care of Cripples. The Central Committee has collected a considerable amount of information as to the numbers of physically defective children throughout the country and as to the amount of accommodation available for them at the present time.

Medical Notes in Parliament.

The Hospital Question.

DR. ADDISON stated, on October 27th, that it was hoped to proceed with the Ministry of Health (Miscellaneous Provisions) Bill immediately after the Committee stage of the Government of Ireland Bill. Mr. Lyle asked, on October 27th, if the Minister of Health could add anything to the statements already made as to the attitude and future policy of the Ministry towards the voluntary hospitals. Dr. Addison said he had nothing to add at this stage, but there would be an opportunity of discussing this question on the Ministry of Health (Miscellaneous Provisions) Bill. [In our Parliamentary Notes last week a full report was given of Dr. Addison's address to the House of Commons Medical Committee on the hospital clause in this bill. In the SUPPLEMENT this week we print the report of a deputation from the British Medical Association which waited upon Dr. Addison at the Ministry of Health on November 1st to discuss this matter.]

Shell Shock Committee.

The Departmental Committee (of which Lord Southborough is Chairman), appointed to consider the effects of shell shock and how far these effects should weigh in trials for cowardice, has held two sittings, and is proceeding to take evidence.

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[1] BRITISH MEDICAL JOURNAL, March 6th, 1920, p. 356.

The Dentists Bill.

Assurance has been given by the Government that the Dentists Bill will be introduced shortly, and there is hope that it may be passed into law this session.

London University: The Bloomsbury Site.—Sir William Davison asked, on November 2nd, whether the present Government or their predecessors had at any time incurred any legal or moral obligation to purchase from the Duke of Bedford the site at the rear of the British Museum; whether an agreement to purchase was ever actually entered into and subsequently rescinded on terms; whether this entanglement with the Duke of Bedford was the cause for the Government refusing any freedom of choice to the University of London with regard to a site, and caused the restriction of the Government's offer to the site at the rear of the British Museum; and whether the price which the Duke of Bedford had agreed to accept could now be stated. Mr. Fisher (Minister of Education) said that the answer to the first three parts of the question was in the negative. The price which the Duke and his trustees had agreed to accept was £425,000.

R.A.M.C. Resignations.—Lieut.-Colonel Buckley asked, on October 26th, whether officers in the Royal Army Medical Corps were refused permission to resign their commissions; and, if so, why they were being placed under a disability which was not experienced in any other branch of the service. Mr. Churchill said he regretted that at present, only in exceptional circumstances, such as ill health, could permission be granted for officers of the R.A.M.C. to retire. This decision was rendered necessary owing to the shortage of medical officers fit for general service, to the large number of applications for permission to retire which had been received, and to the heavy demands from overseas for the services of officers of the R.A.M.C. Captain Elliot asked whether Mr. Churchill would consider the possibility of raising the pay of the officers in the employ of the R.A.M.C. to an equivalent of what a practitioner could make in private practice. Mr. Churchill said that would not meet the immediate emergency. Captain Elliot said that it would attract men from civil practice, and by bringing in fresh recruits liberate those who wished to retire.

Local Government Officers' Superannuation.—Dr. Addison stated, on October 27th, that the bill in regard to the superannuation of Local Government officers was being prepared, but he could not hold out any expectation of the measure being passed this year.

[illegible] Staffs.—Mr. Ormsby Gore asked the Minister of Health, on October 22nd, whether, in connexion with the discontinuance of sanatorium benefits at the end of the current year, he would either provide for the compulsory transfer of members of staffs of Insurance Committees engaged on sanatorium benefit work to the new authority, or provide adequate compensation for all officers displaced by the change, [illegible] in other cases. Dr. Addison replied that the [illegible] work of Insurance Committees was only a part of [illegible], and was to a large extent, carried on by officers and servants of the committee, who had other duties. He issued a circular letter to Insurance Committees last June in regard to this matter. Mr. Gore inquired whether, as a result of that circular letter, county council authorities had [illegible] officers hitherto engaged in this work that no [illegible] employed on other work, and whether the Minister was aware that a number of clerks [illegible]. Dr. Addison said [illegible] but was ready to receive any communication Mr. Gore might make to him on the subject.

[illegible] Women.—[illegible] asked, on October 27th, if the Minister of Health [illegible] effect to the Washington Convention [illegible] the employment of women before and after childbirth [illegible] and whether he was aware that [illegible] had already been taken by the Governments of [illegible], France, Italy, Greece, Spain, [illegible]. Dr. [illegible] replied that the [illegible] Government and [illegible]. He [illegible] what action was being taken by foreign governments.

[illegible]

[illegible] of Disability [illegible].—Mr. Ormsby Gore asked, [illegible] Pensions Committees and the consequent repayment demanded from disabled ex-service men; whether the Minister would order that rates of payment authorized by Local Pensions Committees should stand until reviewed by higher authorities; and if reduced by the latter, that the reduction should operate only from the date of the latter's decision. Major Tryon replied that the arrangement by which medical referees were in certain limited classes of cases allowed to assess disability provisionally in advance of medical examination by a full medical board was made to meet exceptional cases of emergency, where delay would involve hardship. The main function of medical referees was, however, not assessment for pension purposes, but determination of the need of medical treatment, and it was fully understood by all concerned that any advance given provisionally by a local committee on a referee's finding was liable to adjustment by a properly constituted board. The Pensions Minister could not adopt the suggestion contained in the latter part of the question.

Pensions Appeals Statistics.—Mr. Macpherson stated, on October 28th, that the number of appeals heard by the Ministry of Pensions Appeal Tribunal, prior to their dissolution on October 31st, 1919, was 14,731, and of these, 5,064, or 31.2 per cent., were decided in favour of the appellants. On November 1st, 1919, the Statutory Pensions Appeal Tribunals were established, and from that date to September 30th, 1920, 13,030 appeals had been heard, of which 4,130, or 31.7 per cent., had been allowed. Mr. Macpherson added that the Lord Chancellor's office informed him that there were at the present time 2,300 cases in the hands of the tribunals for England and Wales. About 400 appeals were taken weekly, but some had to be adjourned. The average time elapsing between the date when the appeal reached the Head Quarters Office and the date of hearing, was about one month. He was willing to consider the advisability of the appointment of a second tribunal for Scotland.

Treatment Allowances.—Sir A. Warren, on October 25th, asked if the attention of the Minister of Pensions had been called to cases of hardship arising from the operation of Circular 204, whereby disabled men certified by the medical referee as unable to follow a remunerative occupation were being denied treatment allowances by the Deputy Commissioner of Medical Services on the ground that the disability pension was an assessment of the average disability over the period of its currency, and account was taken in its award of such brief periods of incapacity as might be expected to occur in the normal course of the disablement. He asked the Minister if he would postpone the operation of the circular until there had been an opportunity of reviewing the situation in the light of fuller information now available. Major Tryon replied that treatment allowances were, by the terms of Article 6 of the Royal Warrant, confined to cases where it was considered by the Ministry that a man should undergo a course of treatment, and was in consequence rendered unable to support himself. Circular 204, which drew attention to this principle, had been in force in its present form nearly nine months, and the Minister of Health was unable to adopt the suggestion of Sir A. Warren.

Reassessment of Pensions.—In reply to Mr. A. P. Davies, on October 28th, Mr. Macpherson said he had had a comparison made of the results of reassessment of pensions over two periods of four months—namely, June, July, August, and September in 1920, and the same four months in 1919. The figures showed that in the four months of last year 138,000 men were re-examined by the Medical Board, with the result that in 31.4 per cent. of the cases the previous rate of pension was unchanged; in 13.1 per cent. the assessment was raised; and in 43.5 per cent. the assessment was reduced. During the same period of this year 210,000 men were re-examined, with the result that in 43.8 per cent. the previous assessment of pension remained unchanged, in 7.4 per cent. the rate was increased; and in 48.8 per cent. the assessment was reduced. He had been asked whether any instruction had been issued by the Ministry urging the desirability and need for cutting down pensions. He was glad to have the opportunity of replying. He wished it to be clearly understood that no such instructions, confidential or otherwise, had been issued by his department, and none such would ever be issued with his knowledge and consent. Bearing in mind that the assessment for pension purposes depended on the estimate of the extent to which a man was disabled, as determined at intervals of six or even twelve months by a Medical Board, that, in the course of nature, it was only to be expected, especially in the case of disease, which formed 54 per cent. of the whole, that the men should to some extent recover their health, and that the Ministry was spending several million pounds a year in providing treatment for disabled men, he thought the figures he had quoted were sufficient to refute the unfortunate, if not mischievous, suggestion that there was any concerted attempt to reduce pensions arbitrarily.

[illegible] that the Termination of the War (Definition) Act, 1918, [illegible] that the date of the termination of the war shall [illegible] the date of [illegible] of the [illegible] Treaty of Peace. [illegible] assurance that there will be no unnecessary delay in the ratification of the [illegible] Hungarian treaties, which are the last two outstanding treaties to be ratified.

Mr. Chamberlain announced that further legislative proposals are under consideration which will enable the Commissioners of Customs and Excise to modify the existing restrictions on the conditions of transport and [illegible] of spirits intended for use in making power [illegible] spirits, so far as this can be done with due regard to the protection of the revenue.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

THE SHOWS AT OLYMPIA AND WHITE CITY.

THERE is such an unprecedented variety of motor carriages at the Motor Show organized at Olympia and the White City by the Society of Motor Manufacturers and Traders, under the patronage of the King, that the medical man is in sore need of some guide to those features likely to appeal to him. The display is, internationally, the most representative organized in any part of the world. It replaces the yearly show in Paris, which was not held last month. It precedes the great American shows. Therefore, for the time being, London is the motor mart of the world. Late enemy countries excepted, the industry of every country taking a part of any importance in motor building is adequately represented, the number of American makes on the market being particularly noteworthy. The exhibition is marked by the introduction of a large number of entirely new makes of cars, but a goodly proportion of them have not adequate manufacturing facilities behind them to justify their receiving the patronage of the medical profession, whose prime need is a tested design offered by financially well-established firms; reliability and economy of cost, together with absence of the speculative element, are essential to doctors' service. Last year 271 makes of cars were on the British market. According to the *Autocar*, that number of builders and assemblers has now risen to 302, of which 149, or less than half, are British. The varieties of types at the current exhibition number 459, because many of the makers market more than one model.

Misleading Talk about Price Cutting.

At this season there is talk to the effect that the cut in car prices is the chief feature of the show. If, however, we take the prices asked at this season last year, and compare them with those ruling to-day, it is scarcely true to say that there is anything in the nature of price cutting to be observed; far less that it is a general tendency. The reason is plain. In the interval of twelve months we have all had to revise our ideas of the value of money, particularly as all classes of manual workers are receiving higher and yet higher wages, with the result that the costs alike of raw materials and of labour for building a car are unprecedentedly high. In a few cases this has been offset by the coming into production of factories on large scales, in which the dead, or overhead, charges which have to be divided over each vehicle are naturally lower as the output grows. Those dead charges are more or less fixed factors in running a given establishment, and cannot be cut very appreciably merely because output falls off.

The real note of the show is that for the first time anybody going to an exhibition of this sort with a view to placing an order for a post-war car shall really secure delivery within a reasonably early period. Last year orders were given without any guarantee of delivery. At least half the last manufacturing season was productive of no results whatever. That was owing to successive labour troubles. The situation to-day, however, is that, in the main, production is on a scale adequate to meet demand. As for falling prices, it may be pointed out that, whereas at this time last year the cost of a Rolls-Royce chassis was £1,750, to-day it is £2,100, which is also the cost of the 1921 six-cylinder Napier chassis with overhead valve engine, and the six-cylinder Lanchester chassis costs £2,200. While there are not many cars that cost as much as these, the plain fact is that practically all the larger cars are costing quite as much as, if not more than, was asked for them twelve months ago, though many are marketed at prices lower than those that had to be asked last summer, when production was on relatively a small scale, but dead charges remained stationary. Moreover, such cars as the Willys-Overland are not cheaper than last year, the price of the types with covered coachwork being now dearer.

Coming Taxes a Prime Consideration.

In face of the fact that for the most part doctors placing orders for cars now will not seek delivery of them until January 1st it may be pointed out that a prime consideration for them in buying at this time did not obtain formerly—namely, the new scale of taxation. One may take it, broadly, that a car beyond 20-h.p. Treasury rating is not needed by the average doctor. The new tax is £1 per horse-power, therefore a 20-h.p. Treasury rating car involves an expenditure of £20 a year for tax alone.

Under this head it is interesting to observe that no country is offering better value for money in the 20-h.p. class than does the Austin Company, which has been in fuller production, perhaps, than any other firm in this country during the last twelve months, and whose product is now well proved. In the interval sundry new models are being introduced for this market, as instance the 19.6-h.p. four-cylinder Crossley. Both these vehicles may be taken as about the limit of the possible requirements of the medical man, each being suitable for a specialist whose need may be for a relatively fast car carrying covered coachwork and required on occasions to make fairly long journeys.

The average medical man, however, may find these, and such vehicles as the 16-h.p. Sunbeam, too expensive to maintain. But there is ample choice in other directions. Among tested products there is the 15-h.p. four-cylinder Wolseley with overhead valve engine. It is now in full production, and will therefore well repay attention. A like remark applies to the improved post-war models of the nominal 12-h.p. Rover car of the water-cooled type, with detachable cylinder head. This machine is put on the market in very complete fashion, and has sundry improvements in it that may be noted later. Coming down the scale of power, and therefore of prices, one notes in one direction the 10-h.p. three-speed Wolseley-Stellite (Stand 62, Olympia), which, as a two-seater with dickey seat behind, is of about the right power and price for the average medical man. This, like the Rover, is a long proved design, despite its striking originality, the points of which have been well tested in service. There need be no hesitation about buying machines of this character: their economy of running is evident.

This year there is introduced one notable recruit to the overhead valve type of engine—namely, the Standard Company, of Coventry, which has long specialized in a type of car of the size, price, and power, as well as maintenance costs, eminently suitable for medical men. In reviewing the exhibits one notes with regret that such a striking design as the air-cooled Enfield-Alldays, introduced last year, has failed to materialize in standard form because some £100,000 worth of special plant is needed to lay down the work for standard production on satisfactory lines. But the firm is bringing forward a new style small car on what may be called conventional lines.

A Type as a Test.

Any disappointment under this head is offset, too, by the big advance made by the Rover Company with the horizontal engine with two opposed cylinders of the air-cooled variety. This is styled the 8-h.p. model (Stand 57, Olympia). It has now come into full production at a specially equipped works separate from the Coventry factory, and situated at Birmingham. When these cars were first issued in standard form they were engaged in various competitions, in all of which they distinguished themselves. Since then large numbers have appeared on the road in private ownership.

In face of the cost of production in the post-war period, there is here something particularly interesting to the medical man on many grounds. As to price, this is £300 ready for the road. As to performance, the car can be driven up to 40 miles an hour. Of course, the best running is got between 20 and 30 miles an hour, which is fast enough for the average medical man. On long journeys the petrol consumption has worked out in standard examples as economically as 45 miles to the gallon of petrol; 40 miles to the gallon can be practically guaranteed. The horse-power is generous in relation to weight, the engine giving fully 14 h.p., and the total weight of the vehicle being under the half-ton. The suspension is by quarter elliptic springs fore and aft; therefore, the worst one would get on a pot-hole road would be great plangency. To receive a jar is impossible with this system of springing. The vehicle is well worth studying, too, as illustration of how to avoid complication. Here the lines are extremely simple. There is strength without undue weight. There is nothing about which the medical man need be shy. It is generally imagined that an air-cooled engine in a car is a difficulty. The fact, however, is not so. The difficult thing is to devise an air-cooled engine which can be made to run quietly, like the water-cooled variety. The Rover Company has come nearer solving this problem than any firm I have observed so far. It has got on to production of this class of vehicle on a scale not yet attempted by any [illegible] in this country, nor on the continent of Europe. The American industry has never attempted anything in this line. Nor is it at present inclined to do so.

The Air-cooled Car as a Standard Product of Low Price.

In face of the approach of winter, one merit of the air-cooled car from the medical man's point of view may be mentioned: it removes entirely the need for worry about the engine when left in the cold. For example, during a visit to a patient the cylinders cannot crack in winter, because there is no water in them to freeze. As to refinement of operation, the plate clutch, the employment of a worm drive just as on the large Rover car, and so on, are notable features of refinement. This has not the coarseness of cycle car practice, but all the refinements of car practice. Yet the design especially aims at saving initial cost while ensuring long wearing life and economical consumption, therefore the minimum maintenance and running costs. The design of the bodywork, the features of the lamp-lighting fitted as standard, the method of driving the dynamo for it, and so forth, have proved satisfactory in service. In short, this is one of the post-war types of vehicle for the doctor of which more certainly will be heard.

The larger section of the medical profession now has to regard motor car buying from an entirely different point of view. Young doctors have taken wholesale to the use of motor cycles this year, not because they prefer them, but because they were the only motor-driven machines they could get at the price they could afford. Such a proposition as this small Rover has running and maintenance costs more on the motor-cycle scale, therefore enormously cheaper than anything provided by any American or foreign car on the market. As to a suitable motor vehicle in which the driver is adequately protected from the weather, there is nothing to challenge this production in the current show. Years of manufacturing experience on a large scale have been needed, and the expenditure of scores of thousands of pounds in the laying down of special plant to enable each part to be made to the best advantage. So many hundreds of these vehicles are in the hands of the public that the manufacturers have the reports of their behaviour, and know precisely in what details to effect modification here or there. In short, they are assured that each example issued from the factory from now onwards will be more satisfactory than any that has gone before. In motor building there is need not merely to get your design and your plant right; you have, besides, to get your works hands working in team fashion.

I am inclined to take this car as a text not merely because among last year's novelties designed with a view to solving the cost problem this is about the only notable one in the low price classes that has materialized and enhanced the reputation of long established sponsors, but also because it gives one heart to continue one's isolated campaign against a most regrettable tendency that is all against the interests of the doctors, and for which the motor press in general may be said to be no less responsible than, perhaps, the American industry. I refer to the fact that the tendency to overload cars with super[illegible]

Doctors and the Exhibition.

It will be observed that whereas last year a tabulated [illegible] to be of interest to medical men was published in these pages on the occasion of the first exhibition of motor cars in England after the interval of [illegible], no such figures are given in the present issue. The reason is that it was necessary then to review every [illegible] in the way of motor cars introduced to public [illegible] often interesting for the technical features embodied in them by firms of limited manufacturing resources. The smaller the output the easier it was for such concerns to proceed with their production programmes despite the difficulties presented successively by the moulders and other strikes, because the smaller production the easier it was to get supplies of castings, springs, and other essentials between the interruptions occasioned by labour disturbances. At that troubled period the essential thing for medical men, as for other car users, was to discover, not the ideal vehicles for their purposes, but what types could be produced that would suffice. Happily, in the interval the big producers with ample resources for the best methods of production have been able to achieve very large outputs. Therefore this year, for the first time since the start of the campaign, there is no call for doctors to buy "anything that can be supplied on wheels." Instead they may choose. A result is that the makers established on a big scale can give the best value for money and the best types of tested cars. Altogether better and more trustworthy machines are available among the well established makes, which, however, are not numerous.

An Overhead Valve Engined Standard.

The 9.5-h.p. Standard car (Stand 59, Olympia) has rendered yeoman service to the medical profession since the firm first marketed this chassis as one of the earliest of the really creditable contributions towards the provision of a small car of economical running costs combined with durability such as is suitable for the doctor. As a consequence a demand has arisen for a somewhat more powerful car to take a four-seater body. To meet this the company introduces a 11.6-h.p. engine of 68 mm. bore by 110 mm. piston travel, giving a volume of 1,598 c.cm. with overhead valves, the cylinder heads being detachable and the engine lubrication forced. An electrical mechanical engine starter and car lighting system are standard, and the proved 9½-h.p. chassis features are incorporated in this longer wheel base 11.6-h.p. type, which is standardized with two- and with four-seater bodies that reveal in their details practical knowledge as well as originality. Ready for the road, the four-seater weighs 17 cwt. as an open car with a luggage grid. In this model the squab of the rear seat can be lifted open and retained by toggle-arms, while access is had to a large and shallow compartment for storing the side curtain windows of the special hood. Moreover, the front seats are arranged to fold ingeniously, are adjustable for reach, the cushions being square, so that they can be reversed, and the back squab is suspended from a metal frame with a broad band that can be laced tightly or loosely according to the wish of the user. The valve rockers are lubricated by pressure. There is provided at the front of the cylinder head a small extra water-pipe running to the top of the tank of the radiator to prevent steam lock occurring during extra hard work. The power given by the engine is ample for the coachwork and passengers accommodated on a wheelbase which provides ample leg room for the occupants.

Improvements in the Swift Models.

There are sundry improvements in the 1921 four-seater 12-h.p. Swift model (Stand 47, Olympia) which employs a Zenith carburettor in conjunction with a C.A.V. electrical engine starter and car lighting system. The silent chain drive for the distribution gear is adjustable for wear. The general lay out of the engine, as of the chassis, is on well proved orthodox lines. In regard to the coachwork there is this year a marked improvement. The slightly tumbled in top to the sides of the four-seater standard body is an attractive feature. The colour scheme is grey with apple green upholstery. The alterations in the 10-h.p. Swift model include the provision of a hand brake inside the body. There is also a better form of accelerater pedal. The carburettor is equipped with an air strangler. An electrical engine starting and car lighting set is standardized. For the rest, save for very minor refinements, the chassis remains as hitherto. It will be noticed, however, that the price of these cars is lower than that which ruled during the past summer. This is on account of the increase of output enabling the "on costs," as they are styled at the factory, to be distributed over a larger number of cars, with the result that the price of each works out lower.

The new car introduced by Enfield Allday, which made a notable attempt last year to break new ground with a remarkable five-cylinder air-cooled engine which it subsequently proved impossible to put into production because over £100,000 worth of plant was necessary to equip a factory specially to build the car, is a 10-h.p. four-cylinder water-cooled machine constructed on orthodox lines to achieve refinement in a small car. The engine has a bore of 63½ mm. and a piston travel of 117½ mm., giving a volume of 1,488 c.cm. swept by the pistons. The lubrication is mechanical. The gearbox gives three speeds forward and the final power transmission is by spiral bevel gear in the back axle. The rear springs are cantilever. This is not a "mass-production" car; the coupé and other special bodies are made to order, only the two- and four-seater open types being standardized. (Stand 63, Olympia.)

The 1921 10-h.p. Singer Light Car.

An additional universal joint to the propeller shaft; the furnishing of an Autovac feed in conjunction with the employment of a fuel tank in the rear to the achievement of a better balance; the simplification of the bonnet scheme; and a wider dickey seat, are the chief changes in the 1921 model of the 10-h.p. Singer Light Car, a type so popular that there is no need to depart from it beyond incorporating detail improvements in the scheme from year to year. The engine is of the same size as formerly, 63 mm. bore by 88 mm. piston travel, giving a volume swept by the pistons of 1,096 c.cm. This engine is in a sense uncommon nowadays in that the cylinders are cast in pairs. Some of the alterations incidentally make for cheaper production. The new dickey seat unfolds upwards and outwards. The other half of the boot of the car hinges upwards and can be locked by means of wing nuts in any position desired. The rear part of the body is 6 in. wider than in this year's model. The removal of the dickey seat reveals a hole in the floor board that gives access to the filler cap for the petrol tank, which has a capacity of over six gallons. Therefore this car has a greater range on a single charge of fuel than have the earlier models with the gravity tank on the dash. This transference of the fuel tank enables the dash to be made of neater appearance, and to accommodate full easily the instruments disposed symmetrically on either side of the small oblong cupboard wherein maps, glasses, books, and other small articles can be put. The bonnet is composed of three separate members, the two side ones being hinged at the bottom so as to open outwards. The third, the neatly rounded top member, rests on the radiator and dash, and is held by springs to the side by four small clips. By removing the top piece and opening the sides outwards the engine can be exposed in a few seconds. On the coupé model the taper lines from the dash to the bonnet are straight in place of being curved. The cooler is carried by a cross tube lying between the front ends of the side members of the frame and braced at the top by an adjusting rod anchored to the water outlet pipe on the top of the cylinder block. This arrangement enables the radiator to be dismantled, or put on, much more easily. The valve covers are now fashioned of pressings. A clip has been made to keep the ignition wires well away from the exhaust piping. Instead of fitting the ignition wires direct on to the sparking plugs they are provided with terminal clips. (Stand 93, Olympia.)

Contrasted Types of Middle-size Cars.

Perhaps the feature of the Humber exhibits that will attract most attention on the part of the medical man is the 10-h.p., otherwise the smaller four-cylinder chassis, equipped with coupé body. (Stand 32, Olympia.) This little car, which is listed at £750 ready for the road, is neatly finished in dark blue with black leather collapsible hood. It accommodates two people comfortably, and is well designed for doctors' work. The cooling is by the natural circulation of the water, and the oiling is automatic by pumps and troughs. A Smith carburettor is used. The gearbox gives three speeds forward and a reverse, the final drive in the back axle being by bevel gear.

The Morris-Oxford and the Morris-Cowley four-cylinder cars are supplemented by a six-cylinder model, the engine of which is alone shown. It has a bore measurement of 70 mm. and a piston travel of 102 mm., giving a volume of 2,355 c.cm. swept by the pistons. Therefore, this machine will come under the 17.9 h.p. Treasury rating. The power plant, as well as the chassis, is to be made entirely at the Cowley works. For this model the Lucas electric equipment has been selected, including the gear for starting the engine and a Zenith carburettor. The final power transmission is designed to be by spiral bevel gear in the back axle. Fore and aft suspension are to be by half elliptic springs. (Stand 97, Olympia.)

The new Phoenix model is rated at 18.2 h.p., being furnished by a four-cylinder engine having overhead valves and overhead camshaft; the bore measurement is 85 mm. and the piston travel 135 mm., giving a volume of 3,064 c.cm. swept by the pistons. This engine is built in a unit with the clutch and gearbox, the final drive being by spiral bevel in the back axle. Relatively quiet running is achieved by off-setting the camshaft in relation to the valves, securing a low lift cam which operates a high lift valve. The valve ports are cored in the detachable cylinder heads, the inlet ports being almost in a straight line from the carburettor to the valve. The cantilever rear springs are set inside the longitudinal members of the frame. The gearbox is furnished with three speeds forward. (Stand 54, Olympia.)

A low-built new car with proportionately wide track and long wheelbase in conjunction with cantilever rear springs is the 19.6-h.p. Treasury rating four-cylinder Blackburn car, introduced by a firm hitherto associated with the aviation industry. There is nothing experimental about the design, which rather follows generally approved practice. But the appearance of the car is distinctive and pleasing. The cylinders are cast in pairs, having a bore measurement of 89 mm. and a piston travel of 127 mm., giving a volume of 3,160 c.cm. swept by the pistons. The layshaft is placed at the side of the main shaft in the gearbox, both shafts being short, rigid, and mounted on ball bearings. Four forward speeds are provided. Helical bevel gear is furnished to the back axle, which is of the full floating type. The transverse members that act as bearings for the gearbox are removable, this part of the construction being quite out of the ordinary and illustrating the aircraft engineering experience of this firm. The plans are to give first deliveries in the early part of next year at a price provisionally stated as £800 for the chassis.

The French Mass-Production Car.

Despite a number of difficulties, the French manufacturer has done notable things in the mass production of the Citroen car introduced at the show last year by the British concessionaires, Messrs. Gaston, Ltd. (Stand 308, White City). The car is now made for this market with steering and hand-brake control on the right side of the vehicle. The scheme of the chassis, well designed and soundly made, has not been departed from. The features embrace the use of an ingenious form of double quarter elliptic rear springing; the front suspension being by quarter elliptic springs. The coachwork is on standardized lines throughout. It is claimed that this car does full thirty miles to a gallon of fuel. The final drive is by herringbone gear in the back axle. The chassis is now built as a complete unit, the aluminium dash and electric lighting equipment being quite separate from the coachwork. The propeller shaft is now tubular throughout its length. The tie rod under the front springs has been dispensed with owing to the adoption of slightly stronger springs. The forward end of the upper leaves slides in the axle, but the front of the lower leaves is fixed to the axle. The pedal for the mechanical engine starter is now placed close to the central gear change mechanism. The four-seater touring car is standardized at £495, and the coupé with extra folding seat at £625, the bodies being on standardized lines throughout. The disc type of wheel is also standardized.

The 15-h.p. four-cylinder Darracq, with 85 bore and 140 mm. stroke measurement, giving a volume of 3,178 c.cm., is introduced this year with a detachable cylinder head and an external ribbed exhaust manifold. The aim is to reduce to the minimum the likelihood of carbon deposit, as well as to increase the power by approximately 10 per cent., a Smith multi-jet carburettor being adopted. It is bolted to the cylinder block on the right side and warmed from a by-pass off the circulating water. The changes made in the gearbox housing result in its being stiffer. Relatively long cantilever rear springs are used. They are attached to the back axle by two shackles, both the main and the secondary leaves having an eye rolled on their extremities. The petrol filter cap is big and equipped with an efficient filter. (Stand 85, Olympia.)

Delage introduces a 15-h.-p. four-cylinder model of 80 mm. bore by 150 mm. piston travel, giving a volume of 3,016 c.cm. swept by the pistons. Front-wheel brakes, which are a distinctive feature of the six-cylinder type introduced by this firm last year, are not standard on this four-cylinder model, but they can be supplied as an extra. Ordinarily this would not be a satisfactory practice, because the front axle has to be designed specially to take the extra weight and strain, and the steering should also be schemed specially. The knowledge of these facts possessed by the Delage firm has led it so to design these details of the four-cylinder model that there is nothing experimental about the application of four-wheel brakes to it. They are, however, rather unnecessary for the average service of a doctor, particularly as very big back brakes are furnished. (Stand 34, Olympia.)

Miscellaneous Features of Small Cars.

Among the new small cars introduced is the 10.5-h.p. Treasury rating four cylinder Galloway with detachable cylinder heads, forced lubrication, and features which include the bolting together of the engine and gearbox, unit fashion, to carry the pedal assembly, hand brake and central gear change lever. The rear suspension is by quarter elliptic springs, and the forward springing semi-elliptic, detachable disc wheels being standardized. (Stand 21, Olympia.) The novelty of the Willys-Overland programme this year is the 21-h.p. four-cylinder, monobloc cast, Willys-Knight double sleeve valve engine, having a bore measurement of 92.1 mm. and a piston travel of 114 mm., giving a volume of 3,031 c.cm. swept by the pistons. This type was introduced to the American market about half-way through the war, so that it is well proved. The cylinder head of this monobloc casting has a detachable aluminium cover. The clutch is of the single plate type. The gearbox gives three speeds forward and the final drive is by spiral bevel to a semi-floating live axle. The car is standardized either as a five seater, or as a Sedan. (Stand 83, Olympia.) The Calthorpe coupé is listed at 550 guineas; and a new model is introduced with a saloon body at 600 guineas. The chassis displayed this year represents a logical evolution of one of the vehicles that pioneered the small car movement, this year's type having a single plate clutch, gate change gear control independent of the frame, and a new hood laced to metal supports. A fan has been added to assist the cooling, and is equipped with an adjustable whittle belt, which is also employed to drive the dynamo. (Stand 92, Olympia.) The 1921 Lagonda coupé model is marketed at £495, with a larger engine and longer wheelbase. This car has overhead inlet valves and aluminium pistons. The folding top of the dickey is made in two pieces hinged together, the forward section folding back on to the rear part, which is also hinged. The under side of the folding top is upholstered to form a support for the passenger's back and shoulders. A detachable seat cushion is mounted over the spare-wheel housing. (Stand 17, Olympia.) The wiring and instruments on the 10.5-h.p. Treasury rating four-cylinder water-cooled Charron-Laycock car, built by the Sheffield firm of W. S. Laycock, are carried on an aluminium dash and instrument board, as on large cars. Side valves are used, and the detachable cylinder heads are machined inside. The price of the two-seater, with double dickey seat and full equipment, is £625. (Stand 84, Olympia.) One of the 1921 A.C. models is equipped with an auxiliary spring that takes the form of an extra leaf cambered the opposite way to those forming the spring proper. The aim is to reduce rebound. (Stand 122, Olympia.)

It will probably be agreed generally that the outstanding exhibit among the smaller cars is that of Bugatti, this firm having carried the victory in the international Voiturette race in France last August, when it made notable showing as well in regard to holding the road as concerns speed and reliability. Suffice it to point out that an examination of the design of the springs, which is unusual and simple, as is the fitting of four valves per cylinder to the engine, will give a very good notion of the trend which high-grade design may take. As to accommodation perhaps, this is rather smaller than the average car required by a doctor. (Stand 50, Olympia.) A new type of radius rod is furnished to the Douglas light car, which is further distinctive in that it is equipped with the A.E.S. patented helical suspension system. (Stand 23, Olympia.) The Duplex light car makes its appearance this year in the form of a machine equipped with a four cylinder engine having a bore measurement of 66 mm. and a piston travel of 109 mm., the Cox carburettor being used. (Stand 124, Olympia.) One of the few small cars that come within the 1,500 c.cm. class to be equipped with a gearbox giving four speeds forward and to be of sufficient power to carry a four-seater body is the [illegible], the design of which shows no notable changes, and follows well approved practice, the [illegible] being chiefly remarkable for clean lines. (Stand 113, Olympia.) The engine of the 1921 Hillman standard model has been enlarged to give sufficient power for the demand made in regard to road speed and hill climbing. In addition, there is introduced this year the Hillman speed model. (Stand [illegible], Olympia.) The engine of the [illegible] has each valve cap so large as to cover both the inlet and the exhaust valves of each cylinder. (Stand [illegible], Olympia.) The McKenzie Light Car is now fitted with a Coventry-Simplex engine. (Stand 100, Olympia.) Instead of the Baby Peugeot, which is produced no longer, there is an 11-h.p. four-cylinder model shown as a two-seater for £490, the bore measurement being 65 mm. and the piston travel 105 mm. The gearbox gives four speeds forward. Other features include a worm drive and the furnishing of cantilever springs. (Stand [illegible], Olympia.)

The cleverly designed A.B.C. Light Car introduced last year makes its reappearance, there having been little occasion to alter the clever and original design of Mr. Granville Bradshaw. The engine is an air-cooled two-cylinder horizontally opposed type. The control gate is unusual in that it works vertically. The gearbox has four speeds forward. (Stand 414, White City.) A gear-driven oil pump is furnished to the 1921 Deemster model; the re-designed clutch of which incorporates spring-loaded plungers that operate under the fabric to make the engagement easier. Stay rods have been fitted between the back axle and the front of the torque tube. A tie rod is placed underneath the casing. The gear and brake levers are in a more convenient position, being further back. An extra air inlet, controllable from the driver's seat, is fitted. The dickey seat is now wide enough to accommodate two passengers; and the boot to the body is larger and longer. (Stand 315, White City.) The chief novelty of the G.W.K., which has been the most successful of the friction-driven cars, is the placing of the four-cylinder engine in the ordinary position in the front part of the chassis; the drive is taken direct to the disc placed slightly in front of the rear axle. (Stand 335, White City.) Among new cars introduced at this season is a twin-cylinder, horizontally opposed, air-cooled power plant disposed immediately behind the driver's seat in the chassis of the "Unit No. 1." The power transmission is by friction discs, the final drive from the driven disc shaft being by chain through a reduction gearbox. The dummy radiator provides accommodation for a petrol can and spares; the steering is on the combined ratchet and bobbin type, ready means being provided for adjusting the cables; and the suspension is by quarter elliptic springs fore and aft. The adjustable seats of hammock type are unupholstered. (Stand 333, White City.)

The Accessory Section.

In the space at disposal it is impossible to deal adequately with the accessory section. It is not even possible to deal fully with such a display as that of Brown Brothers (Stand 169, Olympia) who pioneered the Duco spring gaiters that are standardized on a large number of cars to be seen in the buildings at the White City and Olympia. One of this firm's interesting novelties is the Duplex mechanical tyre pump driven off some rotating part of the engine and consisting of a double piston actuated by a crank which engages with a brass bush sliding between the two portions of the piston. This bush, which has a square plug, acts as a slide valve. Another of this firm's novelties is the Apex plug cleaner, which is an aluminium chamber containing a multitude of steel needles. If this is half filled with petrol and a plug is screwed into it, when shaken violently it is claimed that both the points and the interior of the plug are cleaned rapidly. Again, as to dashboard fitments, there is a neat form of Duco clock, which is very flat, the method of attaching it to the dashboard being concealed. There are a hundred and one ingenious little tools which will appeal particularly to medical men by reason of neatness. Several will save the owner driver much labour when giving that little timely attention to his car that saves the running up of a repair bill.

The exhibit of the Zenith Carburettor Company (Stand 191, Olympia) embraces a full range of their carburettors for all types of cars, also various sectioned special carburettors with complete inlet pipes and adaptors for fitting easily to well known cars. A feature is the special model for Ford cars that can be fitted without any alterations and which, it is claimed, effects a great improvement in the running. This will work quite well with benzol in the case of those owners who are lucky enough to be able to obtain supplies of that form of motor fuel.

Novelties Among the Tyre Exhibits.

If it may be written in general that there is a relative absence of novelties among the car exhibits, assuredly the same cannot be said in regard to the tyres and wheels displayed. Take as an illustration of sheer variety of enterprise under this head the display of the Dunlop Rubber Company (Stand [illegible], Olympia) which embraces Magnum type tyres with beaded edges for all standard sizes, including the new series of British standard sizes for light cars. Incidentally, it may be said that this work of the tyre organization in standardizing sizes also makes for better production and cheaper tyres. In the course of a few years the motor manufacturers of this country will not be calling on the tyre industry to supply such an unnecessarily wide variety of types as they have done in the past. As it is our manufacturers are to be commended for making tyres of patterns suitable for American cars as well as for all the sizes requisite for British vehicles. There is introduced the full moulded

Dunlop tyre with special rubber non-skid tread built on multiple cord casings. These have rims suitable either for beaded edge or for straight-sided tyres, the latter having removable side flanges. Moreover, the Dunlop detachable wheels displayed embrace the wire, pressed steel, wood, corrugated disc, and combination disc and wire varieties.

The outstanding novelty on the Michelin stand (Stand 236, Olympia) is the new cable cover, produced by this company for the first time in December last, and since found so satisfactory in service that the firm is making a leading feature of it. The points it possesses in notable degree embrace resilience, easy fitting owing to its suppleness, and relatively large air capacity. The initial cost is about 15 per cent. more than for tyres constructed on the ordinary principle. But this is said to be more than offset by the longer wearing life. The company's tests embraced the running under the same conditions of load, pressure, and speed of an 880 by 120 mm. canvas tyre and a cable cover of similar size over an obstacle 2 in. high and 2½ in. wide. By means of the apparatus employed for observing this test it was found that the canvas cover absorbed nine-sixteenths of an inch of movement, while the cable cover absorbed a full inch, indicating greater capacity for shock absorption. Next came the endeavour to discover what energy was needed to drive these two types of tyres at a load of 1,320 lb. at 70 lb. pressure. The tyres were drawn along by a fly-wheel worked by an electric motor. The consumption of current showed that the canvas cover absorbed 1.8 h.p. and the cable cover 1.4 h.p., a difference of nearly ½ h.p., which would represent 2 h.p. on the four wheels of a car. To test this matter another way, an electric car was equipped with 895 mm. by 135 mm. covers, first of the canvas, then of the cable varieties. Under similar conditions it was found that the canvas cover absorbed 15.6 h.p. and the cable cover 12.8 h.p., a difference of nearly 3 h.p. in favour of the cable tyre. Another test consisted in letting a car roll down a gradient on to a level smooth-surfaced road until it came to rest. With canvas covers the car ran 318 yards, achieving a maximum speed of 18.64 miles per hour. With the new cable type of cover the car ran 440 yards along the level and attained a maximum speed of 20.50 miles per hour. Many other tests conducted might be cited, but sufficient have been mentioned to indicate that here is a very interesting innovation in pneumatic tyre construction. The other Michelin exhibits embrace the solid steel disc wheel introduced last year, after it had been used extensively in France before the war. The adoption of similar hubs for the whole series of these wheels of various sizes secures interchangeability. The nuts securing the wheel to the hubs are so formed that the rotation of the wheel tends to tighten the bolts, so that they cannot work loose. It is comparatively a simple matter to adapt a car to take a Michelin wheel. The company is stocking hubs for all the most popular makes of cars.

The main feature both of the all-rubber and of the steel-studded Beldam tyres (Stand 276, White City) consists of a long narrow strip of rubber standing up from the rest of the tyre, and supported on either side by protruded Vees. This design provides for the natural displacement of the rubber, and minimizes the "heaping up" which occurs in some makes of tyres. The projecting Vees also provide an anchorage and greatly reduce the possibilities of side-slip, or lack of grip, at starting a car, which is often a cause of wear. The Beldam steel-studded tyre has a diamond-shaped rubber non-skid pattern tread with oval pockets, in which are inserted steel studs whose surface is on the level of the surface of the rubber tread.

What is called the Rapson unpuncturable pneumatic tyre is displayed by Oylers Limited (Stand 226, Olympia). These pneumatic tyres are made in two types, the Richmond with heavy, square, non-skid tread specially constructed to withstand the strain and stress on the driving wheels of heavy and powerful cars; and the Richmond heavy round non-skid tyre designed for the front wheels of heavy cars to ensure easy steering, and recommended, besides, as an all-round tyre for light cars. These pneumatic tyres are made at the new and elaborately equipped factory at Richmond.

THE first meeting of the German Dermatological Society since the war will be held at Hamburg at Whitsuntide, 1921. The office of the society is at Breslau.

A GRANT of £5,000 from the British Red Cross Society has enabled the board of the Royal Infirmary, Sheffield, to add another story containing twenty-one bedrooms and sanitary blocks to the existing nurses' house. The nursing staff is being increased and their hours of duty reduced.

Correspondence.

A SOLUTION OF THE HOSPITAL PROBLEM.

SIR,—I have read Colonel Griffiths's letter with interest, and am convinced that he has got at the heart of the question. Though voluntary hospitals have rendered splendid services to the nation in the past, circumstances are now against them—too strong for them. During the more active period of hospital development, from the middle to the end of the nineteenth century, the boards of management undertook and carried out duties that could not have been so well performed by any other body; but under the new and profoundly changed conditions, and as the result of the financial straits to which those who have the management of the hospitals have been reduced, a new financial scheme with a different, and probably in the long run a sounder, basis must be devised. During the past three or four years I have seen much of hospitals in every part of the kingdom; coming into close contact with management, staff—lay and professional—and patients alike, and looking at the question from the point of view of all three groups I am satisfied that the levy on employees and employers (see No. 4 of Colonel Griffiths's letter), pressing lightly on individuals—even on employers of large numbers of workers—but providing, in bulk, a sum adequate to meet the cost of great developments, presents the most feasible scheme yet put forward.

For some time past the working man has come slowly but surely to appreciate the value of hospitals to him and his family, and has helped willingly to finance them, especially through organized collections in the workshops throughout the country—more so in the provinces than in London. But such support as has been given is insignificant in comparison with the amount needed adequately to maintain and extend these institutions. I am convinced that the time is ripe for the matter to be again brought before them with the object of gaining the means to place hospitals on a permanent footing. This the scheme now suggested appears to do. The working man, with his present income, is undoubtedly able to make the small weekly contribution suggested as being necessary for the upkeep of an institution in which his interests are so deeply concerned. Moreover, if I know anything of him, his spirit of independence only awaits instruction as to the best method of making it. In this way the few Poor Law infirmaries which now serve as general hospitals in large cities might have their status raised, and come to play a greater part than they do at present (the King's College Hospital authorities appreciate this), and the voluntary hospital expanded to meet needs, some of them very acute, recognized by all.

The hospital question (*pace* the *Times* medical correspondent) is more closely bound up with the housing question than is generally realized. Provide ample hospital accommodation, not only for fever and infectious cases but for "lying-in" and special cases, and, in addition to serious accidents or disease, even for minor affections, and the gravity of the housing question will be greatly diminished, and the gain to the health of the community far more than proportionately great.

Not the least of the advantages accruing under Colonel Griffiths's scheme would be the closer co-operation ensured between the general practitioner and the specialist—greatly to the advantage of the patient. We have arrived at a point at which the money subscribed voluntarily for the improvement of the conditions of hospital life is utterly inadequate, but with the resources that could be placed at the disposal of the hospital authorities as the result of a hospital levy the status of the Poor Law hospitals could be raised, the work of the general and special hospitals greatly extended and improved, and further provision made for others who at present are in sore need of it. Surely it is time to extend to the middle classes some of the splendid facilities provided for the working classes in the voluntary hospitals. Heavily taxed and rated, some consideration is due to them. Cannot they be allowed to share these hospital advantages should they claim the privilege?

Under the voluntary system it has been almost essential to the collection of subscriptions that elaborate buildings, sometimes not well adapted to the purpose they have to should be erected in prominent positions. The hospital must advertise itself. But are such costly buildings necessary? It will be remembered by those who visited the Pathological Museum of the Association Meeting at Cambridge this year, that Colonel Griffiths exhibited a hospital less costly to build, more appropriate and better fitted for the work to be done, more convenient and more economical to administer than the usual palatial buildings erected. Those who took the opportunity of studying his model—that of a lying-in hospital—could but be convinced of the saving to be effected by the adoption of buildings of such design.

It is high time that medical men should join in the discussion as to the provision of hospital accommodation, for, after all, are they not the referees in the matter? Can they shirk the responsibility laid on them? Does not their calling demand that they shall exert all their influence to obtain for their patients conditions they have known since their student days to be essential to assured and rapid recovery of health?—I am, etc.,

Cambridge, Nov. 1st. G. Sims Woodhead.

Sir,—The remarks of Mr. Joseph Griffiths which appeared in the Journal of October 30th ought not to pass unchallenged, because, if his ideas were accepted as representing those of the medical profession at large, a serious blow might be struck by the Ministry of Health both at the voluntary hospitals and at the interests of the profession.

With Mr. Griffiths's opening hypothesis that (1) more money and (2) more accommodation for the treatment of patients are needed, nobody, I suppose, will disagree. It is the proposals he makes for securing each that are, in my opinion, so objectionable. Mr. Griffiths enumerates the sources from which the money might conceivably be obtained, and I agree with him that there are insuperable objections against obtaining it from (1) imperial taxes and (2) local rates. Mr. Griffiths appears to reject all idea of continuing to run the hospitals on voluntary subscriptions and donations, and this leaves him with only compulsory contributions from employers and employees to fall back upon. He goes on to urge that these compulsory subscriptions should also be utilized to provide suitable accommodation for children and maternity cases. In his next paragraph he appears to urge that the professional classes "and others" should avail themselves of the advantages such hospitals would afford! Why should employers of labour and employees pay for the treatment of children, women, the professional classes, and others in institutions which Mr. Griffiths argues cannot or must not be supported by imperial taxation or from the local rates? And what patients, if any, would Mr. Griffiths leave to the private general practitioner and private consulting surgeon and physician? Would he abolish at one stroke all the nursing homes in which much capital has been invested, and abolish such institutions as the new Masonic Nursing Home and Hospital? True, he adds that the general practitioner may be graciously permitted to retain contact with his patients, "of whatever grade in social life, whilst in the hands of the specialist in one of these hospitals supported by employers and employees, and would be allowed to visit him and consult with the staff of these wonderful institutions, and—crowning mercy of all—might even be allowed to study there without expense." Why, for example, a barrister or engineer should be treated when sick at the expense of employers of labour and employees (that is, working men) Mr. Griffiths does not inform us, and I can imagine the good will with which the average working man would pay his contribution towards this deserving object.

That hospital finance is in a parlous state every one is well aware. I communicated some time ago with the King Edward's Hospital Fund some rough ideas of mine which might assist to bring in funds and preserve the voluntary character of our chief hospitals, and the idea is, I am informed, receiving careful consideration by that fund and by the Red Cross Fund, to whom the former referred it.

[illegible] a matter of "good form." [illegible] process of advertising or—as our American cousins would call it "boosting," it might be made a question of "good form" to pay 5 per cent. or 10 per cent. on restaurant and hotel bills to one of the hospital funds, the money being collected and handed over by the proprietors of the establishments in question. Thus at the bottom of the hotel bill might be printed: "5 per cent. of the above account (x O) is requested in aid of the hospital fund. Please do not forget to purchase stamps for that amount and have them affixed to this bill." I believe that some scheme on these lines might be gradually introduced, until it was as well recognized that it is "bad form" not to tip the hospitals after a restaurant dinner as not to tip the waiter. Stockbrokers might be persuaded to adopt the same kind of method, and ask for a voluntary percentage (say ½ per cent.) on investments on their contract notes. Sellers of luxuries—like jewellery, motor cars, furs, etc.—might also be roped in to get *voluntary* donations in this way. There would be no compulsion, except that strongest of all compelling forces, public opinion, as to what is "good form." At the beginning of the war Lord Kitchener embarked on just such a scheme to rope men into the voluntary army, and notices on hoardings, cabs, carts, etc., calling for volunteers, were familiar in those times. It might be invidious to inquire how many men responded to the call, not because they really were anxious to do so, but because they knew it was "shocking form" for a healthy single young man to be seen out of khaki. It is undoubtedly "bad form" for wealthy householders at present to decline to subscribe to their local hospital at least, but as nobody knows or inquires whether they do so or not it is common knowledge that the majority repudiate their obligation; but if those who did not subscribe were known, "good form" would make the large majority reconsider the matter and do their duty.

From this consideration I thought of yet another plan, which Mr. Griffiths unwittingly supports in his letter. This is the idea that it should be made a matter of "good form" for every householder, every head of a household, flat, or even tenement, to keep in full view in his hall or entrance a collecting box for the hospital funds; that he should voluntarily place therein 1d. a week for every soul sleeping under his roof; that it should be a matter of "good form" for guests at every house after, say, a dinner party, reception, or other entertainment, to "tip" the hospitals by putting something in this box, just as one tips the servant who fetches one's car or cab. The absence of such a box would be a public confession that the householder cared naught for "good form," and in time few houses would be found without a collecting box. One penny a week for every one in London would amount to 3 or 4 million pounds a year for the hospitals, and poor and rich alike would be subscribing, and not workmen and employers alone—and that compulsorily—as in Mr. Griffiths's scheme. Some initial expense would be entailed in making and distributing the boxes, and some method would have to be devised to prevent subscribers from "borrowing" back by stealing from them, but I am confident that the scheme could be worked. Some further expense of a more permanent nature would be necessary, in order to collect the proceeds, but if London boxes alone brought in millions a year, I think the scheme would pay nevertheless.

Taking an average household (family and servants) as six, the average householder would be paying £1 6s. a year in fifty-two instalments, surely not an overwhelming burden.

By means such as these the voluntary nature of the hospitals might be preserved from bureaucratic muddling, and systems of *compulsory* taxation to support hospitals could be avoided. The hospitals might still continue to make small charges to those patients who genuinely could not get satisfactory treatment outside the hospital walls—but any scheme, like Mr. Griffiths's, which aims at providing free treatment for "the professional classes and others" at the expense of employers and employees is to be absolutely condemned. Medical men already are taxed equally with the general public for the doubtful privilege of affording free treatment for venereal patients, for cases of infectious disease, etc.; in other words the profession is taxed in order to partially strangle itself! If Mr. Griffiths's scheme were allowed to pass unchallenged, there would be nothing left for the private practitioner at all, excepting death and the tax collector (or what, in my opinion, would be yet a worse fate—the panel)!—I am, etc.,

London, W.C., Oct. 30th. Arthur S. Morley.

Sir,—I apologize for sending the following so soon after the letter you kindly inserted last week; indeed, nothing but the feeling that so many new and undigested policies are now being so rapidly put forward prompts me to do so.

St. Mary's Hospital Medical School has acquired the privilege to utilize the clinical material at the local Poor Law Infirmary in the education of its students. King's College Medical School is said to be seeking to obtain similar privileges (under different conditions) at the Camberwell Poor Law Infirmary. Is the policy underlying this new departure in the interest of (1) medical education, (2) the medical profession, and (3) the public? I believe it is not in the interest of any of them.

Even with the extension of clinical facilities in these and like hospitals there will still be something very much lacking in medical education. The newly qualified man will have received much too little of that technical training essential to the doctor licensed to practise; all doctors entering upon practice *will still have to teach themselves, after qualifying,* many if not most of the methods used in the detection of disease and in its cure; the doctors will, as of old, continue to compete with one another for honorary posts in order that they may obtain opportunities for the acquisition of knowledge and skill and for the advantage the appropriate and accompanying advertisement gives; and the public will gain no adequate or efficient medical service.

Reform in medical education is urgently needed, and the establishment of large hospitals in populous districts throughout the country is essential as a preliminary step, and immediately after or at the same time the abolition of the present system of honorary medical officers. Large hospitals and many of them are required for the people; and their full utilization would be advantageous for the thorough technical training of medical students in order that they may be properly fitted for their life's work. The services of the best specialists would be called for, specialists who would devote their whole time to this very highly important work for the benefit of the sick and injured in the community; and the specialists should be men who, by education and experience, would be competent to train young men in the practical work that lies before them. This, the most difficult task of the medical teacher, has to a very large extent been neglected since the abolition of the apprenticeship and unqualified assistantship systems. Has not the time come for the restoration of that training, not in its former but in a new form? Only with large hospitals would this be possible. Hospitals of 1,000 beds at least are now needed, no less in the interests of medical education than in those of the people, the technical training and hospital service being interdependent, the efficiency of the latter being directly proportional to the success of the former.

Without reformation on some such lines our hospital service must inevitably fall behind that in other countries, and progress in the science and art of medicine in its various branches will, in my opinion, be very greatly hampered, to the serious detriment of our present enviable reputation in the medical world.—I am, etc.,

Cambridge, Nov. 1st. JOSEPH GRIFFITHS.

THE WASSERMANN REACTION.

SIR,—Your correspondent Mr. H. W. Bayly (August 7th, 1920) complains of "contradictory results at different laboratories," of "contradictory results on different occasions at the same laboratory." Previous correspondents complained of "different results from different portions of the same serum at the same laboratory." To the serious laboratory worker this sort of correspondence is quite amusing, and not worth the trouble of contradicting.

Mr. Bayly is appealing to your readers to give him the help of their experience, and to forward him instances of apparent unreliability of the Wassermann reaction, and is proposing to publish the practitioner's name in connexion with the evidence forwarded. May I suggest to Mr. Bayly that he publish the names of the laboratories from which contradictory results emanate? It would be a useful guide to your readers as to which laboratories should be shunned.—I am, etc.,

ALFRED E. FINCKH, M.B.Sydney.

Pathological Laboratory, Sydney, N.S.W.,
Sept. 21st.

"DEATH AFTER TONSILLECTOMY."

SIR,—My note on the *post-mortem* findings in this case was written to draw attention to certain features of the endocrine gland system in the case rather than for the purpose of initiating a discussion on the demerits of chloroform anaesthesia; if those with special knowledge of the subject think that it has not been sufficiently thrashed out, here is a peg on which to hang such a discussion. My own claims to any specialized knowledge of anaesthetics are no greater than those of your correspondent Mr. Nance; and the anaesthetist who chose chloroform has left this country—unhampered by the law—so that I cannot supply a direct reply to the first of Mr. Nance's queries. As regards the second, I imagine that the necessity for carrying through some twenty-four operations in one afternoon may have prevented the team of surgeon, anaesthetist, and nurse from combining to spend half an hour in watching the patient in the recovery room; I think, however, that it is improbable that such a proceeding would have obviated the fatal issue, based as this was on a pathological state of the boy's organs which could not be detected prior to the operation.

I find that in the course of ten years considerably more than 10,000 operations for tonsillectomy have been carried out here, with only one fatality—surely not a bad record for the surgeon and anaesthetists concerned.—I am, etc.,

Swansea, Nov. 1st. A. F. SLADDEN, M.D.Oxon.

TUBERCULOUS MILK.

SIR,—Dr. Nicol Galbraith writes in your issue of October 16th as follows: "Scientific leaders amongst medical men should be absolutely sure of their ground before they make statements," etc. May I suggest that medical officers of health should be equally sure of their ground before they attribute to authors words which they have not written?

Dr. Galbraith has evidently not read what I have written, but merely contented himself by commenting on what appeared in a review. If he will look into *The Shibboleths of Tuberculosis* he will find that I do not in any way "promulgate this half truth." On the contrary, I make the definite statement that "I should . . . altogether neglect this haphazard uncontrolled source of possible immunization."—I am, etc.,

MARCUS PATERSON.

Colindale Hospital, Hendon, Oct. 26th.

SIR,—I have no intention of discussing the question raised in Dr. Galbraith's letter, on which I maintain an open mind, but merely to reply to a point raised by Mr. Ivatts in your issue of October 23rd—namely, whether it is possible to make susceptible animals immune against tuberculosis. I can assure him that immunization against tuberculosis is an established fact. Of this there is plenty of evidence, but I will be content with quoting a small piece which came under my own observation.

The last Royal Commission on Tuberculosis[1] caused twelve calves to be immunized in various ways by injection of tubercle bacilli, bovine or human. Some three months after the calves were subjected to the somewhat drastic test of the subcutaneous injection of 50 mg. of young bovine tubercle bacilli, a dose which almost invariably proved fatal within ninety days to control animals. Of the twelve calves which had been subjected to immunizing doses, nine withstood the test injections very well and showed when, three months later, they were killed in good health "only for the most part slight and non-progressive lesions of tuberculosis in the internal organs," one showed when killed "general tuberculosis less severe than in any of the controls," and two died of acute general tuberculosis.

The conclusions drawn by Drs. A. S. Griffith and F. Griffith, who wrote the accounts, were that "the experiments clearly show that . . . the resistance of the calf can be raised sufficiently to protect it against the inoculation of a dose of bovine tubercle bacilli which has been shown to be capable of setting up severe and fatal tuberculosis in a calf not so protected." "They show further that this degree of resistance is not always produced."

Immunization to tubercle of susceptible animals, then, is a fact experimentally established. But the immunity is not of a high order, like that which can be produced against diphtheria or tetanus. Moreover, it is uncertain, being liable to fail, apparently, in certain individuals. But what is more pertinent to the question at issue is that it is relatively transient. This point is not touched by the experiments of the Commission; but it seems to be generally agreed among veterinary authorities that it does not endure for more than a year, or possibly two at the outside; and if we may assume, as I think we may, that the same is true of man, I can only conceive of an immunity which shall have an important influence upon human tuberculosis as caused, not by abortive infections which become cured outright unless, indeed, these are frequently repeated, but by chronic lesions which remain for long periods not altogether inactive.—I am, etc.,

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[1] Royal Commission on Tuberculosis. Final Report. App. vol. i (Cd. 5893), p. 265.

LOUIS COBBETT.

Pathological Laboratory, Cambridge,
Oct. 25th.

SIR,—In your issue of October 23rd the letter of Dr. E. R. Ivatts replies to those of Drs. E. Cautley and C. Muthu. I agree with Dr. Ivatts "that there is no positive evidence of immunization in tuberculosis at all." After being a medical officer in Brompton Hospital for eight months I, with four other residents, gave a positive von Pirquet reaction. This may prove infection, but certainly not immunity. A child with virulent diphtheria, when being swabbed, coughed in my face. Two days after I gave a positive swab, but did not develop clinical diphtheria. I do not therefore believe I am immune to diphtheria.

My statement regarding the annual 10,000 child deaths from tuberculosis is based chiefly on the evidence of the Departmental Committee on Tuberculosis (1913). To this I refer Dr. Cautley, and draw his attention particularly to Sir H. J. Stiles's memorandum. The work of the Edinburgh School proves conclusively that the ingestion of tuberculous milk can infect human beings with tuberculosis. Of cases of bone and joint tubercle investigated by Dr. Fraser, 60 per cent. were due to the bovine bacillus, 37 per cent. to the human bacillus and 3 per cent. to both forms. I know of a child who developed tuberculosis about age 4 and who died recently. He was without any doubt infected by tuberculous milk. The cow was one of two kept for family use; it was destroyed and found to be suffering from generalized tuberculosis. The family has a tubercle-free history. It is well known that the death-rate from pulmonary tuberculosis increases as age increases, while that from other forms of tuberculosis is greatest in the first year of life. Sir George Newman in his contribution to the final report of the above Committee gives remarkable statistics proving this. Non-pulmonary tuberculosis is generally recognized to be the result of infection by ingestion.

That advanced cases of pulmonary tuberculosis are a great source of infection is acknowledged by all medical officers of health. No well equipped and organized health area is without its hospital for the comfortable segregation of such cases. The efficacy of this will be more evident when powers for compulsory isolation are granted to public health authorities. To be logical, advocates of the theory in question should allow these "open" cases to remain in their homes, infect their relatives, and so confer on them "immunity." I know of one family where unfortunately the "immunity dose" was so over-estimated that [illegible] died in one year, and another is now an active case.

We who are engaged in combating this scourge of humanity in every way possible, including the improvement of the [illegible] conditions of the [illegible], are waiting for guidance from those best able to advise as to [illegible] hence my letter.

I would ask Drs. Cautley, Muthu, and any others with special experience in tuberculosis the following questions:

1. [illegible]
2. [illegible] Bill now before Parliament?

These questions have evidently been drafted on the [illegible] to the public health that tuberculous milk should be allowed to be sold for human food.—I am, etc.,

S. [illegible]

[illegible] Medical Officer of Health.

[illegible] British Medical Journal.

[illegible]

The correspondence appearing in your columns makes one wonder why the Tuberculosis Order was ever issued, since it appears that there is no agreement at all upon this question amongst medical authorities. If the medical profession considers that the immunization of children by unknown doses of bovine tubercle bacilli of unknown virulence acting upon human beings of unknown resistance immunizes them against human tuberculosis and is therefore advantageous, let some authoritative body say so; but if not, it would be of the greatest assistance to those of us who are working in the dairy world, if such statements as have been recently made in your correspondence columns ceased to appear; for those who write them have no conception of the difficulty which they create by their attitude of mind for those of us who are working in the dairy world.

It must be remembered that the average dairy farmer reads his trade journal; that his trade journal is naturally written to please him; that Koch's statements concerning bovine tuberculosis are still reiterated in those journals; and that all assertions which tend to minimize the gravity of infection with bovine tuberculosis are seized with avidity.

I can say with perfect truth that if the doctors wish to eliminate bovine tuberculosis the best of the dairy farmers are ready and willing to help them.—I am, etc.,

R. STENHOUSE WILLIAMS.

University College, Reading.
Research Institute in Dairying, Oct. 28th.

INFLUENCE OF DILUTION ON THE TOXICITY OF ALCOHOL.

SIR,—Adverting to Dr. Vernon's experiments on dilute alcohol and drunkenness, recorded in the JOURNAL of October 23rd, I made some similar observations, not on myself, but on a German guide in Berlin in 1912.

This man easily and regularly drank over twenty litres of beer in the day. I paid for them myself, so the facts are engraven on my memory. He started with a couple before breakfast, four between breakfast and lunch, a couple of litres at lunch, three more before dinner, and the remainder easily between dinner and bedtime. A little of it was Pilsener—4 to 5 per cent. alcohol—but most of it was the stronger, Munich—6 to 8 per cent. of alcohol.

My German friend thus consumed over thirty-seven ounces of absolute alcohol in the day—at my expense—but he did not exhibit the least sign of inebriety.

The case proved to my satisfaction that where alcohol is diluted twenty or thirty times with water it is almost non-intoxicant.

Seeing the enormous quantities of Bock consumed in Berlin I sought in the hospitals evidences of cirrhosis or other signs of alcoholic poisoning. I found none—more than would be yielded by any other city of its size. In Munich, I am told, there are some evidences of cardiac hypertrophy, due simply to the strain of pumping so many gallons of fluid through the kidneys.—I am, etc.,

J. C. McWALTER, M.D., LL.D., M.R.I.A.

Dublin, Oct. [illegible]

INCIPIENT MENTAL DISORDER.

SIR,—The new mental clause introduced in the hidden recesses of the Ministry of Health (Miscellaneous Provisions) Bill, referred to in the BRITISH MEDICAL JOURNAL of August 28th, 1920, p. 332, is by no means an innovation. Ever since the year 1905 the [illegible] Board has put forward bill after bill, with a view to extending its jurisdiction over the "uncertified," only to be met by a refusal on the part of a discerning [illegible] curiously imbued with [illegible] concern for the rights of the subject."

The proposal embodied in Clause 10 is thus described in a Government memorandum (the italics are mine):

"[illegible] from incipient mental [illegible] Lunacy Acts, to be received, [illegible] approved by the Minister of Health [illegible] The [illegible] generally recognized [illegible] nervous disorder."

The persons to be "protected" are those who are anxious to take charge of the mental case *for profit*, who are to be hereby relieved of any liability for infringement of Sec. 315 of the Act, which imposes a penalty for detention effected without compliance with the provisions of the Act—that is, without the judicial investigation implied in certification.

Certification is essentially a bulwark of protection for those whose freedom is endangered. The annulling of S. 315 by this surreptitious method exposes such individuals to imminent peril. A mental case cannot be regarded solely from a medical point of view, except in cases where detention is unnecessary. Once liberty is imperilled, the need for legal safeguard arises. The "stigma" which is so much stressed (more especially by mental specialists) is not caused by the protecting procedure, but by the circumstances of indignity accompanying detention. Let the system be revolutionized, and hostels be provided for early "uncertifiable" cases (see Clause 11) run on a purely hospital footing and free from connexion with lunacy administration, and the "stigma" will disappear with the emergence of a wholly different method of treatment—that is, a method characterized by hope, encouragement, occupations of interest, and a cheerful outlook on the future, instead of bolts and bars, depression, vacancy, and dread. Nothing could be worse for the slightly unbalanced mind than the present atmosphere obtaining in most mental institutions.

Superficially, Clause 10 would seem to supply conditions for voluntary entrance and voluntary exit; but many are the subterfuges by which this can be evaded. And if entirely voluntary, why is there mention of a period of "six months"? The patient is to be subject to secret regulations, and may, moreover, be secretly certified at any moment. The public are not likely to come voluntarily to homes of this description, which are certain to be regarded (especially by ex-service men) as "feeders" to asylums. What is needed in the present temper of the nation is not a proposal which will naturally be resented, but a truly *preventive measure*, statesmanlike in character, which, by intercepting mental cases on the downward track, will at the same time tend to relieve the taxpayer by bringing about a reduction in our hugh asylum expenditure.—I am, etc.,

London, W., Oct. 23rd. S. E. White, M.B.

Obituary.

WILLIAM BRUCE, M.A., M.D., LL.D.Aberd.,

Dingwall.

Dr. William Bruce, whose death we announced last week, was born at Keig, Aberdeenshire, in 1835. He graduated M.A. at King's College, Aberdeen, in 1855, and M.D. in 1858. Soon afterwards he began practice at Crimond, where he founded the second cottage hospital in Scotland. He removed to Dingwall in 1870, and in 1891 gave up general practice to become M.O.H. for Ross and Cromarty, but he still continued as a consulting physician to the Strathpeffer Spa. On the passing of the Medical Act of 1886 granting direct representation of the profession on the General Medical Council he was elected the representative for Scotland, and he held that post for twenty years.

Dr. William Bruce took great interest in local affairs, and had been a governor of the North of Scotland College of Agriculture, chairman of the local parish council, and a member of the Dingwall School Board. He had also served as consulting surgeon to the Ross Memorial Hospital. He was examiner in public health for some years at the University of Aberdeen, and in 1891 the University conferred upon him the honorary degree of LL.D.

On the occasion of his jubilee as a medical practitioner, in October, 1908, he was presented with a congratulatory address by the Northern Counties of Scotland Branch of the British Medical Association. In making the presentation Dr. W. de Watteville, President of the Branch, spoke of Dr. Bruce's work for the profession, and said he was known to them as "a staunch and loyal friend, a wise counsellor, a man of strong convictions and dauntless courage."

He is survived by his widow, two sons and four daughters, the second son being Dr. Ironside Bruce, physician to the x-ray and electrical department of Charing Cross Hospital. The funeral took place on October 27th, at Fodderty Churchyard, Strathpeffer, and was attended by a large number of friends and neighbours, including the Lord Lieutenant and Vice-Lieutenant of the county.

JESSIE MARGARET MURRAY, M.D., B.S.Durh.

The death of Dr. Jessie Murray on September 25th at the age of 53, after a long and painful illness, removes from many fields of activity a brilliant and many-sided personality whose loss is lamented by a large circle of friends in London and the provinces. Shortly before the operation which preceded her many months of suffering she had returned to London, after proceeding to the M.D. degree, apparently in perfect health and ready to throw herself with characteristic energy into her many useful activities, but an exacerbation of certain symptoms, which only her remarkable strength of character had prevented from becoming a serious handicap during her adult life, rendered an operation necessary.

Dr. Murray qualified in 1909, at a time when medical women had not the facilities in post-graduate work that are now available, and when she settled in practice she lost no opportunity of equipping herself by special studies, which soon became focussed in psychological medicine and in sociology. From her earliest days of practice (writes a colleague) she was quick to perceive the psychological element in many cases of illness, and her native insight into this factor enhanced the value of her advice as a physician. She took up the study of psychology at University College, London, and was ingenious and resourceful in adapting to the needs of her patients data which have since been elaborated by other workers into the "vocational psychology" of recent years. This enabled her to attack vocational misfits and domestic disharmonies which often stood in the way of the patient's recovery. But she did not rest satisfied with the applications of laboratory psychology, and turned her attention to more searching methods of investigating mental disharmony. From a study of Janet's methods in Paris she passed to the methods of the psycho-analytic school. In order to bring the latest fruits of clinical psychology within the reach of the patient of small means, she was the leading spirit in the group which founded the Medico-Psychological Clinic. Her desire to extend the scope of the newer psychology did not, however, stop at its purely medical applications; she was equally anxious that its data should be brought within the reach of students in educational and sociological fields. One of her aims was to establish a working understanding between the physician and the psychologist in the region where their interests touch at so many points, and where their co operation would be of great value to the individual and to the community. During the war she shouldered heavy additional responsibilities, entailing long hours and exhausting work, and it is probable that this period of strain was partly responsible for her untimely death.

The late Dr. Samuel Sloan.

Professor Murdoch Cameron, M.D., writes: After acting as an assistant in a country town Dr. Samuel Sloan began practice in his native city in a working-class district at a time when the fees for visits and confinements were very small indeed. In a few years he had a large if not lucrative practice, and was deservedly trusted and beloved by his patients, as he never spared himself although frequently overworked. An appointment on the staff of the Maternity Hospital gave him an opportunity to deal with complicated cases of labour, with the result that he was early recognized as a specialist in midwifery. His merit was rewarded by his appointment as an examiner in midwifery both in Glasgow and Edinburgh, the duties of which he performed with great credit. During these early years gynaecology also claimed his attention, attracted no doubt, like many others, by the brilliant successes of Spencer Wells and Tait. Operative procedures in this department did not attract him, but he devoted himself to other methods of treatment. Electrolysis as advocated by Apostoli gave a great stimulus to the use of electro-therapy in the practice of gynaecology, and for twenty years Dr. Sloan has been a strong advocate for its use in some form. He was a man of culture, and was valued by his colleagues and professional brethren. He was always courteous in his manner, and very considerate of the feelings of others. A large attendance of medical men and friends at his funeral in the Necropolis testified to the esteem in which he was held by those who knew him best.

Mr. Willoughby Furner of Hove died on October 19th, aged 72, after a long illness. He received his medical education at St. Bartholomew's Hospital, where he was senior scholar in 1871, and won the Foster and Treasurer's prizes. He became M.R.C.S. and L.S.A. in 1871 and F.R.C.S.Eng. two years later, graduating M.D.Durh. in 1891. He had filled the offices of demonstrator of anatomy and operative surgery, house surgeon and house-physician at St. Bartholomew's Hospital, and prosector at the Royal College of Surgeons of England. He was an ex-president of the Brighton and Sussex Medico-Chirurgical Society, and consulting surgeon to the Sussex County Hospital. During the war he was medical officer and administrator of the auxiliary hospital in Third Avenue, Hove, and in recognition of his services he received the decoration of O.B.E.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The third M.B. examination will be held from December 14th to 23rd; the M.Ch. examination from December 16th to 18th. The names of candidates for the former should be sent to the Registrary by November 23rd, and those for the latter by November 25th.

The following medical degrees were conferred at a congregation held on October 29th:

M.D.—R. Hodson, A. H. M. Coates.
M.B., B.Ch.—L. F. S. Gordon.
M.B.—W. F. R. Castle, C. Grantham-Hill.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary comitia of the Royal College of Physicians of London was held on Thursday, October 28th, at 5 p.m., the President, Sir Norman Moore, in the chair.

The minutes of the Censors' Board were read and confirmed.

The following candidates, having passed the required examination, were admitted as Members:

[illegible] M.B.Oxf.; Abel Evans, M.B.Lond.; [illegible] M.D.Camb.; William Henry [illegible]; [illegible] M.D.Durh.; Richard Henry [illegible]; Alfred [illegible]; [illegible] L.R.C.P.; Graham Selby [illegible] M.B.Lond.

Licences to practise physic were granted to the following [illegible] candidates, who had passed the required examinations:

[illegible] P. T. Jones, W. B. Jones, *Margaret H. Kingsford, [illegible]

[illegible]

[illegible]

[illegible]

[illegible] A. G. East, N. B. B. Fleming, V. R. Gokhale, G. F. [illegible]

[illegible] to a conference on November 5th upon certain clauses of a Parliamentary bill proposing the establishment of municipal hospitals. (4) The Central Midwives Board, inviting suggestions towards the revision of their rules.

A New Testament was received from the late Board of Censors for administering the oath to Censors, to replace the copy now in use.

Dr. J. A. Ormerod was re-elected a member of the Committee of Management.

The following report, dated October 5th, was received from the Committee of Management:

> That paragraph (c) of the Regulations for the Preliminary Examination in General Education be amended by the addition of the words "or some other language approved by the Committee of Management," so that the paragraph will read as follows:
>
> (c) One of the following languages—namely, Greek, Latin, French, Russian, German, Italian, Dutch, or Spanish, or some other language approved by the Committee of Management.
>
> (The examination must include Grammar, translation into English from unprescribed books, and translation from English.)

After the usual formal College business had been transacted, the President dismissed the Comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Report of Council.

The *Calendar* for 1920 contains the usual information relating to the history, constitution and personnel of the College, together with the regulations for diplomas, prizes and studentships, and the annual report of the proceedings of Council.

The Council's report gives a record of the work of the College and its various departments from August 1st, 1919, to July 31st, 1920. Three special preliminary examinations for the Fellowship were held for candidates whose studies had been interrupted by the war, and who had done commendable surgical work in connexion with His Majesty's Forces during the war. Of 125 candidates thus admitted, 90 were successful. Another special examination will be held this month. It was also decided, on account of the delay in demobilization of officers in the army in the East, to hold a special examination in May, 1921; applications for admission to this will only be considered from those who have been prevented from returning to this country by reason of the exigencies of service in the East. During the twelve months under review, 301 diplomas of membership were issued, including 44 to women. Sixty men and two women were admitted to the Fellowship. The Licence in Dental Surgery was granted to 82 men and 5 women. The Diplomas in Public Health and in Tropical Medicine, granted jointly with the Royal College of Physicians, were issued respectively to 94 men and 5 women, and to 13 men. No dissertations were received for the Jacksonian Prize of 1919. The subject for 1921 is "The pathology, diagnosis, and treatment of tuberculous disease of the spinal column, with its complications."

The Services.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

An International Congress of Military Medicine and Pharmacy has been organized by the Service de Santé of the first Belgian Army, and will take place at Brussels in June, 1921. All medical men or pharmacists who belong or have belonged to the armies of the allied or of neutral countries are invited to take part. The object of the congress is to gather together representatives of military and naval medicine from these nations, so that the experience gained by each during the war may be correlated and the lessons learnt may be communicated and compared. Discussions will take place on the treatment of fractures of the limbs; on campaigns against venereal disease and tuberculosis in the forces; on the chemistry and physiology of poison gases, the sequelae of gas poisoning, and the significance of these in the assessment of incapacitation; and on the general organization of army medical services. Those proposing to attend the congress are asked to write to the honorary general secretary, Dr. Jules Voncken, Hôpital Militaire de Liège, to whom the title of intended communications, together with a brief abstract, should be sent not later than April 1st, 1921.

ADMIRALTY FEES FOR CIVIL PRACTITIONERS.

The scale of fees authorized by the Admiralty for civilian medical practitioners attending naval ratings who are taken ill [illegible] has been revised. The revised scale comes [illegible]. The fee for each visit [illegible] medical certificate, is [illegible] under one mile, [illegible] In very exceptional circumstances the commanding officer [illegible] the fee [illegible] inadequate may refer the case to the Admiralty, with a view to payment at a higher rate.

Medical News.

The Duke of York will declare open the new premises of the London School of Tropical Medicine and the Hospital for Tropical Diseases, Endsleigh Gardens, on Thursday, November 11th, at 2.30 p.m. His Royal Highness will be received by Lord Milner and the Marquess of Milford Haven, President of the Seamen's Hospital Society.

Dr. J. Brindley James has been elected president of the Society of Members of the Royal College of Surgeons of England for the eighth time.

The Post-Graduate College and Past and Present West London Hospital Dinner will be held at the Café Royal, Regent Street, on Saturday, November 13th, 1920, at 7.15 for 7.45 p.m. The chair will be taken by Mr. H. J. Banks-Davis.

Dr. B. A. Richmond, lately Secretary of the London Panel Committee, and now one of the Regional Medical Officers to the Ministry of Health, was on October 26th presented with a silver tea service by past and present members of the London Panel Committee. A large number attended the presentation, which was made by Dr. H. J. Cardale, Chairman of the London Panel Committee, and supported by Dr. Lauriston E. Shaw, the Treasurer. Dr. Richmond expressed his thanks and pleasure at receiving such a testimonial to his services as Secretary of the London Panel Committee for over six years.

The second annual dinner of the Queen's University of Belfast Services Club will be held in Thompson's Restaurant, Belfast, on armistice night, November 11th, at 6.45 p.m. Colonel Thomas Sinclair, C.B., F.R.C.S., will preside.

The half-yearly dinner of the Aberdeen University Club, London, will take place on Thursday, November 18th, at 7.30 p.m., at the Criterion Restaurant, Piccadilly, under the chairmanship of Sir Francis Ogilvie. Dr. Milligan, 11, Upper Brook Street, W.1, will be glad to hear from any graduate desirous of being present.

A post-graduate lecture will be delivered by Dr. Ralph Vincent on practical points in difficult cases of infant feeding and management at The Infants Hospital, Vincent Square, Westminster, on Tuesday, November 16th, at 5 p.m. Admission to the lecture is limited to members of the medical profession.

On the occasion of his retirement from medical practice to take up the post of Regional Medical Officer under the Ministry of Health, Dr. John Orton of Coventry was entertained to dinner by the panel practitioners of Coventry and Warwickshire on October 26th at Coventry. Dr. Latimer Green presided, and on behalf of his brother practitioners presented Dr. Orton with two easy chairs and Mrs. Orton with a pendant, as a mark of esteem and in recognition of Dr. Orton's valuable services as chairman of both the Coventry and Warwickshire Panel Committees since the inception of the Insurance Act in 1913.

The work of Dr. F. H. Haynes of Leamington, who has recently completed fifty years' service at the Warneford Hospital, was accorded public recognition on October 16th, when, at a meeting of subscribers held in the council chamber of the Town Hall, he was presented with his portrait in oils. The portrait is to be hung in the board room of the hospital, and a replica was given to Mrs. Haynes.

The Registrar-General's weekly returns show that during the thirteen weeks, July 31st to October 23rd, 1920, the number of cases of scarlet fever in the Metropolitan Asylums Board and London fever hospitals at the end of each week were as follows: 1,956, 2,027, 2,106, 2,150, 2,266, 2,402, 2,633, 2,953, 3,305, 3,717, 4,121, 4,534, 4,859. During the same succession of weeks the number of cases of diphtheria in hospital were 1,481, 1,469, 1,413, 1,362, 1,391, 1,404, 1,484, 1,591, 1,700, 1,778, 1,884, 1,975, 2,113. It is noted that the figures relating to cases of infectious fever in hospital do not refer to London exclusively.

The twenty-sixth congress of the Italian Medical Society will be opened in the Polyclinic, Rome, on the morning of Tuesday, November 9th.

The celebration of the golden wedding of Dr. W. G. Stevens, who for thirty-five years has been medical officer of health for Renfrew, was made the occasion of a presentation to him, by the provost, magistrates, councillors, and officials of the burgh, of a gold and enamel box. In making the presentation Provost Ferguson referred with appreciation to the energy and perseverance shown by Dr. Stevens as a pioneer in accomplishing much-needed reforms.

The dinner of the Epsomian Club will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, December 9th, at 7 p.m., under the chairmanship of Dr. H. A. Kidd. The annual meeting of the club will be held at 6.30 p.m.

Professor Roget's third and last Chadwick Lecture, delivered on October 29th, treated of the work mapped out for the Public Health Department of the League of Red Cross Societies in the civil community. The lecturer referred again to the Cannes Conference, held in conjunction with the Convention of Red Cross Societies in Geneva last spring, and also to the Medical Advisory Board of the League, which met for the first time in July. He described how the work to be undertaken had been divided into seven sections: a section concerned with social diseases, considering more particularly venereal complaints; a section for the prevention of malaria, another for the prevention of tuberculosis, a fourth on preventive medicine, a fifth on child welfare, a sixth on nursing, and the seventh, the educational section, comprising propaganda work, publications and statistics.

The winter exhibition at the Royal Academy is of more than ordinary interest. By the generosity of the King of Spain and many Spanish gentlemen, supported by King George and a number of English collectors, nearly five hundred pictures have been brought together illustrating the history of Spanish painting from the fourteenth century to the present time. An annotated catalogue of the paintings down to 1828, the date of Goya's death, has been prepared by Don F. J. S. Canton. Of Goya himself there are twenty-four examples, and his early period, illustrated by such pictures as "Carting an Ashlar Stone," will be a surprise to those who know him only in his later, of which there are several striking examples here, including the gruesome but brilliantly lighted "Pest House." There are ten pictures by Velasquez, one of them—a painting of a buffoon—rather a surprise, if, indeed, it be by Velasquez. The visitor will also become better acquainted with El Greco, Coello, Zurbarán, Ribera, and Ribalta. Many, however, will find their most vivid memory to be that of the portrait of Philip II, painted a few months before his death. It is the work of Pantoja, an artist little known in this country. Of the modern pictures it will be enough to say that Spain appears to have experienced the influence of every movement which has swept through the schools of France.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal.

The postal address of the British Medical Association and British Medical Journal is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the British Medical Journal, *Aitiology, Westrand, London*, telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*, telephone, 4361, Central).

QUERIES AND ANSWERS.

"E. T." asks advice in the treatment of an obstinate case of muco-membranous colitis in a woman of 45.

"D. M." writes: Does any institution exist in this country for dealing with young inebriates, in which institution provision is made for regular daily work either outdoor or indoor?

*** A list of institutions for the care and treatment of inebriate cases will be found on p. 454 of the 1920 issue of the *Medical Directory*, also on p. 461 of the 1920 issue of the *Medical Annual*. Before the war a useful list of homes for inebriates was issued by the Friends' Temperance Society, at 15, Devonshire Street, Bishopsgate, E.C.2. The management of inebriate cases has been a feature of the work of the Salvation Army and the Church of England Temperance Society. During the war some of the institutions for dealing with inebriates closed, and have not been reopened. Doubtless particulars regarding approved institutions could be [illegible] on application to the Inebriates Department of the Home Office. Until the proposed legislation for dealing with inebriates is brought forward and embodied in the form of a new Inebriates Act it is unlikely that much progress will be made with the establishment of homes and colonies on scientific lines. At present most of the institutions would seem to deal only with long-standing, advanced, and hopeless cases. There is a great need for new powers and proper facilities for the treatment of young and early cases. The whole problem of inebriety is far from solution. Those interested in the scientific study of the question should consult the *British Journal of Inebriety*, which is the official organ of the Society for the Study of Inebriety, of which Dr. T. N. Kelynack is honorary secretary.

TINNITUS AURIUM.

"W. A. B." (Bournemouth) writes: Any suggestions from your readers regarding the treatment of this malady will be welcomed, as textbooks give very meagre fare. I have several cases: one is a medical man, aged 64 years, who has been under aural surgeons and had polypi and inferior turbinate removed, but he is still no better. There is some post-nasal catarrh, and discharge found to contain pneumococci, streptococci, and *Micrococcus catarrhalis*, and he is now having a vaccine of these and taking bromides, aspirin, etc. The bruit on lying down is very distressing, but during the day he can do his ordinary work. Is vaccine therapy likely to be of service?

FEES FOR CORONERS' INQUESTS.

"W. L. A."—As the law stands at present, if the patient has died in hospital the resident medical officer is entitled to no fee for performing a *post-mortem* examination and giving evidence in the coroner's court. We would refer our correspondent to a Current Note in the SUPPLEMENT of October 9th, 1920, p. 90.

INCOME TAX.

"G. P." has received two income tax assessment notices for 1920-21 in respect of certain earnings for the period from January to May, 1920, and asks for some explanation.

Having regard to the sums assessed, it seems clear that the blue notice for £42 at 6s. is intended to apply to the period to April 5th, 1920, and is incorrectly headed; the other notice, for £25 less £12 expenses, relates to the period from April 5th to May, 1920. For the first period the special service rate of tax, maximum 3s. 6d. in the £, applies, but that relief was withdrawn so far as periods subsequent to April 5th, 1920, are concerned. If our correspondent has not made a statement of total income for the year 1919-20 he will be required to do so before the relief and allowances are dealt with by the authorities. If "G. P." can arrange an interview with the local inspector of taxes it might facilitate a settlement of this small but complicated matter.

"Lex Gamma" inquires as to the assessment of income received for doing odd locum work and of net income received from property.

[illegible]

[illegible]

LETTERS, NOTES, ETC.

[illegible]

[illegible]

continued to be severe for thirty-six to forty-eight hours, and then gradually disappeared. Physical signs were generally absent; in all the early cases this was so. There was no expectoration and scarcely any cough. The temperature was from 102° to 103°. In some patients there was slight tonsillitis; labial herpes was always present. In two families an infant was first attacked, followed two days later by one parent and the other two children. The last two cases occurred in adult men. After the first few days, when the fever had subsided and the patient no longer felt ill, a harsh pleuritic rub was audible, both at the front and also over an area the width of the hand, at the pulmonary base. There was slight pain both in front and behind; at the same time there was a little cough, and one patient expectorated on one occasion streaks of blood. The first cases suggested a nerve root fibrositis, and the fact that one was accompanied by herpes zoster confirmed this. The last two cases, with an onset exactly similar to that of the early cases, suggested an inflammatory intrathoracic condition. I would emphasize the constant position of the worst pain near the edge of the thorax in front, at the insertion of the recti abdominis; also the striking coincidence of well marked bilateral pleuritic rub with an insignificant amount of pain, and with the absence of illness.

CERUMEN.

DR. OCTAVIA LEWIN (London, W.) writes: Dr. Thomas Lewis, in his address printed in the JOURNAL of September 25th, urges the teaching of the normal functions of the human body to the young medical student. The wisdom of this is evidently not universally realized, or Dr. Lewis would not have devoted nearly seven columns to calling attention to it. That there is a real need for a change of front may be evidenced by one comparatively simple example. Cerumen is a protective secretion to prevent insects from finding their way to the drum of the ear. It is only formed at the entrance, but if allowed to accumulate the earlier products are gradually forced inwards by the later, till they reach the drum at last and cause sudden and alarming deafness. The longer it is left the drier and harder and more adherent it becomes, and the pressure on the surrounding structures may cause troublesome symptoms. Chronic dry irritating cough is a well-known common accompaniment. One case has been recorded where mental disturbance was cured by the clearing away of what had developed into a veritable foreign body. When the plug has been removed the result is not always satisfactory, the damage is found not to be repaired; some serious impairment of hearing may and often does remain. Too violent syringing may rupture the drum. When once the patient's attention has been called to the cause of his disabilities the condition should never be allowed to recur, as deafness will follow in due course. Since the wax is only made at the outer end of the meatus it can easily be seen and removed by the aid of direct illumination. Clear bright diffuse daylight is the best. The looped end of a clean, rigid sterilized hairpin is a very suitable instrument, as it is smooth and firm and easily handled, and, moreover, does not remove the protecting covering too completely. If the canal is wiped too thoroughly and cleaned of its secretion then it is left open to the incursions of minute animals. Any access of zeal must be restrained. Should, however, an insect seek refuge in an unprotected area, then a speedy filling up of the canal with oil will stay its beating against the sensitive membrane and float it to the surface once more. Another of the very many and exceedingly important reasons for not allowing wax to accumulate in the ear is the possibility of a concomitant otitis media, a very grave complication. In the examination of school children the presence of excess of wax appears to be so often overlooked that Dr. Lewis's [illegible] warnings should be taken [illegible] even if this one department would show.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages [illegible], and [illegible] of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40, [illegible]

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks

ON

TREATMENT OF SUBACUTE NEPHRITIS BY KIDNEY DECAPSULATION.

With an Account of Four Cases of Nephritis in which Decapsulation was Undertaken.[*]

BY

Sir THOMAS HORDER, M.D., F.R.C.P.

Historical.

During the decade 1896–1906 a good deal of experimental surgery was undertaken in connexion with certain inflammatory conditions of the kidney which had not formerly been considered amenable to such methods. Some of these experimental efforts were undertaken in regard to cases of disease which proved, either at the time of operation or afterwards, to be nephritis. Such experience led the surgeons concerned to more deliberate attempts in this direction in cases of undoubted nephritis, using that term in its strict medical sense. In this way there arose what came to be known as "the operative treatment of acute and chronic Bright's disease." The treatment was at first associated with the names of Harrison, Edebohls, Israel, and Pousson. To these pioneers were added later the names of Primrose, Guitéras, and Hauchet, and the record of cases was further supplemented by Boyd, Tyson, Lyman, Harris and Clayton-Greene, and others.

The technique adopted was variable. The earliest method was a simple puncture; later a simple incision was made: both of these methods were used in cases of acute inflammation, either when the kidney was considered to be in a state of tension within its capsule—as, indeed, it was sometimes found to be—or when the patient was anuric. Still later, the capsule was not only incised, but more or less of it was stripped from the kidney. In the earlier procedures the kidney wound was allowed to ooze "blood and urine" through a drainage tube for several days; in the later operations the kidney was returned to its bed after the capsule had been stripped, and the wound was sutured forthwith. In the earlier cases, again, one kidney only was dealt with, or at first one, and then, if it seemed desirable, the other kidney was similarly treated some days afterwards; in the later instances both kidneys were subjected to decapsulation at one and the same operation.

The work of the surgeons just named was at its height about the years 1900–1902. In reviewing the whole position as it then stood[1] I pointed out that no very clear light could be thrown upon this important question until authors were careful to state fully the exact nature of the cases dealt with so far as this could be done by full clinical and pathological examinations. For if all renal lesions, unilateral or bilateral, local or general, were termed "nephritis," or, still worse, "Bright's disease," we could never hope to say, from reading the reports, which cases were suitable for surgical treatment and which were not. Only confusion could result, for example, from the publication of such papers as that of Edebohls, with the title "The cure of chronic Bright's disease by operation," yet containing records of cases where the evidence of nephritis was of the scantiest.

The cases of kidney inflammation, kidney pain, and kidney haemorrhage up till this time dealt with by surgeons fell into three classes:

(1) Purely local, and for the most part unilateral, affections, such as calculus, pyelitis, pyonephrosis, etc.

(2) A mixed group, including the cases classed as nephralgia, "renal haemophilia," etc.

(3) True nephritis or Bright's disease—that is to say, inflammation of the kidneys which was acute or chronic, but always bilateral and general.

Now the surgery of class (1) was already successful in the highest degree; and with regard to class (2), since Tiffany, in 1885, first incised the kidney capsule in a case of nephralgia, many surgeons had demonstrated the usefulness of the operation in similar cases, if only because it afforded a means of exploration for stone, etc. And Senator, who criticized Israel's work on the surgery of "nephritis" so severely, was himself the first to cure a case of "renal haemophilia" by nephrectomy. It was the cases in class (3) for which the claims of surgery still lacked demonstration, and it was essential that they should be kept separate from other conditions which had come to carry well-recognized surgical indications.

From about this time (1902) onward more exact knowledge concerning operative treatment in cases of nephritis seems to have arrived very slowly. This tardiness was due to two things: the too rash advocacy of the procedure by certain of its friends, and the absence of collaboration between surgeon and physician, whereby some definite indications for the procedure might be arrived at. A certain amount of desultory work of the same kind went on, but, since there was no clear lead as to which clinical type or types were best suited to the methods of decapsulation, it is probable that many good opportunities for exploiting the operation have been overlooked and lives lost in consequence.

The Present Cases.

Of the four cases of decapsulation forming the basis of the present paper the first was undertaken in 1914, and the last in 1919. The first pair of cases were very similar in their clinical features, and were highly successful in their end-results. These two cases, together with a close study of certain individual cases similarly treated by Primrose, Edebohls, Boyd, and others, form the material upon which a type case will be presented, which, I believe, gives more or less exact indications for the operation. The second pair of cases here recorded also presented very similar clinical features; they serve largely for purposes of comparison, because, though partially successful, I do not regard them as belonging to the type which primarily indicates the procedure. In all four of the cases both kidneys were decapsulated at the same operation, the capsules were completely stripped from the entire organs, were cut away, and were removed. The operation is quite simple in the hands of an expert surgeon, and complete decapsulation of both kidneys can generally be completed in about half an hour.

Case I.

Jessie A., aged 30, a dressmaker, was admitted to St. Bartholomew's Hospital on April 6th, 1914. She gave a history of swelling of the legs and thighs, first noticed four months previously, and increasing gradually. She had been short of breath with effort and had vomited on two or three occasions. There was nothing in her past history throwing light upon the origin of the present illness. On examination the patient presented the picture of so-called parenchymatous nephritis. She was anaemic, her face was somewhat puffy, both lower limbs were very oedematous and the oedema involved the loins and lower abdominal parietes. The urine was diminished in amount, averaging 30 ounces in the twenty-four hours, pale, specific gravity 1015, and contained 0.25 per cent. of protein with granular and epithelial casts. The systolic blood pressure was 120 mm. Hg, the radial artery was not thickened, and the heart was natural. The fundus oculi was also natural.

As the result of the customary medical treatment—rest, diet, deprivation of salt, diaphoresis and aperients—the oedema diminished until there was slight pitting in the region of the lumbar spine only, the patient lost 17 lb. in weight, the albumin dropped to 0.1 per cent. and the anaemia improved. She was discharged "relieved" on May 29th, 1914.

This patient was readmitted on February 27th, 1915, stating that she had remained fairly well and at work until early in January, when she noticed swelling of the face, neck, and abdomen, and a return of the swelling in the lower limbs. Her urine had become very scanty. She had taken to her bed, but her condition had not improved. On examination she was found to be more anaemic and much more oedematous than at the time of her former admission. There was considerable ascites: the abdomen measured 39 in. in circumference. The heart showed no abnormality except a ringing aortic second sound; the systolic blood pressure was 116 mm. Hg. The urine was reduced to an average of 20 oz. in the twenty-four hours, specific gravity 1020; protein excretion amounted to 0.4 per cent.; casts were abundant. Vomiting occurred on several occasions.

Despite energetic measures on the usual lines, there was no improvement in the general state, and no diuresis established, after a sojourn of six weeks in hospital. At the end of this period, therefore, I asked Sir D'Arcy Power's assistance in the case, and on May 13th, 1915, he decapsulated both kidneys. There were a good many perinephric adhesions, more on the left than on the right side. The capsules were more adherent to the kidney substance than is normal, entailing a certain amount of splitting of these structures during their removal. Both kidneys were probably a little enlarged, slightly mottled, but certainly not pale.

The patient made an uninterrupted recovery from the operation. Improvement in the urine excretion, in the oedema and in the albuminuria began at once. At the end of the second week after the operation there was no oedema, and the urine excretion was normal: the albumin was less than 0.1 per cent. At the end of six weeks, when the patient was discharged (July 3rd, 1915), her colour was natural, she was quite free from oedema at any time, and the urine showed no trace of protein and no casts. Two months after her discharge she reported herself at hospital saying she was at work and in good health. The urine still contained a trace of albumin. I lost sight of this patient for five years. She then came to see me (January 16th, 1920) to ask if I thought she could get married and go to live in India. This gave me an opportunity of examining her. I found no signs of disease, indeed she was in most excellent health, and had been so since she was last seen. Dr. Geoffrey Evans, to whom I sent a morning and an evening specimen of her urine, reported that both of these were quite free from protein and other abnormalities, and were of good specific gravity.

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[*] A paper read before the Urological Section of the Royal Society of Medicine, October 28th, 1920.

CASE II.

Joyce L., aged 10 years, was seen in consultation with Dr. Hartigan on October 18th, 1914. Six weeks previously there had been slight sore-throat and pyrexia, passing off in a few days, to be followed four weeks later by a similar attack. About a week after this second sore-throat the child was found to have a puffy face, oedema of both legs, albuminuria, and pyrexia. This was her condition when first seen. She was treated on the customary lines of an acute nephritis, but the symptoms got worse, so that by the end of the second month of the illness the urine was scanty and loaded with protein, casts were abundant, and the dropsy was universal and very marked. The temperature was slightly raised throughout, and showed exacerbations which were accompanied by vomiting, headache, drowsiness, increase in the oedema and anuria. In some of these "crises" the vomiting was very troublesome, making feeding difficult. In addition to the routine remedies, trial was given of an autogenous streptococcus vaccine from cultures derived from the secretion taken from the tonsils. The condition gradually got worse, so that by the end of six months the child's state was most unsatisfactory; the oedema was extreme and involved the peritoneum, both pleural sacs, and the lungs. The ascites was relieved on two occasions by paracentesis.

At the end of the seventh month I suggested decapsulation of the kidneys, and this was decided upon after further consultation with Sir William Osler and Sir D'Arcy Power. The procedure was undertaken by Sir D'Arcy Power on May 21st, 1915, gas and oxygen being administered, with a little ether, by Mr. [illegible]. The bilateral operation was completed in thirty-five minutes. A great deal of oedema fluid escaped from the lumbar incisions during the operation. The capsules of the kidneys were stripped without difficulty, exposing pale mottled organs of a large size in proportion to the patient's age. The kidney substance was not under any apparent tension. The wounds healed well, and there were no untoward after-symptoms. Diuresis began almost at once, and the oedema rapidly disappeared.

The after-history in this case is interesting because the condition was complicated by the presence of the infected tonsils. Six months after the operation the patient was found to have a slight degree of oedema of the face and feet at times, and there was slight albuminuria, although the general state was greatly improved. There was at least one "flare-up," with nausea, malaise, and slight increase of both oedema and albumin. This occurred fifteen months after the operation. But the decapsulation had clearly increased the renal adequacy, rendering this in large measure proof against the chronic infection. Dr. Hartigan, however, considered this attack and some subsequent [illegible] developments of the same sort to be in all probability associated with the septic tonsils, and he decided to have these enucleated. This was done in June, 1918, three years after the decapsulation. The procedure seems to have completed the patient's recovery, for within a month of it the last trace of oedema disappeared and the urine became free from albumin. Since that time she has remained quite well. A letter from her mother, dated October [illegible], 1920, says: "Joyce is quite well; she has grown a fine girl, does everything, plays hockey, lacrosse, dances; is really wonderful."

The next pair of cases of nephritis subjected to decapsulation contrast markedly with the last pair in that (1) the clinical type was different, and (2) improvement only was effected, not a "clean" end result achieved.

CASE III.

[illegible], aged [illegible], first seen on July [illegible], 1919, in consultation with Dr. William [illegible]. [illegible] had an att[illegible] [illegible] the urine output

averages 30 to 40 ounces daily: it contains 0.2 per cent. of protein, a fair number of red blood cells, a few leucocytes; a few granular casts; specific gravity 1014. There was slight hypertrophy of the left ventricle as judged by some heaving of the impulse, and a booming first sound; the aortic second sound was accentuated; the radial artery was easily felt; the blood pressure was 175–85 mm. The patient complained of being easily fatigued, of headaches and backache with slight exertion, nausea at times, and suffered from sudden starts as he was getting off to sleep. The fundus oculi was normal.

In view of the prolonged expert treatment which this officer had received, and his unsatisfactory state, I advised him to submit to kidney decapsulation, and this was done by Sir D'Arcy Power on August 8th, 1919. The capsules of the kidneys were rather difficult to remove, splitting a good deal in the process. The surface of the organs was a little rough, and small fragments of the cortex came away during the process of decapsulation. A small piece of one of the kidneys was removed for microscopic examination. Dr. Geoffrey Evans kindly undertook this for me and reported on the sections as follows:

> "The sections are of a small piece of the cortex of the right kidney fixed in formol-Müller, embedded in gelatin and cut frozen. The capsule had been previously stripped, and does not therefore appear in the section. The interstitial tissue is markedly swollen with oedema, and in it are small scattered areas of small-cell infiltration. There is some increase of fibrous connective tissue. The vessels are relatively normal, but in several afferent arterioles there is a fatty obliterative endarteritis such as is typical of diffuse hyperplastic sclerosis (? 'arterio-capillary fibrosis'—T. H.), while the capillaries of the tufts show varying degrees of hyaline degeneration without fatty change. The most marked pathological change is a proliferation of the epithelial cells of Bowman's capsule, in which both parietal and visceral layers are involved, leading to adhesion of the two layers in part of many glomeruli. All glomeruli are more or less affected; in those more damaged there is a periglomerular fibrosis; a few have undergone atrophy and fibrosis. The tubular epithelium shows, in general, a certain degree of cloudy swelling and desquamation and local fatty degeneration. There is no vascular engorgement. The changes appear to be recent. The interstitial tissue shares in the inflammatory process."

Recovery was uninterrupted. The first week after the operation showed considerable increase in the urine secretion, rising to 60 oz. on the fifth to eighth days, and the puffiness of the face disappeared. A month after the operation, however, there was practically no change in the characters of the urine, which still contained red blood cells, leucocytes, 0.15 per cent. albumin, and a few hyaline and granular casts.

The patient wintered at Malaga, and a report of the urine from Dr. Gutierrez on January 17th, 1920, showed almost the same features as those just mentioned. When examined on June 7th, the blood pressure was 160–80 mm., the heart was less irritable, but still gave evidence of slight hypertrophy, the headache and night starts had gone, and the patient could walk five miles without being tired. The urine showed no change; nor did it on September 9th, at which date the protein ratio of albumin to globulin was found by Dr. Mackenzie Wallis to be 9 to 1; red and white blood cells were still present, and a few granular and hyaline casts.

CASE IV.

George S., aged 18 years, was first seen on February 15th, 1918, for Dr. Vickery. He was suffering from headaches, backache, inability to undergo any exertion, and anorexia. There had been slight oedema of the face in the early morning before the present examination, but this symptom had passed off. The patient had been discovered to be albuminuric some eighteen months previously. The urine now yielded the following characters: Amount in twenty four hours, 32 ounces; pale yellow, clear, no naked-eye deposit, specific gravity 1020, acid, albumin 0.35 per cent.; centrifugalized deposit shows red blood cells absent, leucocytes in large numbers; hyaline, epithelial, and granular casts in large numbers. The radial artery was palpable; the systolic blood pressure was 145 mm.; the left ventricle gave evidence of slight hypertrophy; the fundus oculi was normal. This patient had received very efficient treatment before I saw him, and it was thought advisable to try the effect upon his renal function of bilateral decapsulation. This was done on March 4th, 1918, by Sir D'Arcy Power.

The operation and convalescence were uneventful. As oedema was not present before operation in this case, there was no noticeable change to record in the patient's appearance. But the records of the urine in respect of its abnormal features immediately subsequent to the decapsulation are of interest [illegible].

[illegible] subsequent urine examinations always showed the presence of albumin and an occasional hyaline cast, but the albumin [illegible] 0.1 per cent. And this was after a long [illegible]. The patient was over six feet in height, and [illegible] were often to be observed in connexion with the albuminuria. So far as the symptoms were concerned, there has been a [illegible] general improvement, the headaches [illegible] and less frequent, attacks of [illegible]. The arterial hypertension [illegible] the left ventricular hypertrophy remained. Writing as recently as October [illegible], 1920, this boy's father

Records of Urine, showing Abnormal Features immediately subsequent to Decapsulation.

Days after Operation.	Amount of Urine.	Amount of Albumin.	Red Blood Cells.	Leucocytes.	Casts.
	Oz.	Per cent.			
1	36	0.45	Numerous	Numerous	Fair number.
2	56	0.25	A few	Numerous	Fair number.
3	58	0.2	Very few	Fair number	Fair number.
9	60	0.25	None	A few	Fair number.
12	60	0.18	None	A few	A few.
17	48	0.12	None	Scanty	A few, hyaline only.
19	50	0.075	None	Scanty	A few, hyaline only.

says, "Generally speaking, I should describe him as still very slowly improving; his sick headaches are not so numerous as a year ago, and are generally milder when they come."

GENERAL REMARKS.

I do not propose to go fully into the theoretical aspects of this subject. I think it better that actual experience of the procedure should be regarded as the main part of this communication. It would, of course, be absurdly unwise to dogmatize upon so little material. But consideration of these four cases, together with careful analysis of all the available records, lead me to the conclusion that there is a clinical type of nephritis in which—when thorough general measures have proved unavailing, and a reasonable time element, during which it is known that resolution not infrequently occurs, has passed—decapsulation becomes a definite indication and promises satisfactory results. This type is, I think, not inappropriately termed *subacute nephritis*, and is characterized by extensive and considerable oedema, massive albuminuria with casts in the urine, toxic symptoms of the chronic uraemic kind, and an absence, or the presence in only slight degree, of cardio-vascular changes. (By cardio-vascular changes I mean arterio-capillary fibrosis, hypertrophy of the left ventricle, arterial hypertension and retinal degeneration.) This was the state of things in both of my cases that resolved completely after the operation. In the two cases in which some improvement followed the procedure, but no cure, definite evidence of cardio-vascular changes was present, and the type of disease suggested a general involvement of the arterial system rather than a local inflammatory process in the kidney.

This consideration confirms the general idea that subacute nephritis is a different disease altogether from generalized arterio-capillary fibrosis, as a part of which process the kidney vessels suffer early, and the kidney substance suffers secondarily to the disease in the vessels. In subacute nephritis the causative agent may be regarded as either past and over, or, if still present, it may be regarded as producing its effects primarily upon the kidney parenchyma; in chronic interstitial nephritis, granular kidney, and (or) the arterio-sclerotic kidney the causative agent may be regarded as operating chiefly upon the whole arterio-capillary system, including the kidney glomeruli.

I have referred to the fact that analysis of the recorded cases of decapsulation confirms my own experience that it is these cases of subacute nephritis which are specially adapted to this form of treatment.

Dr. Francis Boyd has quite recently (Association of Physicians' Meeting, Manchester, 1920) reported such a case—a man aged 41, in whom dropsy was extreme, necessitating several tappings of the abdomen and the legs; albumin was present to the extent of 32 grains to the ounce, with dyspnoea and severe headaches. After five months' treatment, with gradual decline, the kidneys were decapsulated. Diuresis began at once, and progress was rapid. Three years later the patient was reported to be at work and well, although the urine was still albuminous. In this case the systolic blood pressure was not higher than 130 mm. Hg. In a second case reported by the same author, similar clinical features were present: the blood pressures were even lower (systolic 79, diastolic 55); acute uraemic symptoms appeared in this case and the kidneys were stripped during this serious phase. Five months after the operation this patient was said to be in apparent good health, although a trace of albumin was present in the urine.

I am not here saying that decapsulation does no good in cases of arterio-sclerosis with kidney involvement—several scattered cases in the literature, and my second pair of cases, prove that it does do good—I want to emphasize the opinion that the type of case most suited to the treatment, and most likely to justify its adoption, is not this type. For cases of advanced granular kidney, I feel confident that, from a study of the records, the operation is contraindicated.

One other clinical type of nephritis requires brief mention, and that is acute nephritis. I have had no experience of decapsulation in this disease It is probable that the earliest of all recorded cases—namely, those of Harrison—were cases of this kind, though not recognized as such prior to the operation. It is certain that not a few of Edebohls's cases were suffering from acute nephritis. The occurrence of haematuria seems to have stimulated the surgical instinct. It is highly probable that the kidney puncture or incision undertaken by these pioneers did good. The doubtful point is whether the procedure was necessary in order to secure the result. This consideration does not make it illogical to say that puncture or incision of acutely inflamed kidneys is, in my opinion, quite justified whenever anuria and uraemia persist despite energetic general measures.

Concerning the mechanism by which the results of decapsulation are brought about I have little or nothing to say of actual fact. It is generally thought that depriving a kidney of its capsule, and thus bringing the cortex into close contact with the perinephric tissues, leads to the formation of new vessels which anastomose with those of the kidney itself, thus providing for the removal of inflammatory exudates and assisting in re-establishing renal function. And, although the results of experimental work by various investigators have been at variance on this point, this process of formation of new vessels may, I think, be regarded as actually taking place. In 1905 Boyd and Beattie[2] reported the results of a *post-mortem* examination on a case of decapsulation, and demonstrated these new and anastomosing vessels *in situ* four months after the operation had been undertaken. But we are faced with a difficulty: The good effects of decapsulation are immediate, whereas this new system of vessels must necessarily take time to form. Are these rapid effects due to the relief of tension? This can scarcely be so, seeing that—apart from the cases of acute nephritis, which are in a different class—little or no actual tension is seen to be present at the time of the operation. The question must remain for the time unanswered—unless it be an answer to say that the mechanism of production of the diuresis and disappearance of oedema and of symptoms generally is of the same kind as in the process of "wet cupping." For the process of decapsulation *does* amount to a very direct and very effective "wet cupping" of the kidney itself, and may therefore be not inappropriately compared with the indirect and too often ineffective "wet cupping" of the loin formerly in vogue in the treatment of nephritis.

We know very little about the exact relation which the perinephric tissue bears to the capsule of the kidney and to the kidney proper. We get glimpses at times of possible important bearings of this cellular tissue upon the organ embedded in it and also of a converse relationship. But actual observations and experimental work are as yet very slight. Necropsies carefully undertaken in cases of chronic nephritis frequently reveal, even to the naked eye, varying degrees of perinephritis, and (though chiefly in arterio-sclerotic cases) new vessels of not inconsiderable size are seen entering the kidney capsule. Dr. Geoffrey Evans has drawn my attention to the work of Blandini,[3] which points to possible renal infection *via* afferent lymphatics passing up the peri-ureteral tissue from the bladder. Kenneth Walker[4] showed that an ascending infection was possible by this route, and he was at times able to demonstrate organisms in large numbers in the kidney capsule when he could not demonstrate them in the kidney substance. But remarks such as these are far too sketchy to pursue further. The whole subject calls for systematic study. Such a study may well be found to supply the answer to the question here asked as to the mechanism by which the good results of decapsulation are produced.

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EIGHTY-EIGHTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

Sir George H. Makins, G.C.M.G., C.B., P.R.C.S.,
President.

DISCUSSION ON SURGICAL TREATMENT OF CANCER OF THE RECTUM.

OPENING PAPERS.

W. Ernest Miles, F.R.C.S.,
Surgeon, Cancer Hospital and Gordon Hospital for Diseases of the Rectum.

(*With Special Plate.*)

The operative treatment of cancer of the rectum is a subject in which I have been keenly interested during the past twenty years, during which period, from observing the end-results of various methods of operating, I have arrived at definite conclusions which I propose putting before you to-day. I also look forward to hearing the views to be expressed by those who will take part in the discussion; for just criticism and the faithful exposition of individual experience in the surgical treatment of cancer is our sole means of arriving at the truth.

In 1910 I had the honour of reading a paper upon "The radical abdomino-perineal operation for cancer of the rectum" before this Surgical Section at the meeting held in London in that year. In that paper I condemned all operations carried out from the perineum alone as being totally inadequate for preventing recurrence, and advocated the adoption of the more radical method embraced by the abdomino-perineal operation.

As a result of that communication a very important discussion was held, at a meeting of the Royal Society of Medicine in 1911, upon the surgical treatment of cancer of the rectum. The opinions then expressed showed that, in London at all events, there were two distinct schools: the one strenuously advocating the perineal methods of excision and the other leaning towards the more comprehensive operation.

At that time the radical operation had not been in vogue for a sufficiently long time to enable reliable statistics to be obtained in regard to efficacy in preventing recurrence; but now, after the lapse of ten years, we should be in a position to decide the question definitely. Recent writings, however, show a decided tendency to revert to the older methods, which I cannot help regarding as a retrograde step.

An operation undertaken for the cure of cancer, if it is to be effective, must be based upon pathological findings in regard to the spread of cancer to the surrounding tissues from the primary growth. If the field of operation does not embrace all the tissues which are pathologically known to be prone to invasion by cancer cells which have become detached from the primary focus, then the operation will be doomed to failure, because it will not prevent recurrence.

The whole question, therefore, of the operative treatment of cancer of the rectum hinges upon the knowledge we have been able to obtain—first, of the manner in which cancer of the rectum spreads, and, secondly, of the paths along which that spread takes place.

The Spread of Cancer of the Rectum.

An adenocarcinomatous tumour of the rectum, when observed in an early stage, is confined to the mucous membrane and the submucous tissue. The tumour is sessile and is readily movable upon the subjacent muscular coat of the bowel. It gradually increases in size and during the process of growth spreads in three distinct ways:

(*a*) By direct extension through continuity of tissue.
(*b*) Through the venous system.
(*c*) By means of the lymphatic system.

(*a*) *Direct Extension through Continuity of Tissue.*

Though at first freely movable upon the subjacent muscular coat, the growth soon becomes adherent. The longer the tumour exists the larger it becomes, the increase in size taking place in all directions, though to a greater extent in the transverse than in the longitudinal axis of the bowel. Adherence first begins at the centre of the tumour—that is to say, at the oldest part, but, as the growth increases in size, owing to surface extension taking place more rapidly on one side than on the other, the oldest part of the tumour is not necessarily to be found in the mid-axial line of the tumour, as one might expect. Thus it often happens that the most fixed and indurated portion of the tumour is nearer to one lateral margin than to the other. The appreciation of this fact may be helpful in enabling us to decide the direction in which direct extension is proceeding.

It is difficult to determine how long a growth may have existed, and to what extent the circumference of the bowel is usually involved, before the earliest symptoms indicative of its presence manifest themselves, as there are no data available. I have had the opportunity, however, of observing the gradual development of cancerous growths in the rectum in four patients, who, though seen when the growth was in a comparatively early stage of development, either refused operative treatment or were unable to submit to it for some reason or another. In all of these patients the growths when first seen were confined to the mucous coat, and were freely movable upon the subjacent muscular coat, thus indicating that, up to that time, infiltration of the muscular coat had not occurred. These growths all became adherent to the muscular coat before half of the circumference of the bowel had been encompassed. At the expiration of one year after the date of the first examination the extent of the circumference of the bowel which had become involved was $\frac{5}{8}$, $\frac{4}{5}$, $\frac{4}{5}$, and $\frac{3}{4}$ respectively.

From these observations it may be inferred that, in the ampulla of the rectum at all events, the involvement of the circumference of the bowel is a comparatively slow process, and that by the time that three-quarters of the circumference has been involved the growth is more than a year old. The extent therefore of the circumferential involvement is an index of the duration of the disease.

During the time that the growth is extending round the circumference of the bowel infiltration of the muscular coat is taking place at its oldest part. When the whole thickness of the wall has been penetrated further progress is impeded for a time by a lymph sinus which exists between the outer surface of the bowel and the layer of fatty tissue which surrounds the rectum. This lymph space can be readily demonstrated, and is found to be traversed by minute trabeculae of connective tissue. In the course of time the growth extends across this space, and then invades the perirectal fatty tissue, through which it gradually extends until the fascia propria of the rectum has been reached. According to my observations on this point the fascia propria is not reached until more than three-quarters of the circumference of the bowel has been encircled, which indicates that the growth has been in existence for more than a year. Until the fascia propria has been penetrated fixation to surrounding structures, such as the sacrum, prostate, bladder, uterus, or vagina, cannot occur. Hence it appears that fixation to surrounding structures does not take place until a year after the appearance of the earliest symptoms indicative of the existence of the growth. This is an important point to be remembered when considering the operability of cancer of the rectum, since free mobility of the tumour is so generally supposed to be the criterion of limited dissemination.

It will be seen, therefore, that the mode of spread by direct extension through continuity of tissue is a comparatively slow process, and that direct invasion of neighbouring structures does not take place until the growth is the rectum has involved the greater part of the circumference of the bowel.

If this were the only mode of spread of cancer from the rectum operative treatment would be simple enough, because in all but very advanced cases mere excision of the portion of the musculo-membranous tube containing the cancer in its interior would suffice to rid the patient of his disease. Unfortunately, however, the other modes of spread occur much more rapidly, and lead to wide dissemination in quite early cases.

(b) *By the Venous System.*

There is no doubt whatever that cancer cells occasionally become disseminated in this way. Microscopical specimens sometimes afford evidence of the direct invasion of the interior of venous radicals by a mass of cancer cells, and it is therefore easy to understand how such cells, having become detached from the main body, may be swept into the venous system and carried to a great distance from the primary growth. This fact explains how, in some instances, even in comparatively early cases of cancer of the rectum, in which the primary growth is small, circumscribed, mobile, and involving considerably less than one-half of the circumference of the bowel, and from which direct extension into the perirectal tissues cannot be ascertained to have taken place macroscopically, metastasis in the liver is a matter of early occurrence. Early metastasis in the liver of this kind, however, is not usually associated with general liver enlargement, and therefore it is not possible to ascertain its existence beforehand even after the abdomen has been opened. Fortunately this mode of spread is extremely rare, and consequently we can afford to disregard the possibility of its occurrence when considering operability, because we are unable to control it either by surgical or by any other means. Definite liver metastasis is generally a late manifestation, so that when the liver is obviously enlarged in a case of cancer of the rectum the local disease is already far advanced and quite hopeless so far as operative treatment is concerned.

(c) *By Means of the Lymphatic System.*

The most important of the modes of dissemination of cancer cells is through the lymphatic channels. Anatomists have succeeded in mapping out the lymphatic areas of various regions with considerable accuracy, showing the natural course of the lymph flow to the neighbouring glands. In the rectum there are two distinct sets of lymphatic channels, by means of which spread takes place—namely, *the intramural* and *the extramural* lymphatic systems.

The Intramural Lymphatics.—There are two chief lymphatic plexuses in the wall of the rectum, one in the submucous tissue and the other between the circular and longitudinal muscular coats. These communicate with one another and also with the lymph sinus, situated between the rectal wall and the perirectal fat, by means of short radial vessels. Spread in this lymphatic system is of very limited extent, and probably does not extend more than a few lines beyond the margin of the growth.

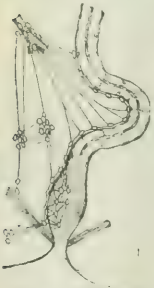

Fig. 1.—Schematic representation of the extramural lymphatic system of the rectum and pelvic colon.

The Extramural Lymphatics.—The general scheme of the lymphatic channels passing from the rectum to the various groups of lymphatic glands is shown in Fig. 1. From the ano-rectal glands, which are scattered over the surface of the rectum, efferent vessels pass in three directions—downwards, laterally, and upwards. Those from the anal canal cross the ischio-rectal fossa, pass through Alcock's canal, and terminate in the internal iliac glands; those from the lower part of the ampulla traverse a plexus situated between the levator ani and the recto-vesical fascia, enter a gland near the obturator vessels, and thence pass to the internal iliac glands; whilst those from the upper part of the ampulla accompany the superior haemorrhoidal vessels behind the rectum to enter the retro-rectal glands, from whence they proceed along the line of origin of the pelvic mesocolon (and beneath the neighbouring peritoneum) to the glands grouped at the bifurcation of the left common iliac artery. From the uppermost ano-rectal glands also lymph vessels pass to the paracolic glands situated along the mesenteric border of the pelvic colon.

The various tissues traversed by these lymphatic vessels are vulnerable to metastatic deposit, and therefore, corresponding to the three lymphatic areas, there are three distinct zones of spread of cancer from the rectum:

The Zone of Downward Spread.—The structures contained in this lymph area are: the perianal skin, the ischio-rectal fat, and the external sphincter muscle. Anatomically there is free intercommunication, through the ano-rectal glands, between the lymphatic plexuses of the wall of the rectum and those contained in the structures mentioned above; and consequently it is easy to understand how a cancer cell, detached from the main growth, may be carried by the lymph stream to a distant point in this area. It is also obvious that even an exhaustive microscopical examination, involving the cutting of a large number of sections, might fail to detect such isolated cancer cells. There is, however, abundant clinical evidence that the tissues in this area are very vulnerable to metastatic deposit and to post-operative recurrent growth.

The Zone of Lateral Spread.—This lymph area embraces the following structures: the levatores ani muscles, the retro-rectal lymph glands, the internal iliac glands, the base of the bladder and the vesiculae seminales, and, in the female, the posterior wall of the vagina, the cervix uteri, and the base of the broad ligament with Poirier's gland. Of these, the most important are the retro-rectal glands and the levatores ani muscles, as they are very frequently the seat of metastatic deposit in quite early cases.

The Zone of Upward Spread.—This lymphatic area is the most important of the three, from the point of view of the spread of cancer from the rectum. The structures contained therein are: the pelvic peritoneum, especially that on either side of the parietal attachment of the pelvic mesocolon; the pelvic mesocolon in its entirety, the paracolic lymph glands, and the group of glands situated at the bifurcation of the left common iliac artery.

My observations upon the spread of cancer from the rectum lead me to conclude that, in quite early growths situated in the ampulla or at the junction of the rectum with the pelvic colon, metastatic deposits may be widely distributed in these zones; and that they are usually so small that their presence can only be recognized after the abdomen has been opened. They cannot possibly be detected by the ordinary methods of rectal examination.

The peritoneum lining the floor of the pelvis, and particularly that portion of it which lies on either side of the parietal attachment of the pelvic mesocolon, is very often the seat of plaques of growth. The deposit no doubt first begins in the subperitoneal lymphatic plexus, and later involves the peritoneum itself, gradually penetrating through its thickness and appearing upon the surface. Should a coil of small intestine come into contact with such an exposed plaque, it may become infected through temporary adhesion and thus cause widespread dissemination.

The pelvic mesocolon also is very frequently the seat of metastatic deposit in early cases. It is quite a mistake to suppose that spread in this structure is a late development. I have been obliged to abandon several abdomino-perineal operations, undertaken for small and early growths in the ampulla of the rectum, on account of metastatic deposits in the upper part of the pelvic mesocolon.

Lastly, the paracolic glands may become the seat of metastasis. I have seen many instances of infection of these glands at a distance of several inches above the primary growth when there was no other evidence of visible metastasis in any other situation.

Anatomically, it can be demonstrated that the lymphatic vessels emanating from the lower part of the rectum pass through the tissues comprising the downward zone of spread, those from the middle of the ampulla through the lateral zone, and those from the upper part of the ampulla through the upward zone. Consequently, it might be assumed that a growth gives rise to metastases only in the zone corresponding to its position in the rectum. The spread of cancer, however, is not controlled by the purely anatomical distribution of the lymph channels. The cancer cell, being a living cell, spreads according to laws of its own, and invades and destroys tissues that obstruct its path. Thus it happens that a growth may give rise to metastases in either or in all of the three zones, irrespective of its position in the rectum. Two specimens, which I have recently removed by the abdomino-perineal method, illustrate this fact well. In one, in which the growth is situated in the middle of the ampulla, the metastatic deposits are confined to the parietal border of the pelvic mesocolon and to the paracolic glands (Plate, Fig. 2). In the other case, although the growth is situated in the lower part of the ampulla, metastases occur in the tissues of all three zones (Plate, Fig. 3). This case is a particularly interesting one from many points of view.

The patient, a female aged 52, was operated upon by me at the Cancer Hospital in April, 1914, for a villous papilloma of the rectum. Microscopical examination showed that there was no irregularity in the arrangement of the epithelial elements at that time. In April of this year the patient again presented herself at the hospital complaining of a return of the old symptoms—that is, profuse watery discharge, occasionally tinged with blood, from the rectum. Examination revealed the presence of a soft growth in the lower part of the ampulla, which felt indurated at its left margin (Plate, Fig. 4). The diagnosis of recurrent papilloma, undergoing carcinomatous degeneration, was made, and the rectum was removed by the abdomino-perineal method. The growth proved to be a colloid carcinoma. The retro-rectal glands were crammed full of cancer cells, and in the pelvic mesocolon a large number of hyperplastic lymph nodes existed along the course of the blood vessels, so numerous indeed as to appear as though a barrage of hyperplastic lymph nodes had been laid down for the purpose of stemming the tide of invasion. Several of these nodes and also some of the paracolic glands were invaded by cancer cells. In the substance of the left levator ani muscle there were two nodes containing cancer cells and a similarly infected node was found in the lymphatic plexus situated upon the upper surface of the muscle. In addition a minute nodule, consisting of a mass of cancer cells, was discovered in the *ischio-rectal fat*. The diseased portion of the rectum was freely movable in all directions, and direct invasion had not extended through the whole thickness of the bowel wall.

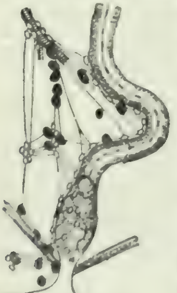

Fig. 5.—Map showing the extent and position in which metastatic deposits and post-operative recurrent growths have been found to occur. The ischio-rectal fat, the levatores ani, and the pelvic mesocolon (particularly the parietal border) are exceedingly vulnerable tissues.

The evidence, then, is that a cancerous tumour, wherever situated in the rectum, is liable to spread, by means of the lymphatic system, among the tissues of all three zones, and that the most vulnerable of these are: the ischio-rectal fat, the levatores ani muscles, the retro-rectal glands and the pelvic mesocolon. It is well to remember, too, that the spread does not take place equally in all directions at the same time; and that, whereas a metastatic deposit may be visible in one zone, in others it is possibly still in a microscopical state.

As a result of (a) noting the position of metastases during the performance of operations; (b) observing the locality affected by recurrent growth either clinically or during the performance of secondary operations; (c) recording the extent and the position of metastases in cases in which a proposed operation had been abandoned on account of their presence; (d) recording the *post-mortem* revelations in regard to the spread of cancer in patients who had died from advanced and inoperable cancer; and (e) the minute examination, macroscopically as well as histologically, of specimens removed by operation, I have been able to make a map (Fig. 5) indicating the tissues which are vulnerable to metastatic deposit during the progress of the disease and to recurrence after restricted operations. It will be seen that the ischio-rectal fat, the levatores ani, and the pelvic mesocolon are the tissues which are largely concerned in the spread of cancer from the rectum. These highly dangerous tissues, therefore, must in all cases be freely removed when an operation for cancer of the rectum is undertaken.

Pathology, then, ordains that the operation must be so planned that all of the tissues which are known to be vulnerable to invasion by cancer cells can be, as far as possible, removed. Let us now see to what extent the various methods that have been adopted for excising the cancerous rectum fulfil the requirements imposed by our pathological knowledge. These are:

1. Perineal excision.
2. Perineal resection.
3. Vaginal resection.
4. The abdomino-anal operation.
5. The radical abdomino-perineal operation.

Perineal Excision.

It is well known that, nearly a century ago, Lisfranc performed the first excision of the rectum for cancer. The type of operation which was then performed remained in vogue until 1875, when Kocher advocated and practised resection of the coccyx as a means of obtaining additional room for manipulation during the operation.

In 1885 Kraske introduced his method of removing part of the sacrum in order to enable him to reach and remove high-lying growths; and since that time various modifications in the technique of exposure have been introduced by Bardenheuer, Hochenegg, Rydygier, Rehn, Tuttle, Murphy, and others. All of these methods of operating, varying slightly in particulars of technique according to the ideas of the designer, are carried out from the perineum, and should be included, therefore, under the generic term of "perineal excision." If we examine closely into the writings of these pioneers of the operation of rectal excision, we are struck by the fact that the various modifications in technique are confined to improving the method of exposing the growth. Apart from this, the type of operation performed remains the same—namely, limited removal of perianal skin, scanty excision of ischio-rectal fat, division of the levatores ani muscles close to their attachment to the rectum, division of the peritoneum close to the rectal wall, section of the bowel one or two inches above the uppermost margin of the growth.

In fact, little attention was evidently paid to the pathology of the spread of cancer from the rectum; so we find that, in all of these operations, the rectum is merely dissected out as a tube containing a cancer, and that the only attempt made for dealing with the spread was removal of the retro-rectal glands.

The limited scope of this type of operation is well shown in Fig. 6.

Between the years 1899 and 1901 I performed nine such restricted operations, with the following results:

Operation mortality	*nil*
Recurrence mortality	100 %
Cures	*nil*

The recurrences manifested themselves comparatively early, the average duration of immunity being about twelve months. The tissues chiefly affected were the peri-anal skin and the ischio-rectal fat. In my next series of operations, therefore, I extended their scope so as to include these structures.

Series II. Fifteen Operations. Period 1902-1904.

Type of operation: Preliminary colostomy; subsacral exposure; wide removal of peri-anal skin; free removal of ischio-rectal fat; division of levatores ani muscles close to the rectum; section of the bowel 1 in. above the upper margin of the growth. The results were:

Operation mortality	*nil*
Recurrence mortality	93.3 %
Cures	6.7 %

The levatores ani muscles were involved in 9 of the 13 recurrences, thus showing that they were extremely vulnerable. The scope of the operation is shown in Fig. 7.

Series III. Thirteen Operations. Period 1904-[illegible].

Type of operation: Preliminary colostomy; exposure by Kraske's or Bardenheuer's method; wide removal of peri-anal skin; free excision of ischio-rectal fat; complete removal of the fascia propria recti together with the lower portion of the pelvic mesocolon, containing the retro-rectal glands; total excision of the levatores ani muscles; free incision of the pelvic peritoneum; section of the bowel two inches above the junction of the rectum with the pelvic colon.

In this series of operations the extirpation of the entire rectum, encased in its sheath of fascia propria, was facilitated by, first of all, carrying the dissection upwards in front of the sacrum, dividing the lower part of the pelvic mesocolon so as to include the retro-rectal glands; dividing the peritoneum longitudinally on either side of the terminal portion of the pelvic colon, so as to free the bowel from its connexions, and then completing the anterior dissection from *above downwards*. The scope of the operation is shown in Fig. 8. The results were:

Operation mortality	7.6 %
Recurrence mortality	91.6 %
Cures	8.4 %

Of the eleven recurrent growths only two occurred in the region of the lateral zone of spread, namely, one in the right lateral wall of the pelvis [illegible] to bone, and the other in the posterior wall of the [illegible].

[illegible] recurrences involved the lower margin of the bowel and the adjacent pelvic mesocolon. In two cases the recurrent growth invaded the pelvic peritoneum and the small intestine. In one of these latter the recurrence was first discovered at an

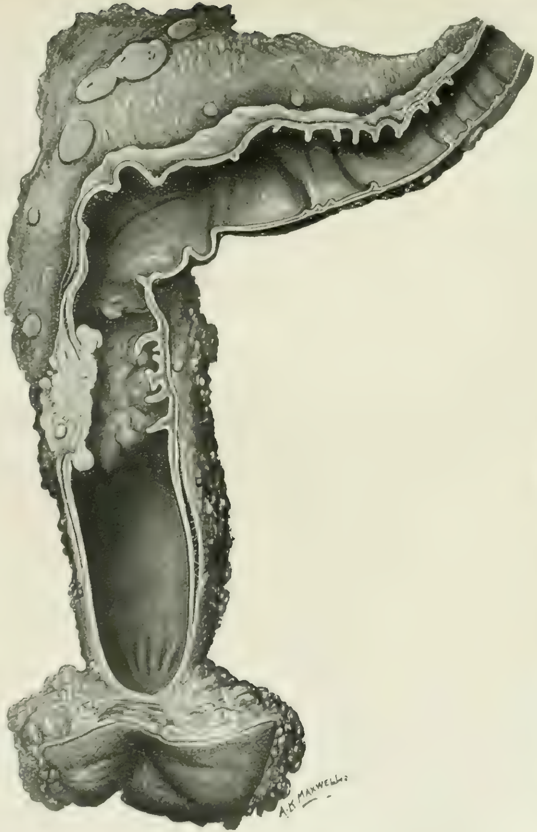

FIG. 2.—An adenocarcinoma in the upper part of the ampulla with metastasis in the zone of upward spread. The growth involves three quarters of the circumference of the bowel. It has extended through the entire thickness of the wall, and, having traversed the lymph sinus existing between the outer coat of the rectum and the perirectal fatty tissue, has invaded the latter, but has not yet reached the fascia propria. Several metastatic deposits are seen in the parietal border of the pelvic mesocolon. Two paracolic glands are enlarged and contain cancer cells. The metastatic deposits in the pelvic mesocolon were beyond the reach of any operation carried out from the perineum alone.

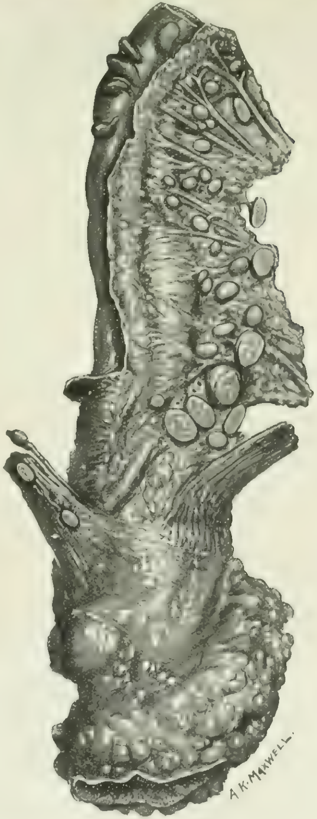

FIG. 3.—Carcinoma of the lower part of the ampulla undergoing colloid degeneration with extensive involvement of the upward, lateral, and downward zones of spread. The retrorectal glands are extensively involved. A large number of hyperplastic lymph nodes, scattered throughout the pelvic mesocolon, contain colloid material. In the substance of the left levator ani muscle, in the lymphatic plexus above that muscle, and also in the ischio-rectal fat, hyperplastic lymph nodes were also found to contain cancer cells undergoing colloid degeneration. This specimen proves that carcinoma in the lower part of the ampulla is capable of spreading in the tissues of the three lymphatic zones.

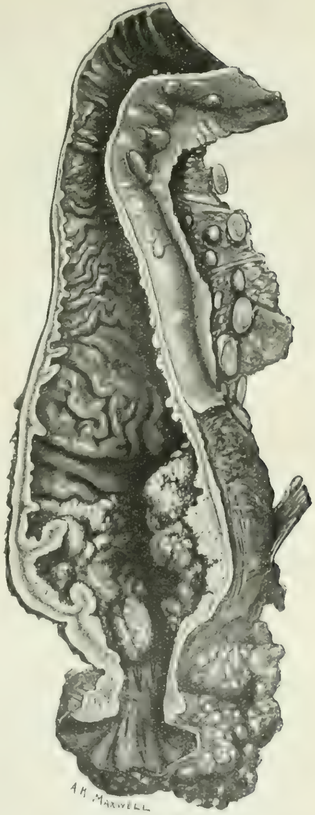

FIG. 4.—An interior view of the specimen shown in Fig. 3. The growth has nearly encircled the bowel, but has not extended through the bowel wall. The wide spread dissemination in the extramural tissues is in marked contrast to the limited degree of penetration of the coats of the bowel.

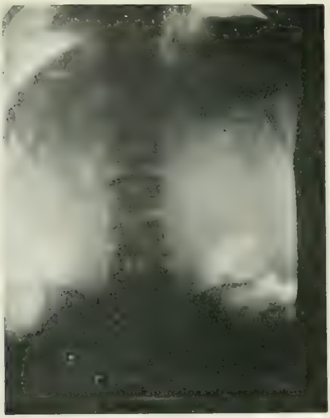

FIG. 1.—Same case as Fig. 2, taken without oxygen inflation. Lower parts of kidneys seen indistinctly. Gall bladder not seen.

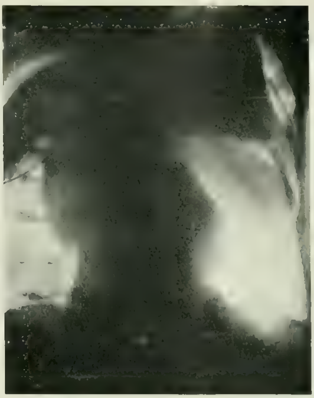

FIG. 2.—Same case as Fig. 1, taken after oxygen inflation. Liver, spleen, both kidneys, descending colon, and large distended gall bladder visible.

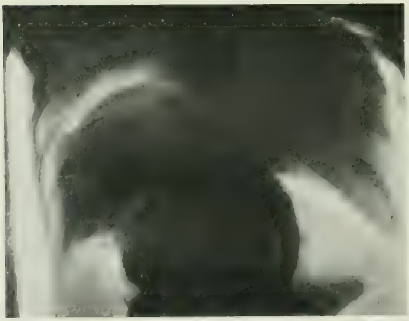

FIG. 3.—Shows an enlarged spleen with a nodular outgrowth secondary to a retroperitoneal sarcoma. Another secondary growth is seen in the diaphragm above the spleen.

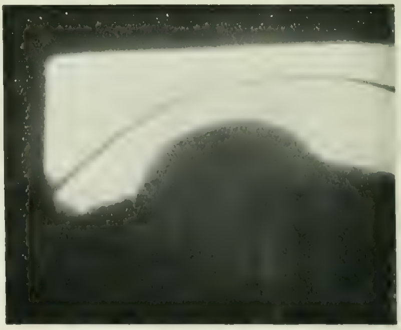

FIG. 4.—A tuberculous mesenteric cyst in a child of 5. Calcareous patches are present in the cyst wall. The anterior abdominal wall is well separated and no adhesions are visible.

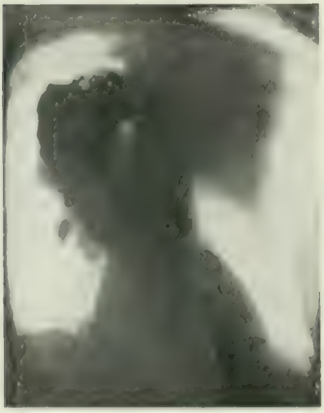

FIG. 5.—[illegible]

FIG. 6.—Pelvis showing the uterus pushed to the left by a solid tumour of the right ovary.

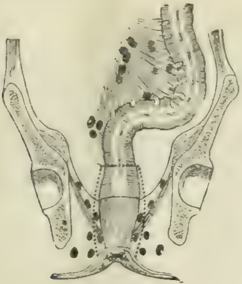

FIG. 6.

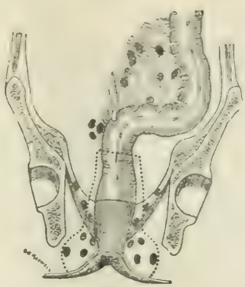

FIG. 7.

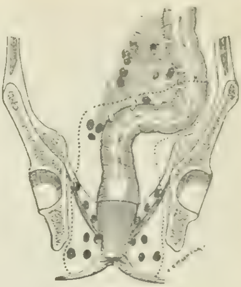

FIG 8.

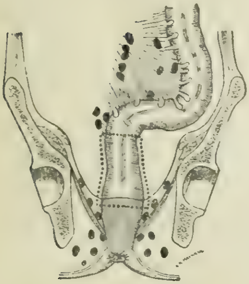

FIG. 9.

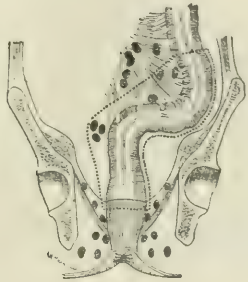

FIG. 10.

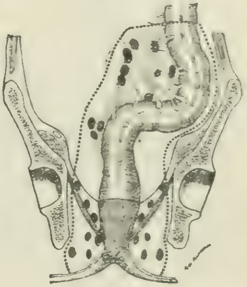

FIG. 11.

FIG 6.—Showing the restricted nature of the operation carried out by Kraske's operation, Bardenheuer's and other methods of perineal excision. The rectum is merely dissected out as a tube containing a cancer, and the vulnerable tissues of the upward, lateral, and downward zones of spread are left behind.

FIG. 7.—Showing the type of operation performed in Series II as the first step in the evolution of the radical operation. The peri-anal skin and the ischio-rectal fat were widely removed, as these tissues were found to be vulnerable to recurrence.

FIG. 8.—Showing the extension of the operative field as a further step in the evolution of the radical operation. In addition to the peri-anal skin and the ischio-rectal fat, the whole of the levatores ani muscles and the lower part of the pelvic mesocolon were included in the operative field, as these tissues were found to be highly vulnerable.

FIG. 9.—Showing the limited character of the removal in perineal resection and in vaginal resection.

FIG 10.—Showing how much of the vulnerable tissues of the three zones of spread is left behind by the abdomino-anal operation. Even when the proximal end of the colon is brought down to the anus the vulnerable tissues of the lower zone are left behind.

FIG. 11.—Showing the final stage in the evolution of the radical operation. Whereas the vulnerable tissues in the lateral and downward zones of spread could be completely removed by an operation carried out from the perineum alone, the greater part of those contained in the upward zone remained out of reach. These tissues, which represent the axilla of the breast operation, can only be removed by the radical abdomino-perineal method.

operation undertaken for the relief of acute intestinal obstruction caused by adherence of a coil of small intestine to a plaque of growth in the pelvis.

It will be observed, therefore, that in this series the recurrences chiefly took place in tissues situated above the field of operation—that is, in the *peritoneum*, the *pelvic colon*, and the *pelvic mesocolon*.

In the next series of operations I extended the field of operation still further, by removing as great a length of the pelvic colon as was found to be possible. This was easy to accomplish because the bowel, by a little traction, was readily stripped out of its mesocolon. It was found to be impossible, however, even with Bardenheuer's method of exposure, to excise more than the lowermost part of the pelvic mesocolon, because the greater part of it was out of reach.

Series IV.—Eighteen Operations. Period 1905-1906.

Type of operation: Preliminary colostomy; subsacral exposure; wide removal of peri-anal skin; free removal of ischio-rectal fat; complete removal of the rectum encased in the fascia propria; removal of the available portion of the pelvic mesocolon together with the retro-rectal glands; free incision of the pelvic peritoneum, and the peritoneum of the pelvic mesocolon so as to permit of several inches of the pelvic colon being drawn down; section of the bowel at or near the middle of the omega loop. The results were:

Operation mortality	*nil*
Recurrence mortality	94.4 %
Cures	5.6 %

Of the recurrences only three occurred in the zone of lateral spread. The remainder were in the pelvic peritoneum and in the pelvic mesocolon. The duration of immunity from recurrence in these cases was considerably lengthened, the average being twenty-seven months.

The operation performed in this series was the most complete that was possible by a perineal method of exposure, and yet it did not suffice to prevent recurrence. It failed because tissues of the upward zone of spread, which had already been invaded, lay beyond the reach of any operation carried out solely from the perineum.

Perineal Resection.

By this procedure the diseased segment of the bowel is resected and an end-to-end anastomosis effected. From the point of view of preserving natural sphincteric control it is ideal, but as a means of treating the cancerous rectum it is absolutely useless.

The scope of the operation is shown in Fig. 9, by which it will be seen that all of the tissues which are known to be vulnerable to extramural metastasis are left behind. I have performed this restricted operation four times, with the following results:

Operation mortality	*nil*
Recurrence mortality	100 %
Cures	*nil*

One recurrent growth involved the external sphincter muscle, two affected the bowel at the site of the anastomosis, while the remaining one occurred in the presacral region.

Vaginal Resection.

The scope of this operation is just as restricted as in perineal resection, and therefore cannot be recommended.

The Abdomino-anal Operation.

In 1884 Czerny first removed a cancerous rectum by a combined abdominal and perineal operation. He did not apparently preconceive the plan, but made use of the abdominal route to enable him to remove a rectum which he had found to be too fixed by adhesions to be removed by the perineal method alone.

Since that time other surgeons have followed his example, notably Chaput, Gaudier, Maunsell, Challot, Boeckel, Giordino, Quénu, Reverdin, and others.

It appears, however, that the chief object of these operators was to facilitate the removal of high-lying growths by mobilizing the bowel above the growth. As a general rule, the bowel was divided about an inch or so above the growth, and very often an end-to-end anastomosis was effected. Even in those instances in which a colostomy was made and a considerable length of bowel removed, the pelvic mesocolon was for the most part left behind, thus clearly indicating that the fact that the mesocolon is particularly vulnerable to recurrence was not appreciated. The desire to preserve the natural function of the bowel also seems to have been uppermost in the minds of these surgeons, because in a considerable number of the cases the proximal end of the pelvic colon was brought down and sutured to the anus, the *abdomino-anal* operation, thus dispensing with colostomy. The scope of the operation is shown in Fig. 10.

I have had no personal experience of the operation, because I have always considered it to be pathologically unsound. It aims at functional preservation, and does so at the risk of recurrence. When the proximal end of the divided pelvic colon is brought down to the anus the greater part of the pelvic mesocolon must be left behind in order to maintain the blood supply of the new rectum. If, however, the pelvic mesocolon is removed, the pelvic colon will slough, and the operation will be worse than useless. Moreover, the levatores ani muscles, the ischio-rectal fat, the external sphincter muscle, and the peri-anal skin are all preserved, in violation of the teachings of pathology in regard to their vulnerability to recurrence.

The Radical Abdomino-perineal Operation.

As a result of my observations upon the paths by which the spread of cancer from the rectum takes place, and in consequence of the failure of the most extensive operation carried out from the perineum to prevent recurrence, I planned this operation so as to embrace the tissues forming the zone of upward spread, as well as those constituting the zones of lateral and downward spread. The scope of the operation is shown in Fig. 11.

By this means the whole of the pelvic colon (except the part utilized for forming the colostomy), together with the whole of the rectum encased in its sheath of fascia propria; the whole of the pelvic mesocolon; the peritoneum lining the floor of the pelvis, together with a strip on either side of the parietal attachment of the pelvic mesocolon; the whole of the levatores ani muscles; the external sphincter muscle; as much as possible of the ischio-rectal fat, and a wide area of peri-anal skin, are removed.

Though this operation is comprehensive in its aim, it should not be reserved for advanced cases only. It should be done for *early* cases, in fact, the earlier the better, because then we may hope to circumvent the invisible spread of the disease. Should it be reserved for advanced cases only, then the invisible spread will have, in most instances, advanced beyond the confines of the operative field, and recurrence will be an inevitable result.

My personal experience of the operation has extended to 72 cases, with the following results:

Operation Mortality.

First series	...	42 cases ...	40 per cent.
Second series	...	19 cases ...	26.3 ,,
Third series	...	11 cases ...	18.1 ,,

The decrease in the mortality rate has, I think, been due partly to improvement in technique and partly to the substitution of spinal anaesthesia with gas and oxygen for chloroform anaesthesia.

Recurrence Mortality.—Owing to having lost touch with [illegible] during the earlier [illegible], I have been unable to trace the [illegible] of [illegible] of the [illegible] patients who survived the operation. Of the remaining [illegible], [illegible] died of intercurrent disease and [illegible] died of recurrence. Leaving the [illegible] untraced cases out of consideration, the recurrence mortality works out at [illegible] per cent.

Results.—The following patients, known to be alive and well, may be regarded as cured: 1 after eleven years, 1 after ten years, 4 after nine years, 3 after eight years, 3 after seven years, and 3 after six years.

Conclusions.

Cancer of the rectum claims 100 per cent. mortality if left to run its course untreated. If, then, the operation undertaken for its relief is followed by a high recurrence mortality, surgery will have failed in its object. The operation of choice is the radical abdomino-perineal because it, alone of the methods at our disposal, ensures removal of the tissues of the three zones of spread. It should be done for early cases, on the principle that the most extensive operation possible, for the earliest possible case of cancer, ensures the greatest immunity from recurrence.

It should not be done in patients who, from age or other reason, are unfitted to stand the strain of a severe surgical operation. For these the choice lies between colostomy only and perineal excision as a palliative measure. If the latter plan be adopted the type of perineal operation mentioned in Series IV (vide perineal excision) should be carried out, so as to ensure that the tissues of the lateral and lower zones of spread are effectively removed. If this be done the majority of the recurrences, as we have seen, will occur in the tissues of the upward zone, and so, being above the level of the true pelvis, will save the patient from the misery of involvement of the sacral plexus by the growth.

In all suitable cases, however, the radical operation should be carried out, and preference should not be given to other methods purely because they are attended by a lower rate of operation mortality. We should remember that, when dealing surgically with cancer, the utility of an operation should be measured, not by a low operation mortality, but by the degree of immunity from recurrence which it confers.

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Importance of Early Diagnosis.

As surgeons we must all admit that the great majority of cases of cancer of the rectum come under our observation at a comparatively late stage. In a series of 41 of my cases the average duration of symptoms before operation was no less than nine months. Rectal discomfort and the passage of blood are always ominous symptoms. Diagnosis would be greatly improved if even digital examination were the rule, while growths beyond the reach of the finger can be demonstrated by the sigmoidoscope in a surprising number of cases in which there are suggestive symptoms. A portion of any suspicious growth or ulcer can be removed by long forceps through the sigmoidoscope and the diagnosis established by microscopic investigation.

The ingenuity of surgeons is not likely to improve the methods of operating on what are really advanced cases, and our aim must be to secure earlier recognition. Operations for rectal cancer can never be considered satisfactory until we are able to remove the growth, while at the same time preserving the wonderful mechanism of sphincteric control. In cases as they ordinarily present themselves at present, at least in the district in which I work, the stage for conservative operations is past, and in the majority only harm is likely to follow attempts to preserve function.

The Spread of Cancer of the Rectum.

There are certain facts in connexion with the spread of rectal cancer that have a direct bearing on the problem of its surgical treatment. They therefore deserve consideration before discussing the various operations which can ordinarily be employed.

Pathological investigation and clinical experience both show:

1. That the local spread of cancer by continuity and contiguity is more important than dissemination by the lymphatics, whether through the lymph stream or by permeation.
2. That for a comparatively long period the disease is strictly local.
3. That malignancy is exalted in the young and vice versa.
4. That there are notable variations in the type of growth, especially as regards dissemination.

These facts emphasize the extreme importance of thorough local removal, whatever extension of the operation may be considered necessary in the direction of removing the tissues in the path of probable cancer invasion. And they teach us that in some of the cases no operation, however extensive, is likely to bring about cure.

The Various Operations that may be Employed.

In a discussion like the present we ought to be quite clear as to the terms we use, and I notice in reading and talking that there is some confusion. This is especially so with regard to the *abdomino-perineal operation.* When I use this term I mean to designate the operation originally described by Mr. Ernest Miles in the *Lancet* for December 19th, 1908. This includes the abdominal removal of the whole of the pelvic colon together with its mesocolon, and a strip of peritoneum at least an inch wide on either side of it, and the lymph nodes situated over the bifurcation of the left common iliac artery, as well as the perineal removal of the whole rectum and its perirectal tissues. Now I find that a good many surgeons speak of abdomino-perineal removal when they merely explore the abdomen and make a colotomy, completing their operation by removing the rectum from below. For statistical purposes it is clearly misleading to compare these two operations as though they were identical.

As I understand it, *local resection* means the cutting away of a part of the circumference of the bowel bearing a growth, while *perineal excision* means the removal of the whole of the lower part of the rectum, including the sphincters, but without excision of any part of the coccyx or sacrum.

By *sacral excision* I understand the extirpation of the whole of the rectum from below, after removal of the coccyx and the last one or two pieces of the sacrum. Though the principle of this method is due to Kraske, it is not the operation which he introduced, and should not be known by his name.

By *sacro-abdominal excision* I mean a removal which is commenced from below by a thorough separation of the rectum as in sacral excision, and is completed by opening the abdomen there and then, in order that the upper limits of a high lying growth may be completely removed under the guidance of the eye.

In *abdominal removal* the highest part of the rectum is excised entirely from above.

In most of these operations restoration of the continuity of the bowel is impracticable, and the combined operations necessitate a permanent inguinal anus. In any case, preservation of function must give way to the necessity for the thorough removal of the growth with a wide area of healthy tissue, and as cases are ordinarily seen, this, unfortunately, usually means too free a removal to permit of restoration.

Analysis of Operations for Cancer of the Rectum.

The following figures represent the result of my own work. The series is small, but it is a continuous one, and includes all the cases in which I have been able to perform some type of excision, from the date of my first operation in May, 1902, to the end of May, 1920. I regret that I am not able to give figures showing the rate of operability and the results of the palliative operations.

TABLE I.—*Analysis of Operations for Cancer of the Rectum.*

	Cases.	Deaths	Cause of Death.
Local resection	2	0	
Perineal excision	4	0	
Sacral excision*	47	6	Sepsis and kidney, pneumonia, shock (2), cardiac attack, sloughing of gut.
Abdominal excision	2	1	Peritonitis.
Abdomino-perineal excision in one stage	5	3	Peritonitis, urinary infection, intestinal obstruction.
Colotomy, and sacro-abdominal excision in two stages	7	0	
Total	67	10	

* In 19 cases colotomy was also performed. This was combined with exploratory laparotomy in 10. In one instance the colotomy was immediately followed by the sacral operation, but in all other cases the operations were carried out in two stages.

TABLE II.—*After-History of the Cases that Recovered.*

Cannot be traced	4
Operated upon during the last six months	5
Alive, but with recurrent disease	2
Known to have died with recurrent disease ...	27
Died suddenly without recurrence 1 year after sacral excision	1
Alive and free from recurrence for periods of from 1 to 17 years after operation	17

In the few cases in which the exact cause of death cannot be ascertained, recurrence has been presumed.

TABLE III.—*Length of Time before Death from Recurrent Disease.*

Known to have died of recurrence at the time of the operation	3
Recurred within one year	11
" between one and two years	4
" between two and three years	4
" between three and four years...	5
" between four and five years	1

TABLE IV.—*Duration of the Life of Patients [illegible] Without Recurrence.*

After 17 years	1(*a*)
" 12½ years	1
" 9 years and 10 months	1
" 7 years and 8 months	1
" 6 years	2
" 5 years	1
" 4 years and 9 months	1(*b*)
" 4 years and 8 months	2
" 3 years	1
" 2 years	1
" 1 year	[illegible]

(*a*) and (*b*) were local resections; (*c*) two of this group were combined sacro-abdominal removals; all the others in the table were sacral excisions.

TABLE V.—*After-History of the 9 Cases of Combined Excision who Survived the Operation.*

Have been performed within 6 months	3
Known to have recurred within a year	3
Recurred after 2 years	1
Alive and without recurrence one year after operation ...	2

I feel confident that in a future series the mortality will be much lower, because of the more general adoption of the two-stage operation—exploratory laparotomy, with colotomy, followed at a later stage by sacral excision.

The Later Results.

Many years ago the work of Mr. Harrison Cripps showed the good results that often followed comparatively limited removal in favourable cases in which the bowel wall was not invaded.

One of my early operations,* Mrs. H., Register No. 599, was such a local excision, and the patient is alive and well to-day, seventeen years afterwards, and I am able to show the specimen. It shows a large malignant ulcer which was situated on the posterior wall of the bowel just within the rectum. It could easily be moved with the mucous membrane. The patient was a woman 46 years of age, and the operation was performed within two months of the onset of symptoms, so that all the circumstances justified the method adopted. It is this sort of experience which makes me hopeful that reasonably earlier diagnosis will enable conservative operations to be carried out in a comparatively large proportion of cases.

The mere statement of the number of patients alive and well does not give a fair idea of the results, and it is necessary to particularize a little in order that the beneficial results may be fully appreciated by those who have not had the opportunity of observing this class of case. Review of a few cases is well worth while, because there are still many who think that the loss of the rectum and the substitution of an incontinent anus means a life of constant invalidism.

Cases of Sacral Excision with Inguinal Anus.

*H. L. L., Register No. 3054. Now aged 77, and nearly blind; is hale and hearty almost ten years after the operation, and still goes to his place of business daily. He looks after the colotomy himself, and has no bother after the morning evacuation of the bowels, which takes place after breakfast.

*J. R., Register No. 6701–2, now aged 65, is alive and well six years after the operation. He has no trouble in regulating the bowels and no pain or discomfort; eats heartily, weighs nearly 11 st., and works regularly every day as a labourer to the blacksmiths.

J. F., Register No. 9644, now aged 63, is alive and well six years after the operation. He eats heartily, regulates the bowels easily, weighs 10 st., and works in eight hour shifts every day as a labourer in a chemical factory. He looks after the colotomy himself, and uses only a simple pad of cotton-wool and a bandage.

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* The specimens from the cases marked with an asterisk were shown at the meeting.

Cases with Sacral Anus.

*S. M., Register No. 5199, now aged 53, is alive and well seven years and eight months after operation. She has looked after a household of eight people, and now has five under her charge. She does all her own household duties, including baking and washing, and is independent enough to do paperhanging and whitewashing at spring cleaning time. Quite recently she has been away for a holiday, and she always goes out to do her own shopping. The bowels are very little trouble, and she regulates them by taking hot water; she looks after herself and uses a simple apparatus like a broad V-shaped perineal bandage.

*S. W., Register No. 8777, now aged 59, is alive and well four years and eight months after operation. He works regularly as a rivet sorter, and makes nearly £4 a week. He starts first thing in the morning and works until 5 p.m. The bowels act thrice daily after food, and as his home is near where he works he is able to return for his meals and for the attentions of a devoted wife.

*G. S., Register No. 8874, now aged 70 years and a pensioner, is alive and well four years and eight months after operation. He can walk three or four miles, and works in his garden. The bowels act about the middle of the day, and he is attended to by his wife. Not long ago he had sufficient confidence to spend the day from home between 7.30 a.m. and 5.30 p.m.

The Intermediate Health of Patients in whom Recurrence ultimately occurs.

Want of appetite, sleeplessness, and inability to acquire a good bowel habit are suggestive symptoms of dissemination or recurrence. Patients in whom the disease has returned within a year have usually never been really well after the operation. Those in whom a longer period has elapsed have often made complete recoveries and have been able to resume their normal avocations.

*One man, J. B., Register No. 8073, with a sacral anus, was the manager of a small colliery and often went down the pit, until recurrent symptoms showed themselves between two and three years after operation. Another, W. K., Register No. 1262, resumed his employment as an engine driver. * T. C., Register No. 5459, carried on a successful butcher's business until three and a half years after, when he developed a secondary deposit in the spine, which soon proved fatal. * A woman, A. R., Register No. 5581, also with a sacral anus, looked after the whole of the housework, including baking, cooking, washing, cleaning and shopping, and indeed was perfectly well until four years after operation, when she developed a recurrence, which progressed rapidly to a fatal termination.

In the cases of perineal or sacral excision local recurrence may be just on the cut margin of the bowel, and may then be amenable to further surgical interference, as in a man, G. M., Register No. 1567, who is alive and well eleven and a half years after the removal of such a recurrent growth. More usually they originate outside the bowel and soon involve the pelvic wall. They are then commonly attended with much more pain than the primary growth, and patients rapidly go downhill. Except for localized recurrences on the bowel wall, I have not seen any benefit from secondary operations other than colotomy for the relief of obstruction. In males urinary symptoms often herald recurrence, and it is well to remember that in the process of healing the base of the bladder is drawn down close to the perineal scar, and may easily be injured by an exploratory incision in this neighbourhood.

I am able to show the specimens from many of the eighteen patients who survived the operation for more than twelve months, and have had them re-examined microscopically, with confirmation of the original diagnosis of carcinoma in every case. I cannot help feeling that in some instances the result would have been the same if a conservative operation had been performed, but in cancer it is wiser to err on the side of removing too much, and it is only because the loss of the sphincter is so high a price to have to pay that one has any regret. On the other hand, in some of the patients who died of recurrence a scrutiny of the specimens makes me feel that a more thorough local removal might have led to happier results, and this is especially so in the abdomino-perineal operation.

Sacral or Inguinal Anus.—As the result of the study of many of my patients who have led useful and not unhappy lives in the possession of a sacral anus, I cannot say that an excremental outlet in this situation is much worse than one on the abdominal wall. Some patients manage wonderfully themselves, and, of course, when they can afford the services of a special nurse, or are fortunate enough to have the attentions of a devoted wife, a sacral anus may give very little trouble, and with some temperaments it is an advantage that their disability is out of sight. Nevertheless, I am satisfied that, generally speaking, the anus robbed of its sentinel is better in a position where it can be seen and attended to by the patients themselves.

The Choice of Operation.

I hold no brief for any one method, and I only want to plead:

First, that the most important part of any operation for rectal cancer is the thorough local removal of the growth with as wide an area of peri-rectal tissue as anatomical limits will allow, and at least 2½ inches of uninvolved bowel above and below the growth.

Secondly, that in a large proportion of cases this can be secured by the sacral operation with a comparatively small mortality and a fair prospect of ultimate cure, as far as this term is ever justified in connexion with carcinoma.

The operation of abdomino-perineal removal as described by Ernest Miles is intended to combine this thorough local removal with a much wider removal of the path of probable cancer invasion. In actual practice I find that so much time is spent in the abdomen and so much taken out of the patient that in consequence there is a tendency to hurry or even scamp the more important local removal. In addition, the closure of the pelvic floor often presents a difficulty wellnigh insuperable, and it has proved a serious omission, as shown by the number of cases in which the small intestine becomes adherent to the uncovered areas. Even with the greatest care the mortality has been high, and, except for any evidence that may be adduced at this discussion, I believe it yet remains to be proved that the ultimate results are better than those of the sacral operation in the hands of surgeons accustomed to practise it.

What, then, is the Best Operation to Employ?

For growths of the anal canal or just above it, *perineal excision* with removal of the groin glands at the same time.

For growths in which the finger can easily be got above their upper limit, *sacral excision*, either with a sacral anus or an independent colotomy made at the same sitting.

For all growths situated higher in the rectum, or wherever situated if combined with obstructive symptoms, *preliminary exploration* by median laparotomy with provision of a left *inguinal anus*, and at a second sitting thorough removal of the growth by the *sacral route*.

In advanced growths that are highly situated, and in which the mesorectum is involved and thereby shortened, the range of operability is greatly increased by the sacro-abdominal method. The abdomen is first explored and colotomy performed. Two or three weeks later sacral excision is carried out; and if, as often happens, there is difficulty in getting the growth down, the abdomen is reopened, and the removal completed from above right up to the colotomy.

When the colotomy is made the lower end should not be closed, because it is useful to be able to cleanse the rectum, with the growth, by irrigation. No attempt should be made to mobilize the growth at the first operation, because this is certain to be followed by exudation and adhesions before the second stage is carried out.

Up till a year ago I had only practised this operation twice, but I have now performed it on seven occasions in all without any mortality. A recent instance was a striking example of its usefulness.

*J. G. G., aged 48, Register No. [illegible]. This man presented himself at the Newcastle Infirmary with a rectal growth in November, 1919. The surgeon who saw him was doubtful as to its operability, and to settle the matter he made an examination under anaesthesia. Operation was not advised and the man was sent home. The patient was never well from that time, and two weeks later he came under my care in a private institution. I found him very ill, suffering from obstruction, and with a large rounded mass in the umbilical region. On opening the abdomen I discovered a large intraperitoneal abscess arising from the pelvis and the neighbourhood of the growth, which had evidently perforated. The latter was hard and fixed, and the mesentery appeared to be diffusely infiltrated, so that I entirely agreed with the opinion expressed as to its being irremovable.

The abscess was drained and a left inguinal colotomy made. To my great astonishment the man slowly improved, and by March, 1920, he returned, looking exceedingly well, but troubled by obstructive symptoms due to the great narrowing of the colotomy. The growth, as felt per rectum, appeared to be greatly diminished in size and more movable, and the patient was extremely anxious that an attempt should be made to remove it.

I operated by the sacro-abdominal method. Adhesions of the small intestine in the pelvis were troublesome and the growth was torn into during the process of separation. However, the operation was completed, the bowel being removed right up to the site of the colotomy, which was repaired and made terminal. The patient made an entirely uninterrupted recovery and left the hospital three weeks afterwards. The growth proved to be a columnar-celled carcinoma. He is now, three months after the operation, in good health and about to start work again.

The Sacral Part of the Operations for Rectal Cancer.

The procedure which I employ is that practised with such success by Professor Hochenegg of Vienna, and I am glad that I had the good fortune to see him perform the operation in April, 1912.

Only the coccyx and the fifth and perhaps fourth pieces of the sacrum are removed, and the section is made in a curved manner, so as to spare as much as possible of the sacro-sciatic ligaments. When it is intended to remove the whole of the rectum, the anus with the surrounding skin, the levatores ani muscles, right up to the white line and all the peri-rectal structures in the hollow of the sacrum, are taken away; in fact, everything but the bladder with the prostate and seminal vesicles and the main vessels and nerves which hug the pelvic walls. The peritoneum is always opened, and is later sutured by interrupted stitches to the bowel. If a sacral anus is not intended, an attempt is made to close the bowel just below the point at which the peritoneum has been attached. Sometimes this is difficult, and in any case, I always bring a tube from this site to the surface of the wound. This ought never to be omitted, for it is surprising how often mucus finds its way to the surface, even after apparently successful closure.

Complications of the Sacral Operation.—In difficult cases wound infection and sloughing of the bowel may occur. These are to be treated by at once laying the wound open, and it heals by granulation very quickly. An attempt should always be made to repair injuries to the urethra, bladder, or ureter, but it is surprising how urinary fistulae ultimately close spontaneously. Retention of urine is very common, and may be long continued. The bladder must be carefully watched, and if the urine is not voided within twelve hours, a catheter should be passed, because the bladder may become dangerously distended without the patient making any complaint, and some of the deaths have followed urinary sepsis which began in a paretic bladder. Once I saw slight incontinence of urine. Prolapse and perineal hernia both occur, but are rare; I have only twice seen stricture of the sacral anus.

The Range of Operability.

In my opinion no attempt should be made to remove in cases in which there is definite dissemination.

Mere local fixidity is not in itself a contraindication to successful removal. In this matter the situation of the growth is important. When it originates on the posterior wall of the rectum, even involvement of the structures on the front of the sacrum and coccyx need not deter the operator. Sometimes this fixation is septic only and the result of cellulitis. With a growth on the anterior wall fixation becomes of much more significance. Involvement of the prostate is always serious, but does not necessarily mean a bad result, and I have one case alive and well five years after operation in whom the whole prostate and the stalk of the seminal vesicles were removed.* There was a urinary fistula for six weeks, but this ultimately closed spontaneously. I have not as yet operated when the bladder wall was so invaded that the growth fungated into the viscus.

One should not be in a hurry to declare that a case is inoperable, and every doubtful case should be examined under anaesthesia. When there is neither evidence of dissemination nor prohibitive local extension the patient should always have the chance that an exploratory laparotomy may bring, and it is extraordinary how a hopeless-looking condition may improve after colotomy. This has been shown in several cases. In one man, what appeared to be an irremovable growth in October so much improved that in January a sacral excision was carried out, and the patient is alive and free from recurrence eighteen months later.

Mere size of the growth is no more a bar to successful extirpation than is long duration, and I believe that slow-growing tumours that have attained a large size are often an evidence of a good resistance.

Cases with peritoneal nodules in the vicinity of the growth are not favourable.

The use of radium after preliminary colotomy may bring some growths within the range of operability.

I have not found that exploration through the sacral incision is useful, for having gone far enough to determine that the growth is inoperable, it is difficult to abandon the operation without risk of serious sloughing and infection.

Conclusions.

1. The treatment of rectal cancer can never be considered satisfactory as long as the disease is so far advanced as to necessitate operations which leave an incontinent anus.
2. Improvement can only come through much earlier diagnosis and consequent surgical treatment.
3. The thorough local removal of the growth and surrounding tissues with 2½ in. of uninvolved bowel above and below its margins is more important than the removal of the upward path of probable cancer invasion.
4. The best operation for the majority of cases as met with to-day is exploratory laparotomy with colotomy, followed by sacral excision.

J. P. Lockhart-Mummery, F.R.C.S.Eng.,
Senior Surgeon to St. Mark's Hospital for Diseases of the Rectum.

It is interesting to look back at the changes that have taken place in the surgical treatment of cancer of the rectum during the last twenty years. Twenty years ago the excision of the growth was purely local, and was performed without any attempt to secure asepsis, and little, if any, to restore the functional condition of the parts. The operation was only undertaken when the growth was low down near the anus, and when it was comparatively small and confined to the bowel wall. The results of such operations were often dreadful; healing was a very slow and tedious matter with severe sepsis, and was usually followed by serious stricture. Moreover, only a small proportion of the patients suffering from cancer of the rectum were submitted to operation at all.

In looking at the improvements that have taken place, the first noticeable one is the much more extensive resection now performed. Local excision of the growth, if we except a very few exceptional cases, is now not practised. The almost universal practice now is to completely resect the entire rectum, together with the neighbouring lymphatic glands and fat, and there can be no doubt that this practice gives a much greater guarantee of freedom from subsequent recurrence. Further, improved technique now enables us to remove growths arising in any part of the rectum, and, providing extension has not taken place into important organs such as the bladder, we can successfully remove growths which have spread beyond the rectal wall, and which twenty years ago would have been considered quite inoperable. Modern technique also aims at securing an aseptic wound, and although one must admit that owing to the very great difficulties encountered we still have occasional failures in this respect, at the same time it is now becoming the rule for the wound to run an aseptic course, and the exceptions are becoming less and less numerous.

I was one of the earliest surgeons in this country to practise the abdomino-perineal operation, and I am still performing it in special cases, but although it gives the most extensive removal I soon found that there were very serious objections to it as a routine operation. The mortality, which was at first very high, was by experience and improved technique very much improved, but it still remains to my mind far too high and is a very serious objection to this operation. A very large number of the patients suffering from cancer of the rectum are old people, and cannot undergo a long and severe operation; moreover, the operation is exceedingly difficult and dangerous in a stout man, and such cases form a fair proportion of those which have to be treated.

I became disgusted with an operation the mortality of which could not be kept much under 30 per cent., and for the last eight or nine years I have been trying to devise a technique which, while giving a free removal of the growth, will enable one to reduce the mortality to a reasonable limit. I still use the abdomino perineal route in cases where the growth is very high up, or where a very extensive removal is called for, but for some years I have given it up as a routine operation, and believe that it should only be used in exceptional cases. The improvement which has resulted in my mortality since adopting this practice has been so considerable as to more than justify my belief. During the years 1915 to 1918 I used my new technique in 65 cases, of which 37 were hospital cases and 28 private cases. There were 4 deaths among the hospital cases and none among the 28 private cases. A most satisfactory feature was that during 1918, when my assistants and I had gained more experience with the technique, the mortality in the 24 cases performed during the year was *nil*. I think this is the lowest mortality that has ever been obtained from complete resection of the rectum. Patients are out of bed in two weeks after the operation, and in a great many cases the wound is healed in two or three weeks.

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* Specimen shown at the meeting.

One great advantage, however, of the improved risk has been that it has enabled one to resect the rectum in cases which would have been considered inoperable if any other method of operation had been adopted. For instance, I have not hesitated in the last three years to perform complete excision of the rectum in patients as old as 73 I have had four patients over 70 who have come quite successfully through the operation, and twenty of the patients were over 60 years of age.

It has also enabled one to operate upon patients successfully who have some complicating disease, which would previously have been considered a complete bar to operation. Thus one patient with Graves's disease, two with bad chronic bronchitis, and one with old-standing locomotor ataxia, came through the operation without any trouble at all.

It has long been my view that no operation for cancer of the rectum can be considered satisfactory unless it can be used with a reasonable degree of safety where the patient is a bad operative risk, as a large proportion of patients suffering from cancer of the rectum are necessarily poor risks owing to fat, age, or other diseases, and that the best operation is that which will give the greatest good to the greatest number rather than that which is most satisfactory from a purely surgical point of view.

This operation is suitable in any case where the growth is at the anus or anywhere in the rectum, but it cannot be performed for growths at the recto-sigmoid junction, for which the abdomino-perineal operation is still the one of choice.

Operation.

The operation is usually performed in two stages, but this is not essential, and I have often performed the whole operation at one time.

The first operation consits of a preliminary colostomy through the left rectus muscle, performed under gas and oxygen and local anaesthesia. At the same time the liver and abdomen are examined for secondary deposits. The colostomy is opened two days later and the lower bowel thoroughly washed out.

The second operation is generally performed a week later. The patient is not starved at all, and a light degree of twilight sleep is induced with scopolamine and morphine previous to operation. The operation is performed in the left semi-prone position under spinal anaesthesia. Frequently no general anaesthetic at all is given. If one is administered gas and oxygen alone are used. In the case of a man a No. 8 gum-elastic catheter is tied into the bladder. The first step in the operation is to close the anus with a stout silk ligature passed on a needle subcutaneously. After this the parts are cleaned up and the surgeon puts on his gloves. The incision starts at the base of the coccyx and passes forward to surround the anus. The coccyx is removed by disarticulation and the rectum freed by dividing the levatores ani on each side and then separating it in front from the [illegible] of the prostate and the bladder, [illegible]. When the peritoneum is reached it is opened from in front and [illegible] to the surface. All the fat and glands in the hollow of the sacrum are freed, together with the rectum. The mesentery is clamped off and [illegible] clamps are applied to the bowel [illegible] [illegible]. The bowel is divided between these with a thermo-cautery and the rectum removed. The end of the sigmoid is then invaginated with a catgut Lembert suture. The vessels are all tied off and the wound is completely closed without drainage.

This operation takes from thirty-five to forty-five minutes, and is absolutely unaccompanied by any shock. One important departure from common practice in the after-treatment is that patients are fed on ordinary solid food from the start. The patient is generally out of bed in fourteen days, and able to return home in about three weeks. This operation has proved exceedingly safe, and has done away with any tedious convalescence. Provided the anaesthetic is properly managed, old patients seem to stand it very well indeed.

Recurrence.

With regard to the question of recurrence, I think that statistics are very misleading, as so much depends upon the type of case operated upon. One of the advantages of a safe operation, such as that I now perform as a routine, is that one can operate upon "border-line cases" and give them a chance. This one would not do with the abdomino-perineal operation. I have performed the operation described in about 100 cases, and the results as regards recurrence to date have been quite as good as in those treated by the abdomino-perineal excision.

Conclusions.

The general points in the operation are:

1. The anus is sealed up before the operation field is prepared.
2. The rectum is freed from in front and from the perineum upwards.
3. The peritoneum is opened from the front of the rectum.
4. The bowel is divided with a cautery between clamps, and the end invaginated.
5. The wound is closed without drainage.

It might be supposed that the blind portion of bowel below the colostomy would be a serious trouble. I have, however, never seen any serious trouble from this cause. Owing to the much shorter period of convalescence, and to the fact that the patients are out of bed so soon, the disability resulting from the operation is very much less than with the abdomino-perineal operation.

I think that for all ordinary cases of cancer of the rectum this or some similar operation should be performed, and that the abdomino-perineal operation should be reserved for cases of growth at or above the recto-sigmoid junction.

A. H. Burgess, F.R.C.S.,

Manchester.

Mr. A. H. Burgess thought it would clear the ground if the operations generally admitted to be unsatisfactory—perineal resection, vaginal resection, and abdomino-anal operation—were eliminated from the discussion and attention focussed on the only two procedures worthy of consideration—the extensive perineal excision (as described in Series IV of Miles) and the abdomino-perineal. All attempts to preserve sphincteric control, or even to leave a sacral anus, were to be deprecated as not allowing of sufficiently free local removal. A permanent abdominal anus was part of the price every sufferer from cancer of the rectum must pay if he hoped for a cure. As between these two procedures, on all anatomical and pathological grounds, and from analogy with operative treatment of cancer elsewhere, particularly in the breast, there was no doubt that Miles's operation of abdomino-perineal excision was theoretically and logically the better. The theoretically best is not always, however, the most successful in actual practice. Certain factors made him hesitate to accept it as a routine procedure: (1) Its severity and consequent high mortality. Miles's average for all cases was 34.2 per cent., and for the first series of 12 cases 40 per cent. If this represented the mortality in the hands of the most experienced exponent of this operation, with the average general surgeon it would be still higher. Mr. Burgess would therefore hesitate to submit a patient to such an immediate risk. (2) The knowledge of cases alive and well many years after a perineal excision. The most extensive sacral perineal excision he had performed, where the growth had extended to the peritoneum of Douglas's pouch, which was widely excised along with it, was alive and well to-day, eight and a half years after operation. In contrast with this he could not help comparing the earliest case of carcinoma of the rectum he had met with clinically, where the growth was about the size of a shilling and freely mobile, and which was operated upon by Mr. Miles by his abdomino-perineal operation, and yet recurrence took place locally within twelve months. These considerations led him to believe that, until the abdomino-perineal operation could be made safer, the better procedure was a preliminary abdominal exploration through a left paramedian incision with establishment of a permanent colostomy; and, if the conditions were found to be favourable for a radical operation, followed in a fortnight's time (during which the colon below the colostomy was daily flushed out) by a wide perineal excision along the lines indicated in Miles's Series IV.

Charles Ryall, F.R.C.S.,

London.

Mr. Charles Ryall said that the two different types of operation described by Messrs. Miles and Turner, and the results, emphasized the fact that it was inadvisable to teach that one particular form of operation was the necessary treatment for all cases of the same malady. Age and other factors had to be considered in the case of each patient, and it was well for the surgeon to exercise a judicial mind before deciding what should be done. Taking the case of a man with rectal carcinoma, whose age was 65, it would be found that insurance tables showed that for a healthy man of this age the expectancy of life was ten years. Were no radical operation carried out and the case treated medically, he might expect to live for three years or more, and with a colostomy perhaps longer, whereas, did he undergo a radical surgical procedure, an operation mortality of 30 per cent. had to be faced, and should he survive this, he again had to face a recurrence mortality of perhaps 50 per cent. All these facts had to be weighed carefully by the surgeon before advising operation, so that each case should be dealt with on its merits.

The Miles method was an operation devised as the result of experience; it was based on pathological findings, skilfully and scientifically planned so as to place the operation on the same plane as that for cancer of the breast, and it would be advocated universally were the operation mortality as low as that of less effective measures. It was undoubtedly the ideal operation for rectal cancer, and the operation mortality, as was the case with all new major operations, would in time be reduced.

Mr. Ryall said that six out of the first sixteen cases of vaginal hysterectomy seen by him died after operation for uterine cancer, and only one out of twenty-seven in the next series. Nowadays abdominal hysterectomy, in spite of it being a more serious operation, was carried out with comparative safety. In seeking for the cause of death too much importance was attached to anaesthesia and too little to sepsis. Every case of rectal carcinoma suffered more or less from chronic intestinal obstruction, partly as the result of blockage caused by the growth, and partly because the growth caused neoplastic or inflammatory invasion of the bowel wall, and thereby a break in the peristaltic wave, by interfering with the neuro-muscular mechanism necessary for peristalsis. Colostomy and drainage of the bowel was therefore advisable before operation, and this procedure not only minimized sepsis but it also freed the growth from the constant irritation, and thereby from inflammatory fixation, and often rendered it more mobile.

Mr. Ryall hoped that Mr. Miles would not be deterred by the failures in his pioneer work, and that he would bravely fight on until he had results consistent with his great advance in the surgical treatment of rectal cancer.

Herbert H. Brown, O.B.E., M.D., F.R.C.S.,

Surgeon to the East Suffolk Hospital.

It is with some diffidence that I address a meeting of this kind, as my experience of operation for removal of cancer of the rectum is comparatively limited; and, after hearing what Mr. Miles has told us, I feel that I must have done many things which I ought not to have done, have left undone things which I ought to have done, and there should be no health in my patients. But I can assure you that a considerable proportion of the patients upon whom I have operated, generally by the Kraske method, during the past fifteen years are alive and in good health. I have been much struck with the comparative freedom from recurrence in cases of cancer of the bowel after operation, and have here a specimen of caecum, ascending colon, and half the transverse colon, containing a carcinoma of the size of a small cauliflower which I removed ten years ago. The patient is at the present time in excellent health.

I feel that it is a very great advantage to retain the external sphincter if possible.

Seven years ago I operated on a young woman of 25 who was five months pregnant and was suffering from a carcinoma of the posterior wall of the rectum of about the size of a five shilling piece. The lower border of the growth was about an inch from the sphincter. I commenced the operation as a Whitehead's operation for haemorrhoids, cutting through the bowel wall above the sphincter, freeing the rectum and dividing about an inch above the growth. I brought down the upper segment to the skin of the anus within the sphincter. The patient went to full term, and had a living child. When I examined her a year later she had a perfectly normal rectum, with complete control, and no sign of recurrence. Unfortunately she was then suffering from splenomedullary leucocythaemia, from which, no doubt, she has since died.

Three weeks ago I operated on a man of 60 with a carcinoma of the upper part of the rectum at the level of the sacral promontory. The lower edge of the growth could just be reached with the finger per anum. I commenced the operation by the abdominal route, dividing the bowel at the lower part of the sigmoid and closing each end. I separated the distal portion of the sigmoid and rectum from the sacrum, dividing the mesorectum as near the sacrum as possible. After freeing the bowel as far as possible from above I pushed it down into the pelvis and freed the peritoneal attachments of the sigmoid. A very slight division of the mesosigmoid (as far from the bowel as possible) was sufficient to liberate a portion ten inches long sufficient to reach to the anus. I sutured the peritoneum to this on each side high up, so as to close the floor of the pelvis. I then proceeded to remove the lower partially freed portion of rectum and sigmoid per anum, making an incision around the anus as for a Whitehead operation, cutting through the wall immediately above the sphincter, and freeing the rectum from its attachments as far as possible with the finger. I divided the levator ani between forceps, finally bringing the bowel outside through the anus, and I divided the remaining portion of mesorectum, and removed it. The portion removed is here shown with the carcinoma *in situ*. It comprises the whole of the rectum and part of the sigmoid, and is about 10 inches long. The cancer, situated just above the peritoneal attachment to the rectum, extends for about two-thirds of the circumference, but does not appear to invade the muscular wall, and there was no obvious glandular infection. The sigmoid was brought down within the sphincter, opened, and sutured to the skin. The patient, so far, is making a good recovery; there was considerable shock for about four or five hours, which had completely passed off before the next morning. He has already some sphincter control, and I hope in course of time it may be complete.

Sir C. Gordon-Watson, K.B.E., C.M.G., F.R.C.S.,

London.

When the British Association of Surgeons met in London last month I asked Sir Berkeley Moynihan what operation he employed for excision of the rectum. He stated, in reply, that he had changed his mind more often with regard to the surgical treatment of cancer of the rectum than with regard to any other surgical subject. This statement is, I think, good evidence that the surgical treatment of carcinoma of the rectum is not yet stabilized. There is no doubt that the operative treatment of cancer of the rectum is one of the most important outstanding surgical problems of the present time. I think we are all agreed that the conclusions at which Mr. Miles has arrived on pathological grounds are most convincing, and that the method of operation which he advocates represents a high surgical ideal and is one which we would all willingly employ if the mortality could be further reduced. Unfortunately, the human equation plays havoc with high surgical ideals.

It was early in 1909 that my friend Mr. Ernest Miles invited me to visit the Cancer Hospital and see his new method of excision by the combined route. I went, I saw, I admired, and I was convinced: the operation appealed to me as an ideal radical method. In April of that year I performed my first abdomino-perineal operation by Miles's method, and from 1909 to August, 1914—that is to say, until I went to the war, I excised the rectum by this method 32 times with 11 deaths. Since the war I have performed the same operation twice (for high growths) with one death (pulmonary embolism) and a perineal excision with preliminary colostomy 10 times with 2 deaths. Since the war I have employed either spinal anaesthesia or gas and oxygen separately or combined in all cases of excision, and I have had no trouble from shock. My mortality and Miles's mortality for the abdomino-perineal operation are approximately the same—about 34 per cent. Owing to five years' absence at the war I have been unable to trace the after-history of all the cases that recovered, but I know that 10 of the 21 are dead, and I only know of 5 that are certainly alive. The remainder have not been traced. Leaving out the untraced cases, this gives a recurrence mortality of about 66 per cent.

When I returned to civil practice after the war, and had ascertained that the abdomino perineal method with its heavy operation mortality did not confer a high immunity from recurrence, I felt that it was time to reconsider my attitude towards the operation. I consulted my colleague at St. Mark's, Mr. Lockhart-Mummery, and found that during the period of the war he had given up the abdomino-perineal method for growths below the recto sigmoidal junction, and had adopted a very free excision from below after preliminary colostomy. His operation mortality was about 7 per cent., and the recurrence mortality of his early cases appeared to be no worse than after the abdomino-perineal operation. I then argued that if 93 patients recovered out of 100 after this operation, and if one-third of these escaped recurrence, 31 would ultimately survive. On the other hand, if 100 patients were operated on by the abdomino perineal method 66 would survive the operation, and if one-third of these escaped recurrence, only 22 would ultimately survive—that is, a final mortality of 88 per cent. against 69 per cent. If the recurrence mortality of the perineal operation is as high as 75 per cent., the final results of the two methods would be about the same. It is well known that many operable cases are unsuitable for the abdomino-perineal operation on account of age or excess of fat, or some other disease. Many of these can be dealt with by the perineal method under spinal anaesthesia with comparative safety. I therefore decided to employ the perineal method with preliminary colostomy until it could be shown that the final results of this method were not so good as the final results of the abdomino-perineal, reserving the abdomino-perineal method for all growths at or about the recto-sigmoidal junction which cannot be satisfactorily removed by the perineal method.

If we are to make real progress in the operative treatment of this disease, it is essential that the general practitioner should endeavour by more frequent rectal examinations to establish a diagnosis at an earlier stage than is usually the case. During the year 1919, 47 new patients attending the out-patient department of St. Mark's Hospital were diagnosed as suffering from carcinoma of the rectum, and in no fewer than 42 of these—that is, 89 per cent.—the growths were diagnosed as fixed and inoperable. Until the results of our operations can be based on the operative treatment of comparatively early cases, not only will the material be insufficient on which to draw reliable conclusions, but we shall always be handicapped in arriving at conclusions from the final results of any particular method of operation by the uncertainty of the condition of the glands at the time of operation.

HAMILTON DRUMMOND, M.B., F.R.C.S.Ed.,

Newcastle.

I would venture to endorse the view of Mr. Turner and offer the opinion that every operation undertaken for cancer of the rectum should aim at a thorough local removal as the most essential part of the operation, whatever variety of operation or procedure may be decided upon. I base this opinion upon two considerations: first, the common observation that cancer very frequently recurs locally—that is to say, in tissues outside the bowel in relation to the primary growth by the lymphatics; and, secondly, upon some microscopical work I did upon the spread of cancer of the rectum. This investigation I commenced before the war, and I took up the work again a few months ago. In all, I examined ten specimens, removed in each case by operation, not from post-mortem cases, and they were all the common type of growth found in the rectum (columnar carcinoma). The object of the inquiry was, I need hardly say, to make out the line of invasion along which the cancer cells spread from the original growth. I may say at once that observations from serial sections cut in these few cases failed to demonstrate any spread of cancer up and down the bowel wall, but on the other hand showed that the spread from the primary growth was by direct extension outwards through the bowel wall to the lymphatics in the adjacent mesentery. If this be so—and I think I am correct in my assertion—it would follow that it is most important to take plenty of time over the local resection.

It appears to me that we have not laid sufficient stress upon the type of individual in selecting our class of operation; for example, to perform an abdomino-perineal operation on a person—say a thin woman—with a broad shallow pelvis is an easy and safe undertaking, whereas in a stout muscular man with a narrow pelvis and a tight mesentery it may present great difficulties, and be followed by very grave shock or even a fatal result.

One more point I would like to mention refers to the difficulty in attempting to predict the result of operation, from the stage of the disease. For example, a case on examination may present signs of old-standing mischief—fixity of the growth by extension to the surrounding structures, and other indications of advanced local mischief, all of which are in keeping with a long history—and yet the patient may do well after operation so long as there are no signs of distant dissemination. I might, perhaps, be allowed to allude to one example which upset all our calculations.

A stout lady, aged 62, had left colostomy performed for chronic intestinal obstruction due to highly situated cancer of the rectum which was said to be irremovable. The operation was done by dividing the sigmoid colon about its middle, closing the lower end and returning it into the abdomen, the upper end being brought out to form an artificial anus. The patient remained well for six months, and was entirely free from all serious trouble except the discharge of mucus from the anus occasionally. At the end of this time she began to have pain associated with increasing anal discharge and haemorrhage. She came under the care of Professor Rutherford Morison one year after the colostomy had been performed. The malignant growth of the rectum was found to invade the posterior part of the vaginal wall and was fixed to the uterus, but apparently not immovable behind. Above the growth the gut was distended by septic contents which discharged at intervals, giving rise to relief for a short while. There were no signs of secondary deposits. The growth, though very extensive, still appeared to be local. The patient consented to operation, which was performed in January, 1911. The coccyx was removed and the posterior vaginal wall divided. The whole of the rectum, up to the colostomy, the uterus, and portion of the posterior vaginal wall were removed. Microscopic examination showed that the growth had invaded the glands in the mesentery and in the vaginal wall, and was very extensive in the bowel wall itself. It is now more than nine and a half years since this operation was done, and the patient still remains well and free from recurrence.

Good results in such long-standing cases show that cancer of the rectum is capable of undergoing natural cure in the same way as other forms of cancer, as is perhaps most commonly seen in cancer of the breast.

R. H. JOCKLYN SWAN, O.B.E., M.S., F.R.C.S.,

London.

I TAKE it that everyone will agree that the aim and object in operating for malignant disease is the entire eradication not only of the primary growth, but of the area likely to be infected by the disease, whether by direct continuity or by lymphatic spread. Mr. Ernest Miles has clearly demonstrated the lines in which extension may take place, and the pathological work done by Dr. Leitch on specimens which I have personally removed, entirely bears out what Mr. Miles has maintained. From my experience of these cases I look upon the upward zone of spread in the mesorectum and the pelvic mesocolon in the lymphatic area between the intermuscular lymph space and the pararectal and mesocolic lymphatic glands, as of greater importance than either middle or lower zone, though these are areas which must be removed. It is doubtless an experience of all of us, in commencing an operation on a case which from clinical examination appears to be early and one eminently suitable for removal, even where the actual growth is limited to only a portion of the circumference of the bowel and is movable on the muscular wall, to find that lymphatic extension has already occurred into the pelvic mesocolic area, that the glands may be definitely infected, or, even more rarely, that there may be a metastatic deposit in the liver, which would compel one to abandon any idea of radical removal. This has been my experience in at least six cases, and the lesson it teaches is that every operation designed for the radical removal of a cancerous rectum should commence with a thorough abdominal exploration. In this way I find myself at considerable variance with Mr. Grey Turner, who appears to regard the local spread of malignant disease of the rectum by direct continuity as of more importance than through the lymph stream, and who also states that the disease remains strictly local for a comparatively long period. Nor can I agree with him that it is sufficient to divide the bowel two and a half inches above the growth.

In any criticism of the various operations which have been described it is necessary to have clearly in one's mind which is the one that will give the patient the best chance of both immediate and ultimate recovery, and the best chance of putting him into a position to earn his livelihood should such be necessary for him. Taking as our standpoint the proved anatomical and pathological lines of spread of the disease, there can be no doubt that any operation of limited extent, as by perineal or trans-sacral route, is useless, as is shown by the figures produced by Mr. Miles. Something more radical is necessary, and I venture to assert that no operation which does not remove the greater part of the pelvic colon together with the pelvic mesocolon and lymphatic area cannot give that promise to the patient that Sir Berkeley Moynihan said yesterday he had a right to expect from his surgeon. It seems to me doubtful if the zone of upward spread can be eradicated by any operation conducted by the sacral route unless combined with a direct attack from the abdomen, when this area can be more thoroughly dealt with under direct observation; whilst, in addition, the arterial supply of the lower bowel can be ligatured at an early stage of the operation.

I cannot advocate an abdomino-anal operation by which the descending colon is mobilized from above and brought down and sutured to the anus, for I maintain that the contents of the ischio-rectal fossa and the levatores ani muscles must be removed to eradicate a potential area of recurrence. Any such procedure would leave the patient with an incontinent sacral anus, and I must say that in my experience a patient is left much better off with an artificial anus in the inguinal region than with an incontinent sacral opening. With very little attention, an inguinal colostomy opened through a muscle-splitting operation can be kept free from any but very slight inconvenience.

For these reasons I strongly advocate in the majority of cases attack by the abdomino-perineal method, and have closely followed Mr. Miles's technique. I am aware that the high immediate mortality has been urged against the operation, but with increasing experience and with the improved methods of preliminary preparation and anaesthesia of the patients, I am sure this can be materially improved. In my own practice I have performed the operation eleven times. These cases range between the ages of 30 and 70 years, but two of them have only been operated upon during the last twelve months. Both are, so far, well and are at work. Of the remaining nine two have died of recurrence—one a year after the operation, from recurrence in the liver, and the other two years after the operation, from a slow recurrence extending from the perineal scar into the buttock. In this last case local recurrence was noted a year from the operation but spread in spite of further operation. After death there was, on *post-mortem* examination, complete absence of any visceral recurrence. In this case I was unfortunate enough to rupture the bowel at the seat of growth during the perineal part of the operation. One case I am unable to trace, but I know that he was alive and doing his full work eighteen months after the operation. The remaining six cases are all perfectly well. I have seen them all recently, and find no evidence of any growth at intervals of five and a half years, of six years (in two), of seven and a half years (this patient was aged 70 at operation), of nine years, and of eleven years. Thus, even assuming the untraceable case to have died of recurrence, this leaves a percentage of 66 per cent. alive and free from recurrence at periods from five and a half years to eleven years after the operation. In these eleven cases there was complete freedom from immediate mortality. I think even these few cases justify the view that the abdomino-perineal operation gives the patient the best chance of ultimate cure. It is admittedly a severe operation, especially in a feeble patient, and may present physical difficulties in a stout patient. In these circumstances, and with a growth placed quite low down in the rectum or involving the anal canal, a sacral operation after a preliminary colostomy might be advisable. Certainly each individual case must be considered from every point of view, but I feel that the abdomino-perineal method holds out the greater promise of radical cure.

D. P. D. Wilkie, O.B.E., Ch.M., F.R.C.S.,

Assistant Surgeon, Edinburgh Royal Infirmary.

Mr. Wilkie thought that most surgeons would agree with Mr. Grey Turner that the ideal toward which to strive was the detection and diagnosis of the disease in such an early stage that resection with the preservation of the natural sphincters would be justifiable. The immediate question, however, was whether anything approaching a unanimous decision could be given on what should be the standard operation in the relatively late but still operable stage of the disease. The majority of surgeons had decided, he thought, that the operative treatment should consist of two essential parts—a preliminary and permanent inguinal colostomy, followed by a free, deliberate and anatomical removal by dissection of the rectum and perirectal tissues from below. The essentials were to get an operation which was thorough and yet reasonably safe. When at the first operation the pelvis was explored and the extent of the growth determined, the lower portion of the pelvic colon should be pulled downwards to test its mobility in that direction. Lack of mobility would usually be found to be due to a vascular pedicle containing the descending branch of the inferior mesenteric artery. Division of this vessel high up between two ligatures would appreciably increase the mobility of this part of the pelvic colon, and allow of its being drawn down at the second operation without fear of compromising the blood supply of the stump which would be left. It was advisable in many cases to allow the patient a respite of two or even three weeks between the colostomy and the second operation. The improvement in the patient's general condition during this period of rest was often most pronounced.

The dangers associated with the second operation were shock and sepsis. The risk of the latter could, he believed, be reduced by utilizing the interval between first and second operations in immunizing the patient by two or more injections of a mixed *B. coli* and streptococcus vaccine, followed on the night before the second operation by subcutaneous injection of 8 c.cm., or better, 10 c.cm., of a 2 per cent. isotonic solution of nucleinic acid to produce a leucocytosis. He had shown experimentally that an animal's resistance to peritoneal infection could be increased two-fold by this preliminary treatment, and he had no reason to suppose that it was not equally helpful in infections of cellular tissues. The shock associated with the second operation could be minimized by free exposure of the parts in the exaggerated lithotomy position, the removal of the coccyx and lower two segments of the sacrum, the systematic isolation and ligature of the main blood vessels, and the avoidance of all forcible traction on the rectum and its suspensory ligaments. On opening the peritoneum, the lower part of the pelvic colon should come down readily, and after being cut across 2 to 3 inches above the growth the end should be closed by inserting a suture such as that used for the closure of a duodenal stump. The operation described was substantially that practised in Sir Harold Stiles's clinic in Edinburgh, and he believed that it fulfilled the conditions of the standard operation in being radical and yet reasonably safe.

General Discussion.

Dr. **Charles Mayo** (Rochester, U.S.A.) did not distinguish cancer of the rectum essentially from cancer in other parts. He frequently had difficulty in deciding clinically between the hard glands of cancer and the ordinary infected inflammatory glands. In young people rarely would a case be cured, no matter what the situation of the cancer. Cancer in the right side of the colon was held back for a longer time than cancer in other parts of the colon, because of the absence of glandular infection. He advocated the combined abdomino-perineal operation, employing the electric cautery knife for complete resection. He pointed out that in operating on cancer it had to be kept in mind that it was a chemical condition which stimulated cell life, and was not necessarily a bacterial stimulation, and these derangements of cell growth were due to alterations in the chemistry of the life of the cell.

Sir Hamilton Ballance (Norwich) was strongly of opinion that a local excision of the rectum could not be considered satisfactory without removal of the whole rectal apparatus. He always performed inguinal colostomy. Patients would have to submit to an artificial anus in the inguinal region; it was the price they had to pay for their disease and its successful removal. A person with inguinal colostomy was not necessarily one who suffered any very great discomfort.

Replies.

Mr. Grey Turner, in replying to the discussion, said that he had never expressed a hope that any manipulations would enable them to save the sphincter, unless the cases were sent at an earlier stage than formerly. He had hopes that if surgeons got cases in the earliest stage they would be able to carry out operations which would preserve the sphincter. Complete local removal of cancer of the rectum was of extreme importance; he found that in following the guidance of Mr. Ernest Miles in doing the combined abdomino-perineal operation so much time was spent in the abdominal part of the operation that the perineal or sacral part of the operation was apt to be scamped. He regarded the local removal as that part of the operation which was of more importance than that which dealt with a probable cancerous invasion in the upper glandular zone.

Mr. Ernest Miles said that there were still two schools—one claiming the abdomino-perineal method, and the other adhering to the lower route. There was no question about the great necessity for complete and thorough local removal. He would like to go a step farther. For fourteen years he had practised thorough removal, leaving nothing but the bones and the bladder, and still recurrences happened, and these recurrences happened in a region absolutely out of reach by operation from the perineal route. The radical operation included the upward zone or spread, and, in his view, the clearing out of that area was just as important as clearing out the axilla in cancer of the breast. His original mortality was due to (1) sepsis, and (2) faulty anaesthesia; by sepsis he meant not only contamination of the peritoneum, but also sepsis taking place in the interior of the large intestine. Before the radical operation was performed, drainage of the bowel should be established for some weeks by means of a temporary colostomy. By that procedure the bowel was drained, and there was not the same danger of septic absorption which was a fruitful cause of death. As regards anaesthesia, many cases succumbed to chloroform poisoning and he had adopted spinal anaesthesia with gas and oxygen. He looked to the time when the mortality would be materially reduced—say, to the same level as that which prevailed in hysterectomy.

Closing Remarks by the President.

Sir George Makins, President of the Section, in bringing the business of the section to a close, congratulated the members on a very excellent meeting. He could not recall any occasion in past meetings of this Section in which there were more excellent speeches or more excellent material produced, so that the interest and attention of the audience were never allowed to flag for a moment. He thought that the Section could not have been better served than it had been by the [illegible]. With regard to the policy of those responsible for the meeting, he thought they had to express very great satisfaction that the Section was not confined entirely to the usual lines of general surgery, but was permitted to have the benefit of papers by Sir [illegible], Mr. Tilley, and [illegible] Elliot, whose papers, while on a subject belonging to limited sections of surgery, really belong to the whole science of surgery. He thought that great advantage would follow from this policy and from the opportunity they had had of hearing men with special knowledge on these subjects. He thought that the introduction of these specialties was a good thing in another way, as it brought them before a larger audience. There was only one disadvantage in bringing those special subjects before the Section of General Surgery, and that was, that to the experts they appeared to be so very easy that the general surgeon might be tempted to think that they really were as easy as they appeared.

OXYGEN INFLATION OF THE PERITONEAL CAVITY FOR RADIOGRAPHIC PURPOSES.

(*With Special Plate.*)

BY

J. E. H. ROBERTS, O.B.E., M.B., B.S., F.R.C.S.,
ASSISTANT SURGEON, ST. BARTHOLOMEW'S HOSPITAL; SURGEON, BROMPTON HOSPITAL FOR DISEASES OF THE CHEST.

The method of distending the peritoneal cavity by oxygen gas, which was introduced by Weber in Germany, followed by Rautenberg and Goetze in Germany, Stewart and Stein in America, and Alessandrini in Italy, has proved to be of great value in exact clinical diagnosis.

By allowing the separation of the liver and spleen from the diaphragm, it has enabled the outlines of these organs to be seen clearly for the first time. By compressing and displacing the empty intestines it enables the other solid viscera and abdominal tumours to be examined.

Method.

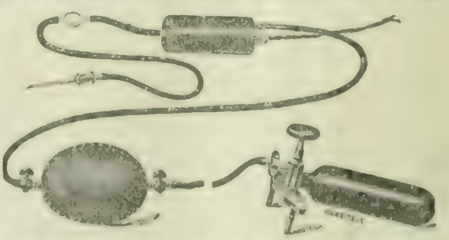
The procedure I have adopted is as follows:

1. *Preparation.*—In order that the intestinal tract shall be empty the preparation of the patient is begun forty-eight hours before the examination. Castor oil is given on two successive evenings, followed on the first occasion by an enema next morning. On the day of the examination no solid food is taken and no enema given. An hour before ⅙ to ¼ grain of morphine is injected.

2. *Inflation of Peritoneum.*—A point about 1 in. below and to the left of the umbilicus is chosen, and with a very fine needle a track down to the peritoneum is anaesthetized with 1 per cent. novocain. Along this track an ordinary lumbar puncture needle is inserted. It is quite easy to identify the anterior and posterior layers of the rectus sheath with the point of the needle, and when the posterior layer is felt the needle is slowly pushed on about ¼ in. and inflation is begun. Messrs. Coxeter and Co. have made for me an inflation set, which consists of an oxygen cylinder, a 1½ gallon rubber bag enclosed in a net with vulcanite taps at each end, an apparatus for warming the gas by means of an electric lamp, a glass tube with a bulb for sterile cotton wool to filter out bacteria, and a connexion which plugs into a lumbar puncture needle. The part from the glass tube to the needle can be boiled. The bag is first filled with oxygen and the connexion is plugged into the needle, which has been introduced into the peritoneal cavity. Slight pressure on the bag now causes the gas to run into the peritoneum. The pressure is continued until the abdomen is markedly distended, when the needle is withdrawn. It is not necessary to measure the amount introduced, but an [illegible] that is, about half a bucketful. [illegible]

3. [illegible]

If the gas is not removed it is slowly absorbed, the process not being completed for five to six days as a rule.



Dangers and Discomfort.

Dangers.—The objections to the method are largely theoretical, and no ill consequences have occurred in the fifty cases I have inflated, nor in any of the many cases of which published records exist. The dangers which may be anticipated are:

1. *Puncture of the Intestine.*—In practice it is found that live gut always gets out of the way, though it is easy to puncture the intestine in a cadaver.

2. *Puncture of veins* in the omentum or mesentery with consequent gas embolism or bleeding. This has not occurred.

3. *Infection of Peritoneum.*—It is unlikely that mere puncture of gut by a fine needle would lead to infection and the carrying in of a punched-out piece of skin is avoided by the use of a sharp needle with an obturator.

Discomfort.—About half the patients complain of no discomfort. Pain in the right shoulder, due to the falling down of the liver and drag on the diaphragm, is often felt. It can be minimized by keeping the patient recumbent, and is at once relieved by lowering the head and raising the pelvis. In only two of my patients has it been at all severe. The removal of the gas at the end of the examination is important, as it at once relieves the pain in the shoulder and any discomfort from distension. Several private patients have returned home by train immediately after deflation, and have stated that they were quite comfortable.

The site of injection has been chosen with some care, though in cases with abdominal adhesions it may have to be varied. By puncturing through the rectus muscle one is enabled to determine the proximity of the peritoneum by feeling the posterior layer of the rectus sheath. By choosing a spot below and to the left of the umbilicus the omentum may be avoided.

Positions for Radiography.

For various organs different positions must be adopted. The ones which have given most information are as follows:

1. Patient supine: (*a*) Rays from below; (*b*) rays from the side.
2. Patient prone: Rays from below.
   This is the most generally useful position for the solid organs and gives a wonderful view with the screen.
3. Patient upright: Rays from behind.
   This position is rarely necessary and is very uncomfortable. It may be used to demonstrate visceroptosis.
4. Patient lying on side: (*a*) Rays from below; (*b*) rays from the side.
5. Trendelenburg position. Prone or supine. (For the pelvic organs.)
6. Occasionally other positions—for example, semi-lateral or knee-elbow—may be necessary.

Results.

The spleen is readily seen and its size and contour demonstrated. The liver is also easily examined in various profiles and its ligaments become visible. The gall bladder, if enlarged, is seen and calculi are readily shown if opaque. If translucent calculi are present, they are seen as translucent areas within the gall bladder shadow, as they are more translucent than the tissues or bile they displace. The kidneys are seen in their whole extent, though they appear a vertebra lower than normally. The situation of calculi within the organ is clearly made out. Intra-abdominal tumours can be clearly made out and their attachments defined. The female pelvic organs are visible, though at present it is difficult to distinguish between a solid ovarian tumour and a uterine fibroid. Abdominal adhesions are often clearly shown. Tumours of the stomach, colon, and urinary bladder may be demonstrated by combining this method with inflation of the cavity of the organ concerned. The lumbar vertebrae are more distinctly shown than by the ordinary methods and a psoas abscess shows very clearly.

It has been suggested that the diagnosis between subphrenic abscess and empyema could be readily cleared up by obtaining the separation of the liver from the diaphragm, and that possibly obscure hernias such as obturator hernia could be accurately diagnosed.

The technical details of the radiography will be dealt with by the radiographers. The accompanying plates were taken by Drs. N. S. Finzi, Dudley Stone, Martin Berry, and H. T. George. I am indebted to my colleagues at St. Bartholomew's Hospital for the opportunity to inflate many interesting cases.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ENCEPHALITIS LETHARGICA.

Since this disease is likely to become more prevalent, I think it is desirable that notes of cases should be carefully taken and recorded, with a view to analysis for diagnostic purposes. In my notes of the following case I regret the absence of the results of lumbar puncture, and of blood examination. In other recorded cases, however, these examinations have not disclosed much that is important. The urine showed nothing unusual.

A muscular man, aged 49, of good health and habits, saw double on May 11th. He consulted me on May 12th solely on account of this symptom. Otherwise he felt quite well. Examination showed binocular diplopia on looking downwards. Pupil reflexes, the extrinsic ocular muscles, and patellar reflexes, were normal. A report from an eye hospital on May 13th stated that there was "paresis of the superior oblique."

I was informed on May 14th that he was not so well, and was weak, very silent, and somewhat changed in manner and appearance. I visited him on May 15th and insisted on his going to bed. Temperature: Morning, 102.4°; evening, 101.4°. Pulse: Morning, 120; evening, 98. Respirations: Morning, 20; evening, 26. Binocular diplopia present; ptosis left eyelid; sweating very general; flexibilitas cerea; Kernig and Babinski signs positive. Ocular conjunctiva congested; pupillary reactions to light and accommodation positive but sluggish. Mask-like face.

May 16th: General condition as on preceding day. Drowsy, but easily aroused. The following day a high enema was found necessary; still drowsy. On May 18th he was perspiring freely; tache cérébrale present; disappearance of diplopia.

May 19th: Tache cérebrale. Intellect clear; can recall with unexpected accuracy, having regard to his stuporous appearance, the date and circumstances of his first feeling ill. He can close his eyelids, but cannot open them. If I *initiate* the act for him by gently lifting the lids, he can complete the opening; this I repeatedly confirmed.

May 20th: Enema given for constipation; general symptoms as on the previous day, but more lethargic. Sweating of face (especially over chin) and of hands. General wasting of whole body and also of face. Digital pressure over the intercostal spaces in mid-axillary line, both sides, elicits pain. Similarly there is tenderness to digital pressure over the lateral branches of the posterior rami of the thoracic nerves, at a short distance from the vertebral spines.

May 21st: Sweating general, especially profuse over beard area. The next day ptosis of left eyelid more noticeable; no nystagmus, rotatory muscles of eyes acting normally.

May 23rd: Sweating freely, great wasting. No longer ptosis of left lid. Tongue, which hitherto was very dry and not easy to see (owing to inability to open the mouth satisfactorily), moister and better projected. Sweating on the chin area greater than on any other part of the face.

May 24th: Sweating freely. Incontinence of urine. Slight ptosis of right lid; lagophthalmos.

The following day the bowels, hitherto much confined, moved naturally. *Opening* and closing of eyelids is under voluntary control. Since May 19th he has been unable to open his eyelids without my initiating the action for him.

May 26th: Bowels moved naturally. Slight ptosis of right eyelid, as yesterday; recession of right eye. Opening and closing of lids under voluntary control. Pulse very weak. For the first time since illness cough is present. On examination of the lungs, hitherto repeatedly negative, there is dullness and bronchophony at right vertebral border and left base. Patellar, epigastric, cremasteric reflexes, hitherto present, now abolished. Babinski's sign negative; Kernig's sign present, as hitherto. Notable epigastric distension; great prostration, wasting, and sweating. Tache cerebrale, present since the eighth day (May 18th), is now faint, and comes and goes slowly. Sweating over beard area not so marked. Buttocks very red. Complains of pain in left wrist—no signs. First interossei and thenar eminences much wasted on both sides. Voice very low and indistinct. Pupils "half-way"; light reflex abolished; slight twitching at angles of mouth. Intellect clear; he made all arrangements for his funeral. Had a "bad turn" at midnight, no convulsion. Death in state of coma on May 27th (the seventeenth day). Temperature before death 106°. The temperature from May 15th onwards had varied between 100° and 103°, and had been almost invariably higher in the morning than in the evening.

The leading symptoms in this case were: (1) Binocular diplopia the first symptom; "mask face"; ptosis of variable extent. (2) The entire absence of pain. (3) Lethargy and flexibilitas cerea. (4) Profuse sweating and rapid wasting. (5) Constipation, until towards the end. (6) Pyrexia moderate in range, but of the *inverted type;* at the end, hyperpyrexia. (7) Notwithstanding the lethargy, the patient was at all times easily aroused, and responded to questions with surprising accuracy and quite rationally.

In conclusion, I wish again to allude to the very strange symptom of his being able to close, but not (without help) to open, his eyes during the great part of his illness. There had been no influenza in his home.

J. J. Hanley, M.R.C.S., L.R.C.P.Lond.,
Motherwell. M.D.Boston.

HYDATIDIFORM MOLE: PERFORATION OF UTERUS.

E. J., a single woman, 27 years of age, was admitted to hospital on September 20th, 1920; she gave a history of profuse and continuous "flooding," beginning when a menstrual period was due and lasting for four weeks. After the "flooding" had been going on for a fortnight her abdomen began to swell, and she experienced severe and continuous hypogastric pain. Her monthly periods had been previously quite regular and there was nothing in her history to suggest pregnancy either past or present.

On examination the patient was found to be very anaemic; she was said to be "losing" considerably. The abdomen was distended, tender and rigid, and the lower half was dull on percussion. The rigidity prevented effective palpation. Vaginal examination was difficult and unsatisfactory, but the cervix was found to be soft and the os closed. The breasts were not enlarged and there was no uterine souffle. On account of the acute abdominal signs it was decided to operate at once. When the abdomen was opened the peritoneal cavity was found to contain a very large quantity of clotted blood. The uterus was enlarged and resembled exactly that of a six months pregnancy. No bleeding point could be found until the uterus was turned forward out of the wound, when a small, almost pinhole, perforation was discovered on the posterior wall; immediately around the perforation the uterine wall was very thin and soft. Hysterectomy was performed and the abdomen closed as quickly as possible. The operation was well borne and recovery has been uneventful. When the uterus was cut open after the operation it was found to be completely filled by a large hydatidiform mole. The uterine wall was greatly thinned in places and particularly so around the point of perforation.

The interesting features of the case seem to be (1) the extremely rapid development and (2) the difficulty or impossibility of making a correct diagnosis prior to operation.

London, S.E. R. C. Harkness, F.R.C.S.Eng.

A CASE OF GONORRHOEAL MASTITIS.

We were consulted on June 30th, 1920, by a married woman, who stated that she was seven months pregnant, and had knocked her breast six or seven weeks previously; the breast had become swollen, and "burst" a fortnight ago.

On examination we found a [illegible] the size and shape of a [illegible] the upper and outer quadrant of the breast. [illegible] and that pus was escaping from [illegible], separated by a narrow bridge of tissue about [illegible] from the nipple. A smear was taken of the pus. To [illegible] it was found to contain gonococci; the pus cells [illegible] typical Gram-negative diplococci. Two days [illegible] the bridge of tissue between the sinuses and [illegible]. At the same time we found that the patient was suffering from acute urethritis and vaginitis, with [illegible], which also contained very [illegible] with Gram-negative diplococci [illegible], so that the [illegible] had a [illegible] more than [illegible] weeks [illegible] followed by [illegible] at [illegible] intervals, four [illegible] of a [illegible] from the breast [illegible]

The [illegible] that we were dealing with a case of [illegible] breast [illegible] the case worthy of note.

W. H. F. Oxley,
London, E. J. [illegible]

Reports of Societies.

DECAPSULATION OF THE KIDNEY.

A meeting of the Urological Section of the Royal Society of Medicine was held on October 28th, with Sir Peter Freyer, President of the Section, in the chair. A paper was read by Sir Thomas Horder on decapsulation of the kidney (printed in full at p. 727), and Mr. Victor Bonney described a new operation for fixation of the kidney. The President, in opening the discussion on decapsulation, congratulated the Section on the excellence of the paper given at this the first meeting of the Section.

Sir D'Arcy Power gave a summary of his experience of decapsulation. He confessed that at first he had been disappointed in the results obtained, his original series of operations having been performed on middle-aged and elderly patients. The cases upon which Sir Thomas Horder had asked him to operate were of a younger class and the results had been far better. With regard to the operation itself, there was little to be said; no particular difficulties had been encountered.

Mr. Frank Kidd reported the results of four cases of decapsulation. Of these one had been permanently cured, two markedly relieved, and one temporarily improved, but subsequently suffered a relapse. He had not yet made up his mind as to what type of case was most suitable for operation. He operated with the patient lying on his face, and stripped the kidneys while in position without any dislocation. It was doubtful how decapsulation acted, but he suggested that to some extent it was a question of drainage; the lymphatics of the kidney run from the capsule towards the hilum, and decapsulation might well remedy a block in lymphatic drainage.

Dr. Lewis Smith said that it was most important to discover the right type of case for decapsulation. In one of his more severe cases changes in the fundus oculi were found, yet it had undoubtedly improved. He thought that nephritis accompanied by considerable oedema, but without marked cardio-vascular changes, was the most likely to benefit from operation. It must always be borne in mind that sometimes this very type of case got well apart from any particular treatment, and it might sometimes happen that improvement would occur, not on account of, but in spite of, decapsulation.

Sir Nestor Tirard suggested that in the two cases reported by Sir Thomas Horder with a low blood pressure there may well have been cardio-vascular changes. Mr. Gwynne Williams reported two cases which had benefited by decapsulation; marked improvement had occurred in the excretion as the result. Dr. Geoffrey Evans said that it was most important to obtain more than a clinical picture of the type of case suitable for decapsulation. He suggested that, as it was an easy matter to remove a small fragment of renal tissue at the time of operation, it would be highly advantageous to add histological to clinical data.

Dr. George Graham put forward a plea for the chemical investigation of these cases. It was particularly desirable to test the following: diastase in the urine, urea in the blood, and urea concentration. The addition of this knowledge would be most valuable in helping to arrive at a decision as to suitable cases for operation.

The President closed the discussion by reference to a case in which he had performed decapsulation. The operation had been followed by a rapid increase in the amount of urine passed, but the improvement was temporary, the patient's life being prolonged only six weeks.

PATHOLOGICAL DISLOCATION OF THE ATLAS.

At the first ordinary meeting of the session of the Liverpool Medical Institution, held on October 28th, Mr. F. [illegible] reported a case of pathological dislocation forward of the atlas and showed diagrams illustrating the position of the bones before and after postural treatment.

The patient was a boy of 10. The symptoms on which the diagnosis had been made were [illegible] pain, rigidity of the neck, [illegible] beneath the occiput, and [illegible]. The cause of the dislocation was [illegible] of the atlas [illegible]. A [illegible] diagram taken through the open mouth showed some lateral deviation of the odontoid, probably due to unequal yielding of the atlo-axial ligaments. The treatment in the first place consisted in placing the patient supine, and supporting the cervical spine forward by means of a rounded wooden support. The weight of the head as it hung over this support dragged back the atlas into position, and produced immediate relief of symptoms.

The prognosis in atlo-axial disease, if detected in time, was good; if not detected, the condition was apt to end fatally and suddenly by compression of the medulla by the odontoid. Photographs and diagrams illustrating the condition were shown.

Dr. **Oram** explained the radiogram, and referred to the difficulty of getting a photograph through the mouth owing to the mechanism used for immobilizing the neck. A film was utilized instead of a plate for the purpose. The film, being flexible, could be moulded to the curve of the pillow, and was thus in contact with the back of the neck.

Colloidal Preparations.

Dr. R. W. **MacKenna** read a paper on some experiences in the use of colloidal preparations, based on two years of clinical observation. After a short review of the history of colloidal medication and of the character and methods of preparation of colloidal solutions, he detailed some interesting clinical observations. His conclusions were that in colloidal solution of manganese a very remarkable addition had been made to our equipment for dealing with suppurative processes, while colloidal sulphur might claim certain advantages over any other preparation of sulphur available in therapeutics. He did not think that colloidal preparations of silver possessed any special advantages over the older preparations of silver used with discretion and knowledge. Colloidal copper he had found to be quite useless in cases of inoperable malignant disease, and he was firmly persuaded that colloidal mercury would never displace the other older forms of that drug. Colloidal iodine had certain advantages. In the concluding part of his paper he sought to explain upon what the peculiar therapeutic properties of colloidal preparations depend. This was still obscure, and many attempts at explanation had served only to make the obscurity darker still. Dr. MacKenna was of opinion that much of their value depended on the state of extremely fine division in which the particles of the "disperse phase" were found. This afforded, relatively to the mass of the drug employed, an enormous surface area for contact between the tissues and the remedy, and at the same time supplied to the system a dépôt of medicament from which slow, constant, and progressive absorption in the form of true solutions might take place.

The first meeting of the 1920–21 session of the Nottingham Medico-Chirurgical Society was held in the society's rooms on October 27th, with Dr. **Blurton**, president, in the chair. Dr. H. C. **Cameron**, physician in charge of Children's Department, Guy's Hospital, delivered the inaugural address of the session, the subject being "Children in general practice." At the close of the meeting the lecturer was cordially thanked for the interesting manner in which he dealt with some of the problems which arise in dealing with the more common disorders of children.

The inaugural meeting of the South-Western Ophthalmological Society took place on October 22nd, at the Bristol Eye Hospital. Numerous cases were shown in the morning, and the members lunched together at the Grand Hotel. Mr. Richardson Cross was elected first president, Mr. Roper of Exeter and Mr. Coulter of Newport vice-presidents, and Dr. Stack secretary. Mr. **Cross** explained the objects of the society. He advocated informal discussions on general ophthalmic topics which would interest not only oculists, but also physicians, surgeons, and general practitioners. Mr. **Roper**, in the afternoon, opened a discussion on "The causes of iritis," laying special stress on the subject from a clinical as well as from a pathological point of view. He drew attention to the influence of damp as a predisposing cause, as exampled by a valley in his neighbourhood, from which he had noticed for a long time that patients, especially after operation, were more prone to inflammatory troubles than those in other parts of the county, and also to the good results which were obtained in very dry climates abroad. The discussion which followed was very general and very interesting. The society already numbers over fifty, and there were present at the meeting members from Bath, Exeter, Weymouth, Newport, and Cardiff.

Reviews.

BIOLOGICAL PRINCIPLES.

The late Professor **Doncaster** called his last book *An Introduction to the Study of Cytology*,[1] but it is much more than that. It contains, it is true, a full summary of modern knowledge about the structure of the cell, its divisions, maturation, and fertilization, but the author has grafted upon this summary discussion relating to most of the fundamental questions of biology. From his earliest chapter, which includes references to such things as the theory of karyoplasmic strain as a possible cause of cell division, he loses no opportunity of presenting his facts as illustrations of general principles, or foundations of theories; and for this we are grateful to him, for cytology is one of the more highly specialized biological sciences, and its technical difficulties are hardly less formidable than its technical vocabulary. Indeed, we doubt whether anyone without a great gift for writing clear English could contrive to produce a Cytology of interest to the general reader.

The most interesting part of the book, and the part in which the author was probably most interested himself, discusses the mechanism of inheritance, and particularly the theory of the individuality of the chromosomes. It will be remembered that in 1915 Professor Doncaster published a book entitled *Determination of Sex*, in which he marshalled the facts which lead many to believe that the difference between male and female is due to the presence of a supernumerary chromosome in one sex or the other; at the end of that book he turned upon this theory and rent it. It appears that before the publication of the book now under review he more definitely adopted the view that "x chromosomes" were the actual visible determinants of maleness, or femaleness; he went further than this, for he regarded the Mendelian segregation of characters and the phenomenon of sex-limited inheritance as a consequence of the maturation divisions of the germ cell. In fact, he came to believe that many of the appearances which the cytologist observes in the fixed and stained cell are but the visible expression of the fundamental laws of life.

We are surprised to see no reference to the results of "cell dissection." If certain recent American authors are to be credited, as we believe they may be, it is possible not only to push the nuclear membrane of a living cell in front of the point of a needle, but even to catch hold of individual rays of an aster, and draw particular chromosomes out of the egg. It is obviously of the very highest interest that such cell-organs as the nuclear membrane and the rays of the aster should admit of handling in the living cell; at any rate, it is proof that these structures are not due to the action of the cytologist's fixatives.

Most of the plates are borrowed from original papers, and represent actual structures as they are seen in this or that organism. Such illustrations are of more value than diagrams, which attempt to present to the eye a summary or collation of the structures which would be seen if a number of types could be examined simultaneously.

EARLY SURGERY IN GREAT BRITAIN.

The Early History of Surgery in Great Britain: its Organization and Development, forms the fourth volume of the Medical History Manuals, and has been written by Dr. **George Parker**,[2] Physician to the Bristol General Hospital and author of various historical articles—for example, the Barber-Surgeons and Medical Organization and the Growth of Medical Sciences in the Seventeenth Century. The period covered in this scholarly and well written volume now before us is from A.D. 1000 to 1850, and its chapters deal with the successive centuries. The author is in full sympathy with the ancient writers, and points out that their methods and aims were not so absurd as passages frequently quoted from them, and often selected for their ridiculous character, might suggest; many of their methods, after a period of disuse, have come into modern vogue; and very possibly our technical language and hypotheses will appear no less quaint to future generations. Thus, Henri de Mondeville of Paris (1260–1320) bid fair to anticipate Lister by 700 years, but his successors fell away in the search for applications to heal a foul wound directly—that is, for antiseptics—which contemporary science was unable to provide. The text is not rigidly restricted to events in this country, for the changes in European surgery necessarily influenced the progress of that art and science in Britain. The development of surgery in this country falls into four main periods—the first following the growth of universities and hospitals in Europe during the twelfth century; the second due to the great Renaissance and the elaborate educational system of the barber-surgeons in the sixteenth century; the third which sprang from the revival of hospitals and the commencement of hospital schools, and clinical teaching in the eighteenth century; and, lastly, the present period, rendered possible by anaesthetics and the discoveries of Pasteur and Lister, which, however, is outside the scope of this book. In tracing the origin of medical and surgical societies, which in the nineteenth century played such a prominent part in advancing post-graduate study, the incorporation of the Royal Society at Oxford in 1662 is mentioned with the remark that "of this opportunity physiologists and chemists quickly availed themselves, and even surgeons from time to time brought forward the results of their observations." The influence exerted severally by the universities, the barber-surgeons, and the hospitals is carefully analysed, and the chief British surgeons receive separate biographical notices. Within a comparatively small compass Dr. Parker has concentrated a large amount of most interesting material set out in an attractive manner.

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[1] *An Introduction to the Study of Cytology.* By L. Doncaster, F.R.S. Cambridge: The University Press. 1920. (Demy 8vo, pp. xiv + 280; 30 figures, 24 plates. 21s. net.)

[2] *The Early History of Surgery in Great Britain.* By G. Parker, M.A., M.D. London: A. and C. Black. 1920. (Cr. 8vo, pp. 204, 8 illustrations. 7s. 6d. net.)

PHYSICAL RECONSTRUCTION AND ORTHOPAEDICS.

The book of Dr. Harry Eaton Stewart, late a member of the Division of Orthopaedics, U.S. Army, on *Physical Reconstruction and Orthopaedics*,[3] is intended to be a condensed manual which should "be of value to the physician, reconstruction aide, physical director, and orthopaedic assistant." It contains useful information which should be of value to those who are not able to study thoroughly the various subjects dealt with. We are heartily in agreement with the writer in his insistence on the importance of turning the lessons of the war to good use in the future. That they should not be forgotten is even more important in the United States than elsewhere, for while the United States Military Medical Service had to treat about 200,000 wounded, the annual total of industrial accidents in peace amounts to some 700,000. These should be treated as carefully and as thoroughly as we believe was the case with the war casualties.

The section on massage calls for little comment, but it would have been helpful if more precise indications had been given—for example, in the case of the heart. The chapter on vocational therapy contains a good deal that is both interesting and useful, but the first four chapters of the second part on orthopaedics are disappointing, particularly that on infantile paralysis, which, coming from the United States, where there has been such an unfortunate wealth of clinical material, might have been expected to be of special importance. The tables of exercises designed to develop paretic muscles are, however, of value. The section on flat foot and other foot troubles is of interest, embodying the experience of army surgeons, who, as is known, devoted much attention to these troubles, to which the United States citizen seems to be peculiarly liable.

There is a glossary at the end of the book, which may be of use when it has been corrected. We would offer as contributions to its revision the remarks that "valgus" does not mean "turned in," nor "varus" "turned out"; that "-ostomy" does not mean "to leave opening into"; and that "to cut into" is hardly an accurate rendering of the suffix "-otomy."

CHEMISTRY OF THE BLOOD AND URINE.

In their monograph *The Newer Methods of Blood and Urine Chemistry* Gradwohl and Blaivas[4] insist that chemical analysis of the blood far surpasses in value the most intricate qualitative and quantitative urinary analysis, and that the two methods supplement each other, the blood analysis giving information about the retained products of metabolism. Urinary analysis may be said to estimate organic changes in the kidney, whereas a chemical examination of the blood supplies information about the minutiae of renal function from a pathological-chemical and a pathological-physiological point of view. Thus renal diabetes, in which there is simply glycosuria possibly due to unusual permeability of the kidneys for the normal blood sugar and never to hyperglycaemia, cannot be distinguished from diabetes without a comparative blood and urine analysis; again, in uraemic nephritis and thermic fever the creatinin content of the blood has a prognostic significance which a urinary examination cannot provide. The authors also bring forward a number of case records proving the value of chemical examination of the blood in distinguishing cardio-vascular cases with secondary renal disturbance from primary nephritis with secondary cardiac changes.

This volume contributed by laboratory workers summarizes the advances in urinary and blood chemistry. It is divided into three parts: (1) The technique of blood chemistry; (2) the chemical analysis of the urine; and (3) the blood findings and their interpretation. The last and much the largest section will attract the general reader, who will find a clear presentation of the most recent work, much of it by American investigators; there are separate chapters dealing with blood sugar, acidosis, blood changes in gout, and blood chemistry in nephritis. An account of basal metabolism, which is very much to the fore in America, especially in connexion with exophthalmic goitre, has been added for this reason, although it is rather outside the scope of this monograph, the description being taken from Dr. J. J. R. Macleod's *Physiology and Biochemistry in Modern Medicine*.

NOTES ON BOOKS.

Dr. Gilbert E. Brooke has published a volume entitled *Medico-Tropical Practice*,[5] which is a second edition, with a new title, of a book he published in 1908. Many alterations have been made; some of the old chapters have been omitted, new chapters have been inserted, and the matter has been rearranged. Tropical surgery and hygiene, as well as tropical medicine proper, are dealt with, and the practical aspect of matters is emphasized. The work as a whole is good and the book can be recommended to students, for the immense mass of information it contains is, for the most part, accurate. It is almost inevitable that it should not be quite up to date; we find, for example, no account of Noguchi's leptospira in yellow fever, nor of Dobell's work on the amoebae, nor of intravenous injections of antimony in bilharzia disease; these omissions, however, are necessary for the student during his instruction for the diploma in tropical medicine and hygiene. Valuable as the book is, the next edition will be still more valuable if subjected to a thorough revision in the light of modern discoveries. A great point in its favour is that it is not too long and discursive, a common fault in the larger manuals on tropical medicine.

Sir Francis Darwin has published this year another book of graceful essays, whose title, *Springtime*,[6] is taken from the heading of the first paper. It is a collection of studies in literature and natural history, and forms a companion volume to *Rustic Sounds*, by the same author, which we had the pleasure of noticing two or three years ago. These twelve essays deal with "a number of things": old musical instruments, the nomenclature of fiction and of English plants, Sir Norman Moore's history of St. Bartholomew's Hospital, the author's childhood at Down, the thirty years' diary of Thomas Hearne who was a contemporary of Newton, Charles Dickens's personality, leaf-fall and the blossoming of flowers, and the life and works of men as far apart as Sydney Smith and the scientists Hooker and Airy. In his handling of subjects so diverse the author shows the wide range of his interests and sympathies, and that mastery of lucid statement which seems to belong by birthright to every member of the Darwin family. It is a pleasant volume for a quiet evening by the fireside.

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[3] *Physical Reconstruction and Orthopaedics.* By Harry Eaton Stewart, M.D., Captain Medical Corps, U.S. Army. New York: Paul B. Hoeber. 1920. (Demy 8vo, pp. [illegible]; 64 figures. $3.75 dols. net.)

[4] *The Newer Methods of Blood and Urine Chemistry.* By R. B. H. Gradwohl, M.D., and A. J. Blaivas. Second edition, revised and enlarged. London: Henry Kimpton. 1920. (Roy. 8vo, pp. 415; 75 figures, [illegible] plates. [illegible] net.)

[5] *Medico-Tropical Practice. A Handbook for Medical Practitioners and Students.* By G. E. Brooke. Second edition, revised throughout and rewritten. London: C. Griffin and Co., Ltd. 1920. (Fcap. 8vo, pp. [illegible]; 8 figures, 2 plates. 18s.)

[6] *Springtime and other Essays.* By Sir Francis Darwin. London: John Murray. 1920. (Cr. 8vo, pp. 212, illustrated. 7s. 6d. net.)

In *The New Children*,[7] by SHEILA RADICE, we find an excellent appreciation and description of the work of Dr. Maria Montessori, whose name as the founder of a method of child education is now a household word. Put very briefly, the Montessori system aims at allowing the child's mind to develop naturally without being pressed into unnatural forms. It will be remembered that Dr. Montessori first approached the study of normal children through her medical studies of defective children. Having evolved a system for educating defective children, and finding that, trained in this way, they could compete with their normal brothers and sisters, she was led to the conclusion that there must be something wrong with the system of training the minds of normal children. She has now, we learn, entered upon an investigation of babies, believing that most is to be learnt about children's minds by studying them from birth. Mrs. Radice is a whole-hearted worshipper at the shrine: "What the world has to learn from Dr. Montessori," she declares, "is not only how to treat little children properly—it is a new philosophy of life. Of this philosophy she has as yet given her students but a fraction, from which they are endeavouring to build up the rest for themselves." When Dr. Montessori visited England last winter, this distinguished member of our profession was entertained at a public dinner, with the President of the Board of Education in the chair, and Mrs. Radice prints an account of the speeches as an appendix to this interesting little book.

MAURICE LEVEL, whose *Crises*,[8] or short stories of mystery and horror, have been admirably translated from the French by ALYS EYRE MACKLIN, was a medical student, and so, as the late H. B. Irving writes in a sympathetic introduction, acquired the knowledge of and sympathy with real suffering which gives to some of the most tragic of his tales a true human touch. Among the twenty-six selected from the 700 *contes* written by M. Level for *Le Journal*, all are enthralling, and some, such as "A Mistake" (in diagnosis) and "Under Chloroform," have a medical setting. Perhaps the nearest approach to them in English is to be found in Miss Louise Heilger's *Tabloid Tales*, and just as their success led to *More Tabloid Tales*, so we may hope for a further selection from M. Level's thrilling short stories.

If we were to assert that where three doctors are gathered together there is one fisherman, it would probably be an under-estimate, therefore there will be a large medical audience for Mr. ERIC PARKER'S well chosen *Angler's Garland*.[9] Angling has a larger literature in English than any other sport, and much of it reaches a high level, so that the task of selection is not easy. Mr. Parker has judiciously cast his net wide, over some five centuries, and it is curious that his earliest extract, from the *Boke of St. Albans* (1486), contains implicitly the apology for their devotion which anglers have expressed since with infinite variety in prose or verse. The angler is told that a fish may, indeed, break him, but "yf he faylle of one he may not faylle of a nother . . . but yf there be nought in the water." But even if he do "yet atte the least he hath his holsom walke, and mery at his ease, a swete ayre of the swete sauoure of the meede floures: that makyth hym hungry. He hereth the melodyous armony of fowles." Also the angler ought to get up early to fish, and this "shall cause hym to be holy, and to the heele of his body. . . . As the olde englysshe prouerbe sayeth in this wyse, who soo woll ryse erly shall be holy, helthy, and zely." All later apologies for angling are variations on the same theme. The book is well printed, neatly bound, and of convenient size.

MEDICINE AND THE LAW.

ADDRESS BY LORD JUSTICE ATKIN.

THE Presidential Address before the Medico-Legal Society was delivered on October 19th by Lord Justice ATKIN. After expressing his appreciation of the honour done by the society, the President said he proposed to restate, from the point of view of his own judicial experience, the object of the society and the close relation existing between the medical profession and the legal profession, with some reference to the practical issues which arise in the course of the administration of justice. Lord Justice Atkin continued: There can be no question, I think, that both branches of the professions—two of what used to be called "the learned professions"—are constantly brought together in the administration of justice, and with the same object—the desire, at any rate, to help to elicit the truth. The result of our being brought together is that there is a large body of medical and surgical knowledge applicable to the elucidation of the issues which are determined in the courts of justice. I assume that that would not be a very incorrect definition of the scope of what is known as medical jurisprudence. I have been very much impressed with the extreme importance to the State that those who take a part in the administration of justice should be really informed upon these particular topics. Doctors are constantly called upon to give evidence in courts of law, and nothing can be more painful than the state of a man who is brought to give evidence upon a particular topic, and to see, as one does sometimes, the man giving evidence to the best of his knowledge on a subject about which he considers he really does know something, and yet to find himself—I don't like to use strong language—turned upside down by a member of a different profession who happens to have a very special knowledge, or has got up a very special knowledge, of the subject. It is not only a matter which is painful to the witness, but might prove sometimes damaging to his career. And in the same way nothing can be, as I often notice, more distressing than to see a young man, entrusted with a brief for perhaps the first time, having to fight against the defence of an expert medical witness, who counters him at every blow, and he is quite incapable of making the real point he wants to make. To both branches of the professions knowledge from the professional point of view appears to be of importance. But I think, if one remembers for a moment the occasions on which medico-legal knowledge has been brought to bear, its value is still more apparent, remembering that the tendency undoubtedly is for the medical evidence to be brought more and more prominently forward in the trial of certain issues. The tendency certainly is to emphasize the effect of physical conditions upon conduct, and rather to express motives in the terms of pathology.

I suppose one might say that, dealing with the criminal law—offences against the person—medical evidence is usually and, in a large percentage of cases, absolutely necessary. That is to say, a medical man is called in to give evidence on one side or the other in all the offences that could be comprised under charges of murder, manslaughter, wounding with felonious intent, or otherwise, all forms of assault, charges of rape and all sexual offences—a very large category, and unfortunately one that tends to fill the calendar of our courts of justice. In dealing with this particular topic one may say this, that the tendency on the part of judges is to regard a medical man who gives evidence, not as an advocate put forward by one side to establish the case, but as an officer of justice there to help the court to elicit the truth, and I think it is of extreme importance that expert witnesses should remember that that is their position. But, at any rate, the judge is entitled, I think, to rely upon the medical man to state fairly the medical facts that bear on the case. And certainly there is nothing more discouraging than to feel that the doctor is anxious to avoid making any admission which, in his opinion, would be likely to be dangerous to the prosecution. Doctors are very fair, and are quite prepared to make any admission that they fairly can make in the course of the case, and I feel satisfied that is the real attitude in which a medical man called in a criminal case ought to approach the matter.

Well, a man may be called on at any moment of his life after he starts practice to take part in any of these charges

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[7] *The New Children.* Talks with Dr. Maria Montessori. By Sheila Radice. London: Hodder and Stoughton, Ltd. 1920. Cr. 8vo, pp. xv + 169. 4s. net.)

[8] *Crises.* Tales of Mystery and Horror done into English from the French of Maurice Level. By Alys Eyre Macklin, with an introduction by H. B. Irving. London: Erskine MacDonald, Ltd. 1920. (Cr. 8vo, pp. 248. 6s. net.)

[9] *An Angler's Garland of Fields, Rivers, and Other Country Contentments.* Compiled by Eric Parker. London: P. Allan and Co. 1920. (Fcap. 8vo, pp. 312. 6s. 6d. net.)

I have mentioned. That which comes prominently to one's mind is charges of murder. From the professional point of view, I cannot help saying that I think a great deal too much interest is attached to murders and murderers. My experience of them is that, on the whole, they are not an interesting class of men, and as a whole they deserve very little sympathy. And the ordinary charges of murder that are made are, in the main, charges in which the facts, and certainly the medical facts, are not interesting at all. It is only occasionally that doubt arises which can be solved only by medical evidence. As a rule, unfortunately, the facts are too plain for dispute, and the only question that arises is, with what motive the man committed the crime. Therefore I am inclined to think, when dealing with questions of medical jurisprudence, that it is possible to attach too much importance to matters which involve questions of life and death—not that the issue itself is not very important, but that from the ordinary medical practitioner's point of view I suppose it is a very small percentage that have to give evidence in such cases. But it is of course essential that there should be qualified persons who are able to give the court, in the most difficult questions, their assistance. There are, however, important questions that arise from time to time, and I suppose that any practitioner, if not brought face to face with an ordinary case of murder, might very often be called upon to deal with the suggestion of child murder, and it is most important, I think, that a medical man should be able to form a just opinion in cases of that kind. In addition to that, in nearly any murder case, if a doctor is called he would have to deal with the question of insanity, and probably he is the only person who would have to deal with it.

In a murder case the prosecution is in the hands of the highest authorities, and it always is considered necessary to call a doctor in order to prove that the act alleged against the person was the cause of death, however obvious the fact may be. In a hopeless case the only possible defence as a rule is that of insanity, and the counsel for the prisoner is sure to have to cross-examine the doctor as to whether the accused is sane or insane. Therefore the doctor must be prepared to deal with it. It is a matter of extreme importance that the doctor shall be able to maintain his view of the matter. Then there is the question of wounding with intent. Unless one has some experience of a criminal court one would not appreciate how often charges are made of wounding, and the great issue that has to be determined, certainly in indictable offences, is whether the wounding is felonious or not, that is, whether it was done with the intention of causing grievous bodily harm. That is an issue which depends very largely upon the medical evidence. And it always appears to me to be of the greatest importance that the doctor should, first of all, inform himself of the legal definition of grievous bodily harm. I feel satisfied that all members of my profession would not be able to tell straight off what is the legal definition. They should be able also to give a reason for their opinion which would help the jury and the court to determine the question. The kind of question generally asked is, "Did it require considerable force?" That, again, is a question which requires a very careful answer, and some knowledge as to what it means. You have to exercise very careful consideration, because the question must be answered, "Yes" or "No," and that may determine whether the man has committed felony or not. The question of wounding is one that a practitioner who is apprehensive of finding himself in a criminal court as a witness should carefully consider. Apropos of wounding, there is a very vexed question as to the state of a man's mind caused by drunkenness. I suppose most persons who have practised in the criminal courts would agree that a very large percentage of cases of wounding are charges made against men who committed the crime when more or less under the influence of alcohol. I think it is very important to have a pretty fair idea in one's own mind as to the state of consciousness of a man when he commits an offence of that kind.

Another class of cases, to my mind the most difficult class of cases in which medical men have to appear, is those charges of rape and sexual offences generally. I have sometimes seen medical men put in great difficulty in such cases. In all cases of sexual evidence, whether consent is necessary to be negatived or not, the lady says she was forced and that it happened for the first time. It is essential, from the point of view of the defence, that these statements should be met, because, if the prisoner is able to show that they are untrue, as any such charge depends entirely upon the credibility of the female witness, a great point is made for the defence. That particular issue as to whether or not the girl is a virgin seems to be one which medical men know it is not very easy to predicate with much certainty, and in which doubts upon the matter may reflect very seriously and unjustly upon the complainant, whilst, on the other hand, a great injustice might be imposed upon the defendant. If the medical witness has doubts as to the matter of certainty, it is extremely important, to my mind, that he should not go any further than a man could conscientiously go with complete satisfaction to himself. I think that the medical adviser in a case of that kind is put occasionally in very real difficulty. He is a family doctor, and he finds it is his duty to make a statement which is detrimental to the virtue of one of his patients. It is so great a difficulty that it has occurred to me that it certainly would be in the interest of the general practitioner that the court should have recourse, if they can, to their own surgeon—that is, there should be one man in the district, recognized as an authority in medical jurisprudence, who would be called as having special knowledge, who would be able to rid the private practitioner of a very difficult position. Whether that would be of interest to the profession, the profession themselves could best judge. Another class of cases—I mention it simply because of its importance—is one with which, I imagine, medical men are constantly brought into contact, cases of abortion. Only a short time ago a paper was read by Dr. Spilsbury, in this room, on the subject, when we heard some horrible details of the torture to which unhappy women are put by the malpractices of criminals, who are sometimes caught and charged. I suppose everyone would agree that, for one case brought into court there are at least a hundred which are not. And, in view of the public danger arising from the practice, it is a matter in which medical men ought to be well informed, and I think they ought to be very careful in reporting cases where they have reason to suspect the fact that such a crime had taken place—I have no doubt they are.

Such are the difficult matters which arise in respect to the criminal law with which medical men meet. A medical man might suddenly, at the outset of his career, find himself having to cope with such cases. Then there is—shall I say on the border line?—the important question of insanity. That raises a very difficult question, upon which, I suppose, there is a good deal of ground for belief that the medical view and the legal view are not completely at one. I cannot imagine a more important function that could be served by this society than, at any rate if it could be brought about, that both branches could agree to some formula which would commend itself both to doctors and lawyers. There ought to be some change in the formula laid down in Macnaghten's case. I fancy that the chief difficulty is in reference to the medical view, that one ought to take into account, in dealing with criminal responsibility, impaired will power, lack of control. That seems to be the division between the parties, and, of course, there are many matters to be considered with reference to that. But, certainly, I am inclined to doubt whether in many cases there is as much difference between the mental operations of a person considered sane and a person who would be considered insane, as there is between the mental operations of the fraudulent trustee and the loafer who steals a pair of boots. I am inclined to think that the complexity and diversity of the mental operation in either case could be compared together, and, possibly, there would be a greater difference in the case of the latter than in the case of the former. One ought also to remember that, after all, order has to be maintained, and it is no use criticizing the formula in Macnaghten's case unless you can substitute some effective formula in its place which will not have the effect of removing all criminals from a gaol to an asylum. These are matters which should be discussed, and, if a practical solution should be arrived at, it would be of very great value, and one so essential before you can make the change which would have to be made by legislation. Again, I cannot help thinking that the question of criminal responsibility has been looked at too much in relation to responsibility for murder. Because the formula which has to be adopted on criminal responsibility and the effect of it in relieving the criminal from the penal effect of the crime is one that is to be applied as much to the petty theft as to the most serious crime.

In addition to the question of insanity, there is the very important medical side in civil proceedings; and the number of classes of cases in which medical evidence is given in civil proceedings is very large indeed. I do not wish to deal with the question of divorce. I imagine it is the medical adviser who could in most cases give a better explanation of matrimonial differences than anybody else. One knows that it is the doctor who has to prove the degree of cruelty relied upon, and the courts have to depend very largely upon an honest expression of opinion by the medical man. Then there are the cases which in industrial districts occur more frequently than in other districts, cases under the Workmen's Compensation Acts, where frequently you have to deal with the difficult question as to whether, first of all, the injury arises from the accident at all, whether the patient is suffering from partial incapacity or total incapacity, and if from either, whether that incapacity is permanent incapacity or not. One is certain to meet, as far as applicants are concerned, with these particular medical questions, and the medical man should have his facts well in hand and his medical knowledge. In addition, there are the similar cases arising out of personal injury, and as to how far the man has been injured by the accident that he is suffering from—questions as to nervous shock, and whether the effects of the nervous shock are likely to be permanent, or whether, as counsel for the defendant will always suggest, they will disappear when the verdict is given. Again, great injustice may be done to the parties on one side or the other if they are not answered accurately, and these are cases in which I think, perhaps more than any other, there is apt to be a degree of advocacy on either side.

A great branch of the relations between medicine and law may be covered by what is known as "State medicine," in relation to the ordinary duties which doctors have to perform in relation to all departments of public health. All these topics seem to suggest a very close relation between the two professions. While they involve the knowledge of the doctor on the principal topic with which his skill and attention is requested, they involve equally the skill of the lawyer, who, in order to decide the matter and deal satisfactorily with the question, has to see that he does not come to a matter with which he is quite unfamiliar. Under these circumstances, one cannot help thinking that, in the case of either profession, we do not take quite sufficient pains to secure that, in the ordinary course of training, we are taught, so far as teaching can be given, that which is necessary in respect to medico-legal knowledge. I speak with bated breath of the course of instruction for medical men. I have always been told, and believe, that it is the most severe training of any profession: I am quite sure it is very much more severe than the education for a barrister. Whether there is scope in medical training for satisfactory teaching in this matter I do not know. I believe that medical jurisprudence is not essential. From what I gather, I am not sure that in some places where it is taught it has not been relegated to the position occupied in school by our French lessons, where the enthusiast may learn if he wishes, but the person who does not wish to learn is not supposed to do anything very wrong if he avoids the course of instruction provided. That is not the case everywhere, but I understand it is in some places, and if, from any sort of discussion that takes place we can emphasize the extreme importance to the medical man of a knowledge of medical jurisprudence, we shall be doing a valuable work. Whether a course of instruction should be part of the necessary qualification for a medical degree is a different topic. It rather occurred to me it might be only the proper subject for some sort of post-graduate study, if you can get sufficient people to take up the teaching. To my mind, that would be a very valuable addition to what one might call post-graduate instruction, at the Bar. At present there is none. A barrister learns as he goes in practice; the instruction that he gets is in the chambers of the man he reads with. It is very valuable, but it is not systematic instruction. I am glad to see we are making changes in that respect. I may mention as of great interest to me, as chairman of the Council of Legal Education, that we have secured the assistance of Dr. Spilsbury to give a course of lectures next term on medical jurisprudence, a matter to which I attach great importance, and of which I believe the young barristers will be delighted to take advantage.

We have talked about medical knowledge, medical jurisprudence for doctors and lawyers, but does it not seem to follow that, in addition to the actual medical topics on the one side and the legal matters on the other, an interchange of instruction might take place between the two professions? It is very difficult, to my mind, to learn medical jurisprudence adequately from the medical side, without having a reasonably clear knowledge of what the law is upon the particular matters. You wish to know how medical facts are appropriate to the particular legal issue. So far as the law is concerned, it is better taught by lawyers than by any one else, as I imagine medical matters better come from medical men than from non-medical men. And if some of our young men at the Bar should receive medical instruction, it might be of advantage to doctors if we could exchange, and that barristers and lawyers should give lectures on the criminal law, so far as it is appropriate to the matters that come within the scope of medical men. These are the matters which have occurred to me to put forward as suggestions to this society. I appreciate how very close are the mutual relations of the two professions, and if there is anything we can do to improve and assist medical men on the one hand, and lawyers on the other, in matters connected with the administration of justice, I shall be entirely satisfied.

Discussion.

In the discussion that followed, Earl RUSSELL suggested that in civil cases it would be a little too much to expect that a doctor called as an advocate for one side or the other should be an officer of the court. With regard to the rule in Macnaghten's case on the question of insanity, a medical man looked on this as a scientific question and stated his conclusion from the point of view of science. But the member of the Bar, who reached the jury and the general criminal public, said: "I have some criminals here; what am I to do with them?" The speaker thought that this was really where the difference lay between the medical and the legal standpoints. No one desired to inflict punishment on a person who was not responsible for his actions, but still they wished to do something for him in an effective way; there was no objection to sending him to a criminal asylum provided he was kept there. Earl Russell agreed that it would be a great advantage to both professions if each acquired some working knowledge of the other in cases in which they overlapped or touched. He therefore welcomed the lectures to be given by Dr. Spilsbury to Bar students, and thought that if, on the other hand, medical men were given some simple instruction in the elements of criminal law, this would help them to appreciate the points to be met. In that way both professions would come closer together when they found themselves trying, often at cross purposes, to arrive at the truth.

Sir ROBERT ARMSTRONG-JONES expressed his high appreciation of the President's address. On the question of responsibility he said there ought to be a very definite *rapprochement* between the medical and the legal sides. The difficulty, to his mind, was that the legal man was an advocate for his case and the medical man an advocate for truth. Dr. F. G. CRUICKSHANK related an adventure he had some years ago when assistant medical officer in an asylum. This ended with a legal argument, in which he got the better of a homicidal patient.

Lord Justice ATKIN, in reply, said he had not meant to suggest that the doctor should hold a different position from that of any other expert witness. He agreed that it would be a counsel of perfection to suggest that in civil cases the doctor should regard himself as there merely to assist the court, though he thought it should be so in criminal cases. He was reluctant to accept Sir Robert Armstrong-Jones's antithesis about barristers and doctors; both, he fancied, were the advocates of truth. The matter of criminal responsibility was one of the very greatest importance, and it would be well for them in the first place to lay the foundation of some satisfactory formula, some mode of agreement between both professions.

SIR JOHN MCCALL, for ten years Agent-General in London for Tasmania, who died in June, 1919, left property valued at £15,307, of which £12,593 is in Tasmania and £2,714 in this country.

THE FUTURE OF MEDICAL PRACTICE.

MEETING OF THE WILLESDEN DIVISION.

A MEETING of the Willesden Division of the British Medical Association was held on November 2nd, when Lord DAWSON OF PENN gave an address on the report of the Consultative Council on Medical and Allied Services. Dr. J. S. CRONE was in the chair.

LORD DAWSON'S ADDRESS.

Lord DAWSON said that during the last ten years great changes had taken place in the organization of medicine. On the one hand, the National Insurance Act had come into being, with benefits for persons of a certain economic position or a certain occupation; and on the other hand, an entirely different type of organization had been set up, free, and open to all classes of the community, and took such forms as the school medical service, the tuberculosis and venereal services, and the maternity and child welfare services. The various clinics in which these services were carried on had not been set up as the result of any settled policy, and it was obvious that such *ad hoc* services were open to indefinite extension. With each extension something was taken from general practice, and the ultimate result would be a salaried State service which had come about by instalments. These changes were not the result of professional initiative. They were due, in the first place, to the fact that the public had acquired a new health conscience, had become alive to the value of preventive medicine, and regarded adequate provision in sickness not as a charity but as a right. It might be that the public would go yet further in this direction. The policy of the Labour party included the establishment of a State salaried service, and the Labour party had to be taken seriously. The profession was face to face with big changes, and either it must have a hand in the fashioning of the new order or the new order would fashion it.

The scientific advance of medicine, Lord Dawson continued, had helped to make apparent the inadequacy of existing medical organization. They had only to look at the increasing range of laboratory or radiographic work to see how inevitable it was that medicine must become increasingly the field of collective as distinct from individual effort; he did not need, in this connexion, to point out the lack of modern equipment from which the private practitioner suffered. The thing which astonished him was that in view of the greatness of their difficulties and the inadequacy of their equipment private practitioners should have done such good work. What the interim report of the Consultative Council proposed was that the State should endow fabric and equipment, while the relationship between doctor and patient should still remain as personal as possible, and this, he believed, was the only alternative to a whole-time State service. The economic factor was telling in the same direction. With every improvement in medical knowledge and every fresh discovery, some addition was made to the complexity and cost of medical examination and treatment, and thus an increasing number of the community proved unequal to the task of providing entirely for themselves and their families the best medical service.

The administration of the public health authority was originally for the most part preventive in character, but in response to public demand, and for the reasons he had given, it had now come to cover no small part of curative medicine. The line of demarcation between State medicine in a locality and domiciliary medicine as represented by general practitioners was no longer that between preventive and curative medicine; rather was it the demarcation between organized and provided medicine on the one hand and unorganized and only partially provided medicine on the other. The Consultative Council said that the time had come for bringing these two branches together, and that institutional and organized provision should lead off directly from private practice. The matter was emphasized by the present hospital situation. The increased demand for institutional treatment, side by side with the difficulties of the voluntary hospitals, had called attention to the fact that there was a large number of Poor Law infirmaries no longer needed for that purpose, and structurally suitable for use as general hospitals—certainly more than two hundred of them. It was proposed, therefore, that the local authorities should take over these institutions, equip them, and place them at the service of the public. That was a step of great significance. It meant that the local authority was invading, not a few specialities, but the whole domain of curative medicine and surgery. The profession must be ready with its views on this matter, which had reached an acute stage at Bradford. Under what conditions were patients to be admitted to the voluntary hospitals? By what methods was the staff of such hospitals to be appointed? Was a salaried State service to be brought in by stealth at the back door? It was high time the profession formulated its policy. The position of the medical profession in this country was singular. There was no country where doctors as individuals were more honoured or were the recipient of more confidences, or where such close and even affectionate relations existed between doctor and patient; but in contrast their collective influence in public affairs was almost nothing, for the simple reason that they had never sought to give expression to their political views, and, engrossed in arduous work, concentrated upon individuals, they had been intense individualists.

After dealing with the situation as it presented itself in Willesden, Lord Dawson said there had been a serious attempt to make the Consultative Council representative and truly advisory, and it had the right of direct access through its chairman to the Minister. The principles which underlay its interim report were, in the first place, to link up the various services of the country; to make the doctors in each district an integral part in the health development of that district—not, of course, that they should play a dictatorial part, but that they should have a very clear advisory function; and, while making it the duty of the State to provide fabric and equipment, to have practitioners in association with the scheme, not in a whole-time but in a part-time capacity. The report was most emphatic in declaring that in all hospitals of first instance—not hospitals of reference—the patient must not be separated from his doctor or from a doctor appointed for the purpose who would not be a whole-time servant. He looked with disfavour upon the staffing of clinics with whole-time officers, because this tended to make a separate caste in the profession, though he granted that in some of the great cities the difficulties of the case warranted an exception in this respect. But he also pointed out that it was reasonable to ask of doctors who hoped to hold part-time posts that they should make themselves efficient by a course of post-graduate instruction for whatever work the clinic was to undertake, and this would open up spheres of specialism to general practitioners.

Discussion.

Dr. WOODLEY STOCKER said that in his experience the lay members of public bodies held medical opinion in very high esteem, and were very pleased to have medical men as their colleagues. He wished that more medical men would aspire to municipal office. With regard to Lord Dawson's scheme, he would have preferred greater explicitness as to its financial aspects, for an inadequately paid profession could not do its best work. The basis of remuneration which the authorities set up ought not to be determined by previous experience of medical practice, but should have regard to the greater expensiveness of practice in the future and the widening functions of medicine.

Mr. E. B. TURNER pleaded for a united policy. He described the hard spade-work which had been done by the Ministry of Health Committee of the British Medical Association. That Committee, of which he was chairman, had thoroughly examined and analysed the report, and had formulated a series of questions on it which had been sent down to the Divisions. He hoped every Division would do what it could to get definite answers to those questions. Those answers would come before the Committee and be carefully studied, and probably a report would be made on the matter to a Special Representative Meeting. It was very important that a policy should be soon formulated, in view of the likelihood that legislation of some kind would be brought forward in the early part of next session. It was necessary not only to have a policy but to stand unitedly upon it. He was a member of the deputation from the Association which had waited upon the Minister of Health the previous day, when the necessity was urged upon the Minister of having effective consultation with the profession before action was taken under Clause 11 of the Miscellaneous Provisions Bill. Dr. Addison had replied that he was perfectly willing to consult with a truly representative body of the profession, but not with half a dozen bodies each claiming to be representative. There must be some body within the profession which could carry weight with the Government, and the speaker urged that the British Medical Association was the obvious body to speak with authority, and that it should be strengthened with all possible fresh adhesions.

Dr. **Christine Murrell** said that the scheme envisaged by the Consultative Council was likely to increase both the efficiency of the individual practitioner and the co-operative spirit among the practitioners in a locality. The health centres made for a more friendly and confidential relationship than had been possible in the past. The scheme would reduce to the lowest possible level that extremely un-British person, the bureaucrat, whereas under a purely State medical service he might flourish like the green bay tree. The great objection to a whole-time officer at a clinic—or more properly at a consultative centre—was that the work of such centres was very largely advisory, and persons whose entire function was to give advice did not perform good work. A whole-time clinic officer was a bad servant, not at all because of his defects as an individual, but because of the system under which he worked.

Dr. **H. J. Macevoy** thought that the report of Lord Dawson's Council was both revolutionary and just, and only on questions of detail could it be differed from. He criticized the present multiplicity of services on the ground that under this system continuity of medical attention in the case of each person or family was so exceedingly difficult to ensure. There could be little preventive medicine without a proper inter-relation of the different services. The ideal, of course, would be for every family to have a medical practitioner.

Dr. **J. A. Glover** described what had been done in Hampstead, where, after the Local Medical War Committee had finished its labours, the whole profession was called together, and the Hampstead Medical Committee elected, with the medical officer of health for Hampstead in its chair. This committee had been sitting for a year, and had been considering whether it was possible to start a primary health centre in Hampstead on the lines of the report. They had not got so far yet, but it was hoped that the committee would be the means of uniting the whole profession in Hampstead, and that it would continue as a body available for consultation by the borough council or other authority.

Dr. **G. F. Buchan** (Medical Officer of Health for Willesden) said that he could not controvert any one of the general principles of the report, though Lord Dawson would be the first to admit that there were many difficulties in the way of carrying out his policy in full. But much could be done; for example, at present the Maternity Committee selected one doctor for a patient, the Infant Welfare Committee another, the Education Committee another, and so on, and some method must be found whereby the work of these various doctors could be co-ordinated, so that continuous medical treatment and prevention would be possible in relation to each individual. This piece of preliminary work they were setting about in Willesden with all the goodwill in the world, and it would not be his fault if they failed.

Dr. **G. W. R. Skene** praised the report, and said that it would make the medical profession one into which at last without hesitation a father could put his son. Dr. **Weir** asked whether it was really settled, as suggested by a reference in the *London Insurance Pharmacopoeia*, that national insurance was to be extended to families. Dr. **Kemp** thought that what was proposed might be reached by graduated stages, a better organization of methods now in existence, leading up gradually to the ideal result. Dr. **Traylen** thought that it would be difficult to discriminate between the three classes: those who received free treatment, those who paid for the whole of their treatment, and those who paid part. Another speaker, who spoke as a taxpayer and not as a doctor, urged that this was not the time, when the country was on the verge of bankruptcy, to enter upon the vast financial responsibilities involved in this scheme.

After a hearty vote of thanks had been accorded to him, on the motion of Dr. C. F. T. **Scott**, seconded by Dr. **Macevoy**, Lord **Dawson** said, in reply to the discussion, that nobody imagined that the whole of the proposals could be carried into effect at once. Expenditure by the Exchequer on a large scale on any constructive medical scheme was out of the question for the present; but that did not alter the importance of getting to work on the scheme and at least laying the foundation on which there might be subsequent building; and the more united they were the more quickly would the building be erected. The financial aspects, so far as the profession was concerned, were exceedingly difficult to deal with, but he pointed out that in the report there was no proposal which would diminish the earnings of a single doctor. The report did not deal with finance too closely, though it entered a little into the question of payments by patients. The underlying principle of the report was the provision and endowment of fabric. There should be private wards in the municipal hospital, but there also the same relation between doctor and patient should be maintained, and of course the standard of treatment (as distinct from additional comforts) would be absolutely the same in all the wards. As for the relation of this scheme to the Insurance Act, it must be remembered that it was much bigger than the insurance scheme; it presupposed that the Insurance Act, whose roots were now deep in the social life of the country, would continue to exist, but of the Act itself the report expressed neither approval nor disapproval. Some system of insurance must intervene in all their plans, but let this more comprehensive scheme be started and inevitably its virtues would penetrate into and mould the insurance system to the benefit of this latter. As for the extension of insurance, that was outside his purview, but he could not conceive that such extension would be made without consultation of the profession.

On the following day (November 3rd) Lord Dawson spoke at Leicester, where he laid before a meeting of medical practitioners similar considerations to those put forward in his address at Willesden.

THE VICARY LECTURE.*

BY

Sir D'ARCY POWER, K.B.E., F.R.C.S.Eng., F.S.A.

(Abstract.)

The Education of a Surgeon under Thomas Vicary.

Sir D'Arcy Power began his lecture by pointing out that the unsettled conditions throughout England resulting from the Wars of the Roses led to the same need for reconstruction in the medical profession as was now being felt after the recent war. Two bodies of surgeons had always existed in London. The one a Gild of Surgeons proper, the other a Gild of Barbers, many of whom practised surgery. The Gild of Surgeons was a small body of men, most of whom were attached to the suites of the higher nobility; the Gild of Barbers was a much larger body, whose members looked after the surgical needs of the citizens. In war time the surgeons served with their Lords, and during the fourteenth, fifteenth, and sixteenth centuries nearly every member of the gild must have seen military service. The barber-surgeons, on the other hand, remained at home, accumulated wealth, and became a flourishing company.

The crowning of Richmond on the field of Bosworth and his marriage a year later with the Lady Elizabeth of York brought a lasting peace to England and a very lean time to the surgeons. The old nobility had been destroyed and their lands distributed, whilst even the precarious livelihood of a military surgeon was no longer to be had. The fraternity of surgeons, therefore, had to cast about for some other way of living. They turned to the Company of Barbers and entered into an alliance with them in 1493, which was formally ratified by Act of Parliament in 1540, which constituted a United Company of Barber-Surgeons. Investigation shows that the Gild of Surgeons had always endeavoured to educate their members and to test their knowledge by examination. They appear to have co-opted the members, and were more concerned with their knowledge of surgery than with the means by which that knowledge had been obtained. The Barbers, on the other hand, worked on the ordinary lines of the City Companies and admitted persons to their freedom after a prolonged period of apprenticeship. By a combination of the two methods a new system of surgical education was introduced. Thomas Vicary, who held the post of serjeant surgeon to King Henry VIII, was elected the first Master of the United Company of Barbers and Surgeons, and during the next fifteen years the Company developed a comprehensive system of education. No person could practise surgery in the City of London or within seven miles unless with the licence of the Company, and this was only granted after examination. Power had also been obtained to take the bodies of four criminals every year for dissection. Anatomy was therefore made the basis of surgical examination, and to this was added surgery and such pathology as could be learnt from English translations of some of Galen's works. One of the first acts of the Company was to appoint a Lecturer on

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* Delivered at the Royal College of Surgeons of England, November

Anatomy with four demonstrators under him. It seems probable that Vicary himself lectured during the first few years, but about 1546 Dr. John Caius was elected to the post, and no better man could have been found. A young Cambridge graduate, fresh from Padua, where he had been a fellow-lodger with Vesalius and a friend of Realdus Columbus—the two great anatomists of their age—the editor of a carefully selected text of Galen, a good disciplinarian, a bachelor and living in the immediate neighbourhood of the Barber-Surgeons' Hall, he could devote the necessary time to make his lectureship a success. He served for nearly twenty years, and so impressed his individuality on the lectureship that the Company's anatomical teaching remained the best in the kingdom for nearly two hundred years afterwards. The post was well paid, it was nearly always held by a young university graduate, and it was the foundation of many reputations in the medical profession.

The surgical and pathological teaching were less successful. Both were taught by lectures, at which the attendance of every surgical member of the Company was compulsory, and clinical teaching was discountenanced. The surgical lectures had always been a part of the teaching of the Gild of Surgeons, and it was undertaken by each member in turn, beginning with "the auncientist" surgeon. Each had to lecture, pay a fine or find a substitute. None of these lectures appear to have survived, so that there is no means of determining their character. Those of Ferris, Keble, and Balthrop are known from contemporary evidence to have done much to inspire their audience with a wish to raise the status of surgery, whilst those of Gale, Clowes, and Banester, with their unmitigated invective, must have been a pure joy to the apprentices who were obliged to listen to them. In the end, however, the Company decided to abolish this form of lecture and to establish a paid post like that which worked so well in anatomy, only they stipulated that the lecturer on surgery must be paid by the surgeons who ought to have lectured and out of their private pockets.

The teaching of pathology was even more unsatisfactory than the teaching of surgery. It was allotted sometimes to the lecturer on anatomy and sometimes to the lecturer on surgery. In either case it consisted in the reading of Galen's *De Methodo Medendi* or the *Therapeuticon*, with some allusion to the hippocratic teaching. The existing records show it to have been extremely dull, and its only use seems to have been to provide some long words, which were found to impress the public afterwards.

The examination for the licence was conducted by specially appointed examiners, in the presence of the Master and Wardens of the Company, at the Barber-Surgeons' Hall in Monkwell Street. The examiners at first were eight in number, of whom four were present at each examination. They were freemen of the Company, but were not necessarily chosen from the Assistants or Council. They reported to the Master and Wardens, and their rejections were by no means infrequent. According to the knowledge displayed the candidate was granted a licence for a longer or shorter period, a permanent licence only being issued after a further examination. This, at least, was the intention in the early years of the United Company's existence, but the second examination was not insisted upon, and it was eventually replaced by "The Grand Diploma," which was rarely demanded, and was the equivalent of the present F.R.C.S., for it was taken by those who intended to devote themselves entirely to the practice of surgery.

An apprentice at the end of his indentures could claim the freedom of the Company, and if he were not going to practise in London or the immediate neighbourhood he was not obliged to undergo any examination; on the other hand, a surgeon who had been licensed elsewhere was examined before he could practise in the city. The licensing of these "foreign" surgeons, as they were called when they had not been apprenticed, often brought the Company into grave disrepute because the licence was granted on very easy terms when money was scarce or when it was necessary to placate some great man whose favour was worth acquiring. The licence granted after apprenticeship never seems to have been called in question.

The Company never lost sight of its members so long as they lived and practised in London. Attendance on lectures was compulsory, and there was an excellent custom handed down from time immemorial known as "the presentation of those in peril of death or maim." If a surgeon had under his care a patient who was in danger of death or was likely to be permanently incapacitated, he was bound before the third dressing to call in the Master and Wardens of the United Company, or if they happened to be Barbers some one specially appointed to act for them. Failure to do so rendered the practitioner liable to punishment either by fine, imprisonment, or in extreme cases by revocation of his licence. The Master and Wardens, on the other hand, were sworn to perform this duty without fee, but if any reward was offered it was to be divided equally amongst them. The rule gradually fell into abeyance as the population increased in London, but it acted well and was in the interest of the surgeon as well as of the patient, whilst in a litigious age it prevented many actions for malpraxis.

But further tasks lay before the more far-seeing surgeons of the time. The general status of surgery was so low, owing to the ignorance of the profession, that quacks and irregular practitioners of all kinds competed on equal terms with those who had been licensed, and often with better success. Vicary, Gale, and Clowes in London, Halle at Maidstone, Banester at Nottingham, and Read in Gloucester, made a determined effort to oust the quacks by improving the surgeons. They acted by precept as well as by example, and their writings give such a lively picture of their actions that they can still be read with pleasure. Vicary and Gale were men of the old school who had perhaps hardly emancipated themselves from the pre-Reformation conditions in England. Clowes was a rough and somewhat overbearing person who loved to take the war into the enemy's camp, for he could rate a quack in language that he could understand. Halle and Banester were educated gentlemen with a mordant wit and possessed of sufficient authority to enforce the law against unlicensed persons practising surgery. Read, the youngest of the band, was showing himself an effective critic of the United Company when death seized him. It is remarkable that this school of reformers left no successors, with the exception of Woodall in London and Peter Lowe in Glasgow; and when the last of them died there was a long interval before surgery showed any signs of becoming more than a trade.

The lecture concluded with a tribute of praise to the Barbers' Company, the members of which had acted as the business partners of the surgeons when their fortunes were at a very low ebb. By their union with the Barbers the Surgeons were given time to educate themselves, and to extend their influence until they became an important profession. Left to themselves, as they were after the dissolution of the United Company in 1745, they soon became bankrupt, and thus showed how greatly they had relied upon the superior business capacity of the Barbers. In the course of the lecture Sir D'Arcy Power showed the books which a fairly well educated apprentice might be expected to have read before presenting himself for his examination at the Barbers' Hall in the middle of the sixteenth century. They were Realdus Columbus for Anatomy; Guydo's Questions, John of Vigo and Tagaultius for Surgery; Oribasius's Commentaries on the Aphorisms of Hippocrates, and Caius's edition of the books of Galen for Pathology; Gale's works, and a little later those of Clowes and Bullen, must often have been added, because they are now so scarce, whilst any student who liked to get his knowledge in a condensed form—such as we have anatomy in Cooke's tables—had only to buy the Tables of Horatius Morus, which has more sections, subsections, and members than Burton's *Anatomy* itself.

Though a lazaret was provided in 1883, the notification of leprosy was first made compulsory in New South Wales, and the detention of lepers first provided for by law, towards the end of 1890. Since 1883, 69 white patients have been treated, of whom 30 were of Australasian origin, and 80 coloured patients (58 being natives of China, 5 of India, and 17 of the Pacific Islands). According to the twenty-ninth annual report the number of patients in 1919 were 24; 3 new patients were admitted, of whom one had lived in Australia for fifty years; the two others had been born, and until recently had lived, in Malta. During the year one patient died from pneumonia, one absconded, and one, a German, was repatriated, having no active symptoms of disease.

British Medical Journal.

SATURDAY, NOVEMBER 13TH, 1920.

HOSPITAL LEGISLATION.

It has hardly been possible to open a newspaper during the last ten days without finding something about the hospital crisis, its dimensions, its causes, and its cure. Public attention has been arrested in particular by Dr. Addison's speech when he described to the House of Commons the modification he proposed to make in the hospital clause of the Miscellaneous Provisions Bill of the Ministry of Health, and by the bald announcement made the next day by the chairman of the London Hospital that that great institution would be closed on January 1st. Lord Knutsford's dramatic instinct is well developed, and in making this announcement—unexpected by his colleagues and the staff of the hospital as well as by the public—he no doubt intended to startle public opinion and to prepare it to accept the proposals now before Parliament.

The hospital clause of the bill (Clause 11) in its original form gave power to county councils and county borough councils to supply and maintain hospitals, including out-patient departments, to contribute to voluntary hospitals, and to take over and maintain Poor Law hospitals. The significance of these proposals was indicated in our issue of August 28th, and we expressed the opinion that their publication at that time was due to the desire of the Minister to give public opinion an opportunity of finding expression. The matter has, in fact, been fully discussed in the interval, both in our columns and elsewhere, and Dr. Addison has had an interview with the medical and university members of Parliament and another with a deputation from the British Medical Association. That deputation asked him to amend the clause by making it necessary for a local authority to obtain the consent of the Minister before embarking upon a hospital scheme. Dr. Addison agreed that this was desirable, and in introducing the clause in the House of Commons he indicated an amendment to this effect; he also proposed to omit from the amended clause the power to supply and maintain hospitals, so that the authority would be limited to taking over under proper agreements existing Poor Law hospitals, and to contributing to voluntary hospitals. The power given in the new clause would not, he said, extend to taking over voluntary hospitals, nor would it authorize the establishment of additional hospitals. These changes will no doubt go some way to conciliate the supporters of the voluntary system, but the power to take over Poor Law infirmaries can be used by a council ambitious to have a general hospital of its own to the detriment of the voluntary hospital—in the manner, in fact, in which a municipal hospital is being established at Bradford. There ought not to be rivalry. The financial embarrassment of the voluntary hospitals is largely caused by increased cost of materials and service, but partly by some falling off of subscriptions, due to net diminution in the income of so many former subscribers.

It is sometimes said that the voluntary hospitals have failed, but the statement may cover some confusion of thought. The voluntary hospitals have not failed in the standard of treatment they have set, but it is alleged, no doubt with much truth, that they have failed to supply a sufficient number of beds. The suggestion that this defect can be remedied by taking over Poor Law infirmaries to supplement the beds in the voluntary hospitals rests on the assumption that there are a large number of vacant beds in the Poor Law infirmaries. The Ministry of Health has stated that there are, but this has been challenged on the ground that the inquiry was made in the summer, and that the result would have been very different had it been made in the winter. Probably the actual position varies very much from place to place; this is illustrated by the case of Sheffield, where it would appear that the infirmary of the city Poor Law authority was habitually full, while that of a neighbouring suburban authority with 400 beds was able to earmark 100 beds for other than Poor Law cases. Where it proves possible to take over Poor Law infirmaries for general purposes it should be with the intention of supplementing the voluntary hospitals.

As the Chairman of Council of the British Medical Association said at the deputation to Dr. Addison, the best way to approach the matter would be to graft on to the voluntary hospital system some of the Poor Law hospitals rather than allow a new set of hospitals to spring up, staffed on Poor Law lines. This is a problem upon which the Government should be guided by the opinion of the medical profession, and at the deputation Dr. Brackenbury pressed this point upon the Minister, pointing out that there would be needed both central and local consultation—central with the Ministry of Health with regard to the general principles for the admission of patients and for the appointment of staff, and local for the adjustment of details. Dr. Addison agreed as to the desirability of consultation in what he called the "formative stage." We gather that it is the intention to obtain the opinion of the Medical Consultative Council, which he described as now a part of the machinery of the Ministry, but that he desired also consultation with an exterior body, and he appealed to the British Medical Association to organize such a body. The matter is under consideration, but it will not be out of place here to observe that perhaps it may be found desirable to follow the precedent of the Central Medical War Committee and its local war committees.

THE BRADFORD MUNICIPAL HOSPITAL.

A meeting of the whole medical profession in Bradford, called by the Bradford Division of the British Medical Association, was held on November 3rd to consider the position brought about by the action of the Health Committee of the City Council in taking steps to establish a municipal general hospital. An account of the Bradford scheme was given recently in our columns by Dr. Buttar, and readers will remember that it involved the conversion of a Poor Law infirmary into a general hospital unconnected with the existing general hospital (the Bradford Royal Infirmary), and therefore inevitably in rivalry with it.

The attendance at the meeting on November 3rd was large and representative, and the high-handed action of the Health Committee in settling a matter of so much medical importance without consultation with the medical profession of Bradford—and, indeed, behind its back and without its knowledge—was strongly condemned. The Medical Officer of Health, who was present at the meeting, rested his defence of the scheme in part on the fact that no representations had been received from the medical profession prior to

March 29th, 1920, when the transfer of the buildings from the guardians to the municipal authorities took place. To this the conclusive reply was made that, though rumours had been current for some months, the first intimation the medical profession received of what the Health Committee had in contemplation was through the announcement of the transfer, as an accomplished fact, in the public press. Another point made by the M.O.H. was that the profession in Bradford had been consulted at a later date, the reference being, as we are informed, to a private conversation on May 1st, 1920, between the chairman of the Health Committee and the M.O.H. on the one side and representatives of the associated hospital staffs on the other. The chairman stated that the proceedings were confidential, and that he was not at liberty to divulge the committee's still half-formed schemes for the municipal hospital; he expressed his own personal high appreciation of the voluntary hospitals, and his hope that they would continue side by side with the municipal hospital. Clearly this cannot be described as a conference with the medical profession in Bradford.

After the meeting on June 11th a letter was addressed to the Town Clerk of Bradford and the Chairman of the Health Committee expressing regret that that Committee had decided to open a municipal hospital without previous conference with the medical profession, and indicating the confident opinion that in the interests of the public it was advisable and necessary that arrangements should not be made for the work of the municipal hospital, as far as concerned the medical profession, without full consultation with the profession of the district. Any arrangement made, it was pointed out, should accord with the recommendations of the interim report of the Medical Consultative Council and be such as to avoid overlapping with the voluntary hospitals. No reply beyond a formal acknowledgement was received. Rumours in circulation as to appointments to the staff of the municipal hospital led to an inquiry being addressed to the M.O.H. in July, but no information was obtained, and it was not until October 1st that the local medical profession was furnished with a copy of a detailed scheme for the proposed municipal hospital.

It will be remembered that at the deputation from the British Medical Association to the Minister of Health on November 1st (Supplement, November 6th, p. [illegible] Mr. Basil Hall of Bradford said that the local profession had not been consulted; it is true that after the receipt of the scheme on October 1st the executive committee of the Bradford Division of the British Medical Association transmitted some criticisms to the M.O.H., but this cannot be taken to have committed the profession in Bradford to accepting the principle of the scheme. The criticisms were directed to the following points: (1) That the clause in the scheme requiring that a member of the staff of the municipal hospital should hold no other hospital appointment should be deleted; (2) that when a patient was discharged from the municipal hospital a short report should be sent to the general practitioner; (3) that the out-patient department should be purely consultative except in certain special departments, and that patients should not attend the hospital for such treatment as they could receive from their own medical attendant, panel or private; (4) that except in emergencies admission to the municipal hospital should be only on the recommendation of the patient's own medical attendant; (5) that the benefits of the hospital should be confined to those resident within the municipal area; and (6) that a consultative or advisory medical committee should be set up to advise the Health Committee upon the appointments to the staff and upon any other points affecting the professional work in connexion with the health of the city. Dr. Addison has asked the Bradford Health Committee for a definite assurance as to the views of the medical profession in Bradford and the means which had been taken to keep the profession informed of the situation, but the nature of the reply has not been made public.

We have endeavoured to show what the situation at present is and are inclined to think that the Minister of Health will agree that the Bradford Council and Health Committee has not shown the readiness to keep the medical profession informed which he was disposed to assume must have existed. The view here expressed is borne out by the letter, published at p. 766, from Dr. West Watson, the Honorary Secretary of the Bradford Division.

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IN MEMORIAM.

"Keep silence, O islands; and let the people renew their strength; let them come near; then let them speak."

The Cenotaph has been unveiled, and the nation has paid tribute to the memory and the majesty of the dead. Homage has been done to all who made the great sacrifice, at sea, on land, or in the air; the fighting man and the unarmed, the officer and the ranker, they died at the hands of the enemy; and, sharing a common fate, they inherit now a common immortality. Nevertheless, it is fitting that we to-day should especially celebrate the men and women who fell in the exercise of their duty to the sick and wounded. We commemorate those killed in the field; the victims of ruthlessness in torpedoed ships and bombed hospitals; those who succumbed to disease; and some whose ultimate fate will never be known. We remember them with pride. The toll of lives taken by the war was made more awful by the absence of that protection which the Geneva Cross should have afforded the sick and wounded and those tending them. Yet the destruction of any sense of safety acted as a stimulus rather than a deterrent to the efforts of the medical services. From the beginning to the end of the war the history of the R.A.M.C. and its auxiliaries is that of continual progress without regard to obstacles or danger. At the outbreak of hostilities the most skilled workers were the farthest from the fighting line. But gradually it was realized that in order to save the greatest number of lives treatment at the earliest possible moment was essential. This was accomplished, as is well known, by a general moving forward, and by the establishment of specially staffed hospitals in advanced situations. Those who experienced the earlier and later battles can bear witness to the effect upon the safety and comfort of the fighting man. Such an end was only achieved through the devotion of the men and women who, without thought for themselves, were ready to face any danger for the sake of the stricken. The progress brought the penalty, gladly paid by those we remember to-day; but we know that the sacrifice was not made in vain. They have left us a rich legacy in the example of a higher standard of service; they added courage to skill and brought a new honour, fresh and without price, to our profession. We shall not forget them.

"Behold, I have graven thee upon the palms of my hands."

THE PRESIDENCY OF THE ROYAL SOCIETY.

The announcement of the new Council, as nominated by the outgoing Council of the Royal Society, is specially interesting this year, for the reason that a new President is included in the list. Sir J. J. Thomson, who has held the office with such distinction, is to be succeeded by

Professor C. S. Sherrington, M.D., Waynflete Professor of Physiology at Oxford. We offer him hearty congratulations on thus being awarded the blue ribbon of science in this country. Medical men in general, and physiologists in particular, will welcome this recognition of medical and physiological science. It would have been difficult to select anyone better suited in every way. Professor Sherrington is one of the most prominent of the Cambridge school of physiologists which the late Sir Michael Foster inspired. He was lecturer on his subject at St. Thomas's Hospital, and afterwards Professor at Liverpool. He was elected to the Oxford chair when Professor Gotch died, and then as now all his fellow physiologists acclaimed the wisdom of the choice. Sherrington has a world-wide reputation, and though he has published original observations of sterling value in many branches of physiology, he is best known for his epoch-making work on reflex action and the nervous system generally. His monumental work on the nervous integration of the body had the immediate form of lectures he gave in America, but was really the outcome of a large slice of his life-work. We trust that under his guidance the Royal Society may have an opportunity of reasserting the importance of the biological side of science. During Sir J. J. Thomson's tenure of office its activities have been specially devoted, as was to be expected, to its physical and mathematical aspect. Professor Sherrington is not only one of our foremost physiologists, but he is a man of affairs, and we may safely trust him as a leader.

RABIES IN ENGLAND.

THE report of the Chief Veterinary Officer to the Ministry of Agriculture and Fisheries for 1919[1] appears somewhat later than usual, owing to the great amount of work which arose at the end of that year in connexion with rabies and foot-and-mouth disease. Outbreaks of the latter disease occurred in various parts of the country, and an account is given of the procedure followed by the Ministry for restricting the movement of animals in infected districts. Notwithstanding close investigation, the way by which foot-and-mouth disease is brought into Great Britain from time to time—although the importation of susceptible live-stock is forbidden—remains a mystery. As the matter stands at present the evidence, such as it is, seems to point to the transmission of particles of virus by the air. The section on rabies states that during the year 143 cases were confirmed in 140 dogs, two horses, and one pig. A summary is given of the method adopted with the object of eradicating this disease. It will be remembered that rabies was imported into Plymouth from abroad somewhere about May, 1918, but it was not until the end of August that the Board of Agriculture (as it then was) received information of this and had an opportunity of investigating and dealing with the situation. The present report gives the history of the disease in the areas which became infected in 1919. The number of persons bitten by animals in the scheduled areas was 179; 46 of these were bitten by animals proved to be rabid, the remainder by suspected animals. Treatment of 66 of these persons, including all the 46 just mentioned, was arranged by the medical officers of the Ministry of Health; there were no deaths from hydrophobia. In a note on the diagnosis of rabies it is said that the first essential in combating a contagious disease of animals is rapid and accurate diagnosis; the second is to pounce down upon the disease, allowing it no latitude for spread. The first, in the case of rabies, calls for the organized help of the laboratory, with its finer methods of diagnosis, aided by clinical skill and experience among those working in the field. The second requires a field staff well versed in the epizootiology of the disease and the tricks it may play. It also, adds Sir Stewart Stockman, needs considerable knowledge of the tricks that may be played by owners of dogs, for there are few diseases in which disregard of regulations on the part of owners of animals may be followed by such appalling consequences. With regard to laboratory diagnosis, the method employed for working purposes was to search the brain of suspected animals for Negri bodies, and the ganglia for the lesions of Nelis and Van Gehuchten. The heads and necks of all suspected animals were sent to the Ministry's veterinary laboratory, together with a report of the history of the animal and of the macroscopic *post-mortem* examination by the veterinary inspector who dealt with the case in the field. The method adopted, consisting of a series of tests, enabled infected areas to be dealt with at once; it abolished to a large extent the need for putting areas under restrictions merely as a precautionary measure, and it obviated the need for sending for treatment, merely to be on the safe side, persons bitten by suspected dogs. From September, 1918, to December, 1919, material was received from 656 suspected cases; of these 235 gave positive results. In 118 of these positive cases Negri bodies were found in the brain. The conclusion is drawn that in a campaign for the eradication of rabies the histological methods of diagnosis are invaluable, since they give quick and accurate results, and are based upon the finding of lesions very seldom absent in the case of infected animals. This part of the report ends with a suggestion that it is not the wisest policy to shoot a mad dog at sight, unless it is at large; for diagnostic purposes it is better to keep the dog for a day or two under official supervision, provided it can be securely confined. In this way a diagnosis can be arrived at in a few hours instead of weeks, as is the case when inoculation methods are undertaken.

A COLLECTION OF NASAL ANATOMY.

THE researches and investigations of the late Professor A. Onodi of Budapest are well known in this country. His work on the anatomy of the nose and its accessory sinuses was made known to us as far back as 1894 by Sir StClair Thomson's edition of his *Atlas* on the subject. His later and very important investigations into the relationship of the optic nerve to the accessory sinuses, and of these to the brain, were also deemed worthy of an English translation. The beautiful sections and dissections on which Onodi's publications were founded were recently brought to this country for disposal. Professor Arthur Keith regarded it as the finest collection on this subject in the world, and was at once anxious to secure it for the Royal College of Surgeons, as a worthy complement to the Toynbee and Cheatle collections on the anatomy of the ear. As negotiations could only proceed slowly after meetings of the council, there was some risk of the collection going to America or being withdrawn from London. It is therefore fortunate that Sir StClair Thomson and Mr. Philip Franklin have been able to purchase the collection for a moderate sum; it will be kept entire and retained in this country. There can be little doubt that the museum of the Royal College of Surgeons is the best home for it. To this institution the present owners are very willing to hand it over for the sum they paid for it. Only £300 is required, and at the first meeting of the session the laryngologists of the Royal Society of Medicine collected quite a quarter of this sum. But the collection is of almost equal importance to the ophthalmologist, the otologist, and the general surgeon, particularly to the surgeon dealing with the head and brain. We are therefore glad to hear that the President of the Society, Sir John Bland-Sutton, is chairman of a committee entrusted with the task of collecting at least £300. More than this sum is wanted, as there are no less than 450 specimens, and it will cost in addition between £500 and £700 to mount the specimens satisfactorily and to label and catalogue them in the College museum. The Presidents of the Sections of Surgery (Mr. Walter Spencer)

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[1] H.M. Stationery Office. 1920. (1s. net.)

Ophthalmology (Dr. James Taylor), Otology (Sir Charles Ballance), Laryngology (Dr. Jobson Horne), and representatives of the Royal College of Surgeons (Mr. H. J. Waring and Professor Keith), together with Sir StClair Thomson, are members of this committee, and subscriptions can be sent to the honorary secretary, Mr. Philip Franklin, at 1, Wimpole Street. We commend this undertaking to our readers, as there is no collection of nasal anatomy in the world which can compare with this one in variety, beauty, or value, and London is very fortunate to have secured it.

THE BENEVOLENT FUND GUILD MATINÉE.

A special matinée in aid of the Royal Medical Benevolent Fund Guild will be given at His Majesty's Theatre, Haymarket, on Friday, November 19th, at 2.30 p.m. An extremely attractive programme has been arranged, including performances by Mr. Nelson Keys and Mr. George Grossmith; Mr. Gerald du Maurier and Miss Winifred Emery, in a sketch; Miss Fay Compton and Mr. Basil Rathbone, in scenes from *Romeo and Juliet*; Miss Gladys Cooper, Mr. Owen Nares, and Mr. Leslie Faber, in *Ten Minutes' Interval*; recitations by Mr. Godfrey Tearle; and Messrs. Leslie Henson and Tom Walls, in a "legitimate" drama, entitled *The Woman Pays—Less the Entertainment Tax*. The prices of seats range from 1s. 3d. in the gallery to £3 3s. in the stalls. Tickets may be obtained from Lady Fripp, 19, Portland Place, W.1. The Guild, or Ladies' Branch, was formed some ten years ago to supplement the work of the Royal Medical Benevolent Fund, by visiting and other personal service, by providing clothes and other necessities, and by assisting in the education and technical training of the younger beneficiaries. An effort is being made to put the Guild on a sound financial basis, and at least £10,000 will be required for the educational branch alone. It is hoped to raise a similar sum for the opening of a hostel for some of the aged beneficiaries, to be used also as a holiday and convalescent home for the children. We wish all success to the matinée in aid of this most deserving medical charity. The theatre has been lent by Sir Herbert Tree's executors and Mr. and Mrs. Oscar Asche, and the performance is under the patronage of Her Majesty the Queen.

THE HOSPITAL QUESTION IN NEW ZEALAND.

We have received the report of a conference of representatives of hospital and charitable aid boards, held at Wellington, New Zealand, on June 1st and 2nd this year. The conference was addressed by the Hon. C. J. Parr, Minister of Public Health, Hospitals and Charitable Aid, who holds this portfolio together with that of Education. In the report there is much food for thought for those who are wrestling with the hospital problem in this country. New Zealand appears to have advanced much further along the path of so-called progress than the old country, and it is interesting to note that, according to Dr. Valintine, Inspector-General of Hospitals, a committee of experts, specially appointed by Dr. Addison to inquire into a system suitable for England and Wales, is of opinion that the New Zealand system is the best and most adaptable. Nevertheless, the Dominion is not satisfied with the results. It appears that the hospitals are supported partly by the rates, partly by contributions from the patients, and partly by subsidies from the Government. Unfortunately, some of the boards, either from slackness or excess of sympathy, fail to collect the patients' contributions, so that, on the average, only 70 per cent. of the fees materialize. Difficulties then arise in connexion with levying the rates. And the trouble is aggravated by the fact that no satisfactory basis for the subsidy from the Government department has yet been arrived at. Consequently a large number of people are looking forward to the time when the whole cost of hospitals will be thrown on the Government, with the inevitable accompaniment of an army of officials, inspectors, and paid members of boards. For the moment the Minister finds himself unable to assent to this proposal, owing to the financial straits wherein New Zealand, in common with most countries, finds herself; he believes, none the less, that the nationalization of hospitals is bound to come. Apparently quite a large number of medical practitioners in New Zealand are becoming converted to the view that some form of nationalization of at all events a portion of the medical profession is necessary. According to Dr. J. L. Frazerhurst, the British Medical Association in New Zealand recognizes that the whole idea of charity in connexion with hospitals has gone by the board. It is said that a large number of facilities in the way of treatment cannot be had unless there is a State service to control and coordinate them. The committee appointed to go into these matters by the British Medical Association in New Zealand felt that honorary staffs should be done away with; that boards should not be allowed to compete against each other in order to get men; and that all medical men would be put on a better equality of service by coming under a State hospital system. And under the State system everyone would be able to come into the benefits of a superannuation scheme. To these proposals of the British Medical Association in New Zealand the objection was raised by lay members of the conference that the medical profession was trying to get control of the whole of the hospital institutions for their own benefit; and in the end the following resolution was passed: "That owing to the increasing demands by the public and sections of the public for further extension of hospital and nursing facilities, it is desirable that the State should establish a hospital service, so as to secure some uniformity as regards salaries and conditions of service for medical officers and nurses; but that the matter be referred back to the department for the further elaboration for, and consideration by, the boards."

ALCOHOL AND VENEREAL DISEASE.

A Danish observer, Dr. S. Lomholt[1] made inquiries between October 1st, 1916, and May 1st, 1920, of all the men attending a Copenhagen venereal clinic as to the circumstances in which they acquired venereal disease. There were altogether 548 cases in which definite information was given. In 476 the disease was gonorrhoea. The infection was attributed to professional prostitutes (that is, women receiving payment at the time) in 153, or about 28 per cent. of the total. This figure is remarkably low. Fournier found that among out-patients in Paris 72 per cent. were infected by prostitutes, and in Berlin Blaschko estimated this ratio at 81 per cent. Among 455 men, 217 admitted to Dr. Lomholt that they were definitely under the influence of alcohol at the time of infection. This ratio of 48 per cent. is not very high. In the Danish navy the author found that about 63 per cent. of the patients were infected while under the influence of alcohol; and in Stockholm Moller put this ratio at 68 per cent. The author found also that of the men infected by professional prostitutes, 75 per cent. were under the influence of alcohol. Of the men infected by amateur prostitutes (that is, women not engaged in routine professional prostitution), only 37 per cent. were infected while under the influence of alcohol. The inference drawn from these figures is that alcohol greatly lessens the discrimination shown by men in the choice of the women with whom they cohabit. In 72 cases, or 13 per cent. of the total, the men were married. The proportion of infections by professional prostitutes was twice as high among married as among unmarried men, and the proportion of alcoholic cases was 50 per cent. greater among the former than among the latter. Dr. Lomholt concludes—as many have concluded before him—that the campaign against alcohol is an important part of the campaign against venereal disease.

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[1] *Ugeskrift for Læger*, July 22nd, 1920.

ZYMOTIC DISEASES IN LONDON.

Some public attention has naturally been directed to the prevalence of scarlet fever and diphtheria in London. The actual figures suggest the following reflections. So far as scarlet fever is concerned, the prevalence is not only greater than last autumn and winter, but in excess of any year since 1893. The increase shown by the last record available at the time of writing is steeper than would have been anticipated from the previous returns, but, on the whole, it seems unlikely that the maximum of 1893 will be attained, and probable that a decline will set in within two or three weeks. The type of disease is, judged by deaths, extremely mild. Diphtheria prevalence, nearly always correlated with that of scarlet fever, is also considerably above the average, but it is much harder to compare the results with those of former years, since the facilities for, and the use made of, means to detect carriers are very different from those of twenty years ago. This consideration makes one hesitate to infer that the fatality of the diphtheria now observed has declined so unequivocally as has that of scarlet fever.

BLIND MASSEURS.

We print this week a letter in which Mr. C. Mansell Moullin and Sir Alfred Pearce Gould support Sir Arthur Pearson in drawing the attention of medical practitioners to the work of the Association of Certificated Blind Masseurs. The 105 men and 21 women members are all completely, or very nearly, blind; they have undergone a training which lasts for about two years, and have passed examinations the requirements of which do not differ from those applicable to sighted candidates. A large majority of the men lost their sight as a consequence of their war service, and were trained at St. Dunstan's; their cause is one which deserves to be helped.

The Bradshaw Lecture will be delivered in the theatre of the Royal College of Surgeons of England, Lincoln's Inn Fields, by Sir Berkeley Moynihan, on Monday, December 6th, at 5 o'clock. The subject will be "The surgery of diseases of the spleen."

The University of Liverpool has instituted a Diploma in Medical Radiology and Electrology. A course of post-graduate work extending over six months is required before a candidate can enter for the examination. Instruction in physics constitutes part of the course. Mr. C. Thurstan Holland has been appointed a university lecturer in charge of the department of Radiology.

The eleventh biennial Huxley Lecture on "Recent advances in science in their relation to practical medicine," will be delivered by Professor F. Gowland Hopkins of Cambridge, in the out-patients' hall of Charing Cross Hospital, on Wednesday, November 24th, at 3 p.m. Previous lecturers have been Michael Foster, Rudolf Virchow, Lister, Professor William H. Welch, Pavlov, Sir William Macewen, Sir Patrick Manson, Sir Frederick Mott, Professor Simon Flexner, and Sir Ronald Ross.

A meeting of the committee formed to establish a memorial to the late Sir Victor Horsley was held at the house of the Royal Society of Medicine on November 3rd, when Sir Charles Ballance, K.C.M.G., was in the chair. The chief business of the meeting was to appoint an executive committee to take steps to raise a fund, of which the Senate of the University of London would be trustees, for the endowment of a lectureship or scholarship to perpetuate the memory of Sir Victor Horsley's scientific and public work. The honorary secretaries reported the receipt of promises to the amount of about £100, in sums of £1, £2, £5, and £10. It was decided not to place any limit on the amount of subscriptions, which may be sent to Dr. Edward J. Domville, O.B.E., Symondsbury, Bridport, one of the honorary secretaries, the other being Sir W. Arbuthnot Lane. The treasurers are Sir Frederick Mott, K.B.E., and Dr. H. H. Tooth, C.B.

Medical Notes in Parliament.

Ministry of Health Bill.

THE HOSPITALS QUESTION.

The second reading debate on the Ministry of Health (Miscellaneous Provisions) Bill was begun on November 2nd, but was broken off by an urgency adjournment motion on Irish affairs. This was the more inconvenient because the measure itself covers diverse matters. The earlier clauses deal with housing problems; Clause 10 takes up the question of the provision of mental homes for non-certified patients willing to be retained in them, and Clause 11 raises the difficult problem as to possible assistance or support for general hospitals out of the rates.

Early Mental Disorder.

In explaining the reasons for what was suggested in Clause 10, Dr. Addison said that a large number of men suffering from shell shock, or affections of that kind, were mentally disordered for a short time. During the war a system was set up whereby suitable cases had treatment in mental hospitals in order that they should never be classed as lunatics, and should escape for the rest of their lives from any disabilities which that might bring upon them. The experience of the war was clearly one which ought to be made use of. Therefore provision was made in Clause 10 to continue this form of treatment under very stringent safeguards. It was laid down that persons so treated must be suffering from mental disorder which was incipient in character and of recent origin, which of course excluded early cases. Treatment for any individual was to be limited to six months. Places where persons were to be treated were to be certified and inspected; persons could only receive the treatment on the certificate of two duly qualified medical practitioners; they could be received only on their own consent, and they could discharge themselves at any time by giving notice in writing. The proposal did not apply only to ex-service men, but the Ministry did not anticipate that it would require more than the existing staff for the purposes of inspection.

The Hospital Clause.

Dr. Addison afterwards explained the circumstances which led to the proposal contained in Clause 11. Having emphasized that the accommodation in voluntary hospitals was quite insufficient to meet the public need, he gave the figures and information which have already been published in our columns in the reports of his address to the Parliamentary Medical Group and his reply to the deputation from the British Medical Association last week. He again insisted that the Ministry of Health had shown by its action a real anxiety to keep voluntary hospitals off the rates, and said there was nothing new in the proposal in Clause 11, which would enable local authorities, if they desired to do so, to make a voluntary contribution in aid of hospitals.

Since 1916, continued Dr. Addison, various authorities had taken power by private bills in the House of Commons to acquire authority to make these contributions. There had been four cases before the House in the last twelve months. The City of Liverpool had taken power to contribute £5,000 yearly to the Royal Infirmary. In Salford they had made a rate, limited to one penny, the produce of which was handed over to the voluntary hospitals. This sort of procedure clearly was desirable. He was sure all would agree that if they could keep voluntary hospitals off the rates they should allow the authority that thought it could do so to render such assistance. On an interpellation, Dr. Addison said he would make quite clear in the course of his speech that the bill should be so framed as not to enable the local authorities to take over any existing voluntary hospitals. He went on to point out that while the voluntary hospitals accommodation was inadequate, there was a large percentage of empty beds amongst the institutions provided under the Poor Law. It had been ascertained, moreover, that there were in the country fifty-four Poor Law hospitals which were entirely separated from the workhouses. Dr. Addison once more gave in summary the reports he had received on these institutions, stating that they were in the main altogether favourable, and he included some further facts. Paddington Infirmary, for instance, was now receiving the overflow from St. Mary's Hospital; Lambeth Infirmary, with 800 beds, was also admitting cases from St. Thomas's, Guy's, and King's; Camberwell Infirmary was receiving cases from King's, Guy's, and St. Thomas's. On August 18th Camberwell Infirmary, with 850 beds, had 200 empty, whilst the population in the district was crying out for hospital bed accommodation. Another striking case was that of Withington Hospital, Manchester—2,600 beds, of which on September 23rd 1,100 were empty. Some authorities had in necessity taken the law into their own hands. Some time ago there was a proposal from the city of Birmingham, which had a large Poor Law infirmary, but he was unable to sanction that request. In the city of Bradford, and at Willesden, hospitals under the Poor Law had been converted into general hospitals. Dr. Addison recalled that borough councils had some powers under the existing Public Health Act, but it was doubtful whether or not these powers fully extended to the supply of general hospitals. The point would be set at rest by the bill. He [illegible], however, in order to meet the [illegible], and to avoid unnecessarily increasing the expenditure, to make certain alterations in Clause 11. In order to secure that the Minister responsible might be called up at question time and made answerable for the schemes he sanctioned, and also for the conditions applying to them, he should suggest that in Clause 11 the wording,

> "That the scheme shall, on certain conditions approved by the Minister,"

should apply to the whole clause.

Clause 11, as originally introduced on August 16th, 1920, ran as follows:

> **11.**—(1) The council of a county shall have power—
>
> (a) to supply and maintain hospitals (including out-patient departments) for the treatment of illnesses and diseases generally, or for the treatment of any particular illness or disease, or any particular class of illnesses or diseases; and
>
> (b) to contribute, on such terms and conditions as may be approved by the Minister, to any voluntary hospitals or similar institutions within their area; and
>
> (c) to [illegible] the maintenance of any Poor Law hospitals or infirmaries within their area; and
>
> (d) to [illegible] and maintain, or to contribute towards the cost of [illegible] in establishing or maintaining, an ambulance service for dealing with cases of accident or illness within their area.
>
> (2) The councils of two or more counties may, with the consent of the Minister and subject to such conditions as he may prescribe, combine for the purposes of supplying and maintaining hospitals under this section, and where any councils so combine they may appoint a joint committee under section fifty-one of the Local Government Act, [illegible] shall have effect accordingly.
>
> (3) Section one hundred and thirty-two of the Public Health Act, [illegible] the maintenance in hospital [illegible] shall apply to any patient who [illegible] maintained by the council of a county [illegible], and the council shall have the same power of [illegible] as is given to a local authority under that section.
>
> (4) [illegible] of a council under this section shall be defrayed in the case of the council of a county as expenses for general county purposes, and in the case of the council of a county borough as expenses incurred in the administration of the Public Health Acts, [illegible].
>
> (5) [illegible] shall have power, with the approval of the Minister, [illegible]
>
> (6) In [illegible] the expression "council of a county" includes the council of a county borough.

He would further propose that paragraphs (c) and (d) of the clause [illegible], so that the authority should be limited to taking over, under proper safeguards, all existing Poor Law hospitals, and that the power should not extend to [illegible] the voluntary hospitals. This would also shut out the establishment of additional hospitals. The intention was to [illegible] to the authorities to make voluntary contributions. Thus they would meet the present needs and [illegible] without prejudice to any ultimate [illegible]. [illegible] expenditure would be raised in the Commons he had authorized inquiries, and the result was set out in a memorandum circulated a few days ago. The result in the boroughs and districts selected was described by Dr. Addison. He went on to say at some length that the two alternatives of policy in dealing with local expenditure were either to control the whole sphere of local expenditure from Whitehall and thus establish a growing bureaucracy, or to put safeguards and limitations of a reasonable kind and encourage the control of the electors over local government. This latter he deemed the right course to adopt.

Debate on Clauses 10 and 11.

Earl Winterton, after some emphatic criticism of the bill on general grounds, strongly objected to Clause 10 as practically giving to the Minister of Health *carte blanche* to override the Lunacy Act. It seemed to him only another example of the fixed idea with which Dr. Addison was obsessed that he and his department alone should be responsible for ordering the coming and going of everyone in this country. He did not know why the Ministry of Health should override the Lunacy Commissioners; its previous attempts to deal with other questions led members to believe that the department would not be any more successful in this. There was a large school of opinion that the present Act allowed too big a loophole for possible ill treatment and ill usage of the subject; yet under this clause Dr. Addison proposed to sweep away the safeguards in the existing Acts. Under the clause it would be possible, subject to very small safeguards, for, say, a neurasthenic who was not familiar with the law to be incarcerated without having any power to adopt the procedure laid down in the Act for appeal to proper authority. As for the voluntary hospitals, Earl Winterton said he did not believe that the effort on their behalf was anything like exhausted. Possibly they might be run by the Red Cross, which, he understood, had large funds at its disposal. Dr. Addison's promise to introduce an amendment to this clause so as to make it impossible for a local authority to set up fresh hospitals and support them out of the rates was an important concession, and in that form there was not the same objection to the clause. He could not, however, see the reason which had led Dr. Addison to present the bill before this matter had been thus defined. If Dr. Addison was anxious to see the voluntary system maintained, he should give it a fair chance, and that it would not have if local authorities were encouraged to give subscriptions out of the rates. The grant of that power would, he believed, strike a death blow at the voluntary system. He moved the rejection of the bill.

Sir Henry Craik seconded the amendment, objecting to the bill on financial grounds, and because it attempted far too many things within the compass of one measure. The matters involved in the medical provisions raised points of great importance and [illegible] as to which the House had to be advised by the most mature and careful medical authorities. They could not, in his opinion, be dealt with in a few lines and a couple of clauses.

Sir Donald Maclean held that Clause 10 required most careful investigation. He hoped that the House would not give, in anything approaching their entirety, the powers asked for by the Ministry. They threatened a very serious inroad in what had hitherto been carefully safeguarded by the House. The Minister of Health might recall the very difficult progress to that House of the last bill which dealt with a similar question. People knew what had happened under the safeguard of the certificate of two medical men, and all the rest of it. He suggested that the operation of the clause might be limited to cases arising out of the war and not have any general application. As to Clause 11, he thought they must face the fact that to grapple adequately with the need for preventive and curative treatment voluntary effort was not sufficient. Given the safeguards required, the proposals of this clause would, he [illegible], after careful scrutiny by the Committee, a [illegible].

[illegible] that the hospital question should have been dealt with [illegible] in a separate bill if dealt with at all. With regard to the mental hospitals clause, [illegible] to the danger of leading themselves to [illegible].

[illegible] that the Labour party were [illegible].

[illegible] Clause 10 must [illegible] the appointment of a large army of [illegible]. He held that Clause 11 would [illegible] before the House [illegible] what were Dr. Addison's intentions as to the [illegible], which practically [illegible] a complete alteration of the Poor Law, and [illegible], which dealt with the whole [illegible].

Sir [illegible], as chairman of the Executive [illegible] of the County Councils Association, was of opinion that there was a real case for enabling county councils to take over Poor Law infirmaries, but saw danger in the proposal to allow county councils and county borough councils to subscribe to hospitals. If aid was required other than from voluntary contributions it had much better be obtained, he thought, in the form of a Government grant, subject to audit and inspection, than in a draft from the rates, which would weaken the springs of voluntary aid. The debate was then broken off.

The Debate Resumed.

The debate was resumed on November 9th, when Dr. Addison further experienced the disadvantage of defending an "omnibus bill." The housing, finance, and hospital proposals were in turn criticized by most of the speakers, who yet were not hostile to all the provisions, but only to some. Much objection, however, was taken to the fact that matters so diverse were linked in a single measure. The hospital clause suffered sharp attack from a number of standpoints, and as, at 11 o'clock, the discussion had to be closured, it is impossible to say to what extent individual dislike of features of the bill remained undisclosed.

At the outset Dr. Addison heard an appreciation of Clauses 10 and 11 by Dr. Raw, who, speaking from large experience of lunacy work, welcomed the project for the treatment of incipient mental disorders. He was certain that many persons admitted to asylums would be spared the stigma of lunacy if they could receive proper treatment for a few months in homes. He referred especially to puerperal mental aberration, to persons under the influence of alcoholism, and to others with mental symptoms following ordinary diseases such as influenza, pneumonia, Bright's disease, or brain injury. Referring to the cases of thousands of soldiers whose nerves had been shattered, he said, from his own knowledge obtained in France, that very few were insane. He would like to see special mental wards attached to all general hospitals, where such cases would receive the best skilled attention. Dr. Raw also supported with confidence Clause 11.

Sir Godfrey Collins dissected figures already published to show that for five years during the war the provincial hospitals had an income exceeding expenditure; and that it was only in 1919 a serious deficit occurred, and this was only 8 per cent. on the total subscriptions. He spoke of the enterprise manifested in the provinces in forming committees of employers and employees to meet these new circumstances by voluntary aid. He knew that the position of the hospitals in London was very unsatisfactory, but he suggested that a small representative committee should be set up to submit a scheme for wiping out the liabilities, and that meanwhile the proposals in Clause 11 should be postponed. The adoption of this clause would, he feared, torpedo voluntary work.

Mr. G. H. Roberts gave qualified support to Clause 11, but was concerned that no existing official staffs should suffer from any change in regard to service. He thought that what had been done under the Insurance Act to preserve friendly societies might encourage hope that the voluntary system could be maintained for voluntary hospitals consistently with aid from local authorities or the State.

Mr. Leonard Lyell objected to the hospital question being dealt with in a miscellaneous measure, and held that the scheme for sanctioning assistance from the rates would work inequitably. Rich districts would escape and poorer districts would suffer a levy.

Mr. Wise held that it was still possible to maintain the hospitals by the voluntary system, and advocated fresh appeals for new subscribers. If, after all, it was found that aid must be obtained from the country, he thought it would be better to get this from the Exchequer instead of from local rates.

Mr. F. Briant spoke in favour of the bill as regarded from experience of Poor Law administration.

Major Ormesby Gore made a slashing attack on the measure, and especially on Clause 11. He insisted that Dr. Addison was not facing the hospital crisis, and described the bill as nothing but camouflage. It simply proposed to transfer from boards of guardians to county councils the cost of maintaining a certain number of beds. In the sequel there would be inadequate provision for the poor who were left, and boards of guardians would have to build new infirmaries. He asked the House to notice that the figures quoted by Dr. Addison as to vacant beds in Poor Law infirmaries referred to August and September. It had been stated that at Fulham there was spare accommodation for 122 persons; that, of course, was true of those summer months, but at present the number of vacant beds was only 42. In his opinion, Dr. Addison had been misleading the House. He wanted to know further whether the Minister had consulted the Poor Law authorities on his proposal. If he wished to end the work done by the guardians, he should introduce a bill to deal with the Poor Law system instead of presenting this "hotchpotch" of every kind of thing.

Mr. Seddon held that the bill would not give to the hospitals the help they needed at the present time. He said that if the bill went to Committee many members who were supporters of the Government would have to oppose it.

Dr. Addison, in a conciliatory reply, offered the House the assurance as regards Clause 10 that any safeguards deemed necessary to protect the rights of patients in the mental homes would be accepted. As to Clause 11, he asked members who objected to contributions out of the rates to voluntary hospitals to ponder the fact that thirty-three different local authorities had already the power to give such aid under clauses which were passed in private bills. He also reminded the House that, while the London Hospital had a waiting list of 900 persons, in addition to its other troubles, there were 200 vacant beds in Whitechapel Infirmary near by. People who could avoid doing so would not, however, use these infirmaries so long as they were under the Poor Law. If this matter were left alone, the whole burden of hospital maintenance would come upon local rates. His was the only practical proposal for relieving the situation; members who had criticized had offered none.

Major Molson announced with regret that he should feel obliged to vote against the bill on financial grounds. Whether the extra burden fell on the rates or the Exchequer, he should still object, as he thought the matter could be carried along by private enterprise. He deplored the fact that Dr. Addison was so beset by housing problems, instead of being able to give his whole attention to essentially health matters.

At eleven o'clock Mr. Bonar Law moved the closure, which was carried by 177 votes to 52. The second reading of the bill was next carried by 156 votes to 76. Nearly all the minority were Coalitionists. Labour was sympathetic towards the bill—either supporting the Government or not voting. A motion by Mr. Hogge to refer the bill to the whole House was defeated by 153 votes to 53.

The Criminal Law Amendment Bills.

The Joint Committee of both Houses of Parliament appointed to consider the Criminal Law Amendment Bills Nos. 1 and 2 and the Sexual Offences Bill finished on November 2nd the task of taking evidence, and it is now engaged in preparing its report. Lord Muir Mackenzie is chairman, and the members include Dr. A. C. Farquharson. The sittings were begun early in the session, and have been held since the autumn, the Committee reassembling two or three times a week with a view of enabling legislation to take place within the session. All three measures thus examined were introduced in the House of Lords—the Criminal Law Bill No. 1 by the Bishop of London; the Criminal Law Bill No. 2 by Viscount Sandhurst (on behalf of the Government), and the Sexual Offences Bill by Earl Beauchamp. They followed the lines of bills brought forward last year in the same chamber.

The procedure followed differed from that which obtains when bills are referred to a Standing Committee of one or the other House. In that case each clause is dealt with successively for approval, amendment, or rejection. Under the reference of the three proposals for legislation to this Joint Committee witnesses were asked to give their opinions on the different bills and their separate features, and it is now left for the Committee to sum up in private its conclusions as to what should be done, the object being to get for the Government a weight of authority in favour of a single bill to be drafted from the three thus reviewed, with such changes as the Committee may think advisable.

Both the Criminal Law Amendment Bills set forth in their first clause that in future "consent" of young persons should be no defence. Both also would amend the principal Act as regards the age of the girl and "reasonable belief," etc. The evidence varied as to whether the age should be raised from 16 to 17 or 18 or left as at present; but there was a weight of opinion that the law would operate more effectively if no question of "reasonable belief" as to age could be raised as a defence. Thus it might be advisable to fix the age lower than otherwise would be done, removing from the principal Act the right of raising "reasonable belief" as to a higher age as a ground of defence. In that case the Committee may apparently retain the present age of 16 or raise it only one year.

Mr. H. Wansey Bayly, honorary secretary of the Society for the Prevention of Venereal Disease, gave evidence on behalf of his executive committee. He urged that amendments should be made in the Sexual Offences Bill so as to ensure that preventive disinfection should not in certain sections be confused with curative treatment. His committee also suggested that the word "preventive" should be omitted from sections of two of the bills, so as to enable chemists to recommend and offer for sale and advertisement proved, recognized, and accredited disinfectants for the prevention of venereal disease.

Lord Gorell, President of the National Council for Combating Venereal Diseases, gave evidence on November 2nd. To remedy evils at docks and harbours he advised that all ships within the territorial waters of the United Kingdom should be brought within the provisions of the Criminal Law Amendment Act by making them liable to be deemed "premises used as houses of ill fame." He gave a depressing account of conditions at the docks, remarking that foreign seamen presented the worst difficulty. Following on what some earlier witnesses had said, Lord Gorell submitted that the transmission of venereal disease might be more suitably dealt with as an offence under a Public Health Amending Act than by a clause in any of the bills under consideration. He feared that if this question were dealt with under the Criminal Law, the tendency even more than at present would be towards the concealment of the disease. In the present state of public opinion the transmission of the disease was a social and not a criminal offence, but if public opinion advanced, in ten years it might be possible to deal with it more severely. Dr. Farquharson asked if the witness held that the moral guilt was greater in the case of a person who knowingly transmitted the disease than in the case of a person who knowingly exposed himself to the disease. Lord Gorell replied that if it were treated as an offence against public health the blame would be the same in both cases.

In answer to the Chairman, Lord Gorell said he did not suggest that the Committee should drop the clause constituting as an offence the transmission of disease knowingly, but that they should amend it and recommend that it should be embodied in a public health bill. To abandon the clause would give the public the impression that there was indifference as to the matter. Lord Gorell said he would not forbid the supply of drugs to prevent venereal disease, but he was not in favour of giving prophylactics to the general public to use as they pleased. The only difference between his council and the Society for the Prevention of Venereal Disease was upon that one point. The whole question medically was whether the distribution of these things would prevent infection.

Public Health (Tuberculosis) Bill.

The Minister of Health has introduced in the House of Commons this week a bill "to make further provision with respect to arrangements by local authorities for the treatment of tuberculosis."

Clause 1 imposes on county and county borough councils the duty of providing, to the satisfaction of the Minister, for the treatment of tuberculosis in sanatoriums or other approved institutions, and gives them power to erect and maintain such institutions; should a council fail in this duty the Minister may arrange for the obligation to be carried out by any other local authority or persons, and confer on them the necessary powers; all expenses incurred thereby may be paid in the first instance by the Minister out of moneys provided by Parliament, and recovered from the council. A council may exercise any of its powers in relation to the treatment of tuberculosis (other than the power to raise a rate or borrow money) through a committee, of which one-third may consist of persons who are not members of the council, but are specially qualified by training or experience in matters relating to the treatment of tuberculosis. Clause 2 makes it lawful for county or county borough councils, or the Metropolitan Asylums Board, subject to the Minister's approval, to provide and maintain [illegible] the Public Works Loan Commissioners, and contributions towards its cost may be paid by the Minister, with the Treasury's consent, out of moneys provided by Parliament. Clause 3 permits councils, with the Minister's approval, to contribute to [illegible] apply to Ireland.

The Census Order.—The Census Act, 1920, provides that the [illegible]

[illegible]

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

The Motor Show in Review.

There is little of interest to the medical man to add to the notes published in this Journal last week on the exhibits at the Motor Show, which concludes at Olympia, Kensington, and the White City, Shepherd's Bush, London, on Saturday, November 13th. True there are an even greater number of small cars, particularly at the White City, than were mentioned individually in these columns. But investigation proves that the very large number of exhibitors in this section seem to be either more or less in the position of little local assemblers, such as were characteristic at one time of the cycle industry, or they place on the market vehicles put together from components bought, and sometimes assembled, in America. Indeed, one piece of advice that may be given to the profession is the need to make assurance doubly sure as to the place of origin of all the components of a car; not that it matters which country any particular component comes from, but it does matter very considerably from what particular enterprise each part is issued. That throws light on the ability of the firm from whom a vehicle might be bought to carry out its obligations alike as to guarantee for the usual term and as to supplying spare parts as and when they are needed. It would seem that a number of vehicles shown in this small section are simply the first examples of their kind that have been put together, so that there can be little or no experimental work behind them. Those staging them could not tell accurately how they will work for three months at a spell, and in many cases they have not had one example on the road more than a few miles! Therefore this is a section in which it would be advisable to recommend the medical man to go very cautiously. The width of choice is most welcome as indicating merely that there is a large public demand for small vehicles. But when brought down to responsible firms the choice is really extremely limited. This does not mean necessarily that there is no chance for a new firm. On the contrary, one may take as an example the Galloway, from Scotland. This little car—which has incidentally a novel form of spring gaiter, in that the main portion is fashioned of aluminium—is designed by Mr. T. C. Pullinger, managing director of the Arrol-Johnston company, and is an effort at an entirely new scheme of manufacturing, the financial details of which may not be published yet. It may, however, be indicated that the notion is that, in this case, the workmen shall have the opportunity of practically owning the business once it is launched. The chief of a very big Scottish engineering house is at the back of this venture.

The Two-cylinder Vogue.

Some of the makers of new small cars seize on the apparent vogue for the two-cylinder air-cooled type of engine, imagining they can improve on such schemes merely by fitting the two-cylinder water-cooled type of engine, sometimes of V form, sometimes of horizontal type. A few even favour the vertical type which was much in vogue until before the war, the cheap four-cylinder motor appeared to displace it because the balance was much better. In the post-war era the two-cylinder revival seems to be justified mainly by reason of motor cycle practice, combined with aviation engine experience, enabling designers to furnish this form of power plant in the air-cooled form. One cannot see much use for the two-cylinder engine of the water-cooled type. On the other hand, as employed on the air-cooled principle it is much cheaper to make, and one puts up with the one fault—the relative absence of balance—by reason of the many other gains in these days of necessarily expensive materials and labour. This type can be constructed of considerable size and power yet of light weight and cost.

Of celebrated makes that depart from convention as regards design, the G.W.K. is shown in chassis form in a manner which makes the method of friction drive at the rear explicable to the least technical. The present condition of labour and materials is reflected in the manner in which a well known small car the 9½ h.p.

Treasury rating, four cylinder, water-cooled Briton—is marketed, namely, as a two seater complete at £455 *plus* £50 surcharge. The 10-12-h.p. four-cylinder type is shown at £460 *plus* £50 surcharge. The latter is a *de luxe* type, having 5 mm. bigger bore measurement and 10 mm. longer piston travel. A firm that has established itself in the motor cycle industry for a long time (Douglas Motors of Bristol) introduces a 10½-h.p. two cylinder chassis, the engine being built on the horizontally opposed principle. This vehicle is staged alike with two-three seater and with four-seater coachwork. The smallest De Dion Bouton chassis shown is a 12.1-h.p. Treasury-rating four cylinder water-cooled model, the chassis of which costs £600. Fitted with a three-quarter coupé cabriolet body, it is marketed at an inclusive provisional price of £940. The chassis price of the 15.3-h.p. Treasury rating four-cylinder Thor car shown by Simpson Taylor is £425, including an Allis Chalmers engine-starting and car-lighting set. The price of this vehicle fitted with London built coupé body is £550. The car is more or less on the typical American lines of designing a vehicle of this size and power, save that the rear suspension is by cantilever springs.

An electrically propelled bath chair is shown by J. and A. Carter, the propulsive force being a ¼-h.p. electric motor set directly above the two small front wheels and driving direct to the front axle. The current is obtained from a series of accumulators stored neatly under the seat. The batteries have a capacity of 36 ampère-hours and give current for a distance of 20 miles per charge. The simple control is by a single lever in the right side of the chair. By moving this forward four speeds can be attained, ranging from a crawling pace to five miles an hour. Ordinary gradients can be negotiated with ease. A reverse can be obtained on each speed. As soon as the current is switched off the hand brake acts on the back wheels. There is besides on the left an emergency hand brake worked on a ratchet; this can be left on when the chair is unattended.

MEDICINE IN THE SCHOOLS.

Sir George Newman's annual report for 1919 as Chief Medical Officer of the Board of Education follows hard upon the heels of his report as Chief Medical Officer of the Ministry of Health, and it is to be remembered that the work of medical inspection and treatment is conducted by the Board of Education under the authority of the Minister of Health and that close co-operation between the two departments exists.

Results of Medical Inspection.

The School Medical Service was established in 1907 for the medical inspection of children at elementary schools. The results of inspection raised the whole question of treatment—medical and educational—in the clinic and in the school, and fresh emphasis was given to preventive methods. Thus it has come about that the School Medical Service now means a comprehensive scheme of child welfare for children of school age, including (1) the medical inspection of children and young persons in elementary, secondary, and continuation schools; (2) medical and dental treatment; (3) hygiene, physical training, and open-air education; (4) provision of school meals where necessary; (5) special schools for the blind, deaf, defective, and subnormal children; (6) the restriction of child employment; (7) the control of infective disease in schools; (8) nursery schools.

The results of inspection during 1919 differ, it is stated, very little from those of previous years: about 49 per cent. of the children examined in the course of routine inspection were found to have one or more defects. Children absent owing to illness are not included; they constitute a separate problem. The gross defects are, on the whole, declining steadily, and a comparison between the 8-year-old children and the 12-year-old shows an improvement in cleanliness, dental condition, nutrition, and diseases of the nose, throat, and lungs. On the other hand there is some deterioration in respect of heart, liver, and deformities.

Crippled Children.

Thanks, perhaps, partly to the war, through the increased attention it caused to be given to traumatic deformities, considerable progress is being made in the arrangements for provision and treatment of deformity in childhood. The Education Act of 1918 extended to the case of physically defective children the duty imposed on the local education authority by the Act of 1914 to make suitable provision for the education of mentally defective children. Since April last the authority is required to ascertain what children in its area are physically defective and to make provision for them. Here again, as Sir George Newman points out, we have the old story of the voluntary pioneer preparing the way for the State. It was in 1851 that the Cripples' Home was founded in Marylebone, and in 1865 that the National Industrial Home for Crippled Boys was started in Kensington.

Sir George Newman pays an eloquent tribute to the achievements of orthopaedics, and then states that the policy of the Board of Education is designed to allow the local authorities to make provision for the education, proper housing, and physical welfare of all crippled children, including, when satisfactory arrangements can be made, little children from the age of 2 years upwards. The first step a local education authority must take is to ascertain the number of crippled children in its area, and certain preliminary inquiries show that the ratio varies very greatly in different areas—from 3.5 per 1,000 in a county area to 13.9 in London, 14.1 in Manchester, 19.9 in Shropshire, and 22.9 in an area just outside Manchester. The figures suggest that one cause of the variation in the ratio is that the inquiry has been made more carefully in some districts than in others. It is suggested, after making all allowances, that between ½ and 1 per cent. of the children of school age require treatment and education as cripples; this would mean from 30,000 to 60,000 children in total. As to the cause of crippling, Dr. Hamer's statistics for London suggest tuberculosis as the most important single cause, next comes acute poliomyelitis, and next congenital defect.

A scheme for the treatment of crippling defects must, it is pointed out, fulfil certain principles: the first is that the child must be brought under treatment as early as possible; the second, that the treatment must be prolonged; the third, that after-care must be provided to maintain the treatment applied in hospital and to guard against relapse; the fourth is that suitable educational provision must be made during the long sojourn in hospital necessary to most courses of treatment. Finally the treatment must be comprehensive and effectual. These principles are practically those laid down by Sir Robert Jones and Mr. Girdlestone in the article they published in this Journal on May 22nd, 1920.

A number of residential schools for crippled children have been established in various parts of the country; thus there are fourteen for cripples and nineteen for non-pulmonary tuberculosis; in addition, seven residential open-air schools take in non-pulmonary tuberculous children. There are also fifty-seven day schools, providing accommodation for over 5,000 physically defective children; at each of these is a nurse, who takes the children to school in an ambulance, inspects splints, and assists at the medical inspections.

Schemes for organizing the treatment of cripples have been instituted in several localities by voluntary committees. The Shropshire scheme, which has grown out of the pioneer work of Miss Hunt at Baschurch, has been fully described in our columns. There is a similar scheme in North Staffordshire. A scheme for Oxfordshire, Berkshire, and Buckinghamshire is being organized by Mr. S. R. Girdlestone, and a scheme for Westmorland, including an orthopaedic hospital at Calgarth Park, Windermere, is being got into working order.

The need for close and continuous co-operation between voluntary agencies and associations and the more official work of the local authorities is insisted upon, but it would appear that the progress of the schemes is being hampered by their high cost, one item in which is the price of apparatus. Economy in the latter respect might be effected had each orthopaedic institution a workshop of its own. As to the nature of the institution, preference is expressed for the residential school which provides early education, long treatment, educational facilities, and open-air conditions; at the same time it is less expensive than a hospital. The child should be got out of the hospital and into a residential school as soon as the special treatment provided by the hospital is completed.

(*To be continued.*)

MAINTENANCE OF HOSPITALS BY LOCAL AUTHORITIES.

A CONFERENCE called by the Federation of Medical and Allied Societies was held at the house of the Medical Society of London on November 5th to consider the provisions of Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill. Sir MALCOLM MORRIS, who presided, said that they had in the first place to consider whether such a measure as this should have been introduced at all; in the second, to note that the Ministry of Health had not consulted the Federation; in the third, to endeavour to assess the effect of the new proposals upon the voluntary system; and finally, to decide upon what measures should be taken to secure the modification of this clause of the bill.

Dr. ARTHUR LATHAM moved the first resolution, which was one of regret that it should have been found necessary to introduce health legislation involving important principles in a miscellaneous provisions bill. Dr. E. H. M. STANCOMB seconded, and said that if this method of introducing health legislation were condoned they might find themselves face to face in their local areas with cut-and-dried schemes quite in opposition to the interim report of the Consultative Council and to the wishes of the local profession. Dr. W. E. ELLIOT, M.P., argued that the profession had itself to blame for not bringing pressure to bear upon the Minister. Dr. F. E. FREMANTLE, M.P., supported Dr. Elliot's contention, but, while admitting that it was regrettable that these provisions should be introduced before a larger measure was brought in, said he must oppose the resolution if it reflected on the Minister. Sir HENRY CRAIK, M.P., said that the resolution assigned responsibility to no one, but it was greatly to be deprecated that a bill should be introduced which was not one but a dozen bills. The resolution was adopted, with three dissentients.

Sir THOMAS HORDER moved:

> That the interests of the public in the question of health legislation can be safeguarded if the Minister of Health avails himself of the means now offered of consulting collectively the medical, dental, pharmaceutical, nursing and midwife professions and others concerned with the national health, inasmuch as the members of these professions not only provide the health services, but are looked to by the public for guidance in such matters.

He thought the principle of this resolution was conceded by the Minister himself, who had emphasized the fact that ultimately he was dependent upon the general opinion of the medical profession for successful health legislation. The speaker mentioned that Lord Rhondda in his last illness, alluding to what he would have done had he been Minister of Health, said to him: "I want you (the medical men) to get the machinery whereby I may tap the opinion of the profession, and this machinery should not be part of the bureau." The Consultative Council was admittedly part of the bureau, but the machinery for tapping opinion existed in the shape of the Federation.

Mr. J. P. LOCKHART MUMMERY seconded the resolution, and Dr. STANCOMB, in supporting, assumed that the Ministry of Health, in bringing in a general provisions bill of this sort, was receiving pressure and advice, not from those best qualified to give it, but from friendly societies and other interested sources; outside pressure was being used to bring in municipal hospitals. Sir HENRY CRAIK urged the strengthening of the resolution to make it express a demand for such consultation, and his amendment to this effect was seconded by Dr. W. E. ELLIOT and adopted, so that the resolution as ultimately carried ran:

> That the interests of the public in questions of health legislation demand that the Minister of Health avail himself of the means [illegible].

Dr. CHARLES BUTTAR moved:

> That as the British voluntary hospital system has been proved to be [illegible] it would be a mistake [illegible] municipal hospitals until the system of contributions by patients towards the cost of their maintenance in voluntary hospitals and the attempts now being made to link up voluntary hospitals with Poor Law infirmaries have been given a fair trial.

Several members of Parliament present pointed out that in the House of Commons on the previous evening the clause had been modified so that the resolution as it stood was scarcely necessary or germane. Dr. Buttar, however, persisted in moving it, with special reference to the position in Bradford, which was not ruled out by what had happened in the House of Commons. He said that there was on the one hand a reaction amongst certain classes against what was called charity, and on the other a movement in favour of nationalization or municipalization, and he regarded Clause 11, at least as it originally stood, as an attempt at a much extended system of municipalization as applied to hospitals. Pending a fair trial of the interesting experiments now proceeding in the direction of payment by patients for maintenance and of the linking up of Poor Law infirmaries with voluntary hospitals, there was no present excuse for any large extension of hospital provision by local authorities.

Mr. NEVILLE CHAMBERLAIN, M.P. (representing the British Hospitals Association), seconded, and the motion was supported by Sir JOHN YOUNG, who said that at the Central London Throat, Nose, and Ear Hospital, where the practice of receiving voluntary contributions from patients had been followed with great success for many years, 50 per cent. of the expenses of the hospital had been met by this means. A well devised system of patients' voluntary contributions would remove the stigma of charity, which was the most important sentimental objection to the voluntary system. Lord KNUTSFORD declared his belief that the voluntary system had come to an end. After January 1st next the London Hospital would close its doors because it could not pay its bills. This was not because subscriptions had fallen off, but because the cost of everything was so high. The voluntary system had done its best, but its day was over. His ideal system would be one in which the London County Council was made the health authority for the whole of London, with a linkage of central and outlying hospitals, the former to be for the most part consultative centres, and the Poor Law infirmaries to be municipal hospitals thoroughly well staffed. He did not think that municipal aid would put an end to voluntary contributions. Dr. STANCOMB could not agree that the voluntary system, to quote the resolution, had proved efficient, though it had been economical, in the unfortunate sense. It had not met the needs of the community nor encouraged preventive medicine. The voluntary hospitals provided no opportunities for practitioners to avail themselves of modern methods for carrying on their work. He trusted the conference would not allow it to go forth that those present would put any obstacle in the way of State aid.

It was agreed, on the proposition of Sir THOMAS HORDER, seconded by Sir RONALD ROSS, to delete from the resolution the words in praise of the voluntary system.

Dr. STANCOMB then moved as an amendment, in place of the whole of the remaining part of the resolution: "That the time has now come when the British voluntary hospital system should be supplemented by State aid." Dr. A. A. MACKEITH seconded. Dr. GORDON DILL opposed the amendment as introducing a wider issue. He bowed to Lord Knutsford's opinion so far as London was concerned, but he believed that in the country generally the voluntary system was not dead, and that it would not die unless killed by misguided legislation. Dr. BRUCE, of the Society of Infirmary Medical Superintendents, praised the linking up of the Poor Law infirmary with the general hospital, but urged that this would not meet the whole situation; and Dr. J. C. MUIR pointed out the fallacy of taking the number of empty Poor Law beds in summer as an index to the condition of the Poor Law infirmaries all the year round. He feared that the destitute poor might be pressed out.

Dr. STANCOMB would not accept any modification of his amendment whereby the words of the original resolution would be left in, and his proposed words added on to them; on being put to the vote his amendment was lost, 14 voting in favour and 15 against. Mr. NEVILLE CHAMBERLAIN then moved to insert at the beginning of the resolution the words, "That the time has come when the British voluntary hospital system should be supplemented by further State aid." Dr. G. B. BATTEN seconded, and this was agreed to. As finally carried, without dissent, the resolution read:

> This conference of representatives of medical and allied organizations suggests that the time has now come when the British voluntary hospital system should be supplemented by further State aid, but that the system of patients contributing towards the expense of their maintenance in voluntary hospitals and the attempts which are now being made to link up voluntary hospitals with Poor Law infirmaries should be given a fair trial.

Dr. FREMANTLE moved that any municipal or State contribution should be limited to a grant per capita for those patients unable or only partially able to pay the expense of their maintenance and treatment in voluntary hospitals. Dr. BATTEN seconded this, but Mr. CHAMBERLAIN pointed out that this would do away with the contributions now being made by local authorities in respect of venereal disease, maternity, and various other services; and Dr. ELLIOT pleaded that a vote should be avoided on this

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* The clause as introduced into the House of Commons on August [illegible] was printed in full in our Parliamentary Notes [illegible].

matter of detail at the present stage. Dr. Fremantle then withdrew his resolution.

A resolution, proposed by Mrs. Cecil Carter, was carried without discussion: it affirmed that in the event of the establishment of municipal hospitals it was in the public interest that the local doctors and dentists, pharmacists, nurses, and midwives should have a clearly defined representation in connexion with all local health authorities or such bodies as were responsible for the administration of local hospitals and Poor Law institutions.

COLONIZATION OF TROPICAL AUSTRALIA.

The question whether the white races can permanently establish themselves in tropical regions has been discussed during the last thirty years or so from a new point of view, for it has been contended that the reason why true colonization has failed is not the climate but certain tropical diseases, such as malaria, which, it is asserted, can be prevented. The question has had particular interest for Australia, the northern part of which falls within the tropics. It has been held, on the one hand, that the climatic conditions and the prevalence of tropical diseases, especially in Northern Queensland, is incompatible with the permanent establishment of a self-sustaining white race in tropical Australia. On the other hand, it has been contended that it should not be beyond the power of preventive medicine to deal effectively with these conditions of endemic disease. The problem is very largely a medical one. The Australian Medical Congress at its ninth session recommended that the principal subject for discussion at the congress at Brisbane this year should be the possibility of the permanent occupation of tropical Australia by a healthy indigenous white race and the conditions conducive or essential to such occupation. At the congress in Brisbane last August a report from the executive committee was discussed. It appears desirable to quote in full the main resolution, which was as follows:

> After mature consideration of sources of information embodying the results of long and varied professional experience and observation in the Australian tropics, the Congress is unable to find anything pointing to the existence of inherent or insuperable obstacles in the way of the permanent occupation of tropical Australia by a healthy indigenous white race. It considers that the whole question of successful development and settlement of tropical Australia by white races is fundamentally a question of applied public health in the modern sense, such as has been demonstrated and practised with success amongst civil populations, under far more difficult conditions, by the American authorities in the Philippines prior to the Great War, and throughout the military forces of every allied Power during that war. It considers that the absence of semi-civilized coloured peoples in Northern Australia simplifies the problem very greatly. But it desires to emphasize in the strongest manner that any considerable extension of population and settlement under the existing loose conditions of sanitary administration and sanitary practice, using these terms in their modern wider sense, which prevail at the present time in tropical Australia, cannot hope for lasting success, and cannot fail to result in ultimate disaster. The Congress recognizes that a large amount of work still requires to be done in working out the practical details of any scheme of settlement, but it considers that it presents no difficulties beyond those of organization, staff, time, and money. It realizes that a great national question is involved, but it is unable to discern any obstacles which cannot be overcome by earnest and skilful application of the principles of statecraft.

The Congress at Brisbane then proceeded to make a series of recommendations. The first was to the effect that, for the solution of the problem, the results of scientific investigation and practical experience must be closely correlated with appropriate action and be made readily available for the study of the various aspects of the problem, and for the guidance of those who are settled, or propose to settle, in tropical Australia.

Among the more detailed recommendations were the following: (1) That the work of the Australian Institute of Tropical Diseases should be extended and the results be made more generally available; (2) that the Federal Government should arrange for a special investigation of the health of the white inhabitants in tropical Australia, and for the co-ordination of information bearing on this area, with the results of white settlements elsewhere in the tropics; (3) that the Federal State Governments should provide for the dissemination of scientific and practical knowledge on the personal and communal requirements essential to healthy life in the tropics; (4) that legislative action for the promotion of suitable conditions of life should include town and house planning, provision of recreation and open spaces, the making of arrangements for periodical changes from the coast to the hinterland, discouragement of extensive consumption of alcohol, selection of the most suitable hours for working, encouragement of industries specially suitable for tropical zones, assisted emigration of suitable persons of white race, provision of a land system which should encourage settlement by such a race, as well as measures for the promotion of an understanding with neighbouring civilized races (other than white) for the avoidance of hybridism and the perpetuation of pure races; (5) that the quarantine defence system should be improved by increased equipment of clinical and laboratory facilities; (6) that the hookworm campaign should be extended so as to include among its activities the determination of the geographical distribution of filaria and malaria, and of the measures necessary for their eradication. For these and other essential ends the Congress declared that the appointment of a Federal Ministry of Health would be the most effective means.

England and Wales.

Bradford Municipal Hospital.

A very large and representative meeting of the medical profession in Bradford was held on the evening of November 3rd, under the auspices of the British Medical Association, to consider the position brought about by the proposals of the Health Committee of the City Council to establish a municipal hospital. The proceedings are described and discussed elsewhere (p. 753), but it will be useful to place on record the resolution unanimously adopted after the subject had been fully discussed with the Medical Officer of Health:

> That this meeting of the medical practitioners of Bradford district regrets very much that the Health Committee of Bradford have thought fit to make arrangements for the foundation of a municipal general hospital without previous consultation with the medical profession, and that on this occasion, in accordance with the established custom of the Health Committee, the medical profession were completely ignored.
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> This meeting sincerely hopes, in the interests of the public and the medical profession, that the Ministry of Health will not seriously consider the proposals of the Bradford Health Committee until such Committee have consulted with the medical profession.
>
> This meeting would also like to draw the attention of the Ministry of Health to the fact that the only medical member of the Health Committee was not appointed to accompany any of the various deputations which have waited upon the Ministry of Health.

Tuberculosis in Wales.

Major David Davies, M.P., founder of the Welsh National Memorial Association for the Prevention of Tuberculosis, has, acting with his two sisters, given the sum of £12,500 to found a chair of tuberculosis in the Welsh National Medical School, University College, Cardiff. The chair will be a memorial to their grandfather. The gift was announced at the last meeting of the council of the National Memorial Association, and Major David Davies, who was in the chair, said that since the resignation of Dr. Paterson the work of the chief medical officer had been carried on successfully by three members of the council. It was now desired to link up the medical work of the Memorial Association with the National Medical School, Cardiff, and the professor appointed to the new chair in that school would also be medical director of the Memorial Association. It was announced that a house with eighty-six acres of land had been purchased at Sealyham for a tuberculosis hospital in Pembrokeshire. It was stated that altogether there were at the present time 144 vacant beds, with no waiting list, at the sanatoriums. It was hoped to make much more use of the North Wales sanatorium for the reception of cases of surgical tuberculosis, of which a large number were awaiting admission.

The Hospital Question in Manchester.

In the report which appeared in the British Medical Journal of October 30th, p. 676, of Dr. Addison's address to the House of Commons Medical Committee he is recorded to have said, in dealing with the spare accommodation in Poor Law infirmaries, that "at Withington, near Manchester, out of a provision for 2,600 persons there were 1,100 empty beds," the inference from this apparently being that these 1,100 beds could be used for paying patients or voluntary hospital purposes. This statement appears to have been rather resented at a meeting of the Manchester Board of Guardians, and the vice-chairman said it was "absolutely untrue." It would seem that there is some misunderstanding as to the real position. It is stated that during the war the whole of the establishment at Withington was handed over to the military authorities, who retained it up to the end of last year, and since then the guardians had been busy in restoring it to its original purposes. The total accommodation was about 3,000, but the greater part of this is said to be unfitted for hospital purposes. Before the war the hospital beds altogether only numbered 1,100, the other accommodation being set apart for the aged and infirm and other classes of inmates. At present, owing to the difficulties of staffing and equipment, only 950 beds were available for hospital purposes, and of these, when the needs of the guardians were satisfied, only 250 could be placed at the disposal of voluntary hospitals or private paying patients. It is suggested that the Minister either obtained his figures in January, when the infirmary was necessarily empty after being so recently handed back by the military authorities, or that he included the accommodation in other buildings which are not suited for hospital purposes.

London Mental Hospitals and the Ministry of Health Bill.

At the meeting of the London County Council on October 26th the Ministry of Health (Miscellaneous Provisions) Bill was brought up for consideration. The Council is the local authority for the administration of the Lunacy and Mental Deficiency Acts, and its Asylums Committee apprehended that certain clauses of the measure might operate prejudicially to this administration. The clauses to which it took exception were that which provided for treatment for incipient mental disorder without the necessity for certification and that which dealt with the power of county councils to provide hospitals. If the clause relating to incipient mental disorder became law, the regulations which the Minister of Health would make to give effect to it might, in the Asylums Committee's opinion, be drafted upon lines which would make it impossible for voluntary boarders to be received in the present county mental hospitals, and the result would be injurious to the status of these hospitals and detrimental to the treatment of patients who must still be received in them for detention under certificate. The bill provides that no person may be received as a voluntary boarder unless he gives his written consent beforehand. This limitation, in the Committee's view, was calculated very seriously to restrict the practical usefulness of the bill, but at the same time the extreme difficulty of the problem was recognized, and the provision might be accepted as at least a contribution to the solution of the problem if it was made clear that there was no intention to make it impossible for voluntary treatment to be given in connexion with the present mental hospitals. It was also feared that the provision for the establishment and maintenance of hospitals by county councils might be part of a scheme for the dissociation from the existing lunacy administration of the proposed arrangements for the voluntary treatment of incipient cases of mental disorder. It was decided that a deputation from the Council should wait upon the Minister of Health.

Ireland.

Central Midwives Board for Ireland.

At the meeting of the Central Midwives Board for Ireland, held in Dublin on October [illegible]th, a resolution recording the loss the board had sustained by the death of Sir John Byers, one of its original members, was adopted and the sympathy of the board was directed to be conveyed to Lady Byers in her bereavement. Dr. Coey Bigger and Sir A. J. Horne were unanimously re-elected chairman and deputy chairman respectively for the coming year. It was reported that at the examinations held in July and October sixty-two and forty-eight candidates respectively were successful. A deputation was received from the Irish Medical Association with reference to the inadequacy of the fees fixed by the Local Government Board under the Midwives (Ireland) Act for professional assistance to midwives in cases of emergency. The board, after hearing the views of the deputation, promised to communicate with the Local Government Board on the matter.

Tuberculosis in Belfast.

Dr. Trimble, the chief tuberculosis officer for Belfast, has lately presented his annual report for the year ending March 31st, 1920, to the Tuberculosis Committee of the City Council. Dr. Trimble rightly insists upon the necessity of an annual report: it is an official stocktaking, of medical and social interest, and a means of propaganda. During the year the Belfast Insurance Committee has presented the Central Tuberculosis Institute with a fully equipped *x*-ray apparatus; a dental surgery was furnished at each institute, and Graymount has been adapted as a temporary hospital for the treatment of Belfast children suffering from osseous and other forms of non-pulmonary tuberculosis. An open-air day-school is also being organized in connexion with this last institution. During the twelve months under review the number of examinations of new patients (2,529) was greater than in the previous year, but was not up to the average; and the proportion of pulmonary tuberculosis to the total had increased from 77 per cent. of the whole to 82 per cent. this year. An endeavour is made to have a report of each patient every three months; 1,575 were under institute (dispensary) treatment, 3,470 were under domiciliary, and 254 in sanatoriums, making a total of 5,299; 7,251 cases were treated, but a number left the city or died. The total number of deaths due to tuberculosis in the city for the year was 1,122. Dr. Trimble lays due stress on the question of prevention, and points out the improvement that has taken place in Belfast: in 1890 the death rate from pulmonary tuberculosis was 4.6 per 1,000; in 1919 it was 2.1—a fall of 50 per cent. in thirty years. To continue the campaign and hasten further improvement, he asks that all should join in helping to increase the efficiency of all three forms of treatment, instead of finding fault and magnifying difficulties. Table VI shows that of 1,820 patients found to be suffering from tuberculosis, 758, or 41 per cent., have had an admitted personal association with tuberculosis. Sometimes whole families have been wiped out; school is mentioned as a very probable seed-bed, impossible to prove years later; 25 per cent. of contacts were found to be tuberculous, most of whom had been noticed to be ailing by the visiting nurse. Interesting tables are also given of age, sex, the number occupying the same house, room, and bed as the patient. Dr. Trimble recognizes the great value rendered by the trained nurses, who visit the patients regularly, and the efficiency with which their duties are discharged. Finally, he comes back to the necessity of personal health, of maintaining in the individual a high resistance, of prevention of infection simple problems, but of enormous difficulty in a large manufacturing town.

Ulster Medical Society.

The opening meeting of this society took place on October 28th, in the Medical Institute, Belfast. Mr. Andrew Fullerton, C.B., C.M.G., occupied the chair and, after the minutes had been read, proposed that the name of Sir George H. Makins, G.C.M.G., ex-President of the Royal College of Surgeons of England, be submitted for election as an honorary fellow; this was seconded by Dr. Thomas Houston, President-elect, and passed unanimously. Dr. Houston was then installed by Mr. Fullerton as President for the ensuing session. The President proposed and Dr. Calwell seconded a hearty vote of thanks to Mr. Fullerton for his services in the chair during the last year, and this was passed with acclamation. The President then delivered his opening address; he referred to the heavy loss the profession had sustained during the year in the deaths of Dr. [illegible] Smith, Sir Alexander Dempsey, Mr. Robert Campbell, Sir John Byers, and Dr. [illegible], and gave a short account of their lives. He then dealt with the subject of his address, "The behaviour of leucocytes in infection and immunity" - and gave an account of Ehrlich's differentiation, the origin of the different forms of leucocytes and their different functions, and the estimated leucocyte production in a discharging abscess. Sir Almroth Wright's experiments were detailed, and the light they threw upon the work these minute labourers had to do. The behaviour of the leucocytes in various infections was studied, and the difference in the results of their examination in such diseases as tubercle, typhoid, pneumonia and malaria, was detailed. Even the ophthalmic surgeon found help in their count in cases of sympathetic ophthalmia as to the probability of the sound eye being affected. The value of the number of lobes in the polymorphs was examined, and also the peculiar power of x rays and of radium in banishing lymphocytes, but not affecting polymorphs. The relations of anaphylaxis and of chemiotaxis were also studied, and the proof was given that the leucocytes, and not the serum, were the protective force. A vote of thanks to the President for his address was proposed by Professor Lindsay and seconded by Dr. Colville, and passed with much heartiness.

Australia.

[From a Special Correspondent.]

THE BATTLE OF THE LODGES.

The protracted dispute between the Victorian Branch of the British Medical Association and the friendly societies (or lodges) is now at a stage in which agreement has been reached with nine of the orders, whereas eight of the friendly society bodies are still recalcitrant. Included among the orders with which the local British Medical Association has come to an understanding are the three large organizations — Australian Natives' Association, United Ancient Order of Druids, and the Independent Order of Rechabites; the Manchester Unity, a strong order numerically, still holds out against the B.M.A., and has throughout the dispute comported itself in a bitter and militant fashion.

Terms of Agreement.

The basis of the agreement with the participating Orders is the acceptance of the Wasley award and the recognition of existing medical institutes, the lodge members to have free choice by ballot between an institute and a non-institute medical officer. Those who do not return a ballot paper are to be deprived of medical attendance until a selection is made. The contracting orders have agreed to take no part in the extension of institutes for a period of four years. It was also made an essential condition that the central executives of the orders entering into the agreement should get control of all medical arrangements. Such a provision was very necessary, as at different times during the course of the dispute negotiations were embarrassed, or rendered futile, by the fact that the central executives of the orders had no power to bind the component branches in arrangements relating to medical attendance for the friendly societies' members. Members of noncontracting orders are still to be regarded as private patients, and a fee of 10s. 6d. per consultation or visit is to be collected from the member and not from the lodge secretary.

The contracting orders agreed to hold a ballot; on the ballot papers appeared the names of the former lodge medical officers (that is, members of the B.M.A. who had resigned), and of the institute doctors; lists were issued to the former medical officers on the completion of the ballot. The agreement in three cases operated from June 1st last, that of the others came into force on September 1st. While the orders agreed, so far as lay in their power, to restore the lodge lists to the former medical officers, the B.M.A. promised that the former medical officers would accept lodge lists for one quarter at least. As returned medical officers who were not former lodge surgeons were to some extent handicapped by the above arrangement, it was agreed that they could apply to the local lodge secretary for immediate appointment to any of the above orders without waiting till the new quarter.

The fees to be paid the lodge medical officers are specified in the Wasley award as follows:

> ". . . the said trustees agree to pay the medical officers quarterly a salary in respect of each member upon his list during the whole or portion of a quarter at the following minimum rates, namely:
>
> "As regards *Male Members.*—When entitled to attendance in the metropolis, or Ballarat, Bendigo, and Geelong, twenty shillings per annum.
>
> "As regards *Female Members.*—(*a*) When the member has no dependant entitled to medical attendance, twelve shillings per annum. (*b*) When the member has a dependant or dependants entitled to medical attendance, eighteen shillings per annum.
>
> "The medical officer shall supply if necessary all B.P. medicines (not serums or vaccines) at the minimum rate of 10s. per annum per member . . ."

With regard to the supply of medicines, it has been interpreted that "if necessary" refers only to cases where no chemist is dispensing in the town.

An important provision in the Wasley award relates to the "income limit." A member joining a lodge shall not be entitled to medical attendance if (*a*) during the twelve months prior to his request for medical attendance his net income has exceeded the amount set out below, and also if (*b*) during the three years prior to such request his average net income has exceeded the amount thus set out:

(*a*) Single man or widower without dependants, £260 per annum.
(*b*) Single man or widower with one dependant, £312 per annum.
(*c*) For each dependant after the first, an additional £ 6 per annum.
(*d*) Married man with wife and no dependant, £312 per annum.
(*e*) For each dependant an additional £26 per annum.

Post-graduate Classes in Victoria.

The Council of the Victorian Branch of the British Medical Association has recently taken steps to place postgraduate training in Victoria on a satisfactory basis. A post-graduate subcommittee of the Council was appointed, with Dr. A. V. M. Anderson as convener; the subcommittee sought the co-operation of the Faculty of Medicine, University of Melbourne, and of the various teaching hospitals, and invited these bodies to nominate representatives to a permanent post graduate committee.

The personnel of the Permanent Post-graduate Committee is as follows:

Dr. A. V. M. Anderson, Chairman, representing the Victorian Branch, B.M.A.; Dr. J. W. Dunbar Hooper, Honorary Secretary, representing the Victorian Branch, B.M.A.; Dr. J. H. Anderson, Faculty of Medicine; Dr. S. W. Patterson, Walter and Eliza Hall Institute of Medical Research; Dr. Fay Maclure, Alfred Hospital; Dr. H. Douglas Stephens, Children's Hospital; Dr. W. F. Orr, Eye and Ear Hospital; Dr. Alan Newton, Melbourne Hospital; Dr. A. E. Rowden White, St. Vincent's Hospital; Dr. R. H. Morrison, Women's Hospital.

It has been arranged that a post-graduate course shall take place in November, 1920, and a syllabus is in preparation and, at the time of writing, approaching completion. The ultimate objective of the committee is to ensure that post-graduate classes shall be held at regular intervals in order that the members of the profession in active practice may receive instruction in the more recent developments of medical science.

India.

Infant Deaths in Bengal.

The Government resolution on the recently published Sanitary Report for Bengal calls attention to the fact that the rate of infant mortality in the province runs as high as 30 per cent. in some districts, and is nowhere less than 20 per cent. The problem is one of great difficulty. Throughout the province good milk is dear and the people poor, mothers are ill nourished, and trained *dhais* (midwives) rare. Poverty is at the bottom of most of this enormous waste of infant life, and social and economic conditions hamper the introduction of remedial measures. A representative committee has been appointed, and has submitted a report on measures which it is hoped will facilitate the solution of the problem, but the high prices now ruling in India make it difficult for a considerable section of the ryot (peasant) class to obtain the bare necessities of life.

Mortality in India.

A recent statement shows that in mart week cholera was responsible for 724 deaths in Behar and Orissa, 570 in Madras, 213 in Bombay. Plague accounted for 433 deaths in Madras, and 175 in the Central Provinces. The total number of deaths from cholera was 1,800; 200 from smallpox, and 1,700 from plague.

Wandering Lepers in Lucknow.

At the recent meeting of the United Provinces Legislative Council it was stated that the Government was aware that there is a certain number of wandering lepers in Lucknow. To facilitate their confinement in the Lucknow Leper Asylum grants have recently been made to the asylum authorities. The general policy of the Government on the subject of leper segregation is at present under consideration in view of the recent passing of the Lepers (Amendment) Act XXII of 1920.

Correspondence.

THE HOSPITAL PROBLEM.

SIR,—I have read with great interest Mr. Griffiths's suggested solution of the hospital problem; I am quite sure that if it were brought before a representative meeting of general practitioners and members of the honorary medical staffs of our hospitals it would meet with a great deal of destructive criticism and opposition. In any case, such a scheme as he suggests would take a year or two before it could be brought into being. In the meantime many of our hospitals have been compelled in the last two or three years to sell out the greater portion of their invested capital or have borrowed money from their bankers on the security of such capital. This means that in the course of a very short time all their capital will be expended, they will no longer be able to borrow from their bankers, and they will be compelled to carry on as best they can with the amount they receive in the form of bequests, donations, and subscriptions from generous donors. This must mean the closing of wards and diminishing the number of beds; in other words, the curtailment of the excellent work they are now doing.

Now, Sir, the hospital with which I have been connected for nearly [illegible] years finds itself in precisely this condition. The committee of management have clearly seen that in the course of a few months we shall have used up all our available assets and shall not be able to obtain any further loans from the bank. We have been taking stock as to what we should do, and have decided, guided by the experience of Leicester, to appeal to the working classes. The Leicester Hospital, we understand, is in the happy position of obtaining from £5,000 to £10,000 each year from the working classes, and so are free from any financial problem. Leicester is a large manufacturing district, and the difficulty of collecting 2d. a week from each working man through the employers by the consent of the workers is not great. The difficulty of collecting money from agricultural labourers and their wives in scattered villages is much greater, but we are by good organization overcoming this difficulty. We have published two leaflets, one showing how it is that the hospital is in so critical a condition, and why the workers should come to the help of their hospital and how they can help.

Our second leaflet shows how the villages should be organized to help the hospital. We have appointed a paid organizer, who arranges the village meetings and attends the meetings himself. We send as far as possible a speaker who is fully acquainted with the work of the hospital, who can tell the people what the hospital has done for them in the past, and how it can help them in the future if they help to keep it going. In the smaller country towns and in Oxford itself the trade unions are giving their whole-hearted support. We commenced active work on September 1st, and the success we have already attained has altogether exceeded our expectation. Now, Sir, if our hospitals can be financed, first, by the generous donors who have so liberally contributed in the past and second by the working men and women of England, who are much better able to help now than they have ever been, it is surely better to keep them on a voluntary basis than accept any State scheme which brings them under State control.—I am, etc.,

WILLIAM COLLIER.

Oxford, Nov. [illegible]

The leaflet on organization recommends that after the other leaflet (on finance) has been distributed, a meeting of parishioners should be called by the clergyman of the parish, the minister of the chapel, the schoolmaster, the local trade union secretary or the benefit society secretary, of all those who use and benefit by the hospital. At this meeting a Hospital Aid Committee would be elected, its members undertaking to collect and receive contributions from 1d. a week upwards from each wage-earner who agrees to contribute. The scheme has been well received, and has received whole-hearted support in every village at which a meeting has so far been held.

BRADFORD MUNICIPAL HOSPITAL.

SIR,—In your issue of October 30th, on p. 676, Parliamentary Notes, the following words appear:

"[illegible] medical [illegible] he had obtained the views of the Bradford Division of the British Medical Association, and they agreed with the principles of the proposal as regards Bradford, with some modifications."

In the name of the Executive Committee of the Bradford Division of the British Medical Association, I beg to state that this is quite erroneous. The Division was never asked for its opinions upon the principles of the proposal, but after the medical profession in Bradford had through various channels made several unsuccessful applications for information, on September 30th, 1920, six months after the hospital had been taken over from the guardians by the health authorities, a lengthy document, entitled Municipal General Hospital, St. Luke's, Report by the Medical Officer of Health, was sent to the Executive Committee of the Division, and they were asked in a covering note "Whether your Executive Committee have any observations to make thereon." The Committee carefully considered the detailed report, and made several observations thereon, some of which were in the form of questions, but they certainly did not express any agreement with the principles of the proposal, nor were they asked to do so.

Over three months before this, on June 15th, a strong protest had been sent to the Health Committee in the form of a resolution worded as follows:

> "That in the interests of the public it is advisable and necessary that the arrangements [illegible] the work of the Municipal hospital, [illegible] the medical profession, with the fullest consultation with [illegible]."

No notice was taken of this beyond a formal acknowledgement of receipt.—I am, etc.,

W. N. WEST WATSON,
Honorary Secretary, Bradford Division,
November 5th. British Medical Association.

MUNICIPALIZATION OF HOSPITALS.

SIR,—I regret that there has been no answer to my letter in the JOURNAL of October 23rd, in which I asked whether the bill being brought in by Dr. Addison to enable an extension of the municipalization of hospitals was in accordance with the views of the Consultative Council.

The bill is now under discussion in the House of Commons with considerable alteration, I understand, in Clause 11. Therefore I should like to repeat my question, as, until it is answered, the suggestion—perhaps unwarranted—inevitably arises that the body supposed to safeguard the interests of the profession has neither been called into consultation, nor has initiated representations on its own account.—I am, etc.,

London, W., Nov. [illegible] F. C. MARTLEY.

THE THEORY OF VISION.

SIR,—In your leader in the BRITISH MEDICAL JOURNAL of October 30th there is no mention of the complete refutation of Mr. Parsons's arguments in my reply in the *British Journal of Ophthalmology*. These arguments are mostly based on errors. The two chief may be given here, but I must refer the reader who is interested in the subject to my replies and to my book on the *Physiology of Vision*.

The first is that there are certain animals, as, for instance, the tortoise, which have only cones and others which possess only rods. Has any reader seen a retina of this kind? I have examined a very large number of specimens and quite failed to find one. For instance, in the tortoise the rods and cones are as definitely marked and distinct from each other as in man. The most conclusive fact against the duplicity theory is that when a colourless spectrum has been obtained, with further dark adaptation colour reappears; in fact, Burch stated that with complete dark adaptation there was no photochromatic interval. Spectral coloured light appeared as coloured immediately it was visible as light.—I am, etc.,

London, N.W., Nov. [illegible] F. W. EDRIDGE-GREEN.

TUBERCULOUS MILK.

SIR,—The conflicting opinions expressed in the letters on this subject illustrate the confusion which exists in the medical profession on the subject of the prevention of tuberculosis. The public has been repeatedly told that tuberculosis is a preventable disease, and that we have all the knowledge necessary to eliminate the disease in a certain number of years. Dr. Galbraith, in his letter of October 16th, terms it "the most readily preventable of infectious diseases," although in a later letter his statement that he is waiting for guidance as to the most effective measures to adopt seems to imply some doubt. "If preventable, why not prevented?" has become a shibboleth. Apparently those who hold the view that tuberculosis is easily prevented aim at the prevention of infection by tubercle bacilli.

It is true that it would not be impossible to prevent infection by bovine bacilli, and Dr. Bishop shows that a large measure of success has been obtained in Guernsey, where the conditions are ideal for the experiment. But the elimination of bovine infection would only prevent some 6 or 7 per cent. of the deaths from tuberculosis, a desirable consummation, but one that leaves the big problem of the prevention of tuberculosis almost untouched. In order to eliminate infection from human sources there are some who plan a widespread segregation of all consumptives. Apart from the fact that it is impossible to discover when the tuberculous patient becomes infectious and that errors of diagnosis are common, so that many non-tuberculous persons are sent to sanatoriums and many infectious patients are missed, is it conceivable that the nation would agree to so great a loss of freedom or so cruel a punishment of an unfortunate and large section of itself? I see very little hope in methods aiming only at the prevention of infection. On the contrary, the evidence we have points to the increasing urbanization of countries and the consequent greater tuberculization of the people as a main factor in the decreasing mortality from tuberculosis. "The wider spread is tuberculosis in a community the smaller the case mortality." Dr. Ivatts and Dr. Galbraith would deny this, and are agreed that "there is no positive evidence of immunization in tuberculosis at all." They ignore all the experimental proofs now confirmed by many workers in various countries. One would like to know how they explain the great difference in the course of tuberculosis in the virgin soil of young infants or savage races, and that in the adult of civilized countries. Chronic phthisis of the adult is unknown in early childhood or among the lower animals, and it is difficult to resist the view formulated by Romer that it is a manifestation of immunity against tuberculosis which has been acquired by an infection during early childhood. Again, there is good evidence that the result of the infection which practically everybody passes through during childhood depends in large measure upon the dose and virulence of the bacilli first gaining entrance.

Whilst the medical officer of health is concerned with prevention on a large scale and should welcome the Milk and Dairies Bill, the practical physician is concerned with the prevention of tuberculous disease in individuals and must take into account not an ideal state of affairs but things as they are at present. What advice is he to give to parents who ask whether their children should have raw milk? It is inevitable that the children will be infected sooner or later, and the future will depend upon the nature of their first experience with tubercle bacilli—the type of bacillus, the size of dose, the state of health of the children at the time of inoculation. Are we to leave the matter to blind chance and risk a massive infection, or should we endeavour with the means we have at hand, crude as they are, to control the first inoculation? Until bovine infection is eliminated I agree with Riviere, Cobbett, and others that we can make use of it to control the first infection. By giving graduated doses of raw milk from the well mixed collection from a large herd of cows we should avoid the danger of a massive first infection of bovine bacilli and get the infant safely through its first inoculation. The fact that inoculation has occurred can be shown by a positive von Pirquet reaction. In well-cared-for homes the danger from human infection is not great, and it is surely better that the first infection should be with bovine bacilli than with the more dangerous human type. In poorer homes, however, there is grave danger of a first infection with human bacilli, often in massive doses. Modern methods of prevention act on the assumption that the infectious consumptive is equally dangerous to adults as to children, but all the evidence shows that the danger is much less to adults than to children, and that the key to the prevention of tuberculosis lies in the care of the children, the avoidance of massive infection in infancy, and a healthy environment in later life. It might be wiser and easier to remove the infant for a few years from the infected home, see him safely through his first infection in healthy surroundings, than to remove the consumptive parent from the home for the whole period of his infectiousness.

Whilst the physician, recognizing the inevitability of infection, avails himself of the prevalence of bovine infection as the only means at hand to control the first infections of childhood, he must recognize that this is only a passing phase, and he should encourage every effort made by medical officers of health in their larger problem.

We cannot say what will be the effect of the total elimination of bovine infection. Other things being equal, it is possible that if there is a decline in the prevalence of tuberculosis there may be an increased susceptibility. But when that time arrives we hope that the improvement in social and economic conditions of the working classes, in housing and hygienic knowledge, will reduce the chances of massive infection. It is also possible that an attenuated living virus may be discovered and substituted for the cruder method which alone is possible now. Cow-pox protected against small-pox and led to the discovery of a virus which has stamped out the disease. History may repeat itself, and the knowledge that cow tuberculosis gives a measure of protection against human tuberculosis may lead to successful vaccination against tuberculosis.—I am, etc.,

Birmingham, Nov. 7th. W. H. Wynn.

CELL EVOLUTION.

Sir,—In your admirable review of Morley Roberts's book *Warfare in the Human Body*, in the Journal for October 23rd, you remark that the conception of the human organism as a vast colony of erstwhile protozoa, banded together for their mutual advantage, has lost its vogue. This was never better exemplified than in the discussion on "the present position of cancer research" at the British Medical Association meeting at Cambridge, reported in the Journal of October 30th. Immense expenditure of energy and intelligence has been applied to the elucidation of this problem, but eyes have been glued throughout to microscopes, and broader perspectives seem to have been ignored. For example, the individual cells of the human body must be themselves subject to the laws of evolution in the same way as the members of any other community. In studying the behaviour of the human cell surely a beginning should be made with the protozoal ancestor. Do successive generations of amoebae, for instance, present new characters as the result of specific irritations, chemical or otherwise?

We are accustomed to regard evolution as a process, the successive steps in which are measured in thousands of years. But the unit of time in evolution is the generation, and an organism multiplying many times in an hour can show evidence of evolution in days or weeks, as in the acquiring of enhanced virulence by bacteria during epidemics, and the diminshing virulence of bacteria growing on culture media.

Can we not explain all the phenomena of malignancy by attributing the acquired characteristics of the cancer cell to a process of cell evolution, proceeding in a particular group of cells exposed to a constant irritation or condition of stress? Under these conditions, in a tissue where cell proliferation is normally rapid, as in the breast, the uterus, etc., the individual cells, faced by a threat to their existence, undergo evolution in the direction of coarseness and hardihood, and develop their powers of reproduction to the highest degree. In the same way, the rate of reproduction throughout the animal world bears a direct ratio to the dangers to which each species is subjected.

It has been objected to me that this theory gives no practical help, and leads nowhere. But it might help to divert the volume of research into more fruitful channels, and thus economize grey matter, of which, like many other commodities in these times, there is no surplus.—I am, etc.,

Ashton-under-Lyne, Nov. 1st. J. V. Fiddian, M.B.

BLIND MASSEURS.

SIR,—Will you kindly allow us to call the attention of your readers to the work that is being carried on by the Association of Certificated Blind Masseurs, 224, Great Portland Street, W.1, and to enlist their sympathy and help?

The association numbers 126 members—105 men and 21 women—all of whom are practically blind. Seventy-six of the men were in His Majesty's Services and lost their eyesight through injury or disease incurred in the war. The training they have received at St. Dunstan's and at the School of Massage attached to the National Institute for the Blind is of the most thorough description. It lasts for eighteen months or two years, and after it is over they have to pass the massage examination of the Chartered Society of Massage and Medical Gymnastics under exactly the same conditions as sighted candidates. (At a recent examination a blind candidate from St. Dunstan's was returned at the head of the list, with distinction.) They have also to pass a special examination in remedial exercises, and, after another three months' training, in modern methods of treatment by faradism, ionization, radiant heat, etc., using a form of galvanometer specially adapted to the blind.

It is hardly necessary for us to point out that massage, as distinguished from mere rubbing, with which it is often confused much to its discredit, is a scientific method of treatment, which can only be carried out efficiently by those who have had a thorough training. May we ask the members of the profession, when they recommend this method of treatment for their patients, to employ, whenever they can, those who have deserved so well of their country, and who, in spite of their handicap, are making such a splendid effort to make good?

We need hardly say that no member of the association is ever allowed to treat patients without the consent and advice of a registered medical practitioner.

Forty-nine of the members of the association are living in London or its immediate neighbourhood. The rest (with the exception of a few who have gone to the colonies) are in the provinces. A list with names and addresses will be sent with pleasure by the Secretary, Mr. F. Chapman Hall, on receipt of a postcard. We are, etc.,

C. MANSELL MOULLIN, C.B.E., F.R.C.S.,
[illegible]
ALFRED PEARCE GOULD, K.C.V.O., C.B.E.,
M.S., F.R.C.S.
ARTHUR PEARSON.
President, National Institute for the Blind and
Association of Certificated Blind Masseurs.

London, W., Nov. 6th.

THE CONSULTATIVE COUNCIL'S REPORT.

SIR,—A few days ago we had a meeting of the Bucks Division to discuss the report on "Future Medical and Allied Services." There were over thirty medical men present, and we were also fortunate to have Dr. Dain, a member of the Consultative Council and chairman of the Conference of Local Medical and Panel Committees, to explain the matter. We decided not to vote, but to send each one present a copy of the Questions, and ask them to return the answers within a week.

Very few spoke, and those who did asked questions showing that they had a very slight knowledge of the report, and still less as to its application to them. The impression one got was that they resented any interference with their present work, and only wanted to be left alone. The general attitude was one of suspicion and a fear that their present position would not be improved, and that it would lead to loss of independence somewhat similar to that under the Insurance Act. At least this was my impression, but I may be wrong.

I must confess that I held this opinion myself before I carefully studied and thought over the report. Now I heartily agree with it. My principal reasons for this are:

1. It is dead against a State Medical Service of whole-time medical men.

2. The position of the general practitioner as the most essential and responsible factor in the scheme is recognized. His consulting room and his surgery will remain as at present.

3. The growing tendency to separate preventive and curative medicine is deprecated and provided against.

4. There is no suggestion that the service is to be free except to those who cannot afford it, and these are to be paid for by a system of insurance or otherwise.

5. It will abolish the present wasteful system whereby treatment is furnished by several different authorities, none correlated to each other, and will bring all under one new health authority.

6. It will provide for every practitioner a centre where, if he wishes, and *not unless he does wish it*, he can send his patients for nursing, midwifery, dentistry, pathological investigation, etc., and yet continue to attend them himself.

7. It will provide a proper and well-equipped centre for such services as pre-natal care, child welfare, medical inspection and treatment of school children, tuberculosis clinics, venereal clinics, etc. The loss of time in travelling under the present system will be abolished.

8. Consultants and specialists will be available to all. Nurses will be provided, also health visitors and such like.

9. Cases of difficulty and those requiring special treatment will be sent on to a secondary health centre staffed by consultants and specialists. The general practitioner can choose whether he keeps these in a primary health centre and treat them himself or not.

10. There will be provision for tuberculosis, mental diseases, epilepsy, certain infectious diseases, and orthopaedic treatment, all under the same health authority.

11. It will assist the voluntary hospitals, especially many cottage hospitals, to carry on, improve their equipment, and increase the number of beds by grants in aid.

12. The medical profession will be well represented on all the authorities, and there will be a Local Medical Advisory Council.

These are my chief reasons for giving the scheme my support. One would have thought that every medical man would like a primary health centre to send his patients to, if necessary. It will be a cottage hospital on a large scale, and accommodation for many purposes not at present provided in the majority of such institutions.

But to my surprise one of our members expressed doubts as to whether many general practitioners would not prefer to send their cases right away to a secondary health centre, just as at present they send them to hospitals. He said many practitioners had no time to spend at primary health centres and to devote to them that attention they might require. There is no doubt but that at present the profession is understaffed and the cost of living and increased professional expenses makes it difficult to pay one's way unless by doing a lot of work in a perfunctory manner. But one hopes for a time when, with better pay, less strenuous work will be necessary and time can be spared to go more fully into cases, call in consultants more frequently, make pathological and chemical examinations, and carry out treatment more thoroughly. Under present conditions it cannot be done. It must be remembered that primary health centres are only for general practitioners to follow up their own cases. No patients can be sent in for others to treat.

I foresee great trouble over the formation of the new health authority. There are the present public health committees of county, borough, urban, and rural district councils to reckon with. What will become of their present officers and duties? If the new health authority is to be based on a secondary health centre with a radius round it of twenty miles or so, it will cut into many different authorities. The best method of appointing the new authority is not by direct popular election, but by nominations from these various bodies. They would select the men and women specially fitted for this work to represent them.

In conclusion, I do most sincerely hope that the profession will express its opinion fearlessly, judiciously, and with wisdom, that medical men will buy the Report (price 1s. at any bookseller's) and read it carefully and vote on it at Division meetings, also that anyone who has any ideas on any schemes that would work out better will bring them forward and let them be discussed. If they do not they will have only themselves to thank if a scheme with which they do not approve is eventually adopted, for the Government is determined to provide a better medical service than at present. I am, etc.,

Chesham Bois, Nov. 1st. ARTHUR E. LARKING.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

SIR,—I wish to associate myself with Dr. Edgar F. Cyriax in his letter which appears in the issue of October 30th, and which refers to an article by Dr. Charles Mackay on the above subject.

Dr. Mackay therein states that

> Muscle re-education is an entity quite distinct from the routine procedures of . . . and Swedish remedial exercises.

He then refers to the especial treatment by muscle re-education of infantile paralysis. In his letter Dr. Cyriax contends that this particular form of treatment is not new, and that it has been known to the Swedish school for a long time.

It was my privilege to undertake a thorough course of instruction in the methods of remedial exercise treatment in various clinics in Stockholm some years ago. Also I have carefully read *The Action of Muscles* (Colin Mackenzie), the textbook of muscle re-education, and have had the benefit of seeing Dr. Mackay's most capable exposition of the methods therein described, during his sojourn at Alder Hey Special Military Surgical Hospital.

I say, without hesitation, that although there were modifications in the performance of certain movements, the essential principles were identical with those taught in Sweden.

Further, I would add that the teaching advocated by the various training schools for the Swedish remedial exercise certificate of the Chartered Society of Massage and Medical Gymnastics is founded on the principles enunciated in Dr. Mackay's article.—I am, etc.,

Liverpool, Nov. 6th. W. H. Broad, M.D.

SPECIALISTS IN OTO-LARYNGOLOGY.

Sir,—The article on page 711 of the current British Medical Journal, under the heading "Specialists in Oto-laryngology," does less than justice to the scanty opportunities afforded by the examining bodies of this country to oto-laryngologists. The University of Aberdeen permits candidates for the higher surgical degree (Ch.M.) to take oto-laryngology as their special subject, and affords exceptional opportunities for instruction to students interested in that particular branch of surgery.—I am, etc.,

F. Pearce Sturm, Ch.M.Aberd.,
Member of the British Oto-laryngological Society.
Leigh, Lancs, Nov. 6th.

SELF-ADMINISTRATION OF NITROUS-OXIDE GAS.

Sir,—In view of a sad case, recently reported, of death resulting from the testing of a cylinder of nitrous oxide by self-administration, we think it right to bring this matter to the knowledge of those who are interested in the administration of anaesthetics.

One of us (J. D. H.) called at a dentist's house to administer gas to a patient, and on entering the consulting room found the dentist dead in the operating chair. The mask was still applied to the face. The head had fallen forwards and sideways over the arm of the chair and was resting upon the gas stand; the cylinder was still supplying gas.

At the inquest it was stated that he at times tested the apparatus by inhaling the gas previous to its being used for an operation. A verdict of "Death from misadventure" was returned.

It may not be generally known that it is quite a common practice among those engaged in dental surgery to take an occasional so-called "whiff," sufficient only to cause partial unconsciousness. Several cases are known to us in which this has been done while standing in the upright position, the result being the fall of the administrator heavily to the floor. The mask being fortunately displaced, there followed a return to consciousness.

But if the inhalation, as in this case, be taken while lying down, there is evidently a danger of complete unconsciousness supervening. Then probably the tonic spasm of the muscles may actually retain the mask in position, and, if there be no one present to intervene, an overdose may result in fatal asphyxia.

We know of only one other fatal case of self-administration being reported (Hewitt's *Anaesthetics*, third edition, p. 284). We shall be glad to know of other such cases, should any have come to the knowledge of readers.—We are, etc.,

James Donald Holmes, M.B., C.M.
Hedley C. Visick, Anaesthetist to
Hampstead General Hospital.
London, N.W., Oct. 24th.

Obituary.

The late Dr. Henry John Andrews, V.C.

Major-General Sir Patrick Hehir, I.M.S. (ret.), writes: I should be glad of an opportunity of making a few remarks about the late Dr. Henry John Andrews, V.C., M.B.E., I.M.S., Salvation Army, whose posthumous award of the Victoria Cross has been announced (British Medical Journal, September 18th, 1920, p. 456). He was killed in action in Afghanistan on October 22nd, 1919. The brave deed that merited this high distinction has been described in dispatches. He met his death in the way I believe he would have chosen, in service to others, doing his duty—the ideal way for the army doctor. It was my pleasure and privilege to know Andrews fairly well, as we worked together in the Northern Command in India when I was D.D.M.S. there. On several occasions he asked to be transferred to the front, but he was doing such excellent work as commandant of the Moradabad War Hospital that his services could not be spared. Eventually he was employed at the front in the Afghan campaign, where he met his glorious death. He was energetic, brimful of vitality, extremely modest, quiet, thorough and reliable, completely unselfish, and his devotion to duty was most inspiring to others. Whilst serving on the military side I know that he gave to Government the best that was in him. His goodness infected all those around him, and one feels confident that his influence will continue for many a day in the neighbourhood in which he worked. He was a man with broad human sympathies, and a splendid type of the medical missionary in India. He was loved by the poor, and their care, comfort, and treatment were meticulously attended to in his hospital. He was a good operator, and crowds of people flocked from various parts of the Moradabad district to be treated by him. He designed and supervised the construction of the Salvation Army Hospital at Moradabad. It is a model of what a district hospital should be in India. It is one of the few hospitals in Oudh that has its own tube well. I was particularly struck with the admirable way in which the various departments of the hospital were arranged. It was well organized and administered. The hospital was made over to Government as a war hospital in a whole-hearted manner by the Salvation Army, and did most laudable work for our sick and wounded Indian soldiers. In my official rounds I had to inspect and report on this hospital on two occasions while Andrews was in command, and found that the executive and administrative work was being carried out perfectly; every part of the hospital and everything connected with it was spotlessly clean, the patients well fed, nursed, and carefully treated. For such a man the future life could have no cause for apprehension, and we may be certain that he was welcomed into the other world with the words, "Well done, thou good and faithful servant."

The late Dr. Willoughby Furner.

Sir Francis Champneys, Bt., writes: I wish to add a little to the obituary notice of Dr. Willoughby Furner in your last week's issue. Dr. Furner was house-surgeon at St. Bartholomew's while I was a student, and was a very old friend of mine. He was a born surgeon. Even at that period he had the true surgical instinct and was willing to take risks. I remember one occasion when he put the welfare of the patient before regulations—and was reprimanded according to rule—to the great advantage of the patient. Had he remained in London he ought to have made a great success; but his father called him and he went. I was once in his care as a patient, and can never forget the confidence he inspired nor the beautiful skill and gentleness of his hands. He was a true and trusty friend and an excellent companion.

The death, on June 14th, of Surgeon-Major John Killaly Goodwin, R.A.M.C.(ret.), is announced in the monthly *Army List*. He was 89 years of age and retired in December, 1876. He took the diploma of L.R.C.S.I. in 1855, and entered the army as assistant surgeon in the same year. He served in the Chinese war of 1857–60 and in the New Zealand war of 1863–66, receiving the medals for these campaigns. He was an excellent surgeon according to the lights of those days, was universally loved and respected, and would have made his mark had he been able to remain in the service. During the Chinese campaign he suffered severely from dysentery, and the New Zealand campaign had an injurious effect on his health, though after that he had a long spell of home service. When it again became necessary for him to serve abroad the medical board had to advise him to retire. In his retirement at Newton Abbot he retained his interest in surgery and medicine, and was always ready to discuss recent advances and developments; though he never practised after his retirement he was an omnivorous reader and kept himself well acquainted with the progress of science and practice. He was a fine classical scholar and found recreation in the great writers of the past. He was the soul of honour and integrity, and throughout his life was a living example of probity and of what an English gentleman ought to be. The present Director-General, Sir John Goodwin, K.C.B., is his son.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Radcliffe Prize, 1921.

THIS prize, which is of the value of £50, will be awarded by the Master and Fellows of University College upon the report of the examiners, provided a sufficiently deserving memoir be submitted for adjudication, for a memoir, or papers, embodying research in any branch of medical science comprised under the following heads: Human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynaecology, forensic medicine, hygiene.

The prize is open to all graduates of the university who have proceeded, or are proceeding, to a medical degree in the university. Candidates, at the date of application, shall not be Radcliffe Fellows; but the provision that candidates shall not have exceeded twelve years from the date of passing the last examination for the degree of B.A. [illegible] has been so far suspended as to enable any graduate, [illegible] during the years of the war (1915, 1917, 1919) to be eligible for the forthcoming award (1921).

Candidates are requested to send in their memoirs to the Assistant Registrar on or before Wednesday, December 1st, 1920. No memoir for which any university prize has been already awarded can be admitted to the competition, nor may the prize be awarded more than once to the same candidate. Saturday, March 19th, 1921, is the intended date of the award.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on October 20th, when, as has already been recorded in these columns, it was resolved to accept (subject to certain conditions) the Government's offer of [illegible] Bloomsbury.

The thanks of the Senate were accorded to the executors and trustees of the will of the late Sir William Dunn for a gift of £5,000, to be expended upon one of the subjects which would have been embraced by the Institute of Medical Sciences, which the university had projected, but which it was not found practicable to establish.

Dr. Edwin Deller was appointed Academic Registrar in succession to Mr. P. J. Hartog, and a resolution was passed recording the Senate's high appreciation of Mr. Hartog's great services, and congratulating him on his appointment as Vice-Chancellor of the University of Dacca.

The following were recognized as teachers of medicine of the university at the institutions indicated:

Westminster Hospital Medical School: Dr. A. Abrahams, Dr. A. W. [illegible]

London Hospital Medical College: Drs. J. Parkinson and R. A. [illegible]

London School of Medicine for Women: Dr. H. H. C. [illegible].

It was resolved that the regulations for internal students in the Faculty of Medicine be amended so as to provide that [illegible] the first and second examinations for medical degrees shall not be [illegible] except to qualified students [illegible].

The course of lectures on [illegible] in vegetable [illegible] arranged to be given [illegible] by Professor A. D. Waller, F.R.S., and [illegible] has been postponed.

Sir H. [illegible], C.B.E., has been elected Dean of the Faculty of Medicine for the period 1920-22.

UNIVERSITY OF MANCHESTER.

[illegible]

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

[illegible] Royal Faculty of Physicians and Surgeons of Glasgow [illegible] Monday, November [illegible]

Among the office-bearers appointed were the following: President, Dr. A. Freeland Fergus; Visitor, Dr. W. G. Dun; Treasurer, Mr. George McIntyre; Honorary Librarian, Dr. E. H. L. Oliphant: Councillors: the President, the Visitor, the Treasurer, the Honorary Librarian, Dr. James A. Adams (Representative to the General Medical Council), Mr. J. McGregor Robertson, Mr. J. Forbes Webster, Mr. R. M. Buchanan, Dr. Ebenezer Duncan, Dr. W. R. Jack, Mr. Henry Rutherfurd, and Dr. A. K. Chalmers.

The Services.

HONOURS.

THE following decorations have been conferred upon the officers mentioned in recognition of valuable services rendered in connexion with the war:

C.B.E. (Military): Lieut.-Colonel Horace Samson Roch, C.M.G., D.S.O., R.A.M.C. (South Russia).

O.B.E. (Military): Temporary Captain (acting Major) Hugh George Hobson, M.C., R.A.M.C. (Black Sea), acting Major William Anderson, R.A.M.C. (Salonica).

M.B.E. (Military): Senior Assistant Surgeon and Major Richard Corridon, I.M.D. (France), Senior Assistant Surgeon and Major Charles W. E. Kerr, I.M.D. (Mesopotamia), Senior Assistant Surgeon and Major William G. Durham, I.M.D. (India), Senior Assistant Surgeon and Major Christopher A. Farmer, I.M.D. (India), Senior Assistant Surgeon and Lieutenant Charles R. Coxe, I.M.D. (India).

MENTIONS.

The following further names have been brought to the notice of the Secretary of State for War by Lieut.-General Sir J. L. van Deventer, K.C.B., Commanding-in-Chief British Forces in East Africa, for distinguished services during the operations from May 30th to December, 1917: Lieut.-Colonels A. C. Adderley, D.S.O., R.A.M.C., and T. Smyth, D.S.O., S.A.M.C.; temporary Major (acting Lieut.-Colonel) T. M. R. Leonard, D.S.O., Special List and Medical Service, W.A.F.F.; and Captain (acting Major) A. McW. Green, D.S.O., S.A.M.C.

FOREIGN DECORATIONS.

The following decorations have been awarded for distinguished services rendered during the course of the campaign:

By the President of the French Republic. Légion d'Honneur (*Commandeur*): Lieut.-General Sir T. H. J. C. Goodwin, K.C.B., C.M.G., D.S.O., Director General A.M.S. *Officier*: Honorary Major-General Sir J. Murray Irwin, K.C.M.G., C.B.; Colonel R. J. Blackham, C.B., C.M.G., C.I.E., D.S.O.; Lieut.-Colonel J. P. Decarie, C.A.M.C. Croix de Guerre: Lieut.-General Sir C. H. Burtchaell, K.C.B., C.M.G.; Major-General J. J. Gerrard, C.B., C.M.G.; Major-General Sir H. N. Thompson, K.C.M.G., C.B., D.S.O. (second award); Captain (acting Major) P. J. Ryan, M.C., R.A.M.C. (third award); Captains Robert Burgess, D.S.O., M.C., R.A.M.C., T.F. (third award), O. G. Donovan, C.A.M.C. (second award) and J. A. A. Paro, M.C., C.A.M.C. (second award); temporary Captains (acting Majors) F. B. Winfield, R.A.M.C. (second award), and T. A. Lawder, R.A.M.C. (third award); temporary Captain F. P. Montgomery, M.C., R.A.M.C. (second award). Médaille d'Honneur avec Glaives "en Vermeil": Major J. A. Lussier, C.A.M.C.; temporary Captains A. Sandison, R.A.M.C., and A. H. Style, R.A.M.C.

By the King of Italy: Order of the Crown of Italy (*Cavalier*): Lieutenant Raymond Theodore E. Barnett, R.A.M.C. (T.F.). Silver Medal della Salute Publica: Colonel John Vincent Forrest, C.B., C.M.G., A.M.S.; Colonel John Charles B. Statham, C.M.G., C.B.E., A.M.S.; Lieut.-Colonel James Currie Robertson, C.M.G., C.I.E., C.B.E., I.M.S.; Lieut.-Colonel John Weir West, C.M.G., R.A.M.C.; Brevet Lieut.-Colonel John Grenside Bell, D.S.O., R.A.M.C.; temporary Captain Wyndham Parker, M.C., R.A.M.C.

By the Maharajadhiraja of Nepal: Order of the Star of Nepal (3rd Class): Lieut.-Colonel (acting Colonel) Thomas Howard Foulkes, C.I.E., I.M.S.; Lieut.-Colonel John W. Grant, I.M.S.

TERRITORIAL DECORATION.

The announcement published in our issue of October 30th (p. 684) that the Croix de Guerre had been conferred by the President of the French Republic upon Colonel Arthur M. Connell, A.M.S. (ret.), was incorrect. Colonel Connell was awarded the Territorial Decoration.

DEATHS IN THE SERVICES.

DEPUTY INSPECTOR-GENERAL JAMES LONG SWEETNAM, Royal Navy (retired), died at Hove on October 14th, aged 76. He was educated at Queen's College Cork, and at the school of the Irish College of Surgeons, and graduated M.D. and M.Ch. Queen's University, Ireland, in 1869. Entering the navy soon after, he rose to the rank of fleet surgeon in 1891, and retired with an honorary step as D.I.G., on July 18th, 1899. He received a Greenwich Hospital pension on February 15th, 1915.

Major Arthur Shepherd, R.A.M.C., died on July 19th. He was educated at Aberdeen, where he graduated M.B. and B.Ch. in 1897, and entered the army as lieutenant on February [illegible], becoming captain in 1901 and major in 1910.

Temporary Captain K. H. [illegible], M.B., I.M.S., was accidentally killed on [illegible]. He took a temporary commission in the I.M.S. on September 2nd, 1915, and was promoted to captain after a year's service.

WM. HEINEMANN (MEDICAL BOOKS), LTD., announce for early publication a work on Gout, [illegible], by Dr. L. J. Llewellyn, with a section on eye diseases by Mr. W. M. Beaumont.

Medical News.

THE following members of the medical profession are among the mayors elected on November 9th: Dr. E. A. Farr, J.P. (Andover), Alderman W. E. St. L. Finny (Kingston), Alderman A. J. Rice-Oxley, C.B.E. (Kensington), re-elected, Dr. J. B. Smith (Hertford), and Dr. J. E. Thomas (Bangor).

THE Minister of Health has appointed Drs. F. J. Blackley (Bristol), F. B. Thornton (Reigate), R. T. Worthington (Lowestoft), and E. Parry Evans (Llantwit Vardre, Wales) as Regional Medical Officers of the Ministry, to fill vacancies.

THE annual dinner of the Cambridge Graduates' Club of St. Bartholomew's Hospital will take place on Tuesday, November 16th, at 7.15 for 7.30 p.m., at Frascati's Restaurant, with Dr. P. Horton-Smith Hartley, C.V.O., in the chair.

AT the annual general meeting of Fellows and Members of the Royal College of Surgeons of England, to be held on November 18th, resolutions will be moved on behalf of the Society of Members (1) affirming the desirability of admitting members to direct representation on the council in order that the constitution of the council shall be in keeping with modern ideas of true representation, and (2) requesting the President and Council to nominate at least two members in general practice to represent the interests of general practitioners in the management of college affairs. The honorary secretary of the Society of Members of the Royal College of Surgeons of England is Dr. Sidney C. Lawrence, 61, Wellington Road, Bush Hill Park, Enfield.

PROFESSOR SANARELLI, director of the Institute of Hygiene of the University of Rome, and editor of *Annali d'Igiene*, and Dr. Nicola Badaloni, a well-known writer on social medicine, have recently been made Roman senators.

A LECTURE under the auspices of the Eugenics Education Society will be given by the Dean of St. Paul's on Tuesday, November 16th, at 5.30 p.m., at the Wigmore Hall, Wigmore Street, on "Eugenics and Religion."

AT the second anniversary meeting of the Vocal Therapy Society, held on November 11th, Sir Frederick Mott gave an address on "The influence of music on body and mind." The society exists for the benefit of ex-service men, and aims at the restoration of health through speech, song, and correct breathing.

ON his departure from Batley, Yorks, Dr. J. A. E. Stuart, who has practised for nearly forty years in the district, has received a presentation from his friends as a mark of their esteem and appreciation of his services.

THE sanitation number of the *Tropical Diseases Bulletin* dated October 15th, 1920, contains abstracts and critical notes of recent British and foreign literature dealing with prevention of disease, conservancy, water, milk, vaccination, rat destruction, and disinfection. With the close of the current volume (the sixteenth) in December, the "sanitation numbers" will be published as "sanitation supplements," and will be obtainable from the bureau at 23, Endsleigh Gardens, N.W.1, at a subscription price of 7s. 6d. per annum, post free; they will form an independent volume of 150 to 200 pages, with index.

SURGEON COMMANDER DIGBY BELL, R.N., will lecture on recreation in the navy during the war, and its application to civil life, on Friday, November 19th, at the Town Hall, Deptford. The Mayor will take the chair. The lecture is an outcome of Commander Bell's address to the Royal Society of Medicine on a scheme for national physical education. Tickets (1s.) may be obtained from Dr. Rosa Ford, 21, Jerningham Road, New Cross, S.E.14.

THE next award of the Alvarenga Prize of the College of Physicians of Philadelphia, value 250 dols., will be made on July 14th, 1921, if an essay on any subject in medicine deemed worthy of the prize is received by the secretary of the college on or before May 1st, 1921. The essay must be sent without signature, but accompanied by a motto.

AT a banquet of the Plumbers' Company, given to meet the Lord Mayor and Sheriffs, on November 1st, the Master of the Company, Dr. F. J. Waldo, His Majesty's City Coroner, alluded to the antiquity of the Plumbers' Company, whose Royal Charter dates from 1612, and whose ordinances, dated 1365, provide that it shall be certified "by the best and most skilled men in the trade that he (the plumber) knows how, well and lawfully, to work so that the trade may not be scandalized, or the commonalty damaged and deceived by folks who do not know their trade." In replying to the toast of the Plumbers' Company and Public Health, Dr. Waldo described the services rendered by the company during war in connexion with the making of munitions, and pointed out the desirability of co-operation between medical officers of London on the one hand and educated responsible sanitary plumbers on the other. Professor H. R. Kenwood also replied to the toast.

AMONG the six names chosen out of 177 at the fifth quinquennial election to the American Hall of Fame is that of William Thomas Greene Morton, the discoverer of ether as an anaesthetic. Morton practised as a dentist, and ether was first used when he extracted a painful tooth on September 30th, 1846; it was first used for a surgical operation on October 16th, 1846. The operation, which was performed by Dr. John C. Warren at the Massachusetts General Hospital, was for congenital vascular tumour of the neck in a young man. There is a public monument to Morton in Mount Auburn Cemetery, Boston, and his name is among the fifty-three distinguished sons of Massachusetts inscribed round the base of the dome of the Chamber of Representatives.

THE twenty-ninth French Congress of Surgery will be held at Strasbourg on the second Monday in October, 1921. Professor Jules Boeckel of Strasbourg has been elected president, Dr. Hartmann vice-president, and Drs. Mauclaire and Bérard members of committee. The questions to be discussed are (1) treatment of epilepsy following wounds of the skull, introduced by Drs. Billet and Lenormant; (2) serum and vaccine treatment of osteo-articular affections, introduced by Grégoire and Debrey; (3) remote results of treatment of cancer of the breast, introduced by Drs. Forgues and Walther.

THE American Physiological Society has arranged to publish a quarterly journal with the title *Physiological Reviews*. It will contain articles, usually five in each issue, dealing with the recent literature of some subject in physiology, using the term in a broad sense to include biochemistry, biophysics, experimental pharmacology, and experimental pathology. The managing director is Dr. D. R. Hooker, Johns Hopkins Medical School, and the annual subscription outside North America is 6.50 dols. The first number will appear in January.

DURING 1919 there were 833 cases of plague in Egypt among the native population, with 445 deaths, and 44 cases among the foreign population, with 28 deaths.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"M.B.EDIN." asks for suggestions as to the treatment of a patient who has a permanent cystotomy. There is a sinus about three inches long, with a painful point about one inch from the surface, which causes frequent very painful spasmodic contractions of the bladder and prevents the patient from going about.

"PINELAND."—Gould's *Practitioner's Medical Dictionary*, published by H. K. Lewis, and Dorland's *Illustrated Medical Dictionary*, published by the W. B. Saunders Company, are comprehensive reference books. *Hoblyn's Dictionary of Medical Terms*, published by G. Bell and Sons, also gives the derivations of medical and scientific words. Black's *Medical*

Dictionary, edited by J. D. Comrie, and the small *Medical Dictionary for Nurses*, by Amy Hope (G. P. Putnam's Sons) may be mentioned as well.

INCOME TAX.

“[illegible]” inquires as to the allowances due to him in respect of life assurance and children, and the £225 relief.

*** The life assurance is apparently calculated at 3s. in the £ on the basis that our correspondent's total income does not exceed £1,000; if the further assessment in respect of the appointment under a Ministry raises the total income above £1,000 the rate should be 4s. 6d. except in regard to the policy effected in 1919, as to which the rate would still be 3s. It is this policy which accounts for the difference in the figures for the allowance; the premium allowed on any policy must not exceed 7 per cent. on the actual capital sum assessed exclusive of bonus, which is £21, instead of the £29 16s. claimed. The allowance is therefore rightly calculated on £63 10s. 10d. less (£29 16s. − £21 = £8 16s.), that is, on £54 14s. 10d., which at 3s. in the £ is £8 2s. 9d. We cannot understand why the children's allowance should be £60 only instead of £90, and suggest that our correspondent should ask the local inspector to explain the matter.

In income tax calculations two sums of £225 are involved—that is, £225 exempted in the case of a married man, and another £225 which is chargeable at 3s., the remainder after both deductions being chargeable at 6s.

“J. H. B.” writes: In making my 1920–21 income tax return early this year I omitted to deduct one-tenth and the £225 allowance and £36 for a child; am I now entitled to claim to be refunded 3s. in the £ on the above amounts which I paid in error?

*** Our correspondent is apparently under some misapprehension. The income to be returned for assessment is the full amount, less of course any proper professional expenses, and the deduction of the tenth and the other allowances should be made by the income tax authorities and shown on the formal notice of assessment issued to each taxpayer. We do not quite see how “J. H. B.” can have paid any tax for 1920–21, as the first instalment of the tax for that year does not become due until January 1st, 1921. The new provisions do not of course apply to an assessment for the year 1919–20, even if that assessment is made within the present financial year.

“J. W.” spent £55 in obtaining a diploma and the expenditure has been disregarded by the inspector of taxes, on the ground that the expenses are not incurred “wholly, exclusively, and necessarily in the actual execution of” his duties.

*** The words in the statute are “in the performance” not “in the actual execution” of the duties. The inspector's phrase seems a little stricter than that of the statute, but we think that his contention is well grounded. The expenditure seems to be in preparation for the performance of the duties and not “in” their performance, and consequently to be analogous to the expense of training incidental to all professions. For instance, the expenditure incurred by an articled clerk in passing the examinations to become a chartered accountant are clearly not incurred in the earning of [illegible] clerk, however essential to the [illegible] The argument applies [illegible]

[illegible]

“[illegible]” [illegible]

[illegible]

In [illegible] Coroners Act, 1887. Section [illegible] as follows:

> “Where an inquest is held on the body of a person who has died in a county or other lunatic asylum or in a public hospital, infirmary, or other medical institution, or in a building or place belonging thereto or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration.”

LETTERS, NOTES, ETC.

OBSTETRICAL RARITIES.

DR. C. R. A. SUTTON (Sidcup) writes: As a matter of record may I say I had an experience quite similar to Dr. Gilbertson? I was called in 1907 to a 2-para. The full-term fetus, a female, had been born some time before with unruptured membranes. The woman in attendance was too frightened to do anything, and the child was of course dead.

DR. FRANK W. CROSSMAN (Hambrook, near Bristol) writes: A propos of “Obstetrical Rarities,” mentioned in your issue of October 30th, the following paragraph, taken verbatim from a copy of *Bonner and Middleton's Bristol Journal* issued Saturday, June 15th, 1776, which I have in my possession, would probably interest your obstetrical readers:

> A letter from Beaumaris, dated May 17th, says: “Last Monday was brought to bed, at the Four Crosses, Denbighshire, Ellin Ellis, who is 72 years of age, and has been married forty-six years. She has had twelve children by the same father; the eldest is 45, and the youngest before the last 25 years of age. The last was stillborn, owing, as it is imagined, to the mother's being frightened by a brute of a fellow telling her a fortnight ago, ‘If she was with child, it must be by the devil.’ This is so remarkable an event that you may be sure her pregnancy was much called in question. Both she and her husband look very infirm. All this is fact, not a hearsay story.”

FOUR MATERNAL GREAT-GRANDPARENTS ALIVE.

DR. J. ROBERTSON HALL (Fence Houses, co. Durham) writes: I have just attended a somewhat rare maternity case. The patient (a young woman of 21) has all her four grandparents living—consequently the newborn infant commences life with four great-grandparents on the mother's side. Moreover, at least one of the great-grandfathers, now aged 69, still works regularly as a miner. This seems to me a sufficiently unusual event to justify recording it; possibly some other doctors will be able to tell of cases of more than four great-grandparents living.

A SCHEME TO IMPROVE DAIRYING.

IN the agricultural district of which Hemyock (Devon) is the centre a “calf club” has been instituted according to a scheme which had its origin in Canada and the United States in 1916. In America a Banker Farmers' Association, acting on reports of branch bank managers and of visiting experts, organizes in certain districts “calf clubs,” in which are enrolled boys and girls of 12–18. Calves from milk-recorded cows are publicly assigned by lot, after judgement of their relative value “by points,” to members of the club, in consideration of their parents depositing with the bank a promissory note bearing no interest for one year. At the end of that period the animals are again judged, and prizes are awarded for the greatest improvements; subsequently the calves are put up for auction, each member being given (1) the opportunity of redeeming his own animal on redemption of the promissory note, or (2) the difference between the price of sale and the amount of the note. In the meantime, at meetings of the club instruction is given and discussions take place regarding the care of the animals, the production of milk, and other phases of scientific dairying. In the British Isles clubs are being promoted by United Dairies, Ltd.; it is hoped that sound knowledge of dairying will be propagated and that benefit will accrue to agriculture.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 45, 48, 49, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 46, 47, and 48.

THE following appointments of certifying factory surgeons are vacant: Bampton [illegible], [illegible], Hull (York, East Riding), Kirkwall (Orkney), [illegible] (York, North Riding).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
ORTHOPAEDIC SURGERY IN RELATION TO HOSPITAL TRAINING.

MADE IN OPENING THE ANNUAL MEETING OF THE BRITISH ORTHOPAEDIC ASSOCIATION IN LONDON ON NOVEMBER 12TH

BY

SIR ROBERT JONES, K.B.E., C.B., CH.M., F.R.C.S.,
PRESIDENT.

FIRST of all I wish to congratulate the British Orthopaedic Association on its ever-increasing vitality. When the association was founded, on the initiative of our good friend Dr. Osgood, we were in the midst of war, with but little time to spare on outside objects, and we displayed, I fear, a timidity as to the future of the association which time has proved to have been quite uncalled for. We now know that its potentialities are unlimited, and that they depend very largely, if not entirely, on the enthusiasm, the work, and the enterprise of its younger members. We depend on them for light and leading, and to carry the torch into dark places. We of the old brigade should encourage, and even endeavour to guide, the efforts of those who follow us. The moment we become obstructive and unsympathetic, the time has come for our best friend to guide us from active scenes and persuade us to lead a harmless and contented life, dwelling on the memories of the past. The signs of surgical senility are doubtless noted in quarters we least expect—they are rarely obvious to ourselves. A diminished surgical initiative may be compensated for by a ripe critical judgement and a sense of proportion, but the mind no longer receptive to a new idea belongs to a bygone day. The tide of surgical advance cannot be held back by voices from the past.

I need not dwell on the services of orthopaedic surgery to the injured of the war, nor on the services of the war to the orthopaedic surgeon; they have been generously and universally acknowledged. Not the least of these advantages is the better understanding which has developed between the general surgeon and ourselves, and the widened knowledge which has resulted from our association with one another. It should be our pleasure and our duty to do all we can to foster this good feeling in order to attract the best men to the surgery of the extremities. So long as we remain an exclusive cult, claiming a special perfection, we deserve some of the neglect and scorn with which we have been treated in the past. If we possess a special knowledge, it should be shown in the character of our work, which must ever remain the sole criterion of its value.

THE SCOPE OF THE ORTHOPAEDIC SURGEON.

The term "orthopaedic" has been somewhat confusing, and yet we still await a more expressive name to cover the group of cases we desire to treat, and this suggests the very important question as to the type of case which the term should cover. In the past a very superficial surgical knowledge was required by the orthopaedic surgeon. Lateral curvature, flat-feet, knock-knees, and certain congenital deformities mainly sufficed to represent the specialty. A few tenotomies and an occasional osteotomy were all the operations that were practised. An operative technique was not imperative, and the use of the knife was a last resort and generally represented the failure of mechanical effort. We must remember, however, that it is to these our forefathers, who by mechanical means and laborious effort accomplished so much, that we are so greatly indebted for our success in the operative field of to-day. They have impressed upon our minds the knowledge that an operation is but an incident in the treatment of a case, and that success so largely depends upon efficient after-care. In my early days under the tuition of H. O. Thomas, part of my daily routine consisted in manually unravelling advanced club-feet, aided, perhaps, by tenotomy of the tendo Achillis. Each case would represent several months of hard work, consisting of alternate stretching and fixation. The lesson it taught, however, was invaluable in demonstrating the effects of perseverance and patience.

Such a narrow definition of orthopaedic surgery as sufficed then cannot be allowed to obtain to-day, and for this reason we should agree as to the limits of its expansion. May I therefore venture to suggest the group of cases which a modern orthopaedic surgeon should be prepared to treat? They should consist of

- Fractures—recent, malunited, and ununited.
- Congenital and acquired deformities of the extremities.
- Paralyses of the extremities.
- Diseases, derangements, and disabilities of the joints, including the spine, wry-neck, and those conditions included under the general term "bone-setting."

This definition covers a very large area of surgery, and therefore will appeal to the ambition of the best type of young surgeon. To master the intricacies of so large a section of work requires exceptional ability, and the portals of success are not open to any but the very highly trained. This is as it should be. Some of the very distinguished general surgeons who helped us at the orthopaedic centres during the war have emphasized the fact that many of the operations involved in that work were amongst the most difficult they had ever known. This is a sufficiently good reason for raising the standard of education in the case of all who practise the specialty. The war has taught the orthopaedic surgeon that he has to be more of a general surgeon; it has taught the general surgeon that he should be more of an orthopaedist.

I have always maintained that an orthopaedic surgeon must primarily have a thorough working knowledge of general surgery, and that all through his life he must be cognizant of its advances. I cannot emphasize too strongly that unless this be accepted as a cardinal principle our section may even yet be reduced to a side-show—a refuge for anyone who is unable to hold his own in any operative procedure which his art requires of him. He should be saturated in sound surgical principles, and not become entangled in bewildering detail. He should be a master of detail but never governed by it. Function is his goal, and he should know and be able to practise the best way of arriving there. He must have a sense of perspective and of proportion. An operation means to him but the beginning of his problem. His most brilliant operative exploit, unless directed to a functional success, should be a reproach. This can only be achieved by acquiring, in addition to mechanical knowledge, an operative skill of the highest kind. I have only to look around me now to recognize men who have done splendid service during the war, and in whose hands one may safely trust the future of orthopaedic surgery.

The demand, however, is greatly in excess of the supply. We want more men, and better facilities for training them. We want every student to imbibe orthopaedic knowledge from a competent teacher. We want his attendance at the department to be made compulsory. It is futile to suggest that the curriculum is overburdened. The type of case which he will meet in the orthopaedic department is precisely that which confronts him at the examination board and in any remote village where he may practise. We want well trained men prepared to devote themselves to orthopaedic work, and to take their places on the staffs of all our general hospitals. On the other hand, if education is to be complete, it is essential that the orthopaedic department be fully equipped and adequately staffed. The principles of prevention should be studied, and the department should not be merely utilized to rectify cases which have not done well. How often on entering a so-called orthopaedic department do we find merely a massage room, a few Zander machines, some electric apparatus, but nobody with the requisite knowledge at the head of affairs!

Before offering a few suggestions on orthopaedic departments in relation to general hospitals and on the facilities for teaching, I wish to anticipate the attitude of the general surgeon towards the widened definition of orthopaedic surgery which I have advanced and which I look upon as fundamental. The surgeon may very properly urge that if so large a group of cases were taken from his wards much valuable teaching material would be lost to him. The answer to this is that the general surgeon should have an absolute right to treat any case and as many of any type of cases as he desires. The orthopaedic surgeon is alone to be limited as to type. He should only be allowed to treat cases which are included in the definition. The general surgeon should not be limited by any definition of any sort. Under such an understanding there would be no resentment and no reservation. Take fractures as an example. The treatment carried on in the orthopaedic ward would be contrasted in friendly rivalry with that of the surgeon who takes such cases into the general ward. If the orthopaedic surgeon falls short of expectation, the rivalry will be to his disadvantage. Truth never shows better than when contrasted with error, and in the nature of events fractures will be absent from such an orthopaedic ward. If he should succeed, the reverse condition will occur, and the general surgeon will be only too delighted to be rid of a case in the treatment of which he does not excel. In any case, the rivalry will benefit them both—and, incidentally, the patient.

A great defect in our large general hospitals is the system whereby a surgeon is expected to treat equally well cases in regard to which he is an acknowledged master, and cases which do not interest him in the least. There is an urgent call to remedy this dangerous defect. Once a surgeon is convinced by demonstration of his inability to give the best to a patient he would no longer care to invite comparison. A surgeon of international reputation on the brain is only too pleased to hand over a case of haemorrhoids and accept a tumour of the pituitary. A well-organized orthopaedic department should prove a pleasant dumping ground to many a skilful and conscientious surgeon.

THE ORTHOPAEDIC DEPARTMENT OF A GENERAL HOSPITAL.

The question now arises as to how an orthopaedic department in a general hospital should be organized. I have been asked this question by the staffs of several hospitals, and after consultation with some of my *confrères* I would suggest the following as an outline scheme:

Scheme.

The definition of orthopaedic surgery on the lines I have suggested should be adopted.

The general surgeon should be allowed to treat any of such cases as he desires.

The work of the orthopaedic surgeon should be strictly limited by the definition.

The orthopaedic department should be confined to the treatment of out-patients; it should be a complete unit with beds commensurate to out-patient demands.

The staff should consist of:

(a) *An Orthopaedic Surgeon.* This officer should be in charge of the department and see to its efficient conduct. He should be responsible for all cases admitted to his department. His practice out of hospital should be confined to orthopaedic surgery. He should have a seat on the Medical Board, and hold equal rank with the general surgeon.

(b) *An Orthopaedic Registrar.* He should be a Fellow of the College of Surgeons or [illegible] final examination. He should be selected as a man desirous of practising orthopaedic surgery.

(c) *House-surgeons*, who should be appointed for at least six months.

(d) Dressers and clinical assistants.

Nursing. It is important that the matron should grant security of tenure to the sisters in charge of the orthopaedic out-patient department and of the orthopaedic wards. It takes time to train nurses in the special work involved, and considerable responsibility is attached to them. They should therefore not be removed and placed elsewhere when it can be avoided.

Beds. In a hospital of 300 [illegible] should also be [illegible] for the orthopaedic service. These beds should be segregated and not mixed with other types of cases. Beds in the country, as I will point out later, should be available for children. The out-patient department should contain a complete physiotherapy department [illegible] preferably, in close proximity to the operating theatre, a plaster [illegible] room, [illegible] for the manufacture of splints and appliances. [illegible] complete records [illegible] be kept [illegible] should be attached to the unit.

OPEN-AIR COUNTRY HOSPITALS.

I have [illegible] country beds. For over twenty-five years I have [illegible] that children's hospitals should be [illegible] from the towns and established in the country. These hospitals should not be of the character of cripples' homes or convalescent hospitals. They should be fully equipped and staffed for the most modern type of surgical work. Such hospitals, in addition to being economical, are of infinite service to the child. I would lay down as a fundamental principle that no in-patient hospital for children should be started in the centre of our cities, and that existing institutions should deal only with out-patient clinics and act as fitting centres, a few beds being retained for urgent and acute cases. A long experience has taught me the injustice of segregating sick and deformed children in the vitiated air of city hospital wards. Over twenty years ago, with the help of Miss Hunt, we started the first really open-air hospital in the world, where the children live in the open air by day and by night all the year round. This was followed by the large country hospital at Heswall, and later at Ruislip and Harrow. In none of these hospitals is there any possibility of closing the wards, and through sunshine and storm, snow and sleet, one side of the shed is always absent. It is a most inspiring sight to visit these children. Gaiety reigns rampant. Infectious disease—the bane of hospital wards—has never spread, nor has there been one instance of so-called "catching cold" or pneumonia. At Baschurch this principle of open air was extended to soldiers, and nowhere in my military inspections have I met with more contented men nor such rapid healing of wounds. The sheds are cheap and decrepit—there is an air of penury about it all—but it is the birthplace of a great reform, which is steadily gaining ground all over the world. Already several hospitals have sprung up in the United States based upon this rough Shropshire model. I have emphasized this subject because I feel very strongly that orthopaedic surgeons should convince hospital authorities of the urgent necessity of open-air annexes for the active treatment of crippled children. I am delighted to find that the governors of the Royal National Orthopaedic Hospital have adopted this principle, and are now appealing for funds to build and fully equip a country branch, where most of the operations will be performed. We should see that this is followed by similar action on the part of our general hospitals, especially where orthopaedic departments are attached.

THE TRAINING OF ORTHOPAEDIC SURGEONS.

It is a great misfortune that we have comparatively few well trained orthopaedic surgeons in Great Britain. In consequence there exist a very large number of avoidable deformities. This defect can only be overcome by the organization of efficient training. From all quarters there is a growing desire to learn, and it is obvious that if preventive methods are to be mastered we have to insist that our orthopaedic departments should have the opportunity of training students. We should pay no heed to the cry that there is no time. The training is essential if the practitioner is to become efficient. Take a walk round almost any wards with a physician, and you are almost certain to find a case that requires orthopaedic help. Visit the different spas and note the crippled adults in their bath chairs, most of them having consulted a distinguished physician. Yet nearly all these deformities are avoidable. Take such a group of cases as that of the rheumatoid. On scores of occasions I have been taken to their bedsides in hospitals and elsewhere to see if anything can be done for their joints. Valgoid ankles, acutely flexed knees, adducted and flexed hips all avoidable. The assimilation of elementary orthopaedic facts would prevent it all. If a joint must stiffen, it should be allowed to do so in the best functional position. If the practitioner always knew this, and the consultant also, what trouble and anxiety it would save, and what a blessing it would be to the patient! The same holds good regarding poliomyelitis. The student therefore must be taught.

Having started our orthopaedic department, what can we expect [illegible] teaching?

We will deal first with the undergraduate. I think it will be agreed that the student is more receptive of orthopaedic teaching towards the end of his curriculum than earlier. The essential point, however, is that his attendance should be compulsory for a certain number of sessions. It should be possible that on one day a week the orthopaedic department be prepared to lay itself out for systematic instruction, and the student should be obliged to attend upon at least twenty occasions. During that period every variety of case should be demonstrated, and opportunities should be afforded him to do practical work.

More especially should he be taught the principles that underlie the prevention of deformities and their correction. At this clinic the instruction should be of the simplest kind, and the student should not be burdened by material of a controversial character. He should not leave this clinic until he has mastered the simpler and more efficient methods of treating fractures. He should also be made familiar with the uses of plaster-of-Paris. This course of education should be carefully planned, and week-end visits should be made to the country hospital. In my opinion the out-patient departments of the general hospitals in London should lay themselves out for the reception of the undergraduate, and a hospital such as the Royal National Orthopaedic, in alliance with the Shepherd's Bush Hospital, should be equipped for the training of the post-graduate. Post-graduate teaching has hitherto been of a very unsatisfactory kind. Practitioners have come for, at most, a month or six weeks, and the arrangements, on the side of both teacher and student, have been of a most casual kind. The glamour of the operating theatre has overshadowed the out-patient department from which the bulk of his training should come.

Systematic instruction should be offered the post-graduate, and should consist of short courses for the practitioner who merely wants to be familiar with modern methods. Even this tuition should be carefully planned so that the education may prove intensive. The post-graduate who can only spare three months should be encouraged, for he is the type of man who feels the responsibility of not being competent. The post-graduate school should, however, be prepared with higher courses of training as applied to men who wish to become thoroughly efficient orthopaedic surgeons. These courses should extend some over one and others over two years, and graduates should be given every opportunity to familiarize themselves by practice both with mechanical and operative technique. At the end of the first year, if the work of the graduate has been satisfactory, he should be granted a diploma in orthopaedic surgery, and if he elects to train a second year he may take his university degree in the same subject. The higher courses should offer the advantages of the anatomical, the physiological, and the pathological departments, and for a degree original research work should be essential. I sincerely hope that a progressive university will favourably consider such a scheme.

There is one more point in connexion with training that I would like to suggest—namely, that the orthopaedic surgeon attached to teaching hospitals should be granted a lectureship, and that he be asked to deliver certain of the systematic lectures dealing with his specialty.

At present, alas! there are not enough orthopaedic surgeons to meet the hospital demands, but in many hospitals surgeons will be found who are interested in the surgery of the extremities. The results of the hospital treatment of injuries leave very much to be desired, and an effort should be made in all hospitals to segregate these cases into special wards. They are too often left in charge of the most junior member of the staff. A segregation of such cases in order that comparisons may be drawn will soon lead to better methods of treatment, and the surgeon who shows the greatest aptitude will ultimately obtain control.

In conclusion, I need scarcely emphasize the fact that on the personality not less than on the efficiency of the surgeon will the success of the orthopaedic department depend. Friendships and discussions with the staff will all make for higher education, and a feeling of comradeship will immensely add to the efficiency of hospital work. We can never forget the delightful spirit that dominated our orthopaedic centres during the war, where we each spoke to the other of our failures, and where any advance made by any member of the staff became at once the property of all. The secretive mind had no place amongst our workers. No member of a team was jealous of the other, and light hearts tempered responsibility. Uppermost in our thoughts springs Shepherd's Bush—a hospital so closely associated with His Majesty King Manuel, to whom we as orthopaedic surgeons owe so much, who accompanied us with unerring instinct through deep and troubled waters, and who devoted four years of his life in self-sacrifice and devotion to the cause of the wounded soldier. We welcome him amongst us to-day, proud that we can count him an honorary fellow of the British Orthopaedic Association.

ULCERATING GRANULOMA OF THE PUDENDA CURED BY INTRAMUSCULAR INJECTIONS OF ANTIMONY TARTRATE.

BY

H. LOVETT CUMMING, M.D., Ch.B.Edin.,
D.P.H., D.T.M. and H.Camb.,
SHANGHAI.

The disease known as "ulcerating granuloma of the pudenda," "granuloma inguinale," "granuloma venereum," etc., is fairly prevalent in South China, British Guiana, West Indian Islands, India, West Africa, South Africa, and Northern Australia; it is less frequently seen in Ceylon and Central Africa. I have met with a number of cases in Malaya, but chiefly among coolies from India and China. It does not seem to be common among Malays and Javanese.

Ulcerating granuloma is now generally considered a venereal disease. In the great majority of cases it commences somewhere on the genitals, usually on the penis or labia minora, or on the groin, as a papule or small nodule. The epidermis over this gradually becomes inflamed, thinned out, and excoriated, and the surface breaks down to form an ulcer. The resulting ulceration is seldom deep. The disease either spreads by eccentric peripheral growth or by auto-infection from an opposing surface.

The affection is probably of protozoal origin, but so far nothing definite has been established. Some writers have described a spirochaete as the cause, while Donovan found present in the lesions certain bodies resembling "gigantic bacilli with rounded ends." Siebert found, in all instances, similar bodies in material from various countries, but called them diplococci.

On the other hand, spirochaetes have only been found in a certain number of cases, and when these have disappeared after salvarsan treatment the disease has still continued. In fact, salvarsan and allied preparations in the treatment of this disease have been either altogether useless or extremely disappointing.

I have seen several cases where the disease was quite uninfluenced by intravenous injections of salvarsan, which, with the more extensive experience of other writers, goes far to prove that, in any case, the origin of the affection is unlikely to be spirochaetal. The incubation period is uncertain. It is not referred to in any of the well known textbooks. In the case about to be described it was at least four weeks. Probably, in most cases, it is never likely to be much shorter than that period.

It is only within very recent years that antimony tartrate has come to be used in various diseases, chiefly tropical, which have hitherto resisted, almost completely, all previously known forms of treatment. This drug has been given with great success in kala-azar, Delhi boil, trypanosomiasis, bilharziosis, yaws, certain forms of syphilis, and in ulcerating granuloma of the pudenda.

During the summer of 1916 the writer saw a very advanced case of the latter disease cured at the Albert Docks Hospital by intravenous injections of antimony tartrate. This case was fully reported by Low and Newham in the BRITISH MEDICAL JOURNAL of September 16th, 1916, p. 387.

The following case is of particular interest on account of the method of treatment used and its complete success with comparatively small amounts of the drug introduced into the system.

S. H., an American, first consulted me on September 8th, 1919. He was suffering from chronic gonorrhoeal discharge—a thick yellow "bonjour drop"—which had been present off and on for nearly a year; also from several soft sores, three in number, with hard edges, situated on the dorsum of the penis in and behind the balano preputial furrow, and involving to a slight extent the proximal end of the glans penis. There was a considerable amount of inflammation and infiltration present round the sores but no definite induration. The glands of the groin were neither enlarged nor tender.

The patient, who is a very observant and intelligent man, stated that he had first noticed on March 3rd, 1919—about six months previously—what appeared to be a slight abrasion, "similar to a hair cut," which he himself treated steadily for about five days with alternate applications of silvol and potassium permanganate crystals, placed between layers of damp gauze and applied directly to the suppurating area—about two fresh applications of each drug every twenty-four hours. As a result by March 10th—a week later—there was closure of the raw area, but a slightly swollen and inflamed area appeared, larger than the original open area.

This condition—an inflamed, hard, raised area—continued in a [illegible] degree until it reopened and formed a fresh sore about the end of July, 1919. At this time three distinct sores [illegible]. He treated the condition as before, with the addition of zinc ointment. The treatment was ineffective over a period of nearly a month—that is, up to September 9th, 1919, when he consulted me.

Source of Infection.—With regard to date and circumstances of exposure, nothing very definite was known. There were two possible exposures in the four weeks preceding March 3rd, 1919, one being a European and the other a Chinese Cantonese woman. Neither was a professional prostitute, to the best of his knowledge. This occurred in Hong Kong from December 18th, 1918, to February 1st, 1919. Ulcerating granuloma is quite common in South China, and amongst Cantonese prostitutes. The writer has since seen in Shanghai a Chinese woman from Canton [illegible] suffering with this disease in a very advanced form.

Condition Present at First Examination, September 9th, 1919.—On [illegible] examination, the sore presented three definite and separate ulcerations, but the surrounding inflamed areas were practically contiguous, and the inflammation and infiltration were more pronounced at the parts more remote from the actual raw centres.

Thinking the condition was one of simple "soft sores," I prescribed "black wash" and a powder consisting of iodoform, calomel, and boracic acid, in equal parts.

September 17th. The sores were cleaner and smaller in appearance, and there was less inflammation present. Solution of silver nitrate, 10 per cent., was painted on the affected parts. This treatment was continued until September 30th, when a [illegible] improvement was noted. Only one sore remained unhealed; this affected the balano-preputial furrow, and extended on to the posterior rim of the glans penis.

October 2nd. Thinking the continued gonorrhoeal discharge might be the cause of the persistence of the ulcer, I passed the urethroscope. The urethra bled readily; inflammation extended back to the internal sphincter, from 1½ in. behind the meatus; there were no signs of infected follicles. Bi-daily douches of potassium permanganate (1 in 4,000) were ordered, and a soothing diuretic mixture to be taken after meals three t[illegible]

October 11th. Less discharge from urethra; the remaining [illegible] but apparently healing in parts; edges [illegible] treatment [illegible].

[illegible] tion, although some typical Donovan's bacilli were found.

Treatment.

The treatment by intravenous injections of antimony tartrate was suggested, but, owing to pressure of business, the patient [illegible] intramuscular injections of antimony tartrate were not con[illegible]

[illegible]

January 12th, 1920. Whole scar on dorsum of glans penis was larger—a little bigger than a farthing. The unhealed distal crack was larger, with convex anterior edge. The whole appearance was now quite diagnostic of ulcerating granuloma. No other symptoms were present; no pain or enlarged glands. Discharge from urethra was slight and thin in consistency.

Treatment by Antimony Tartrate (Intramuscular).

The patient was becoming very disheartened at the apparent obstinacy of the condition and at the absence of complete healing. Just at this time I received from home the latest edition of Castellani and Chalmers's *Manual of Tropical Medicine*, and discovered there, under treatment for yaws and oriental sore (vide p. 2174), a formula for administering antimony tartrate by intramuscular injection without any unpleasant results. This had been used successfully in the treatment of yaws even in young children.

Castellani's No. 1 formula consists of antimony tartrate with carbolic acid and glycerin—for example:

℞ Tartar emetic	gr. viij
Acid. carbol.	♏ x
Glycerin	ʒiij
Distilled water to ...	℥j

Dose: ½ to 1 c.cm.

He also recommends a solution by the mouth:

℞ Tartar emetic	gr. v
Sodii bicarb.	gr. xxx
Glycerin	℥j
Aq. chloroformi	℥ij
Aquae	℥iij

Dose: 2 to 4 drachms three times a day after food.

Castellani holds that these combinations of antimony tartrate prove comparatively non-irritant to the muscles (intramuscularly) and to the stomach (internally), and in my experience this proved to be the case.

January 14th. First intramuscular injection given—about 9 minims of Castellani's solution, equal to about gr. ⅙ of antimony tartrate. This was followed by a slight bruised feeling, with some pain and stiffness in the hip and down as far as the knee, lasting for an hour. Later, the same evening, a transient rash came out on the thighs, like mosquito bites.

January 15th. He commenced taking the mixture, 2 drachms thrice daily. Each dose is roughly equal to gr. ⅕ of antimony tartrate—that is, gr. ⅗ daily.

On January 16th antimony tartrate gr. ¼ was injected into the left hip; on the 18th and 20th gr. ⅓ into the right hip; and on the 22nd gr. ½ into the right hip.

The left hip still remained a little swollen and tender on pressure after No. 2 injection on January 16th, but it was possible to go on injecting into the right hip without any unpleasant effects. The sore showed now, after the fourth injection, definite signs of healing. There was less thickening present at the edges and the appearance was healthier.

January 25th. Owing to an attack of influenza, further local treatment was postponed. The last injection was most painful of all. Right hip very tender. Still signs of healing locally. Raised border beginning to contract and flatten out, while the sore was drying up at the same time.

January 31st. Nine days since last injection. No pain or discomfort in either hip. Locally, sore healed, with exception of small area, about a quarter of an inch in length; whole area looks healthier and practically no discharge. Antimony tartrate gr. ½ was injected into the left hip.

On February 2nd antimony tartrate gr. ½, and on the 4th gr. ½, was injected into the right hip. On the latter date there was only a tiny place about ⅛ in. unhealed, ulcer more shallow. On February 7th gr. ½ was injected into the right hip, and on the 10th the same amount into the left hip, the sore was clean, red, and healing well—less than ⅛ in. long. On the 14th, gr. ½ was injected into the right hip: sore almost healed; no pain or swelling in either hip.

February 16th. Small white pustule present on dorsum of glans penis, probably due to action of the drug. This dried up and disappeared in two days and there was no recurrence.

February 18th. Antimony tartrate gr. ½ was injected into the left hip. A small fissure of the sore was still present unhealed. [illegible]

[illegible]

[illegible] with the result that the urethral discharge gradually disappeared.

April 23th. The penile sore remained healed, and the surface had assumed an almost normal appearance, except for a small shallow depression remaining to show where original sore had been.

June 17th. Nearly four months after actual healing of sore; no sign of any recurrence.

Undoubtedly the gonorrhoeal complication helped to aggravate the condition and retarded the healing of the ulcer. At the same time it is not unlikely that the antimony tartrate injections and the antimony tartrate taken by mouth helped to light up the old gonorrhoeal trouble. It is, however, unquestionable that the antimony tartrate was the only drug which had any effect upon the sore. Definite signs of healing were observed after the fourth injection, although the patient himself declared that he found improvement after the second injection.

All other local treatment was suspended while the injections were being given, with the exception of an antiseptic wash, night and morning, for the sore, followed by the application of a little dusting powder composed of equal parts of calomel, boracic acid, and iodoform, which had been previously used without the slightest effect.

Altogether, about 3 grains of antimony tartrate were injected intramuscularly over a period of thirty-six days. Only twelve injections were given. Castellani recommends ½ to 1 c.cm. as the dose of his No. 1 formula of antimony tartrate. I began with 9 minims (about ⅐ gr. antimony tartrate), and gradually went up to 1.2 c.cm., or ⅓ gr. antimony tartrate, for the last five injections. By mouth, roughly 27 to 30 grains of antimony tartrate were taken over the same period. How much of the cure can be attributed to the oral administration of the drug is difficult to calculate, but it was noted that although the patient was taking 5 to 20 minims of antimony wine three times a day, in gradually increasing doses, from November 4th, 1919, to January 14th, 1920—a period of seventy-one days—without any appreciable effect on the condition of the sore, it is reasonable to conclude that only a very small amount of the drug, subsequently given by mouth, had any definite effect on the process of healing. On the other hand, very definite improvement took place after the fourth intramuscular injection, that is, before the drug given orally could have had time to have much constitutional effect. It is stated that:

> "Antimony is slowly absorbed and is taken up from the blood and stored in the liver. It does not appear to have any important influence upon the corpuscles, but diminution in red cells, leucocytosis, and decrease of alkalinity have been recorded." Also, "it is excreted in the intestine, and by the liver, kidneys, and skin" (vide Bruce and Dilling, *Materia Medica*, p. 139).

Some authorities state that it causes peripheral vascular dilatation. Probably the latter action of the drug, a certain amount of leucocytosis, and that part of it excreted through the skin, were the chief sources of improvement in the local condition. The amount of the drug administered orally, acting in the above way, would naturally be infinitesimal, owing to the very slow absorption. Some authorities, among them being Greig and Curjel, consider that the condition is only benefited by large doses of antimony tartrate (1 to 3 grains intravenously). This may be where the disease is extensive and advanced. Other authors have reported cases of failure. The case of the Cantonese woman already referred to was a failure, but it was hardly a fair test case, as the disease was far advanced, involving the clitoris, vagina, the fourchette, both labia minora, and the right labium major. It was impossible to give intravenous injections, owing to the smallness and inaccessibility of the veins, while the intramuscular injections of antimony tartrate, in saline or distilled water (grain ¼), caused several local abscesses, and had to be discontinued. Daniels stated to me that any improvement in such an advanced female case is very improbable.

Fortunately, the case here recorded was definitely localized, and neither advanced nor extensive; also, the progress of spread was extremely slow. It was an ideal case for the administration of the drug by the intramuscular route. The results were so satisfactory, and the cure so quickly attained by this method, that the report of the case may be the means of encouraging some others to use the same treatment. No doubt early cases—before the disease has got a firm hold, and where the ulcer is not extensive—will prove most amenable to the action of the drug intramuscularly.

With advanced and extensive cases it would be useless to treat them otherwise than by larger doses, by the intravenous route, over a more extended period, and in hospital, where the action of the drug and the condition of the patient can be observed carefully from day to day.

SEVEN CASES OF ESSENTIAL PENTOSURIA,

BY

P. J. CAMMIDGE, M.D.Lond., AND **H. A. H. HOWARD,** B.Sc.Lond.

Alimentary pentosuria is not a very rare condition, particularly in summer when fruits containing arabinose are often eaten in considerable quantities, but essential or spontaneous pentosuria, which is not dependent upon the ingestion of pentose-containing foods, is exceedingly uncommon, some forty cases only being on record. Up to the present no example of the condition has been reported in this country, the published cases having all occurred in America or Germany. Last year we had the remarkable experience of meeting with seven cases, five of which were encountered in one month and the other two a few weeks later. Five of the cases proved to be examples of simple essential pentosuria, inactive arabinose being the only sugar present in the urine, in the other two small quantities of dextrose and pseudo-laevulose were found in addition. One of the patients with pure pentosuria had been treated for diabetes for twenty-six years, two had been dieted along orthodox lines for the same complaint without any improvement for several months, a fourth was referred to one of us as a case of lactosuria, presumably because the sugar in the urine did not ferment with yeast, and in the fifth the presence of sugar had been discovered accidentally, although its nature was not determined, previous to an operation. The remaining cases had been rejected for life insurance owing to the presence of glycosuria.

The majority of the cases of essential pentosuria hitherto described have been Germans, or of German or Russian descent, and a striking proportion have been Jews. Three of our cases were Jews, two were of Greek descent, but the others were purely English in birth and ancestry. A striking feature of the condition is its tendency to occur in several collaterals of a family, and some pentosuriacs have been members of diabetic families. Two of our patients, those of Greek descent, were father and son, but no history of glycosuria in any other member of the family could be obtained. Two of the Jews (Cases 4 and 6) were also related, being uncle and nephew. In this instance there was a family history of glycosuria, the father of the elder patient having been treated by the late Dr. Pavy for many years for diabetes, although he eventually died at the age of 67 from Bright's disease; a niece of the same patient and cousin of the other, consulted one of us and was found to be passing about 50 grams of sugar a day, the whole of which however was dextrose. The family histories of the other cases were free from diabetes or glycosuria, so far as could be ascertained. Six of the patients were males and one was a female. Their ages ranged from 19 to 75 years. These details, with the actual amount of sugar passed and the other more important results of the analyses of the urines, are shown in the following table (Table I). The data for Case 5 are incomplete, as only an odd specimen of the urine could be obtained for examination. The dextrose and pseudo-laevulose were estimated by the methods described by one of us in 1917[1] and the pentose by a modification of Jolles's process carried out as follows:

> One hundred c.cm. of the urine are mixed with 150 c.cm. of hydrochloric acid (12 per cent.), and heated in a flask fitted with a reflux condenser for a quarter of an hour in a water bath. The contents of the flask are subjected to steam distillation and 500 c.cm. of the distillate collected. Of this 100 c.cm. are neutralized with sodium hydrate (20 per cent.), using methyl orange as the indicator, and then made faintly acid by adding one or two drops of half normal acid. A measured quantity of normal sodium hydrogen sulphite is introduced, and the mixture left to stand for two hours. The excess of sulphite is then titrated with tenth normal iodine solution, using starch as the indicator. From the amount of sulphite consumed the percentage of pentose present can be calculated, each cubic centimetre of sulphite corresponding to 0.07595 gram of pentose.

Arabinose does not reduce copper salts as readily as dextrose, and, as the percentage of the sugar excreted is

TABLE I.—*Results of Analyses.*

Case.	Sex.	Nationality.	Age.	Urine.	Sp. gr.	Albumin.	Sugar. Benedict's Test.	Bial's Test.	Rotation.	Fermentation.	Dextrose.	Pseudo-laevulose.	Pentose.	Acetone.	Total Nitrogen.	Urea.	Uric Acid.	Amino acid Nitrogen.	Indican.	Urobilin.
				c.cm.							gms.	gms.	gms.		gms.	gms.	gms.	gms.	gms.	
1	M.	Greek	47	700	1030	0	+	+	±	0	0	0	2.4	0	8.9	17.2	0.42	0.15	0.007	++
2	M.	,,	22	1,000	1025	0	+	+	±	0	0	0	2.5	0	17.4	32.7	0.66	0.35	0.005	++
3	F.	English	75	800	1030	tr.	+	+	+	0	0	0	3.4	0	8.3	16.5	0.48	0.20	0.024	++
4	M.	Jew	19	1,400	1030	0	+	+	±	0	0	0	3.9	0	19.2	37.5	0.77	0.91	0.005	++
5	M.	,,	40	?	1025	0	+	+	±	0	0	0	?	0	—	—	—	—	—	++
6	M.	,,	48	1,600	1020	0	+	+	—	+	3.2	6.4	3.2	0	18.1	33.9	0.44	0.30	0.006	++
7	M.	English	52	800	1030	0	+	+	+	+	5.0	1.6	1.6	0	9.6	16.8	0.32	0.35	0.008	++

always small, a delayed reaction with a sudden change of colour—especially with Benedict's test—is suggestive. The best confirmatory test for routine diagnostic work is Bial's, but it may also give a reaction with an excess of glycuronic acid, and does not differentiate between the inactive arabinose of essential pentosuria and the l-arabinose of alimentary pentosuria. The results, therefore, need confirmation before a reliable diagnosis can be arrived at. With the help of the polariscope the dextro-rotatory l-arabinose may be distinguished from the inactive form, and a controlled fermentation test with yeast shows that the sugar does not ferment, but the most reliable data are obtained by preparing the p-bromphenylosazone and the diphenylhydrazone, and studying their melting points and rotatory powers. As will be seen from the table (Table I) the urine from all our cases gave a positive reaction with Bial's test. The five cases of pure pentosuria passed urine which did not rotate polarized light and did not ferment with yeast, but in the other two the urine was optically active, and formed gas when submitted to the action of yeast owing to the presence of other sugars. The results obtained with p-bromphenylhydrazine and diphenylhydrazine are shown in the following table (Table II). For comparison the standard results given by racemic or inactive arabinose and l-arabinose are also shown.

Owing to the limited amount of material available in some instances, and an inability to secure a further supply of diphenylhydrazine when our pre-war stock had been exhausted, we were unable to carry out all the tests in every case, or to obtain invariably a pure product for the determination of the melting-point, but the results as they stand are sufficiently exact to suggest that inactive arabinose was the pentose present in all, and that this was undoubtedly so in three of the cases is proved by our having been able to isolate the pure sugar and study its properties. The isolation was carried out by the following procedure.

Method.

The diphenylhydrazone was first prepared. The urine was thoroughly [illegible] with one-tenth its volume of a saturated [illegible] lead acetate [illegible] filtered. The filtrate was [illegible] until the lead had been completely precipitated, and this precipitate was filtered off. The clear solution was now evaporated to one-third of its volume and twice this volume of alcohol added. After standing for two hours it was again filtered and the sugar present in the filtrate estimated. For each gram of sugar found to be present 1.4 gram of diphenylhydrazine hydrochloride and 1 gram of sodium acetate were added, and the mixture boiled in a water-bath, under a reflux condenser, for two hours. The crystals which appeared on cooling were filtered off and recrystallized two or three times from aqueous pyridine until a constant melting-point was obtained.

From this purified product the sugar was separated by the action of formalin. For each 3 grams of the diphenylhydrazone contained in a flask, there were added 12 c.cm. of formalin (40 per cent.) and 20 c.cm. of water. The contents of the flask were well shaken for an hour, and the flask was then heated on a water-bath for another hour. After cooling the solution was extracted with ether three times and evaporated down to a small bulk. On standing the sugar crystals separated out, and were purified by recrystallization from absolute alcohol.

The urine of three of our cases treated in this way yielded small white crystals which melted at 163–4° C., and in solution were optically inactive, thus corresponding to inactive arabinose. In order to prove that the sugar was actually arabinose, however, it was oxidized with bromine and the barium salt of the acid formed was prepared.

One gram of the sugar was dissolved in 10 c.cm. of water and 1 gram of bromine and 1 gram of barium carbonate added. The mixture was allowed to stand at the room temperature for three days, then boiled and filtered from the excess of carbonate. The barium salt was precipitated from the filtrate with absolute alcohol, filtered off, purified by recrystallization, and its barium content determined. This was found to work out at 36.9 per cent., a close approximation to the theoretical yield of 36.92 per cent. by barium arabonate, and thus proving that the sugar separated from the urine was arabinose. Further evidence in support of this conclusion was obtained by preparing the r-arabonalactone, which has a melting point of 98° C. One gram of the barium salt, prepared as above, was dissolved in 10 c.cm. of water and decomposed with a stream of carbon dioxide gas. The precipitated carbonate was filtered off and the filtrate evaporated on

TABLE II.—*Polarization and Melting Points.*

	[illegible]		p-bromphenylhydrazone.		Diphenylhydrazone.		Isolated Sugar.	
	M. P.	[illegible]	M. P.	Rotation.	M. P.	Rotation.	M. P.	Rotation.
l-Arabinose ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]-160	+104
R Arabinose ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	163-164	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]	—	—
[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	164	[illegible]
[illegible]	[illegible]	[illegible]		—	[illegible]	—	—	—
[illegible]	[illegible]	[illegible]	—	—	—	—	—	—
[illegible]	[illegible]	[illegible]	—	—	[illegible]	—	16[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	—	[illegible]	[illegible]

a water-bath to a small volume. On standing, hard white crystals separated out and were found to melt at 98° C.

Inactive arabinose is made up of equal parts of the dextrorotatory and laevo-rotatory varieties, and although the difference in its optical activity and the rotatory powers, melting points, and solubilities of its derivatives are sufficient to distinguish it from these two sugars, the actual separation of its constituents furnishes the most conclusive proof of its composition. We therefore attempted to effect this, and were successful in isolating the laevo-rotatory sugar from one specimen and the dextro-rotatory sugar from another. The recovery of both from one sample was impossible owing to the small amount of material available.

Separation of Laevo-rotatory and Dextro-rotatory Sugar.

In order to obtain the laevo-rotatory sugar 1 gram of the r-arabonalactone, prepared as described above, was dissolved in water and mixed with a saturated solution of brucine, cooled, and the brucine salt filtered off. This was suspended in water, shaken with barium hydrate, filtered, and the filtrate extracted five times with ether to remove the excess of brucine. The watery solution was then decomposed with carbon dioxide and the resulting barium carbonate filtered off. The solution, which was now found to be dextro-rotatory, was evaporated on a water-bath, and the lactone which separated out was recrystallized from alcohol. It was found to have a melting point of 95° C. On being dissolved in water and treated with sodium amalgam the lactone gave a sugar which yielded a phenylosazone with a melting point of 160° C., and 0.2 gram dissolved in pyridine-alcohol showed a specific rotation of + 1.10°, proving that the sugar was l-arabinose.

The dextro-rotatory moiety of the sugar was separated from another sample as follows: One gram of the purified sugar, prepared as before, was mixed with 1 gram of sodium acetate and 1 gram of l-menthyl-hydrazine and heated in a water-bath for two hours. On cooling, the product which separated out was recrystallized from alcohol, and found to have a melting point of 131° C., corresponding to d-arabinose-l-menthylhydrazone. From this the free sugar was separated by the action of formaldehyde. On preparing the phenylosazone it was found to have a melting point of 160° C., and 0.2 gram dissolved in pyridine-alcohol had a specific rotation of − 1.1°, corresponding to d-arabinose.

The source of origin of the inactive arabinose found in the urine in essential pentosuria has been the subject of much debate and many experiments. That it is not derived from the carbohydrates of the food is shown by the fact that their complete withdrawal has no influence on the excretion of the sugar in the urine. There is some evidence that it may be related to the proteins in the diet, however, for Klercher[2] found that the output varied considerably during the day and that there was a certain parallelism between the amount excreted and the total nitrogen content of the urine. Klercher and Janeway[3] also observed a diminished excretion on a purin-free and milk diet. Neuberg[4] has advanced the hypothesis that the parent substance may be galactose, and in support of this are the observations of Tintemann[5] and Klercher that a slight increase in the amount of pentose in the urine followed the administration of galactose or lactose, especially in the first few hours after the sugar was taken. Bial and Blumenthal, on the other hand, failed to find any such increase. We had the opportunity of carrying out a number of experiments bearing on this question on one of our patients who went into a nursing home for observation. In this case the administration of lactose on two occasions, once alone and later along with oatmeal porridge, milk, bread, and coffee, had no effect on the amount of arabinose appearing in the urine, even in the hours immediately succeeding the meal. When all carbohydrate food was withdrawn the excretion of the pentose was practically unchanged, but as the protein was diminished the output of pentose fell from 3.2 grams to 0.5 gram daily, and then gradually rose again to its former level as the protein intake was increased.

It is noteworthy that the urine of all our cases of pentosuria contained an excess of urobilin and showed a high excretion of amino-acid nitrogen, a combination which we have come to regard as indicative of defective functioning of the liver; moreover, in the case where continuous observation was possible, we found that the output of arabinose varied with the amount of urobilin and the quantity of amino-acid nitrogen excreted. We have also noticed that alimentary pentosuria has been associated with an excess of urobilin and a high amino-acid nitrogen in the urine. We are therefore inclined to conclude that pentosuria is dependent upon defects in the functional activity of the liver. In some cases it is probably due to a congenital, or possibly an acquired, abnormality, which results in the imperfect metabolism of a pentose of protein origin, thus giving rise to essential pentosuria, while in others it is merely an inability to destroy the pentose derived from foods containing it, with the result that alimentary pentosuria follows their use.

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A NOTE ON THE TREATMENT OF CUTANEOUS ERYSIPELAS WITH BRILLIANT GREEN.

BY

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Erysipelas is a disease to which little attention is paid in these days, though formerly it used to be regarded with respect and even dread. Probably there are few diseases which have been treated in so many different ways or with so many different topical applications. During the war, when streptococcal infections of wounds were prevalent, it was not a very infrequent complication, but the prognosis rarely gave rise to anxiety, and isolation of erysipelas cases is not now regarded as essential for the well-being of other patients in the wards. The reason is not far to seek. To be logical all streptococcal infections should be segregated, and the fact that the infection has reached the superficial layers of the skin, and is therefore more apparent to the eye, is not a sufficient argument in favour of isolation. Furthermore, it is well known that, except at the extreme age periods of life, erysipelas is not a dangerous disease, and in previously healthy patients the mortality is very low. These patients may be very ill for a time, and the rash may spread almost all over the body, but with intelligent treatment and good nursing the outlook is almost always favourable, even when the lesion originates in connexion with a serious wound. With the abolition of sepsis in clean surgical wounds erysipelas has retired to a place of little importance. Cases, however, are still admitted to hospital in fair numbers, and at St. Thomas's they are taken into the isolation block reserved for obviously septic cases. During the last eighteen months I have been in charge of these beds in the hospital, and therefore I have had the opportunity of observing many examples of this disease and of comparing the relative merits of a large number of topical applications. It has enabled me to come to conclusions as to whether topical applications are of real value, and also which of the many in use may be relied upon to limit the disease and to ease the patient's distress.

In 1909 I published, in conjunction with Dr. P. N. Panton, some observations on erysipelas and allied infections,[1] in which we emphasized the facts that erysipelas is usually a streptococcal inflammation of the epidermis, but that the streptococci are of many different strains. From this, and by subsequent clinical observations, it is realized why the treatment of this condition by stock serums and vaccines is not conspicuously successful. Otherwise it would appear that such treatment ought to be efficacious. I have since been keenly on the look-out for any evidence that topical applications really influence the disease. It was at one time held that the extension of the rash in the skin could be limited by incisions outside the affected zone, by scarification, or painting a ring of silver nitrate around it, but these methods have all been abandoned owing to their lack of success. In some cases, at any rate, there is a coincident streptococcal lymphangitis, and this may account for failure. Perhaps such examples should be termed phlegmonous, or cellulo-cutaneous erysipelas, but anyhow these cases are difficult to separate from the purely cutaneous ones.

A whole legion of topical applications has been employed in the treatment of this disease; they have been used for two purposes—namely, to give comfort to the patient, and to limit the spread of the infection. The first is undoubtedly of importance since in some cases there is intolerable itching which disturbs the patient's rest, but the second is the supreme test of all local treatment.

Lard, boracated lard, and numerous ointments with a paraffin basis have been used for this first purpose, and so also have carbolic and lead lotion, boracic and starch powder, and a host of other soothing applications. Each and all of them have met with a certain measure of success, but none of them appears to affect the course of the disease. It is well known that an attack of erysipelas usually runs a course of about six or seven days, though recrudescences and recurrences are common. There must be evidence that a local application, before it is accepted as being of any real value, has caused a rapid subsidence of the rash, and this will most often coincide with a fall of temperature. It is clinically impossible to recognize afebrile attacks of spreading erythema as being true erysipelas.

The applications of which I have had recent experience are a concentrated watery solution of magnesium sulphate, glycerin, glycerin and ichthyol, picric acid in methylated spirit, iodine in rectified spirit, and an aqueous solution of brilliant green. The first used to be a very fashionable remedy, but it gives little comfort to the patient, and I have never observed that it definitely influenced the progress of the disease. Glycerin itself, and a solution of ichthyol in glycerin, are perhaps more comforting, but I have no faith in their limiting power. Picric acid, iodine, and brilliant green I have tried in parallel cases of about the same degree of virulence, and my house-surgeons, as well as the nurses in charge of the cases, have all pronounced in favour of the last-named. The total number of cases is about 40, and we have not arrived at any conclusions as to the utility of any one remedy until at least 6 cases have been submitted to a trial of its powers. On several occasions, disappointed with the results of iodine or picric acid treatment, we have employed brilliant green with happier results, fully conscious that the time factor may have played an important part. Further, cases treated with brilliant green are the only ones where dramatic disappearance of both rash and fever as early as the second or third day of the disease has been observed.

These substances have been employed because they are well known as skin disinfectants, and they all possess undoubted power of penetration through healthy skin. How far they can penetrate skin which is in a state of inflammation is not known, but in the case of healthy skin Professor Dudgeon has kindly prepared sections from portions removed within two hours of the application of all these three substances, and has demonstrated to me the granules deposited among the deeper cells of the Malpighian layer. They appear to be more numerous in the case of brilliant green than with either picric acid or iodine, but, as the sections were unstained, it may be that these granules are more readily seen.

Tincture of iodine has been used in France for the treatment of erysipelas, and Basset and Lechelle[2] considered it superior to any other topical application. Their cases were only five in number and were all limb infections secondary to war wounds.

I do not know whether other surgeons have made use of brilliant green in this connexion, and I claim only to record a confirmed clinical impression as to its usefulness. To present scientific data is almost impossible since so much depends upon the stage of the infection when the patient first comes under treatment. Anything which is applied about the sixth or seventh day is likely to appear successful, for at this period the fever usually subsides and the rash ceases to spread or begins to fade. Nevertheless, since my observations have been fairly numerous and the cases have not been selected in any way, I have no hesitation in recommending this simple method of local treatment in erysipelas. I may add that in a dozen cases so treated the average time for subsidence of the attack was just over five days. There has been no mortality in the whole series, but I must admit that recrudescence occurred in two cases, once on the tenth and once on the twelfth day.

The obvious objection to the use of brilliant green is that it stains whatever it comes in contact with, whether it be the skin of the patient, the hands of the nurse, or the bedclothes. It may then be urged that this treatment is camouflage, and that we really substitute a green skin for a red one. The fact that the patients, both women and men, like it even when applied to the face, and that the nurses have quite withdrawn their original objections to it, go far to answer these arguments, and, as far as I am aware, brilliant green possesses no toxic properties. Both iodine and picric acid are open to objection on this ground.

Our method has been to paint the affected area with a 5 per cent. aqueous solution once a day in mild cases and twice a day in severe ones. No dressing has been applied except a piece of lint on some parts of the body to prevent staining of the bedclothes. When the eruption has subsided the discoloration can be removed in three or four days by vigorous washing, preferably with ether soap. Possibly it would be wise to apply the solution over rather a wider area than that actually involved—for, say, an inch outside the advancing edge—but so far we have not done this.

I am indebted to the sister and nurses of our isolation wards, as well as to my recent house-surgeons, Messrs. Foss, Macdonald, Ryan, and Higgins, for their co-operation in testing the value of this treatment, and I may add that their opinion coincides entirely with mine.

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ON INTRAVENOUS PROTEIN THERAPY IN EPILEPSY.

BY

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The good results which have followed the injection of foreign proteins into the blood stream in haemophilia, purpura, paroxysmal haemoglobinuria, intestinal haemorrhages, streptococcal septicaemia, asthma, and multiple arthritis of various kinds—that is, in a number of diseases which have no common etiological or pathological factors—suggested that possibly it might be used with good effect in yet other diseases.

The following results have been obtained in a series of twenty-three cases of epilepsy. Ten of these were treated at the Bristol Royal Infirmary, and thirteen at the Stoke Park Colony for mental defectives, by the kind permission of Dr. McMath, the medical attendant.

A 5 per cent. solution of Armour's peptone ("powdered," formerly called No. 2) was used, made up according to the prescription of Auld.* It was injected into a vein at the elbow once a week. The initial dose was 5 ♏. In succeeding weeks 7 ♏, 10 ♏, 15 ♏, and 20 ♏ were given, unless toxic symptoms occurred. No dose greater than 20 ♏ was injected. If a fortnight went by without the occurrence of a fit, the dose was not further increased. If no results were obtained after three doses of 20 ♏ the treatment was given up. In four cases toxic symptoms were observed—rigor, vomiting, temporary pyrexia—either as an isolated phenomenon, or in any combination. If this happened the next dose was lessened. In such cases it was found that the dose could be subsequently increased to the old figure or even beyond without the occurrence of any untoward symptoms.

In three cases of post-hemiplegic epilepsy no improvement occurred.

In eleven cases of epilepsy without signs of any gross cerebral lesion no permanent arrest was produced. In four of these the fits ceased but subsequently recurred, though in lessened severity, and in two cases the frequency was lessened. The average age of the patients was 18 years, the average duration of the disease ten years, and the average frequency of fits once a week.

In nine cases of epilepsy without physical signs of any gross cerebral lesion the fits ceased. This arrest has now lasted more than a month in all cases, and in some as long as three months. Five of the patients were mentally defective: in one of these no mental improvement occurred, in three some improvement, and in one considerable improvement. The average number of injections given was 5½. The average age of the nine patients was

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* That is, dissolve the peptone in three-fourths of the required volume of normal saline solution, shaking and warming to 37° C. Add 1 c.cm. of a 1 per cent. solution of sodium carbonate for each 5 grams of peptone present. Make up volume by adding more normal saline. Add phenol, so that its percentage in the solution is 0.25.

18 years, the average duration of the disease was ten years, and the average frequency of the fits rather more than one a week.

As can be seen, no distinction could be drawn between those cases in which arrest of the fits occurred and those in which it did not, either in the age at which the fits began or in their frequency.

It appears, therefore, that of 20 cases of epilepsy, of *haut mal* type, the intravenous administration of a peptone solution caused arrest of the fits in 9 and diminution of their frequency in a further 6.

No certain deductions can be made from such small numbers, but the results are sufficiently good to lead to the suggestion that this treatment might be tried in other cases. Both the nature of epilepsy and the mode of action of a "peptone" solution are so obscure that it would not be profitable to discuss how this arrest of epileptic fits was brought about. But though epilepsy does not cause many deaths, it does cause so much disability that any new method of treatment which promises well deserves a further trial.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge, June 30th to July 2nd.

SECTION OF NEUROLOGY AND PSYCHIATRY.

DEMONSTRATIONS.

THE PATHOLOGY OF DEMENTIA PRAECOX.

BY

Sir Frederick Mott, K.B.E., M.D., LL.D., F.R.S.

For some years past I have been interested in the pathology of dementia praecox. First I investigated the reproductive organs, and I have already published in recent numbers of the British Medical Journal a paper on the investigation of the testes in 100 cases of deaths in hospitals and asylums at all ages from birth to 80 years and over. In this paper I have shown that in a large proportion of the cases of dementia praecox there is a complete arrest of spermatogenesis, and in all cases a more or less regressive atrophy is shown, the degree of change as a general rule depending upon the age at which the mental symptoms first were manifested, and the time elapsing between the onset and death. In some cases in which the clinical history showed that mental symptoms had occurred in the prepuberal or puberal periods spermatogenesis may never have occurred. Now, in spermatogenesis we have a most active nuclear proliferation going on continually, and the histological evidence shows that the nucleic acid, which is the principal substance of the nuclear matter, is formed from a phosphorized lipoid contained especially in the cells of Sertoli.

The head of the spermatozoon consists of a protamin nucleinate, and the tails, which are formed in these nurse cells of Sertoli, consist almost entirely of lecithin and cholesterol. I will not go into further details on this point, but I should like to point out that where active spermatogenesis is going on, there we find abundance of the lipoid granules; the same regions which show the existence of these lipoid granules also show the oxidase reaction. By this I mean that these granules play an important part in the chemical processes connected with the function of spermatogenesis. The oxygen on the surface of the lipoid granules is molecular oxygen, but in order to become nascent (chemically active oxygen) the molecule of O_2 must be converted into atomic oxygen, and this is effected by the catalytic action of the iron contained in the nuclei of the spermatic cells. A continued process of decomposition and recomposition, in which oxygen plays an important part in building up the fresh nuclear matter, takes place.

Nucleic acid, which forms the main constituent of the heads of the spermatozoa (as was shown by Miescher and Kossel's experiments), contains a large amount of organic phosphorus, iron, and calcium. All nuclei contain these three important elements in addition to the elements of a protein. The arrest of spermatogenesis may, then, be due to a failure of one or more of these elements in the circulating blood; or it may be due to an inherent biochemical lack of durability of the germ plasm.

The reason why I have given this short account of the failure of nuclear matter in the reproductive organs in dementia praecox—for it occurs in the ovaries as well as in the testes—is that the essential histological morbid change in the nervous elements of dementia praecox, as Nissl and Alzheimer pointed out long ago, is one of nuclear decay.

Nature is unmindful of the individual, mindful only of the species, for the body is only a vehicle for the germ plasm. During fetal life the hormone of the sex determinant cells is active in establishing sex characters; after birth till puberty all the productive vital energy is concentrated on the somatic cells to build up a body capable of fulfilling Nature's supreme biological end—reproduction. I showed that the interstitial cells forming a well-marked gland in the testes at birth in a few months shrink and become quiescent functionally; the spermatic tubules at three months have grown to twice the size of those at birth, and no further change of importance takes place till puberty, when the interstitial cells reappear and are filled with lipoid substance, and active spermatogenesis begins. Simultaneously with this concentration of productive energy on reproduction, the sexual hormone passes into the blood and produces the secondary sexual characters; at the same time it effects a complete mental revolution. At first there is a vague, ill-defined longing, and this develops sooner or later into an all-prevailing desire, arousing new sentiments, passion, and behaviour, with many biological characteristics peculiar to each sex. The critical periods of life as regards mental disease are adolescence and the climacteric periods of life, when the sexual function matures and wanes. This affords *a priori* evidence of the important relation between the sexual functions and diseases of the mind. The question naturally arises, Is the regressive atrophy of the reproductive organs the cause of the mental changes: (*a*) by its disturbing influence on the whole endocrine system of glands; (*b*) by the suppression of the normal sexual impulse, the great source of psychic energy; or (*c*) does the regressive atrophy of the testes and the neuronic functional decay indicate a germinal lack of durability of the two most important structures of the body?

The changes in the nervous system are unlike those of organic dementia—for example, dementia paralytica; there is no naked-eye wasting; there are no evidences of chronic inflammatory changes; the fibre systems are but slightly wasted. The changes * in the neurones are of two kinds: (1) those indicative of suppression of function—namely, swelling of the nucleus and biochemical changes in it, vacuolation, disappearance of the Nissl granules, and even destruction of the cytoplasm and its dendritic processes, without destruction of the axon; (2) those indicating hypofunction—namely, accumulation of lipoid granules in the cells of the cortex and basal ganglia and other structures of the central nervous system to an extent and degree exceeding by far physiological limits, for the same appearances may be found in old age, although the changes affect only scattered cells. The existence of these lipoid granules can be easily demonstrated by staining with Sudan 3 or Nile blue. All neural processes, and therefore all psychic processes, are dependent upon physiological processes—namely, oxidation processes which take place at the synapse in the grey matter, and, as in the testes, upon oxidase granules. These granules are found upon all the dendrites and body of the cell, but not upon the axon. They are especially abundant in the layers of the plexiform cells (second type of Golgi) which form the synaptic junctions of the cells of the first type, where the molecular oxygen is converted into active nascent atomic oxygen by the catalytic action of the phosphorus and iron of the nucleus. A progressive failure of function of the nucleus to build up new nuclear matter is the essential morbid change in the testis; similarly a progressive failure in the formation of the nuclear substance in neuronic systems may be postulated as the cause of suspension or suppression of neural function by a consequent failure in the oxidation processes essential for neural activity.

Sir Frederick Mott gave a demonstration by means of the epidiascope and microscopes to illustrate the changes in the testis and the various structures of the nervous system—namely, various regions of the cortex, the basal ganglia, pons, medulla, and inferior cervical ganglion. A case of monorchidy in a patient suffering with dementia praecox, with marked diminution in size of the adrenal on the side of the absent testis, was described, and allusion was made to the evidence regarding the association of the cortex adrenalis with the function of reproduction. This case was illustrated by drawings and specimens of the testis and adrenal gland.

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* A full account, with coloured illustrations, appeared in the June number of the *Proceedings* of the Royal Society of Medicine, Psychiatrical Section.

LETHARGIC ENCEPHALITIS.

CLINICAL ASPECTS.

BY

E. Farquhar Buzzard, M.D., F.R.C.P.,
London.

Dr. Farquhar Buzzard spoke on certain clinical aspects of lethargic encephalitis, and pointed out that the name was unfortunate in that it presumed one of the many symptoms which any form of encephalitis might give rise to. It should be remembered that an inflammation of the encephalon could produce as many symptoms as there were functions of the brain. The tendency to attach importance to any particular symptom and to recognize different types of the disease answering to the predominance of this or that disturbance of function was to be deplored. Involuntary movements, for instance, had been observed in many cases from the beginning of the epidemic, and christening such cases as belonging to the "myoclonic type" was setting an example which, followed, would lead to an absurd situation. We should soon have as many types as there were cerebral functions. It would be more profitable to consider the variations in the onset and course of the disease and to admit at once that any symptoms indicative of a disturbance of a cerebral function might or might not be present. During the epidemic he had observed many mild or ambulatory cases which had been characterized by a general dulling of the higher intellectual faculties, and still more by the frequent complaint of diplopia. This did not indicate necessarily a peculiar incidence of the morbid process on the oculomotor nuclei. The explanation probably lay in the fact that there was no disturbance of function which so immediately revealed itself to a patient as that of the oculomotor apparatus. We could all suffer from slight deterioration in the activity and accuracy of our facial, masticating, articulating, and deglutitional movements without being painfully conscious of the fact. On the other hand, the slightest defect in the condition of an eye movement could not be overlooked.

Another question of interest was the significance of lethargy. This symptom only occurred in a certain proportion of cases, and could not be regarded, therefore, as a general as opposed to a focal phenomenon. In most cases of lethargy there is found some sluggishness or total abolition of the pupillary reflexes, and it seemed possible that lethargy was evidence of internal hydrocephalus, the result of occlusion or partial occlusion of the aqueduct of Sylvius. It did not seem unjustifiable to suppose that even a moderate amount of inflammation of the corpus quadrigeminal region would suffice to bring about this interference with the free circulation of the cerebro spinal fluid. A similar condition was not infrequently produced by tumours in this situation. In fact, lethargy going on to stupor associated with disturbance of pupillary reflex activity was characteristic of tumours at the posterior end of the third ventricle.

Attention should be drawn to the great variation in the onset of this disease. Some cases were fulminant, and others appeared to develop slowly over periods as long as several weeks. Moreover, the disease varied much in its course. Relapses were not uncommon in acute cases with a recrudescence of fever, headache, and even [illegible]. Finally, emphasis should be laid on the appearance of fresh symptoms weeks and months after the acute stage of the disease had passed off. These generally took the form of involuntary movement, or an increase in the rigidity of limbs, which was not an [illegible] of the disease.

MORBID ANATOMY.

BY

J. G. Greenfield, M.B., M.R.C.P.,
Pathologist, National Hospital for the Paralysed and Epileptic,
Queen Square.

Dr. Greenfield showed a series of lantern slides illustrating the morbid anatomy of lethargic encephalitis.

The changes found in the brain [illegible] were very diffuse, [illegible] to be found [illegible] from the [illegible] to the cortex. Sometimes one part of the brain stem or cerebrum was especially damaged, but that was more an accident due to vascular occlusion than an essential feature of the disease. The most constant appearances were capillary dilatation and infiltration of the brain substance with small cells of the lymphocyte type, which were often grouped round the nerve cells as though attacking them (neuronophagy). These round cells could often be seen passing out from the walls of the capillaries. The appearance of "cuffing of the vessels," due to infiltration of the Virchow-Robin space with round cells, was very commonly seen, but was absent in many sections where other changes could be seen, and might only involve one or two vessels in the whole brain and brain stem. An excess of lipochrome pigment in the nerve cells was sometimes found, and when present was extraordinarily diffuse, affecting almost every nerve cell throughout the brain; its meaning was obscure. A comparatively common feature of the disease was infarction of the brain, due to thrombosis of smaller or larger arteries. Slides were shown illustrating infarction of the surface of the brain in one case and of the centrum ovale and basal ganglia in another. Slides were also shown illustrating calcareous and thrombotic changes in the vessel walls, which were sometimes found in cases of longer standing. The cerebrospinal fluid in lethargic encephalitis was of very varied appearance and composition. In about 50 per cent. of cases no abnormality could be detected. Among the other 50 per cent. uniformly blood-stained fluids, or fluids with a yellow tinge from altered blood, were not uncommon, and the albumin, globulin, and cells might rise considerably. But in no case examined had either a fibrin clot or polymorphonuclear leucocytes been found. This formed a valuable diagnostic point in distinguishing lethargic encephalitis from polioencephalitis and tuberculous meningitis.

SENSORY DISTURBANCES IN THE HAND FOLLOWING INJURIES OF THE CEREBRAL CORTEX.

BY

Henry Head, M.D., F.R.S.,
President of the Section,

AND

George Riddoch, M.D., M.R.C.P.,
First Assistant, Medical Unit, London Hospital.

With focal lesions in the post-central region of the cortex, after a sufficient length of time has elapsed for the lesion to become stationary, the disturbance of sensibility in the opposite hand is sometimes found to be confined to one or two fingers. A limited distribution of this kind was not uncommon after gunshot wounds of the head in the recent war, and was well illustrated in the three patients who were presented before the Section.

To ascertain the precise nature of the sensory loss produced by cortical injuries prolonged investigations with elaborate methods had to be carried out. Scientific research has revealed the significance of the different tests employed, and has indicated those which can be used to demonstrate the main features of the sensory disturbance in these cases with sufficient accuracy for the purposes of clinical diagnosis.

The patient is usually fully aware that something is wrong with his fingers, especially when those on the radial side of his hand are affected. For example, on being questioned he may say that his little and ring fingers are normal, but that something is wrong with his index and middle fingers. They feel different; he can use them, but they are clumsy.

On examination it is found that he responds correctly to tactile, thermal, and painful stimuli, but the intensity of the stimulus required to evoke a response from the affected parts may be increased. Thus he may be unable to recognize that he is being touched with a wisp of cotton wool, but when it is moved over the surface of the skin, and especially if hairs are displaced, he responds at once. Again, the sensation evoked by a pin prick may not seem so "sharp" or so "clear" as over normal parts, and at the same time the discomfort it produces may be increased.

Thus, although the crude recognition of touch, pain, heat and cold is never abolished as a result of a cortical lesion, yet sensibility is modified. To evoke a sensation a stronger stimulus has often to be applied to the affected than to the normal fingers. Further, the patient is frequently unable to appreciate differences in the intensity of stimuli of the same sensory quality, as, for example, between water at [illegible] and [illegible]

One of the commonest defects produced by a cerebral lesion is want of recognition of posture and passive movements. This disturbance, when present, can usually be demonstrated by a simple test: Ask the patient to stretch out his arms in front with his fingers extended and to keep them in the same horizontal plane. If his eyes are then covered, those fingers in which recognition of posture is defective will be seen to droop while the others remain straight.

Hypotonia and inco-ordination are associated with loss of postural recognition, so that the fingers can be hyperextended more than the corresponding digits of the other hand, and their movements are clumsy. Lack of precision of movement can be detected at once when the patient attempts rapidly to oppose the tip of his thumb to each finger in succession. As soon as the first affected finger is reached the patient hesitates, performs the movement deliberately, and often misses the tip of his finger with his thumb.

The power of appreciating differences in weight and of recognizing the shape and relative size of common objects may be gravely disturbed. When the patient is tested for the appreciation of relative size and form, the loss of sensation not infrequently is so gross that he is quite unable to recognize the nature of common objects. A defect of this nature is always associated with inability to distinguish between two obviously dissimilar weights when they are placed successively on the fully-supported fingers.

Thus the sensory activity of the cortex is not concerned with the crude recognition of touch, pain, heat, and cold, but it is necessary for the recognition of the intensity of stimuli, of spacial relations, and the appreciation of similarity and difference in external objects. Each of these functions may be disturbed independently of the others as the result of lesions of the cortex, and in the hand the sensory loss may be limited to one or more fingers.

DEGENERATION AND REGENERATION OF PERIPHERAL NERVES.

BY

J. G. Greenfield, M.B., M.R.C.P.

Dr. Greenfield gave a demonstration on the degeneration and regeneration of peripheral nerves, based on the examination of portions of wounded nerves removed during operations for end-to-end suture.

The chief object of the demonstration was to emphasize the importance of the rôle played by the cells of the neurolemma sheath. These were seen to grow out from both the proximal and distal cut ends of a nerve, and to form in either case a plexiform neuroma or end bulb. That on the distal cut end contained no nerve fibres unless a junction was made with the nerve bulb of the proximal end. The axis-cylinders in the process of regeneration split up into very numerous branches, which run in all directions, often as leashes of several fibrils, within the outgrowths of neurolemma. If a junction is established between the upper and lower end bulbs, either directly or by means of outgrowths which spread along the connective tissue planes, the axis-cylinder processes may run into the outgrowths from the peripheral cut end of the nerve, and be conducted by them to the neurolemma channels of the peripheral part of the nerve, within which they always run singly. By these sheaths they are conducted to their terminations, whether sensory or motor. The intimate association displayed between the young axis-cylinder processes and the nuclei of the neurolemma sheath is strongly suggestive of a nutritive influence derived from the neurolemma, and it seems probable that without its help the axis-cylinder processes have not the power of continued growth.

INSCRIPTIONS OF SPEECH.

BY

Edward W. Scripture, M.D.

Dr. Scripture demonstrated an apparatus for making inscriptions of speech. Typical results were exhibited that showed how general paralysis, multiple sclerosis, and epilepsy could be diagnosed from a speech inscription at a time when no defect could be detected by the ear. The object of the work is to do for certain nervous diseases what the urinary tests do for nephritis and diabetes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

BROMOFORM POISONING.

In the *Practitioner* of 1893 I advocated the use of bromoform in the treatment of whooping-cough, and I am still of opinion that it controls the paroxysms of the disease more effectually than any other drug. Moreover, it is free from danger if one point in its administration is observed. Bromoform is thrown down from any solution or suspension if the least quantity of water is present. The water contained even in mucilage or tinctures precipitates the drug. In all cases of poisoning that have come to my notice the mishap has been invariably caused by the last dose in the bottle.

Mr. W. B. Watson's experience, published in the Journal of November 6th, p. 702, is another instance of toxic symptoms from concentration of the bromoform at the bottom of the bottle.

The symptoms described by him and the child's recovery also agree with observations previously recorded.[1] For some years trouble was successfully prevented by the simple expedient of directing that the last dose in the bottle was to be always thrown away. But I now advise bromoform to be prescribed in a form arrived at by Mr. J. T. Corder, pharmacist, after trying and testing many others: Bromoform mj, paraffin. liq. ʒj, this being the ordinary dose for a child between 1 and 3 years of age. Even in dispensing this it is necessary to have the bottle thoroughly dried.

Norwich. F. W. Burton-Fanning, M.D., F.R.C.P.

Reports of Societies.

LATENT SYPHILIS IN PREGNANCY.

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, held on November 4th, a paper on the inter-relationship between pregnancy and syphilis was read by Dr. R. A. Hendry. During four and a quarter years, he said, 94 pregnancies had been under observation in which there were no active clinical signs or symptoms of syphilis apart from the effect on the pregnancy. As this definition of latent syphilis excluded the primary and secondary stages, the first difficulty was diagnosis. Diagnosis rested on (1) the clinical evidence—that is, the unreliable history of infection and the obstetrical history, and on (2) the laboratory evidence resulting from the examination of stillbirths, abortions and placentae, and from the Wassermann reaction. The unreliability of the clinical evidence was shown by a table representing graphically 18 obstetrical histories, some syphilitic, others not syphilitic; and by an analysis of the first 57 cases diagnosed as latent syphilis, which revealed 48 abortions with 75 stillbirths—123 ante-natal and intra-natal deaths—with 96 live births, of which 33 subsequently died, 9 of the 33 during the neo-natal period. In the fetus the presence of *Spirochaeta pallida*, chondro-epiphysitis, changes in other organs—notably the liver, spleen, and lungs—were generally considered reliable evidence of syphilis; their absence, in his experience, was equally reliable. In early abortions this conclusive evidence of syphilis was rarely obtained. In placentae there was not yet unanimity regarding what constituted reliable evidence. The drawback was on the score of quantity rather than quality. The Wassermann reaction had been examined in 348 cases: 173 were positive, 175 negative. To the end of 1918, 65 were positive and 88 negative; from January, 1919, to July, 1920, 63 were positive, 87 were negative and 45 "slightly positive," these being of doubtful significance and usually disregarded by syphilologists until a further test could be made; the obstetrician could only delay treatment at the expense of the infant. Seven cases in which negative Wassermann reactions were associated with positive fetuses had been found, chiefly through investigations in the Department of Obstetrics of the University of Liverpool; three were examined during pregnancy, one was five days after labour, two were three or four months after labour, while the precise dates were lacking in the seventh. Even a "slightly positive" Wassermann reaction justified the institution of antisyphilitic treatment, but such cases should not be pressed to attend venereal clinics, as some were not syphilitic. The results of the treatment were shown in tables; 43 cases without treatment resulted in seven infants surviving after the neo-natal period; in 40 cases where treatment was instituted during pregnancy, twenty-nine infants survived—the treatment was begun in fifteen during the first four months and in fourteen during the second four months; of the 11 cases under treatment when pregnancy began, all the infants survived. Administrative difficulties prevented the use of arsenobenzol derivatives. Hydrarg. cum cretâ gr. j thrice daily was found satisfactory; grey oil, at first extensively used, was only retained in special cases after the first two years. All the credit for the 29 live births where treatment began during pregnancy could not be claimed for the treatment—*post hoc* not necessarily being *propter hoc*—none the less three living infants out of four was much better than one out of six without treatment. The 11 cases under treatment when pregnancy began had figured on the debit side of the earlier groups in previous pregnancies.

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[1] British Medical Journal, May 26th, 1900; June 2nd, 1900, and May 18th, 1901.

Dr. Amand Routh said that the treatment of latent syphilis in pregnancy had two objects in view: to cure the mother and to prevent the child from being a congenital syphilitic. He alluded to the difficulties which had to be faced twenty years ago by those who had to treat syphilitic children born of apparently healthy mothers. Healthy children were born after giving the mothers mercury, if treatment were begun at the third month. Similar treatment was required in each subsequent pregnancy. The discoveries of the *Spirochaeta pallida* and the Wassermann reaction in 1905–6 made the diagnosis easier, but the unexpected negative reaction in certain groups of cases in both mothers and offspring during and immediately after pregnancy had not been satisfactorily explained. The opinion was now accepted by most observers that by some means the infection of syphilis was often held latent during pregnancy. To explain this "latency" the following facts and suggestions were advanced by Dr. Routh:[1]

1. As a result of [illegible], spontaneous or otherwise, the spirochaetes can be broken up into granules. These are infecting agents, being in fact spirochaetes in the granule stage. The granules are able to develop into the mature organism in a suitable environment or may become biologically inactive and remain latent for varying periods.

2. Chorionic (syncytial) ferments are present during pregnancy at the point of interdigitation of the fetal and maternal portions of the placenta. Their action is primarily trophoblastic, to enable the delicate chorionic villi to penetrate the uterine mucosa and to open up maternal blood vessels, so that the ovum may find for itself a resting place with nutritive blood spaces around it. As a result of the destructive action of the ferments upon maternal tissues, so-called syncytiotoxins are formed, but [illegible] appears to be at once neutralized by [illegible]. If not thus neutralized, maternal and fetal [illegible] may become present.

3. The chorionic ferments or their derivatives are suggested as [illegible] capable of exercising their destructive properties upon the infecting spirochaetes and to break them up into granules.

4. It is further suggested that during pregnancy it is the continued action of the chorionic ferments upon the granules which may render them latent and biologically inactive, and perhaps in a few cases may destroy them.

5. After the pregnancy, when the chorionic ferment gradually ceases to be present in the tissues of the mother and child, the granules, unless already destroyed, may develop into mature spirochaetes.

6. The success or failure of the chorionic ferments to protect the foetus and infant from postnatal infection would depend upon [illegible] of the infection [illegible], owing to the presence of more maternal antibodies [illegible], and upon the source of the infection, whether derived from both parents or maternal [illegible] paternal [illegible] and [illegible] by the ferments.

7. The Wassermann reaction of mother and child appears to be [illegible] of infection [illegible] by the spirochaetes in their [illegible] the granules [illegible] the mature [illegible].

Dr. Routh showed how these suggestions tended to explain latent syphilis in pregnancy, and the negative Wassermann reaction in infected mothers and their offspring; the absence of mature spirochaetes in the abortions of syphilitic mothers; infections through the semen; intervening healthy children; and Colles's law.

Congenital syphilis, with its heavy infantile mortality, and the difficulty of its successful treatment, was briefly considered. The treatment of latent syphilis in pregnancy had been much facilitated by the discovery since 1909 of a series of chemical substances by which spirochaetes could be destroyed without injuring the tissues, with the result that prevention of congenital syphilis seemed within reach of attainment. Cases in which successful treatment of the pregnant mother was not begun till the seventh and eighth months of pregnancy were referred to as being presumably only possible if the *Spirochaeta pallida* had been granulosed and rendered latent, as already suggested. Lastly Dr. Routh insisted upon the importance of continuing treatment, or at all events supervision of both mother and child, and sometimes of the father.

Mr. John Adams said it was just two years ago that he read a paper before the Obstetrical Section on the treatment of ante-natal and post-natal syphilis. At that time he was only able to give the results of one year's treatment, and a wish was then expressed that he should report the progress of these cases to the society at some future date. Accordingly, at the request of the senior honorary secretary, he now presented the table (printed below) summarizing the results of all cases treated during the past three years at the Thavies Inn Venereal Centre for Pregnant Women as far as it had been possible to follow them up. In his former paper he said: "I am aware that one year is too short a period in which to bring the treatment of ante-natal and post-natal syphilis to perfection, and that the treatment adopted to-day will be improved on to-morrow." This statement had been fully confirmed during the past two years. Mr. Adams had been able to follow up most of the cases, and to show, last November, to the Hunterian Society many of the babies up to two years old, all of whom appeared perfectly healthy and showed a negative Wassermann test. On one occasion only a baby showed a doubtful positive Wassermann reaction after once becoming negative. In each year the percentage of babies born with a negative Wassermann reaction had increased, as shown by the statistics given. He attributed this result to the more active treatment the mothers received before confinement, and the more general use of salvarsan in pregnant syphilitic women than formerly. He looked forward with confidence to seeing the wastage of infant life from syphilis almost come to a vanishing point in the future. At present it was doubtful if any disease, even tuberculosis, was so destructive to child life or so disastrous to child health as syphilis. Most of the mothers entered Thavies Inn at about the sixth month of pregnancy, having been sent there on a diagnosis of syphilis made either on clinical evidence or on the Wassermann test. Some had been treated with mercury and arsenic and in consequence showed no obvious lesions, others had had no treatment whatever. Practically all were in the secondary stage of the disease. The results of treatment were most encouraging, though, of course, they varied with the period before confinement at which it was begun. In the last two years there had been only one stillbirth and one death from syphilis among the cases treated. Mr. Adams's experience had been that if the mother's Wassermann test could be brought to negative or doubtful at her confinement the baby would be born negative and show no sign

Results of Treatment of Women during Pregnancy and of the Newly-born Children. (Each year begins on September 1st and ends on August 31st.)

	1917-18.	1918-19.	1919-20.
Mothers admitted with syphilis ...	28	30	37
Babies born alive—			
Wassermann reaction positive	17	[illegible]	1
Wassermann reaction negative	6	21	36
Babies dying of syphilis	3*	1†	None
Fetus stillborn from syphilis ...	5	1	None

* Aged 2, 12, and [illegible] days respectively. † Aged 2 months.

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[1] [illegible] *Lancet*, January 17th, [illegible]

of syphilis. If the mother were positive or strongly positive the baby would probably be positive too, in which case, of course, vigorous antisyphilitic treatment was begun at once. However, in a case at present under his care, in which a definite history was obtainable that infection took place about seven months after conception, and no treatment was given before confinement, the baby was born negative, although at the time the mother had generalized syphilis, as shown by a strongly positive Wassermann reaction. Cases of this kind opened up interesting questions as to the cause of the baby's immunity. None of the babies born negative had since become positive nor developed any signs of syphilis, though many had not had any treatment beyond the drugs they absorbed through their mother's milk. To summarize, it might be said that a pregnant woman with syphilis, whether active or latent, if treated for three or four months before her confinement, would probably be delivered of a healthy child at full term.

Mr. Charles Gibbs said that it was a pity that the treatment of syphilis in pregnancy should have been so neglected in the past; even now accommodation for such treatment was inadequate. He would like to congratulate Dr. Hendry on having obtained such good results with mercury, and amongst out-patients. Previous to the use of the Wassermann reaction it had always been difficult to know what to do with children born of syphilitic mothers, but apparently healthy themselves. His routine in these circumstances was to prescribe a three-years' course of mercury treatment. One of the surgeons at the Lock Hospital had been in the habit of leaving these cases untreated in the absence of any clinical indications of syphilis, and, as a rule, that surgeon had been justified in this course. Mr. Charles Gibbs himself thought it unnecessary to administer salvarsan to an infant free from clinical signs and with a negative Wassermann test. On the other hand, all infants showing signs of syphilis should be given arsenical treatment; he preferred the intravenous method, utilizing either the external jugular vein or the anterior fontanelle. The latter method of administration he had found especially useful. He considered that another important point was the administration of a full course of salvarsan to the mother during lactation. It was remarkable to see the increase in weight in a child in these circumstances. Amongst 100 cases of syphilis during pregnancy treated at the Lock Hospital eighty-seven showed secondary lesions, seven a primary lesion only, and one a tertiary. In 95 per cent. of cases, therefore, syphilis had been active rather than latent. In 34 per cent. the Wassermann test was positive. In 85 per cent. of these cases pregnancy had gone to full term; 86 per cent. of the children had been normal at birth, 5 per cent. showed syphilitic lesions, and 5 per cent. presented a wizened appearance but were otherwise free from signs of disease. Of the children born of these mothers, 97 per cent. gave a negative Wassermann reaction; the 3 per cent. that were at first positive soon became negative under treatment.

Mr. J. E. R. McDonagh said that the existence of granules as the result of breaking down of the spirochaete was difficult to prove. According to his own view, the organism of syphilis went through a definite sexual cycle. With regard to the Wassermann reaction, he thought that when its rationale was more fully understood less reliance would be placed on it as a diagnostic sign. In his opinion a syphilitic woman required treatment during every period of pregnancy, even although the father of her later children could be proved to be non-syphilitic.

Dr. Eardley Holland said that in his opinion the importance of syphilis as a cause of fetal death had been exaggerated. He believed he was right in saying (although he was relying on his memory only for his figures) that the Royal Commission on Venereal Diseases had come to the conclusion that 50 per cent. of fetal deaths were due to syphilis. This was certainly an exaggeration. He had examined 300 dead fetuses, and in only 37 of these had he found spirochaetes. The question at once presented itself as to whether these 37 cases in reality represented all the cases of fetal syphilis. He had therefore tried to find out what were the most reliable secondary attributes of syphilis in a fetus apart from the discovery of spirochaetes. The result of this investigation had shown the importance of the following: (1) The existence of chondro-epiphysitis; (2) the presence of a large spleen or liver; (3) signs in the placenta pathognomonic of syphilis. It was interesting to know that only six of the mothers in these 37 cases of fetal syphilis showed clinical signs of the disease; 21 of them gave a positive Wassermann reaction.

Mr. Kenneth Walker said that he had been much interested in Dr. Amand Routh's theory of the pathology of latent syphilis in pregnancy. Whilst it was possible to accept a great deal of what Dr. Routh had put forward, it was very necessary to exhibit caution in the matter. In the speaker's opinion the evidence that the organism of syphilis might exist in some other form than a spirochaete was overwhelming. When we failed to discover spirochaetes in the semen of syphilitic men, and yet knew from the clinical and experimental evidence that such semen was infective, the only conclusion that could be arrived at was that the organism of syphilis existed in a form other than that of a spirochaete. The same remark would apply to the fetus, and might explain the failure to find spirochaetes in syphilitic miscarriages. After a certain latent period these spores, or granules, would develop into the spirochaetes that were so readily found in the tissues of the syphilitic stillborn child. Whether the chorionic ferments had any inhibitory action on the organism of syphilis was an entirely different question. It seemed to the speaker that Dr. Amand Routh, anxious for the safety of the developing child, surrounded by all the horrors of spores and spirochaetes, had cast about for a good fairy; he had finally decided that the chorionic ferments must play this rôle. There was no direct evidence that the chorionic ferments acted in this way. As the spirochaetes could now be grown in culture, it would surely be possible to test the action of chorionic ferments on spirochaetes. If the speaker had been in search of a guardian angel he would have lit rather on the lipoids of the placenta. These must certainly have a strong protecting action against all infecting organisms. It was difficult to obtain reliable statistics as to the frequency with which a negative Wassermann reaction was obtained in syphilis in pregnancy. Out of 226 women attending a Buenos Aires maternity clinic and exhibiting clinical signs suspicious of syphilis, 116 had given a negative Wassermann. It was, however, difficult to feel sure that all of these suspicious cases were actually syphilitic, especially when it was remembered that these figures came from a country in which it might be said that an individual was regarded as syphilitic till he had proved himself otherwise. In any case the incidence of a negative Wassermann reaction would seem to be unusually high.

Dr. Ulysses Williams said that he had been investigating the *x*-ray appearance of stillborn children in order to find out whether radiography could assist in the diagnosis of syphilis. About 15 per cent. of the cases he had examined showed thickening of the epiphysial line characteristic of chondro-epiphysitis.

Dr. R. A. Hendry agreed with Dr. Eardley Holland that chondro-epiphysitis was practically pathognomonic of syphilis. In a few cases it was very difficult to be certain of the existence of chondro-epiphysitis, and in such cases radiography might be of service in showing the existence of rarefaction above the epiphysial line. In macerated specimens the head was firmer in consistency when syphilis had been the cause of death.

Dr. Amand Routh said that the difficulty of proving directly the action of chorionic ferments on the spirochaetes lay in the impossibility of isolating the ferments. The Commission on Venereal Diseases had come to the conclusion that between 20 and 25 per cent. of fetal deaths were due to syphilis. This would bring the annual mortality up to 27,000. He congratulated Mr. Adams on the results obtained at Thavies Inn.

Mr. John Adams agreed that much work would still have to be done on the placenta. He entered a plea for less dangerous methods of administration of salvarsan to infants than those advocated by Mr. Charles Gibbs. Personally, he preferred intramuscular to intravenous injections.

GLYCOSURIA AND DIABETES.

At a meeting of the Sheffield Medico-Chirurgical Society, held on October 28th, 1920, Professor Arthur Hall opened a discussion on "The prognosis and treatment of glycosuria and diabetes." A brief survey was first given of the more important events which during the last three centuries have contributed to the present knowledge of the subject. It was shown how much the clinician has depended on the co-operation of workers in allied sciences, particularly chemistry and physiology, in the study of everything connected with diabetes. When towards the close of the eighteenth century Rollo published his essay advocating the reduction of carbohydrate intake, the clinician had gone as far as was then possible, and had perforce to wait until the chemist and the physiologist provided him with aids to further progress. At the present time the position was reversed; chemistry and physiology moved at such a rate that the clinician had difficulty in keeping pace with them. The experimental work of Allen was referred to and his general principles of treatment were outlined. The question of non-diabetic glycosuria was considered and the difficulties of diagnosis from diabetes in human subjects were pointed out. Not absence of symptoms, nor small quantity of sugar, nor intermittent occurrence, either severally or together, formed sufficient grounds for differential diagnosis. Allen's paradoxical law and diuretic tests were referred to as possible helps in diagnosis. The speaker gave it as his opinion that in any case of sugar in the urine the wisest course was "to consider it as guilty of being diabetes until it was proved innocent." Regarding the prognosis of diabetes mellitus, there were three broad groups of cases: (1) Those that progressed from bad to worse and ended fatally in spite of treatment. (2) Those that continued to live in more or less comfort until the full average term of life in spite of no treatment. (3) The intermediate cases; judicious treatment would keep them alive and well, injudicious or no treatment would hasten their end.

Efficient treatment at the present time was entirely dietetic; there was no drug treatment which had been proved to replace this or to approach it in importance.

Reference was made to the various views held since the days of Rollo as to what constitutes proper dietetic treatment. Up to quite recent years the general rule had been "Restrict carbohydrates; make up for the deficit by stuffing with other foods." Latterly it had been gradually realized that this was not satisfactory, and the formula of to-day, put forward among others, by Kuelz, Van Noorden, and Guelpa, and elaborated more recently by Allen, was "Restrict excess of all kinds of food." "Excess" was not any definite standard amount; it varied not only in each individual diabetic, but also from time to time in the same diabetic. Hence it was necessary by careful periodic tests to ascertain each diabetic's tolerance for various foodstuffs at frequent intervals, and to keep him below it.

The full and complete co-operation of the patient in his treatment was essential. Dietetic treatment of a diabetic demanded a more or less constant self-denial on his part, and such self-denial was not always easily secured amongst the hospital population. The early fasting and tolerance testing days could only be carried out satisfactorily in an institution fitted up for and accustomed to such routine. The after treatment, which, to be effective, must continue for the rest of the patient's life, was the province of his own medical attendant, and, although less elaborate, required much care and trouble, and, above all a complete understanding of underlying principles concerned.

Dr. [illegible] thought that strict fasting was in many cases unnecessary, and even when carried out under skilled direction was not always free from danger of acidosis. He had since 1912 been in the habit of using a very low calorie diet comparatively rich in carbohydrates. Oatmeal had been found very useful; it was cheap, uniform, and in the form of biscuits could be used as a bread substitute. As a safety diet to be used when there was a diacetic reaction he recommended about 3 oz. of oatmeal with some twice boiled cabbage. On this diet in a few days the average case became aglycosuric and lost the diacetic reaction. A single fast day would then suffice to free the urine from sugar or, if it was already free, to bring the blood sugar down to reasonable limits. For testing carbohydrate tolerance he used oatmeal with a relatively small quantity of vegetables because the latter appeared, in the absence of figures relating to respiratory exchange, to introduce many unknown factors depending on cooking, personal variations in cellulose utilization, etc. He also put the patient on a minimum Chittenden protein allowance (1 gram per kilo of the body weight) during the tolerance test. The chief difficulty lay in the maintenance diet: the difficulties experienced in inducing the patient to adhere to the limited diet were diminished by teaching him to test his own urine, and emphasizing to him the imperative necessity of his remaining thin. One might tell him that the lean and hungry diabetic dog lived indefinitely and the plump one died; one might also advise him to give all samples of diabetic food to the dog and burn their advertisements.*

Dr. Skinner said that in conditions of acidosis, where the alveolar CO_2 tension was upset, it seemed reasonable to suppose that a difference would appear in the "acidity" of the urine, which, according to Professor Leathes, was related to the alveolar CO_2 tension. Observations on two cases of diabetes with acidosis bore out this supposition, in so far as both cases showed a variation from the normal acidity in the direction of lessened acidity during the night with a gradual tendency to increased acidity during the forenoon—the converse of the normal reaction.

THE first meeting of the Pathological Section of the Liverpool Medical Institution was held on November 4th, with Dr. J. E. Gemmell, the President, in the chair. Dr. E. Cronin Lowe read a note on "Metastases in bone from a case of renal hypernephroma," illustrated by coloured drawings. The secondary growths occurred in one humerus and both femora, in each case causing spontaneous fracture. Death occurred eleven years after the initial symptom of haematuria. Unfortunately the necropsy was only partial, and the primary growth was unobtainable. The secondary growths, however, showed the typical arrangement of cells as seen in a renal tumour. Drs. A. D. and P. M. Bigland read a paper on cerebrospinal fluid examinations, with special reference to neurosyphilis, based upon 180 cases. After a brief allusion to the history of the subject the authors discussed the procedure of lumbar puncture. They advocated the sitting posture, the use of a White-Jeanselme needle, and the midline insertion between the third and fourth lumbar vertebrae. The patient should remain recumbent for twenty-four hours after the puncture to avoid or lessen epidural leaking of spinal fluid, which appears to be the cause of the resulting headache. The various tests were demonstrated, including Lange's colloidal gold reaction. Tables were shown giving the different results of the tests in the various types of neuro-syphilis, and great stress was laid upon the importance of only relying upon the combined findings of all the tests. The authors deduced the following results from their work, and based their conclusions upon *post-mortem* findings and clinical facts. They stated that (1) no case having a similarity to the usual forms of neurosyphilis should be regarded as such without laboratory proof; (2) no case with a positive serum Wassermann reaction, or with a history of syphilis together with nervous symptoms, should be diagnosed as neuro-syphilis until proved so; (3) a negative Wassermann reaction in the blood does not exclude neuro-syphilis.

Reviews.

TUBERCULOSIS OF THE LUNGS.

We welcome the appearance of the second edition of Dr. Maurice Fishberg's textbook on *Pulmonary Tuberculosis*,[1] a well written and up-to-date volume that provides the medical practitioner with a first rate account of all aspects of tuberculosis of the lungs. It contains forty-four chapters; the first five give an account of the tubercle bacillus, infection, phthisiogenesis, and the epidemiology of tuberculosis. Next follows a short but adequate description of the pathology and morbid anatomy of phthisis. The next seven chapters deal with the symptoms of pulmonary tuberculosis, and are followed by sixty pages on the examination of the patients. Phthisis and its complications occupy the middle part of the volume; the various forms of treatment receive very full and critical consideration in the last two hundred pages.

An experience of over twenty years with the tuberculosis problems in New York City has crystallized a number of very definite conclusions in Dr. Fishberg's mind. He holds that the physician can and should recognize phthisis in its earliest or pretuberculous stage, on the strength of the general symptoms of the disease, and at once consign the patient to a sanatorium, though he is careful to point out that institutional treatment is not the only effective method of dealing with the tuberculous patient. Indeed, he is of opinion that "careful home treatment is productive of practically the same immediate and ultimate results as institutional treatment, and is less costly to the patient and to the community." He points out that in America the available institutions could hardly accommodate 10 per cent. of the phthisical inhabitants, and no doubt much the same state of affairs obtains in our own country also. It is therefore satisfactory to find that his experience leads him to believe that sanatorium treatment, excellent as it is, has definite limitations, and is not indispensable for the cure of consumption of the lungs. He lays considerable stress on the fact that while the very great majority of persons acquire tuberculous infection of the lungs in youth, nine out of ten of them recover, and only the remaining one develops "pulmonary tuberculosis" in such a form as to require treatment. He therefore distinguishes between "infection" and "disease," or between "tuberculosis" and "phthisis." Some such distinction should certainly be drawn; but we doubt whether the choice of the terms "tuberculosis" and "phthisis" for the purpose of contrasting the one with the other is happily made. Possibly it would be better to say that the nine individuals mentioned above had suffered from "pathological tuberculosis," for it is recognizable only in the *post-mortem* room, and the tenth from "clinical tuberculosis." Another point on which Dr. Fishberg lays emphasis is the fact that "'incipient' does not always mean *curable* tuberculosis, and, conversely that 'advanced' disease does not necessarily indicate a hopeless outlook." In his chapters on treatment the author has a good deal to say on the subject of medicinal treatment, which he credits with more efficacy in many cases than do the therapeutic nihilists; he also gives a good description of the pneumothorax treatment of pulmonary tuberculosis.

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[1] *Pulmonary Tuberculosis*. By Maurice Fishberg, M.D., Clinical Professor of Medicine, New York University and Bellevue Hospital Medical College, etc. Second edition, revised and enlarged. Philadelphia and New York: Lea and Febiger. (Med. 8vo, pp. 744; [illegible] figures, [illegible] plates. [illegible] dollars.)

The author writes with easy competence but no undue dogmatism, and has made ample use of the more recent literature of the subjects with which he deals; his style is direct and clear, and it is plain that it is the practical questions rather than the theoretical that most attract his attention in matters bearing on phthisis. It is natural that in so large a volume as this there should be passages with which many practitioners of medicine will find it hard to agree. On page 273, for example, he states that "Palpation for the vocal fremitus is of no diagnostic value in any stage of phthisis, excepting in cases where pleural effusions are suspected. But it is often absent in thickened pleura and thus is not of great assistance in our attempts at differentiating the latter from an effusion." Surely this is a libel on the art of palpation! Dr. Fishberg deals severely with tuberculin treatment, though not unjustly, and lays great stress on the psychotherapeutic treatment of all phthisical persons, to which in one form or another they habitually respond well.

We can recommend his book strongly to all medical men and senior students of medicine in search of a thoroughly sound, well informed, and comprehensive textbook of tuberculosis of the lungs, its etiology, diagnosis, complications, and treatment. It is by far the best work on the subject with which we are acquainted in any language.

OBSTETRICS.

The first edition of *Midwifery*,[2] by Ten Teachers, has been exhausted in a little over three years, and a second revised and enlarged one has just been issued. The principal additions appear to be chapters on ante-natal hygiene, on the chemical pathology of the toxaemia of pregnancy, and on the management of breast feeding along the lines advocated by Dr. Truby King. There is also an addendum on the estimation of renal efficiency. The authors hope that these additions will increase the usefulness of the book to the students for whom it is written. The change in this edition most obvious to the ordinary reader is an increase of some seventy pages in its length and of more than ½ lb. in its weight. When a book comes to weigh over 4 lb. its value as a students' textbook is imperilled, and it is apt to become merely a book of reference. It used to be said of Syme's book on surgery that each edition was not only better but also smaller than its predecessor. Doubtless the power of avoiding all that is unnecessary is more than evidence of complete mastery of one's subject; it is a mark of a complete mastery of *teaching* the subject that amounts almost to genius. At any rate, its rarity amongst the authors of present-day textbooks is remarkable, and perhaps the last place in which one would reasonably look for it is in a co-operative society such as is responsible for the volume under review. The additions appear to us of unequal merit. The chapter on ante-natal hygiene contains nothing that might not equally well be introduced as a paragraph in the preceding chapter, and its value is not greatly increased by the devotion of two pages to a specimen of the schedule used at a pre-maternity centre. The chapters on protein metabolism and on the oxidation of fats and their modification in acidosis are excellently lucid, and will undoubtedly be useful to both students and practitioners. The chapter on infant feeding is good, but hardly sufficiently clear in regard to detail for students or young practitioners. The directions in such a chapter ought to be as exact and full as those on the tin of a patent food. The addendum on modern biochemical methods of testing renal efficiency seems to us quite out of place, and more suited to a book on clinical methods than a textbook of midwifery; but when all is said, the book remains an exceedingly clear, sound, and practical, if necessarily rather unequal, presentment of obstetrics, whose avoirdupois will be more than counterbalanced by the weight of authority carried by its authors' names. We predict a useful career for it, and commend it sincerely and confidently to students and to practitioners.

Professor Herbert Spencer has published his Lettsomian Lectures on *Tumours Complicating Pregnancy, Labour, and the Puerperium*[3] in a small volume. As the lectures were reported in our columns at the time of their delivery to the Medical Society of London, and were also reviewed at that time, it is unnecessary to discuss them here. It is satisfactory to have them in this accessible new form, as they unquestionably represent the most recent and authoritative teaching on a subject of great practical importance in midwifery.

Berkeley and Bonney's *Difficulties and Emergencies of Obstetric Practice*[4] is a book so well calculated to be useful to practitioners that it is not surprising to find it blossoming into a third edition. Every thinkable complication of pregnancy, parturition, and the puerperium is discussed with complete clarity from a practical point of view. When this has been said little need be added. We should, however, like to mention specially the chapter on infant feeding by Dr. H. C. Cameron, which has been written for this edition and is a model of perspicuity and common sense. It will undoubtedly enhance the value of the book to many readers. We congratulate the authors unreservedly on this volume.

Three editions in some four years is a sufficient index of the general appreciation of Professor Shears's *Obstetrics, Normal and Operative*.[5] The latest edition is revised and edited by Dr. P. F. Williams of Philadelphia, and has been brought up to date in such sections as the metabolism of pregnancy, syphilis in pregnancy, anaesthesia in labour, and Caesarean section. Dr. Williams has succeeded in retaining the note of confident individuality which characterized the book, and has no doubt contributed to its deserved success; we are, however, glad to note that he has toned down some of the remarks which we were compelled to criticize adversely in the previous editions. Dr. Williams gives a very balanced statement as to the value of nitrous oxide–oxygen anaesthesia in labour, which is being largely tried in America at present. The account of the pathology of the toxaemia of pregnancy is not quite up to date, and the author adheres to his view that suboxidation is an important factor in the causation of the symptoms. Most obstetricians will agree with Dr. Williams in his criticism of Professor Shears's advocacy of early version in occipito-posterior cases. In regard to the use of forceps in persistent cases, we have found frank rotation of the head by forceps, after the plan described two centuries ago by Smellie, preferable to the combination of rotation and pulling advised by the author. We congratulate the author and editor on their work, which forms a contribution of high practical value to the literature of modern obstetrics.

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[2] *Midwifery*. By Ten Teachers. Edited by Comyns Berkeley, H. Russell Andrews, and J. S. Fairbairn. London: Edward Arnold. 1920. (Med. 8vo, pp. 782; 303 figures. 30s. net.)

[3] *Tumours Complicating Pregnancy, Labour, and the Puerperium*. By Herbert R. Spencer, M.D., B.S.Lond., F.R.C.P. London: Harrison and Sons. 1920. (Demy 8vo, pp. 78; 28 figures. 5s. net.)

[4] *The Difficulties and Emergencies of Obstetric Practice*. By Comyns Berkeley, M.A., M.D., M.Ch., F.R.C.P., and Victor Bonney, M.S., M.D., B.Sc., F.R.C.S., F.R.C.P. Third edition. London: J. and A. Churchill. 1920. (Roy. 8vo, pp. 821; 291 figures. 42s. net.)

[5] *Obstetrics, Normal and Operative*. By G. P. Shears, B.S., M.D. Third edition, revised by P. F. Williams, Ph.B., M.D., Instructor in Obstetrics, University of Pennsylvania. Philadelphia and London: J. B. Lippincott Company. 1920. (Roy. 8vo, pp. 767; 419 figures. 35s. net.)

BACTERIOLOGY.

The atlas and textbook of bacteriology by Lehmann and Neumann,[6] a sixth edition of which has appeared recently in Munich, differs from most works on bacteriology in that it gives in readily accessible form a review of non-pathogenic as well as pathogenic bacteria. Hence it is a valuable reference book for those concerned with the identification of bacterial species, and will continue to be consulted until a more critical work fulfilling the same purpose is available in the English language. The present edition is a reprint of the fifth, with the addition of an appendix of about seventy pages, which is intended to cover the most important advances in bacteriological diagnosis since the last issue seven years before. The appendix can scarcely be said to fulfil this aim in a comprehensive fashion, except in so far as advances in the authors' own country are concerned. Almquist's views on the life-cycle of bacteria are well epitomized, but there is no reference to the important recent work of French and British bacteriologists on the anaerobic bacteria associated with gas gangrene. Again, no reference is made to the occurrence of rickettsia bodies in connexion with trench fever, or to such a practically valuable method as the glycerin preservation of faeces for delayed examination in cases of suspected enterica and dysentery.

SPECIMENS FOR THE LABORATORY.

The Link between the Practitioner and the Laboratory,[7] by Drs. Fletcher and McLean, is a handy little pocket book, designed to indicate the various ways in which a laboratory of a certain type can be of use to the general practitioner. It also deals with the methods by which material for examination can be obtained and transmitted to the laboratory, and states within what period of time a report may reasonably be expected in reply. A brief summary of vaccine and serum therapy is appended. The book will be particularly useful to those who wish to use what are known as long range pathological laboratories. If the directions would appear at times unnecessarily full, those who deal with specimens sent by post will know only too well the faults frequently committed by those who should be better acquainted with the requirements of the laboratory expert. The increasing efficiency in practical pathological teaching and the spread of laboratories throughout the country will doubtless before very long render such directions to a large extent unnecessary. For the present however, long-range pathology and bacteriology must exist, and, as already said, this is a most excellent guide for the use of the busy practitioner. Though not strictly a scientific work, it will be deservedly welcomed as an unpretentious little book of considerable merit and utility.

BEAUTY AND BETTERMENT.

Professor Knight Dunlap's small book on *Personal Beauty and Racial Betterment*[8] is a clear and outspoken statement that demands serious attention from all, and especially from eugenists and medical men. The conservation of beauty is *the* problem of the present day and of all time, for, as human beauty is the sign of fitness to propagate children able in a high degree to hold their own in the struggle of life, it is also the problem of racial betterment. The first half of Professor Knight Dunlap's message is, under the heading of the significance of beauty, devoted to a detailed analysis of the characters of beauty, and naturally reference is made to the bearings of physiology. The relations of the endocrine and sexual glands to the growth of hair are touched upon, and he epigrammatically insists that baldness is a fatal bar to beauty both in the male and in the female. Beauty is summed up as the sign and expression of the potentiality of the individual, not of what he has done or is doing, but of what he is capable of doing for the race as a parent.

In the second part—on the conservation of beauty—the question of elimination of the unfit is considered on broad-minded lines; at present the possibility of systematic legal sterilization is rejected; any move in this direction must depend on publicity and the movement of public opinion. The dissemination of knowledge about hygienic means of preventing conception is advocated to reduce multiplication among the less desirable, and so to favour a relatively higher birth rate among the best specimens of the race. The author speaks in very strong terms about rich married women who luxuriously avoid motherhood, and says that they are more properly and accurately designated as hetairae. Of prostitution, which has developed with civilization as a result of social maladjustment, the only beneficial effect is shown to be some diminution in the reproduction of the feeble-minded. Attention may be called to the picturesque and admirable dictum that "if, by the concerted efforts of the Governments of the world, venereal diseases could be finally stamped out, no events in the Christian era would be worthy to rank with this accomplishment except the defeat of the Mohammedans by Charles Martel, and the defeat of the followers of 'the 'good old German God' by Foch."

NOTES ON BOOKS.

Both to chairmen and to those over whom they preside a small book, *How to Conduct a Meeting*,[9] by John Rigg, will be welcome, for all who attend meetings should know the right procedure. The conduct of debate; points of order; limitation of debate, either by standing orders or by special vote, are explained and, when needful, illustrated. "The previous question" ("a form of parliamentary procedure," says Mr. Rigg, "seldom used and little understood") is clearly described. The object of this procedure is plain; but we think, judging from the confusion of mind produced in meetings when the "Question" has been moved, that, in general, it is well to avoid its use. An important chapter is devoted to "Motions and amendments," preference again being given to the parliamentary procedure; but it is fairly arguable that the mode common outside Parliament of giving precedence to amendments may be recommended. Hints on committee work complete Part I. Part II contains model standing orders and rules which, if more full than may be generally needed, are good as a guide. It is altogether a compact and useful little work.

The Centenary Volume of Charles Griffin and Company, Ltd., Publishers,[10] by eleven contributors, is introduced by Lord Moulton, who points out that early in its career this enterprising firm adopted the policy of producing technological works of all kinds as well as valuable scientific treatises mainly associated with industrial problems, and has thus done good service to the nation by raising the standard of our technology. Over 90 per cent. of the firm's publications are technical and scientific textbooks, manuals, and monographs, and the progress marked by these publications during the last 100 years is described by various authorities: thus, Professor T. Hudson Beare writes on engineering, Sir W. S. Abell on naval architecture, Professor W. Gowland on metallurgical, assaying, and associated work, Professor H. Louis on mining, and Dr. H. H. Hodgson on chemical technology. The last chapter in the book, on medical, hygiene, and sanitation textbooks, by a contributor disguised as "Medico, M.A., M.D., M.R.C.P., etc.," gives an interesting account of the numerous well known books brought out by the firm: though often urged to revise his *Human Anatomy* for a second edition the late Professor A. Macalister was never able to reduce his voluminous record to a sequence for publication: the late Sir Victor Horsley, whose latest photograph is inserted, was to have contributed a systematic work on brain surgery, but unfortunately this was never accomplished. The history of Griffin's, from its start in Glasgow in 1820, is attractively told in a volume beautifully got up and generously and successfully illustrated.

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[6] [illegible] Lehmann [illegible] Neumann [illegible]

[7] *The Link between the Practitioner and the Laboratory.* [illegible] Fletcher, M.D. [illegible] McLean [illegible] London: H. K. Lewis and Co., Ltd. 1920. [illegible] pp. 91.)

[8] *Personal Beauty and Racial Betterment.* By Knight Dunlap [illegible] London: Henry Kimpton. [illegible]

[9] *How to Conduct a Meeting: Standing Orders and Rules of Debate.* By John Rigg. London: George Allen and Unwin, Ltd. 1920. [illegible]

[10] *The Centenary Volume of Charles Griffin and Company, Ltd.* With a Foreword by Lord Moulton, P.C., G.B.E., K.C.B., F.R.S. London: Charles Griffin and Co., Ltd. 1920. (Med. 8vo, pp. [illegible]; illustrated.)

The Harrow Life of Henry Montagu Butler, D.D.,[11] by Mr. Edward Graham, is an extremely interesting biography of a gifted and gracious character. The son of a head master of Harrow, he carried all before him as a boy there, and after an interval of eight years, mainly at Cambridge, he returned as head master in 1860, at the early age of 26. After twenty-five years' successful work he became Dean of Gloucester, and soon afterwards Master of Trinity; but this aspect of his life will be described in a further volume. In early life he was a delicate boy and his heart was thought to be weak, so that, though he won the match against Eton in 1851 by making 41 runs, he had a boy to run for him; yet he climbed mountains with energy and apparently without harm. When 64 years old he had an attack of angina pectoris, but survived to die at the advanced age of 84 from quite other causes. There is a specially charming introductory chapter by his schoolfellow, Sir George O. Trevelyan.

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[11] *The Harrow Life of Henry Montagu Butler, D.D., Head Master of Harrow School (1860-1885); Master of Trinity College, Cambridge (1886-1918)*. By Edward Graham. With an introductory chapter by Sir George O. Trevelyan, Bt., O.M. London: Longmans, Green and Co. 1920. (Demy 8vo, pp. 472; 8 illustrations. 21s. net.)

VENEREAL DISEASE PROPHYLAXIS.

The unofficial National Birth Rate Commission has appointed a special committee to inquire into certain aspects of venereal disease. The terms of reference are to consider the following questions:

1. Whether sexual continence before marriage is consistent with normal health.
2. Whether self disinfection as a method of preventing the development of venereal disease in persons who have exposed themselves to the risk of infection is more efficient or less efficient than medical treatment at venereal clinics and early treatment centres.
3. The possible advantages and disadvantages of various suggested methods of self-disinfection, (*a*) before, (*b*) after sexual intercourse.
4. Whether methods of self-disinfection involve any serious disadvantages of a moral kind—that is to say, whether they are calculated to weaken moral control, and thereby to lead to an increase in promiscuous sexual intercourse; and if so, to what extent these disadvantages should render the use and advocacy of self-disinfection undesirable when considered from the point of view of ultimate national welfare.

The Ministry of Health has undertaken to assist the inquiry by all the evidence and information at its disposal. The members of the Committee are:

The Bishop of Birmingham, C.B.E., D.D. (*President*).
Sir W. Arbuthnot Lane, Bt., M.S., F.R.C.S.
Sir Alfred Pearce Gould, K.C.V.O., F.R.C.S.
Sir F. W. Mott, K.B.E., M.D., F.R.S.
Sir H. D. Rolleston, K.C.B., M.D.
Sir G. Sims Woodhead, K.B.E., M.D.
R. A. Bolam, O.B.E., M.D.
Charles J. Bond, C.M.G., F.R.C.S.
Charles Gibbs, F.R.C.S.
T. Eustace Hill, O.B.E., M.B.
Eric Pritchard, M.D.
Amand Routh, M.D., F.R.C.P.
Agnes Dunnett, M.B.
Mary Scharlieb, C.B.E., M.D., M.S.
Professor William Wright, D.Sc., F.R.C.S.
Rev. Principal A. E. Garvie, D.D.
Right Rev. Mgr. Provost W. F. Brown, D.D.
Rev. F. B. Meyer, D.D.
Rev. Rabbi Professor Hermann Gollancz, D.Litt.

The Secretary is the Rev. James Marchant, C.B.E., LL.D., Rhondda House, 60, Gower Street, W.C.1, to whom all communications regarding the Commission should be sent.

A third surgical clinic (under Professor Borchart) and a fourth medical clinic (under Professor Klemperer) have been added to the University of Berlin.

TROPICAL MEDICINE IN LONDON.

The new building of the London School of Tropical Medicine and the Hospital for Tropical Diseases, both of which institutions are attached to the Seamen's Hospital Society, was formally opened by H.R.H. the Duke of York on Armistice Day. The building, in Endsleigh Gardens, Euston Road, was first erected for the purpose of a hotel, but so dextrous has been the work of the adapters and furnishers that the casual visitor would be unaware that the original design was not for a hospital and medical school. The only structural disadvantage is the number of separate floors—nine, including the basement—but this is overcome by excellent lift installations. The school has the lower part of the building and the hospital the upper. On the ground floor are the general offices and board room and a general laboratory; on the first floor the museum and the departments of tropical pathology and entomology, and on the floor above those of helminthology and protozoology. On the third floor a tropical diseases bureau is established, under the direction of Dr. A. Bagshawe. The hospital is entered on the fourth floor, where are the matron's office, the patients' waiting-room, and the officers' quarters; on the fifth floor the staff have their quarters; the sixth floor is devoted to private wards, and the seventh and eighth to general wards, together with operating theatre and dispensary. The hospital contains 60 beds, many of which are already in occupation.

The Duke of York was received by Lord Milner, Secretary of State for the Colonies, the Marquess of Milford Haven, President of the Seamen's Hospital Society, Mr. Austen Chamberlain, M.P., one of the vice-presidents, Sir Patrick Manson, founder of the school, and Sir Havelock Charles, the dean. The members of the committee of management, the physicians and surgeons of the hospital, and the teachers in the school were introduced.

Lord Milner said that the school and hospital represented one of the greatest achievements of private munificence that he could remember. The school had its origin during Mr. Joseph Chamberlain's distinguished tenure of the Colonial Office. Mr. Chamberlain was instrumental in starting not only this institution, but the similar school at Liverpool which was its rival, and which had also done a great work for the sanitation of the tropical outposts. The hospital and school in London worked together, which was the ideal arrangement, as everybody would recognize. The study of tropical medicine was carried on in direct touch with the treatment of tropical diseases. As time went on, distinguished men of science became attached to the school, and, with the enlargement of its opportunities and the increasing insistence of the demands upon it, a much larger sum than Mr. Chamberlain had originally collected was required. About ten years after the school had been started, Mr. Austen Chamberlain, following in his father's footsteps, and with the cordial support of Mr. (now Lord) Harcourt, then Colonial Secretary, initiated a movement whereby upwards of £70,000 was raised for the school. This placed it in a strong position, though not strong enough for its growing work. After the war was over it became desirable, and indeed almost necessary, to remove the school from its original site near the London docks to its present position, where, through the generosity of the British Red Cross Society and the Order of St. John, a new hospital for tropical diseases was established. This new site, in the educational centre of London, was, of course, a great gain to the school, but the transference, the building of a new laboratory, and the provision of funds for additional research entailed a further appeal to the public, not undertaken without trepidation in view of the demands on private charity at such a time. Thanks to the energetic work of the committee, however, upwards of £100,000 had been already collected towards the £150,000 which was made the objective. (Applause.) He mentioned in this connexion the great help which had been given by Sir Marcus Samuel, who not only came forward with a splendid subscription of his own, but was tireless in approaching others. At the same time, money was not everything; it had been the great good fortune of the school to attract good teachers, and the name and reputation of Sir Patrick Manson would always be connected with its progress. (Applause.) No one who knew anything about our tropical possessions failed to realize that the condition of their development was the improvement of the health of the population, whether European or native. It was owing to the immense progress in this respect already made that some parts of the Empire which had seemed to be the most backward were now the most prosperous; but greater things still remained to be accomplished.

The Duke of York then declared the building open. He said that he could not too strongly commend the work that had been done by those who had helped, through medicine, to build up the great tropical dependencies of the Empire. We stood under a great debt, not only to the scientific men who had devoted their lives to this service, but to those who had assisted in the raising of the necessary funds, to the British Red Cross Society and the Order of St. John of Jerusalem, and also to successive Secretaries of State for the Colonies. He wished every success to the students of the school in their vital and interesting studies; many of the students, he understood, were officers appointed to posts in the medical departments of the Colonies or of India, and he did not need to emphasize the importance of their imperial task. It was the first duty of a civilized community to provide the conditions of healthy life, to sweep away plague spots, to take measures against infection, and, possibly most important of all, to instruct the public in the habits of life which made for health. The School of Tropical Medicine held a watching brief for the health of the outposts of our wide empire, and it was here that schemes might be initiated such as had already made what used to be known as the "white man's grave" a land where to-day the white man could work without any undue toll of death and suffering. He hoped that research would here be stimulated and advanced.

After the inspection of the laboratories and museum the Duke proceeded to the hospital floors, where he was received by Sir Percival Nairne, chairman of the committee of management, Sir Edward Hope, representing the Metropolitan Convalescents Fund, and the medical staff of the hospital.

THE SOUTH AFRICAN MEDICAL CONGRESS AT DURBAN.

The [illegible] South African Medical Congress was opened at Durban on October 5th, and was attended by [illegible] delegates representing all the South African Branches of the British Medical Association. Dr. J. A. Macdonald, late Chairman of the Council of the Association, was enabled, by the coincidence of his visit to South Africa with the meeting of the Congress, to attend its sessions and take part in its work.

The President of the Congress, Dr. S. G. Campbell, was introduced by Dr. Campbell Watt, vice-president of the South African Committee, who said that Dr. Campbell's name was well known in Durban as one possessing in addition to professional skill a catholic outlook, high ideals, and interests in public affairs. The Congress was opened by his Honour the Administrator, Mr. G. T. Plowman, C.M.G., who paid tribute to the services rendered by Sir Thomas Watt in securing the passage of the Public Health Act for South Africa. It was a matter for congratulation, he said, that the provincial authorities had now been given a greater share in the administration of public health, particularly in regard to the treatment of tuberculosis and of venereal disease. Public assistance for endowment and maintenance of hospitals had been abundantly forthcoming in Natal, and [illegible] assistance was called for as a supplement to Government aid in the matter of maternity and of child welfare.

President's Address.

The President thanked the Administrator on behalf of the Congress, and expressed also the pleasure felt in welcoming Dr. Macdonald, who had come as a representative of the British Medical Association, under whose auspices the Congress was being held. He hoped that Dr. Macdonald's visit would enable him to [illegible] the [illegible] which [illegible] in the upper [illegible] since the last meeting of the Congress [illegible] the world. It might be asked: Would the community of the [illegible] be equipped mentally and physically to [illegible] the high destiny to which by its [illegible] [illegible]? A great responsibility [illegible] the future [illegible] upon the medical profession, [illegible] would depend on the appreciation of [illegible] by the [illegible] of the State, and on their close co-operation. The medical man, by training and circumstances, should be best able to advise and to control the conditions on which fundamentally rested the social welfare of the people. But a general awakening of the public conscience was essential before one could approach within a measurable distance of the ideal. The business man would ask what percentage return would accrue from outlay in connexion with public health; but the lives and the comfort of the community were not computable on the basis of pounds, shillings, and pence. No community should consider itself sane which had not under it skilled, thorough, and systematic supervision, in addition to the matters commonly included under public health—motherhood, physical and mental child welfare, housing, and food. The President concluded by a plea for a more active individual participation in the consideration of problems than was shown by the members of the profession as a whole. It would be good if medical assistance were more often available for the scientific solution of many problems in connexion, for example, with the limitation of working hours. The present year marked the advance of South Africa to the position of being able to offer its young people a full course medical curriculum. Thus their own people would be able to enter the portals of a profession which was a hard master and bad servant—a hard master in that to live up to its ideals required a life of self-sacrifice and anxieties, accompanied, however, by the corresponding spiritual compensations; while it was a bad servant if undertaken for the purpose of making a living. Other occupations offered greater opportunities for the acquisition of wealth, and young men and women who contemplated entering the medical profession should first make certain that an impelling force drove them in that direction.

Speech by Dr. Macdonald.

Dr. J. A. Macdonald said that he appreciated, and would always remember, the manner in which the Congress had expressed its welcome to him. He came as an ambassador from the British Medical Association to one of its greatest Branches, and he brought a message wishing the members of the Congress success and prosperity not only in their profession but as members of the Association. It was his endeavour to see the British Medical Association coterminous with all the medical men throughout the Empire, and if he had done a little towards that aim in South Africa he would return home well satisfied. In 1914 he had had the honour of making a similar visit to Australia, New Zealand, and Hong Kong, and there he had found the British Medical Association stronger than at home. In Australia about 93 per cent. of the doctors were members of the Association; might he hope that they would soon be as strong in South Africa?

Sections.

In the Public Health Section, of which Dr. A. Jasper Anderson, M.O.H. for Capetown, was president, a paper on "Some problems affecting rural areas and the smaller towns of South Africa" was read by Dr. G. L. Haydon, M.O.H. for the Union, Pretoria. Dr. Haydon said that in large towns the inclusion of the various hospital units in one central institution, provided with separate blocks for fever cases, mental cases, etc., would result in economy of means and personnel, and would secure greater elasticity and efficiency. After a summary of the campaign against typhus and malaria conducted during the last four years, Dr. Haydon pointed out that at last the onus of responsibility for keeping vermin-free was laid on every individual while at home, and on employers where native employees were in barracks. It was anticipated that the preventive and educative methods initiated in the Transvaal would lessen the incidence of malaria. Allusion was made to the important part played by flies in the spread of intestinal diseases, especially in the small towns, and Dr. Haydon expressed the view that it was quite possible for any rural authority by adequate sanitary measures to overcome this source of infection.

Besides the various sectional discussions the delegates attended a reception at the Victoria Smith Hall, and public lectures were given in the town hall by Dr. Erasmus Ellis and Dr. M. G. Pearson.

Banquet.

A very successful congressional banquet was held at the Royal Hotel on the evening of October 8th. The President occupied the chair, and was supported by Dr. Macdonald and the Mayor of Durban.

British Medical Journal.

SATURDAY, NOVEMBER 20TH, 1920.

THE IMPORTANCE OF ORTHOPAEDICS.

The paragraphs in the annual report of the Chief Medical Officer of the Board of Education, of which we gave some account in our last issue (p. 701), and the address of the President of the British Orthopaedic Association, which is published in this number, concur in calling attention once more to the need of the children of this country who are crippled or in danger of becoming crippled if not properly treated. The public conscience has long been stirring in this matter, and we published last year (October 11th, 1919) a paper by Sir Robert Jones and Mr. Girdlestone in which were laid down the lines on which a national scheme for the treatment of cripples might be formed. Before a complete scheme for the whole country can be prepared it will be necessary in the first place to make an accurate census of the cripples. A rough estimate of their numbers may be formed from the returns made by school medical officers and printed in tabular form in Sir George Newman's report. But before an accurate census can be made it will be necessary to set down clearly what are the conditions which constitute crippledom. It is evident that the figures in the table represent very diverse ideas on the part of the school medical officers concerned. How else is it possible to explain the respective figures of incidence per 1,000 in the cases, for example, of Ealing (10.7), Acton (4.7), and East Ham (4.7)? Surely comparatively well-to-do Ealing has not twice as many cripples as its immediate neighbour Acton, or the poor working-class district of East Ham!

Despite the want of a census we know that there is a very large number of cripples needing treatment, that many are not being treated at all, and that many who are undergoing treatment are, for want of proper facilities, receiving very inadequate attention both as regards quality and quantity. The experience gained by the public authorities at such excellently equipped centres as Queen Mary's Hospital at Carshalton shows the long periods for which it may be necessary to continue treatment in order to obtain definite cure or permanent relief, and the meticulous surgical care which is necessary during that time. When we reckon up the number of properly trained skilful orthopaedic surgeons that will be required to staff the necessary institutions we are at once confronted with the fact that nothing like a sufficient number exists. The needs of war have produced many most efficient surgeons skilled in the surgery of the extremities, but many times their number will be required. Sir Robert Jones in his address sets himself to sketching a scheme of training to meet the want. As he points out, it is no narrow speciality with which the modern orthopaedic surgeon will have to deal, but one which includes some of the most interesting subjects of our art, and which offers to the true χειρουργός, the handicraftsman, the most fascinating problems in medicine and mechanics combined. For although the highest operative skill is required, in no branch of surgery is it more true that the healing of the operation wound only marks the beginning of curative treatment. No other branch of surgery can afford so much satisfaction to the surgeon in the contemplation of worthy achievement and of young lives brightened and minds and bodies made permanently more efficient by good surgical technique and mechano-therapy.

An efficient orthopaedic department is not to be created by appointing a surgeon, however brilliant, nor by allocating to it certain premises and apparatus. To carry out the post-operative treatment a number of trained assistants and masseurs are needed, but the students under instruction should be entrusted with much of this work under proper supervision. An undergraduate who sought to obtain a diploma or certificate of proficiency in orthopaedic surgery should be required to produce evidence that he has learnt not only the technique of the plaster room, but also that he can handle tools and make at least the simpler kinds of appliances. Every one does not possess an aptitude for practical mechanics; those who do are the most likely to prove efficient orthopaedic surgeons. It will take time to train enough undergraduates for a complete national scheme, but meanwhile post-graduate courses might be established, both for a pass diploma and for the higher qualification, such as that which the University of Liverpool has in contemplation.

Above all, it cannot be too strongly urged that the treatment of cripples, and especially of crippled children, should be carried out in the country, and as far as possible in the open air. Enough experience has been gained to show that children do best in wards or sheds exposed as to the whole of one side to the open air, and that in this country it is never necessary to move them to more sheltered positions, no matter what the weather may be. Increased efficiency is here happily combined with much decreased cost of building, as such shelters can be erected at a cost of only a few pounds a bed. At present the fact that no indoor refuge is needed is not appreciated by the Metropolitan Asylums Board, which insists that for each outdoor case an indoor bed shall be available in case of need. It is much to be regretted that, disregarding the advice of experienced medical officers, the Board has refused to abrogate this rule in the case of crippled children.

At the present time the continued existence of voluntary hospitals is in the balance, and the public as well as the profession are ready to consider schemes for the reorganization of medical education. Sir Robert Jones's address is therefore peculiarly timely, and will, we hope, fruitfully stimulate opinion on this subject.

CAPILLARY POISONS, SHOCK, AND ANAPHYLAXIS.

In the first of his three Herter lectures, delivered in November, 1919, at the Johns Hopkins University, Dr. H. H. Dale[1] gave a clear review of the work on shock, which from various papers and reports published in the *Journal of Physiology* and by the Medical Research Council, especially in 1919, has already come within our readers' purview, though not in so compact a form. Starting from a pharmacological investigation of ergot in 1904, a series of researches in association with Drs. Barger, Laidlow, and Richards was devoted to histamine, an amine derived from ergot by decarboxylation of amino-acids. It was first shown that relatively small doses of histamine could, like certain products of the partial cleavage of proteins, cause the phenomena of anaphylactic shock. Further experiments with histamine proved that its action on the circulation involved a dual mechanism namely, constriction of the arterioles and relaxation of the capillaries. The sensitiveness of the capillaries to this dilator influence is extraordinary, one-millionth of a milligram of histamine having been observed to exert this effect. These observations lead to an important modification of current physiological opinion; although the conception of an independent contractility of the blood capillaries has been entertained since 1865, it has generally been considered that the arterioles are the important factor in maintaining the blood pressure, and that when the blood enters the capillaries it has reached an area where the peripheral resistance is relatively trivial. Dr. Dale takes the view that the capillaries in the body as a whole are normally in a state of tonus and thus contribute an effective part of the peripheral resistance. In ordinary conditions a very small proportion only of the available capillary paths in the tissues is at any one time transmitting blood, the remainder being closed by intrinsic tonus; further, the site of this closure is always changing, some paths opening while others close, so that the total passage is kept fairly constant. There are therefore (1) coarse adjustments of blood supply to whole organs or areas effected by variations in arterial tone under the influence of the nerves or of epinephrin, and (2) a fine adjustment of the supply to the varying needs of small areas or even of individual cells caused by the changing tone of the capillaries. Although it is tempting to explain this mechanism by the assumption that there is increased protein cleavage with the formation of histamine-like bodies, there is no proof that such substances are produced by the tissues during functional activity.

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[1] H. H. Dale: *Bull. Johns Hopkins Hosp.*, Baltimore, 1920 xxxi, 257 265.

Larger doses of histamine—1 to 2 mg. per kilogram of body weight—produce pathological results, those of secondary shock; these are arterial constriction, general and persistent dilatation of the capillaries with stagnation of blood there, so that the great vessels and heart become relatively empty. This oligaemia is mainly due to capillary stasis, but there is concentration of the blood, as shown by a rise of 50 per cent. in the number of red blood corpuscles and the haemoglobin content, due to escape of more than half the plasma through the damaged capillary endothelium into the tissues. After an initial period, which may show a rise, the blood pressure slowly falls. These data are applied with wise caution to the explanation of secondary wound shock in which probably the essential factor is absorption from injured autolysing tissues, and especially muscles, of substances producing the same depressant effect on capillary tone and the same morbid permeability of their walls as that known to be caused by histamine. For fifty years the similarity between states of traumatic shock on the one hand, and collapse from rapidly generalized infection on the other hand, has been recognized, and it is clear that circulatory changes of a similar character are produced by poisons which, whether traumatic or bacterial in origin, have an action analogous to that of histamine.

In the second lecture anaphylaxis is defined as a condition in which a normally innocuous, indeed an inert, substance has the effect of an acute poison of the type of histamine, and it is shown that it apparently depends on the formation or introduction of a specific body of the precipitin type, but that when the state of sensitiveness is most characteristically present no precipitating quality can be recognized in the blood serum. The difficult problem of the nature of anaphylaxis is philosophically discussed, and the difference of the modern conception from Richet's original view, that it was the converse or antithesis of immunity, is pointed out. In the guinea-pig anaphylaxis depends on the interaction of antigen and antibody in the cells, but an answer is still required to the initial problem why the occurrence of this intracellular reaction should produce effects on plain muscle and capillary endothelium so closely resembling those caused by a group of protein derivatives of which histamine is a type. While cautiously warning his readers that the scene now changes from the region of experimental research to the realm of speculation, Dr. Dale suggests that in the development of anaphylactoid shock the meeting of precipitin with antigen in the cells sets up a change in the state of dispersion of the protoplasmic colloids; such a change might initiate a fermentative process leading to the formation of a substance having the histamine type of action or even of histamine itself. In answer to the further question, how histamine produces its effects, it may, in our ignorance, again be supposed that a change in the state of dispersion of protoplasmic colloids is thus induced.

In the third lecture the discussion of anaphylaxis is continued and it is explained as a specialized phase in the development of the immunity necessary to a species to prevent the permanent incorporation into its cells of the protein of another species: and it is pointed out that the dangers of the anaphylactoid state are largely induced by the purely artificial conditions of hypodermic injection, whereby a foreign protein is introduced into the circulation with a rapidity not achieved by any natural method of absorption. Whereas the same fats and carbohydrates are found in many different species, the distinction of species depends on a difference in their proteins. These proteins may, in some instances, be distinguished by their chemical or physical properties; but, on the other hand, corresponding proteins from species not too widely separated may be identical, except in their immunity reactions. Possibly the difference may depend on the order of arrangement of the amino-acids into the intricate pattern of the molecule; and Dr. Dale's investigations on the anaphylactic reactions of certain proteins, in conjunction with Dr. H. D. Dakin's examination of their molecules as to the structural arrangement of the amino-acids, justify the hope that it will eventually be possible to state antigenic specificity in terms of structural chemistry. This difficult problem of "chemical structure and physiological action" is further discussed, with illustrations from the action of certain alkaloids and organic bases, especially epinephrin.

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THE SERO-THERAPY OF TUBERCULOSIS.

IN two recent communications to the French Academy of Medicine[1] a new intensive method of preparing therapeutic serum was described. In the first communication J. W. Howard of Buenos Aires describes the procedure whereby he prepared serum against the typhoid bacillus, and in a later paper the same author, in conjunction with S. Rano,[2] gives details of the application of the same process for a similar purpose in the case of the tubercle bacillus. Briefly the method consists in administering a living culture in gradually increasing doses intravenously to a horse, and in injecting from time to time the fresh serum of another species of animal in order to promote bacteriolysis. So far there is little new in the method; its novel feature is the transference of the serum of the first immunized animal to a second, which is then prepared against the living micro-organism in the same way. The serum of the second horse is next transferred to a third, the immunization continued, and so on. It is stated that by this procedure Howard succeeded in obtaining a therapeutic serum that possesses strongly bacteriolytic, agglutinating and precipitating properties both *in vivo* and *in vitro*, and that it proved to have well-marked curative properties when administered to typhoid patients. Chief interest, however, attaches to the last communication, where Howard and Rano describe the therapeutic results obtained with a serum prepared on these lines against the tubercle bacillus. After sounding a note of caution, so necessary in speaking of therapeutic results obtained in tuberculosis, they state that experience of the application of this serum to over 200 cases suffering from different forms of tubercle enables them to speak strongly of its efficacy. As an example of its therapeutic potency, they mention that three cases of tuberculous meningitis recovered when treated intrathecally with the serum. In spite of this encouraging result they consider that further progress will require prolonged experimentation. The clinical observations were carried out at the Velez Sarsfield Hospital at Buenos Aires. Further particulars of this promising development of sero-therapy will be awaited with interest.

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[1] *Bull. Johns Hopkins Hosp.*, 1920, vol. 31, [illegible] and [illegible], 380.

[1] Howard, J. W.: *Bulletin de l'Académie de Médecine*, vol. 84, No. 32, October 19th, 1920, p. 147.
[2] Howard, J. W., and Rano, S.: Ibid., October 26th, 192[illegible], p. 163.

HEALTH OF THE NAVY.

The statistical report of the health of the Royal Navy for the year 1914,[1] necessarily delayed by the war, is now issued under date of January 1st, 1920. The chief point of general interest is naturally the influence exerted by the war. The total force, corrected for time, in 1914 was 158,300, and the total number of cases of disease and injury entered on the sick list was 93,041, which gives a ratio of 587.75 per 1,000, a decrease of 52.4 as compared with the ratio for the preceding five years. The average number of sick daily was 3,215, giving a ratio of 20.3 per 1,000, a decrease of 5.7 in comparison with the previous five years; and the average loss of service for each person was 7.4 days, a decrease of 2.08, as compared with the average for the preceding five years. The number of final invalidings also showed a fall. These satisfactory figures are probably connected with the stimulating effect of war and the resulting reluctance of men to report sick. On the other hand, the total number of deaths was 5,995, giving a ratio of 37.87 per 1,000, an increase of 34.66 in comparison with the average ratio for the previous five years. Of this number, 407, or 2.57 per 1,000, were from disease, and 5,588, or 35.3 per 1,000, from injury, including casualties in action. The table of the killed and wounded in action in the service afloat shows that 4,362 were killed or drowned, the large majority being due to drowning when ships were sunk by mines or by the enemy, but the number due to this cause alone without any additional injury cannot be stated. There were 39 deaths from wounds, and in addition 167 cases classed as severely wounded and 368 as not severely wounded. There is an interesting table with 97 items showing the ships, places, and dates of casualties in action, beginning with H.M.S. *Amphion*, sunk by a mine in the North Sea on August 6th with 185 casualties (147 killed), and ending on December 31st, when a boat action against the *Königsberg* in Rufigi River cost H.M.S. *Dartmouth* one casualty from a bullet. The loss of H.M.S. *Good Hope* and *Monmouth* on November 1st, in the action off Coronel, Chile, was responsible for the loss of 1,655 lives, but Admiral Sturdee's victory at the Falkland Islands was attended by only 27 British casualties (3 being fatal). Of the general diseases, Mediterranean fever, once an important disease, was recorded in 8 instances, or 0.05 per 1,000, as compared with 0.06, the average for the previous five years. There were 18 cases of cerebro-spinal fever, 13 from home dépôts and 5 from the Grand Fleet. Tuberculosis was recorded in 336 cases, 289 being pulmonary, with 269 final invalidings and 42 deaths. The total number of venereal disease cases was 11,575, and showed a substantial decrease of 36.8 in the case ratio as compared with the average for the preceding five years; the highest case ratio per 1,000—namely, 138.5—was given by the China station, and the lowest (47.5) by the Cape of Good Hope. The health reports of the various stations are summarized separately. In the Grand Fleet, which consisted of 239 vessels and had a mean force, corrected for time, of 88,240, the returns in general were very satisfactory; the incidence of infectious diseases was very low, and there were well-marked reductions in the case ratios of influenza, venereal disease, parasitic and skin affections, and local injuries. In view of the severe war strain it is remarkable that the case ratio of nervous diseases has gone up no more than 1.8, and that the cases of neurasthenia amount to only 256, with 85 invalidings.

CHAIR OF TUBERCULOSIS IN WALES.

As was mentioned last week, Major David Davies, M.P., founder of the Welsh National Memorial Association for the Prevention of Tuberculosis, has, acting with his two sisters, given the sum of £12,500 to found a chair of tuberculosis in the Welsh National Medical School, University College, Cardiff. The desire is to link up the medical work of the Memorial Association with the Welsh National Medical School, and it was therefore arranged that the professor appointed should also be medical director of the Memorial Association. Colonel S. Lyle Cummins, C.B., C.M.G., Professor of Pathology at the Royal Army Medical College, was on November 12th elected to the dual office. While serving in Egypt in 1907 he was concerned in plans for the prevention of tuberculosis among the Sudanese battalions, which suffered severely from the disease. Afterwards he was assistant professor of pathology at the Royal Army Medical College, and was engaged in superintending the manufacture of typhoid vaccine. At the outbreak of war he went to France as medical officer in charge of General Head Quarters, and shortly afterwards was appointed D.A.D.M.S. In March, 1915, he was placed in charge of antigas defence, and during the next two years, through the combined labours of many workers, British troops were provided with appliances and a system for gas protection which was approved and imitated by other armies. Colonel Cummins then went to Italy as A.D.M.S., and in 1918 was appointed adviser in pathology at British Head Quarters in France. In that capacity he came into close association with the American Red Cross Research Committee; later he was appointed a member of the General Council of the League of Red Cross Societies. Last year he resumed his duties as Professor of Pathology, R.A.M. College, an office to which he had been appointed in 1914. We believe that this is the second chair of tuberculosis instituted in Great Britain, the other being that held by Sir Robert Philip in the University of Edinburgh.

SURGICAL TREATMENT OF ANGINA PECTORIS.

Jonnesco,[1] who first introduced resection of the cervical sympathetic system in 1896, was able, in 1906, to report to the German Congress of Surgery 159 operations, all but two bilateral, without a death and without secondary trophic troubles. They were performed for glaucoma, for exophthalmic goitre, and for epilepsy; a few have been done for neuralgia and migraine. Jonnesco claims complete success in exophthalmic goitre, and a high proportion of relief in glaucoma, but admits very doubtful results in epilepsy. It is probably fair to say that surgeons generally have not looked favourably upon the operation, which, though described by the originator as "delicate but in no way difficult," has serious technical drawbacks for less skilled hands. It is significant, too, that though François Frank suggested as far back as 1898 the possibility of sympathectomy as a treatment for angina pectoris, Jonnesco could not find any one of his medical colleagues to send him a case until 1916. In April of that year a man of 38, employed in a church choir and as a law court official, syphilitic and alcoholic, was admitted to his clinic after having had four severe attacks of angina. A further attack was observed whilst in hospital; the symptoms were precordial pain, agonizing constriction of the chest, and severe neuralgic pain radiating down the left upper limb. The pulse was small and infrequent (48 to 52); the heart was enlarged and the aorta also. At the operation the middle cervical ganglion, the sympathetic trunk, the plexuses about the inferior thyroid and vertebral arteries, the inferior cervical and first thoracic ganglia of the left side, were removed. The immediate results were those usually observed, but the striking feature is that the patient had no attack of angina during the subsequent four years. Although the Wassermann reaction was positive, and the patient remained two months in hospital, Jonnesco in his report does not mention any treatment by salvarsan. Contrary to his usual custom, Jonnesco was forced—in this case by the patient's refusal of further operation—to confine himself to a unilateral excision, and confesses to some surprise at the completeness and permanence of the relief. Granted that the phenomena of angina are due, as he alleges, to irritation of the terminal filaments of the nerves of the sympathetic plexus in the walls of the chronically inflamed aorta, it would seem necessary for cure, as he had himself supposed, that every path of transmission to the cord and bulb, the dorsal communication of the first thoracic ganglion, the vertebral plexus and the sympathetic trunk should all be cut off; yet in this instance, where, it is true, the precordial pain and brachial neuralgia were definitely left-sided, cure resulted from simple ablation of the paths on that side. Angina is so terrible a disorder, one in which the sufferer may naturally be supposed ready to accept any treatment, however drastic, that promises relief, that Jonnesco's initiative will be watched with attention, but surgeons in general have shown no disposition hitherto to adopt the procedure for any less urgent reason.

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[1] *Statistical Report of the Health of the Navy for the Year 1914.* Published by His Majesty's Stationery Office, pp 169. 1920. Price 1s. 6d.

[1] *Bulletin de l'Académie de Médecine*, 3e série, [illegible] No. 30, p. 95 et seq.

CONGRESS OF UNIVERSITIES.

The first Congress of Universities of the Empire was held in London in 1912, when all the universities, to the number of fifty-three, were represented, in most cases by their executive heads together with several members of their professoriate. The Universities Bureau was an outcome of this congress, to it was entrusted the summoning of future congresses at intervals of five years. In 1917 this intention was frustrated by the war, and transport difficulties rendered it inadvisable to attempt to carry it into effect during the present year. It has now been arranged that the second congress shall be held next summer. Dr. Alex Hill, who took over the organization of the first congress after the death of Dr. R. D. Roberts, who had laid its foundations, and has from the beginning acted as secretary to the Bureau, is engaged in its promotion. The number of universities in the British Empire has now increased to forty-eight, and all, it is anticipated, will make a point of sending delegates. With great generosity the University of Oxford has invited all members of the congress to be its guests from July 5th to July 9th. The Chancellor of the University, Lord Curzon, will preside over the opening session on July 5th, and Mr. A. J. Balfour, Chancellor of the University of Cambridge, will preside in the afternoon. On the preceding day the congress will assemble in London for certain ceremonial functions and entertainments, of which the programme will be announced at a later date.

ANTIVIVISECTION IN AMERICA.

In California a bill for the prohibition of all experiments on animals is being submitted this month to the popular vote. It is opposed by the authorities of the California University and of Stanford University, and by all who fully understand the benefits to farming and stock breeding which have come from experiments on animals. Thus there is a fair hope that this iniquitous and cruel measure will be rejected. Still, it is widely supported. A correspondent in California, a member of the Research Defence Society, writes that "the public has been quite bamboozled with lies. Back of the anti-movement here stands the great Christian Scientist Church—rich, powerful, fanatical. You have no idea of the power they can exert in this State whenever they are impelled; and, naturally, their influence is always thrown against ideas involving the recognition of the bacteriological origin of disease. Then we have a large class of vegetarians, osteopaths, chiropractors, drugless healers, theosophists, spiritualists, prohibitionists, standing back of the Christian Scientists. I doubt if in any community in the civilized world would an antivivisection bill have a stronger following than in California; and I say this admitting that from a certain standpoint the general intelligence and cultivation is exceptionally high. It is, however, merely a high degree of fuddled mediocrity. No low spots, no high spots." It would be hard to put things better than that. We over here are more fortunate. Our profession and our newspapers are not held back by any fear of "Christian Science" from saying what they think about real science. We are happily free from osteopathy and chiro-practice; indeed, we hardly know the meaning of these words. Still, we must not be too proud of ourselves. We are the servants of the public, and we must not neglect the plain duty laid upon us to educate our masters.

AEROPHAGY.

Dr. G. Leven's monograph on Aerophagy,[1] which was ready for press in 1914, contains much new information based on x-ray observations begun in 1902. Air swallowing, of which the patient is often unconscious, is a frequent, and often undetected, factor in dyspepsia; in fact, flatulent dyspepsia, so commonly regarded as due to fermentation, is mainly indigestion complicated by aerophagy, and for its cure demands treatment for air swallowing. The reason why aerophagy, which is so protean in its clinical manifestations, is so commonly overlooked and its nature and mechanism misunderstood, is that x-ray examinations are necessary for its correct interpretation, and accordingly the author's extensive employment of this diagnostic method makes this comparatively small volume of great value. Though the first to be described, nervous aerophagy is the rarest of all the forms, a definite cause being often overlooked in cases so reported. The responsible factor may be extra-gastric, such as adenoids and nasopharyngeal catarrh, or gastric—for example, gastroptosis may irritate the solar plexus and so set up deglutition movements. Increased salivation, of course, plays a very important part in air swallowing, and its frequency is associated with one of the minor signs of the condition, namely, the bright red and moist tongue. Aerophagy may be silent when the cardiac orifice of the stomach is relaxed, or partial and noisy when the cardia is spasmodically closed; the noisy movements of air, which the patient erroneously regards as eructations, might well be called [illegible], for x-ray examination proves that air is being swallowed when the false eructations are taking place. The stomach may be large, and the author points out that the splash usually regarded as evidence of dilatation is much more characteristic of aerophagy. But the more important gastric condition is a small spasmodically contracted stomach which can be recognized only by skiagraphy. Air swallowers may have an hour-glass stomach due, not to any organic change, but to pressure exerted by the dilated splenic flexure of the colon, and such stomachs may be much contracted and contain air at high pressure. The intestinal manifestations are fully as important as the more familiar gastric symptoms: spasm at the splenic and hepatic flexures of the colon may simulate renal, biliary, or appendicular colic. The circulatory symptoms include dyspnoea, anginoid seizures, acute cardiac dilatation, high blood pressure, palpitation, and syncope. The treatment varies with the etiology; for the tic of air swallowing various mechanical methods, such as a nasal clip, are suitable; for diaphragmatic insufficiency breathing exercises should be prescribed; and for the causal dyspepsia, diet with bismuth carbonate and sodium bromide (30 grains daily), to relieve spasm due to irritation of the solar plexus, should be employed. Antiseptics, such as naphthaline, and charcoal are useless. For acute and dangerous aerophagy, such as post-operative dilatation of the stomach, the gastric catheter should be passed and very hot baths given. Finally, this useful book provides a chapter on the air swallowing of infants.

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[1] *L'Aérophagie.* Par le Dr. G. Leven. Paris: Librairie Octave Doin. 1920. (Pp. 310, [illegible].)

LEPROSY IN NORWAY.

At a meeting of the Norwegian Medical Association in August, 1920, Lie[1] referred to the familiar prophecy that leprosy would be completely stamped out in Norway by 1920. In 1856 there were about 3,000 cases. After 1870 there was a rapid fall, so that by 1880 there were only 1,804 lepers left. By 1900 this number had dwindled to 577, and by the end of 1919 to 180. But after the autumn of 1918—that is, within a period of less than two years—15 new cases were notified. Only one of these was of recent origin; the rest were advanced cases which had lasted for years. Giving details of several of these cases, Lie pointed out how the patients had led more or less vagrant lives, circulating among their fellow-beings with the unobtrusive facility of coin of the realm. Most of them had more than a shrewd suspicion of the nature of their disease, but though they had gone from doctor to doctor, and one had even consulted a specialist in diseases of the nose and throat, the leprous character of the disease had been overlooked. Syphilis was the disease usually diagnosed in these cases, and this mistake was the more pardonable as Wassermann's reaction is usually positive in the nodular form of leprosy. Failure to establish the diagnosis was in some cases due to ignorance of the fact that rhinitis, usually associated with epistaxis, may be the first and only clinically demonstrable sign of leprosy. Another factor conducive to diagnostic errors is the length of the period between infection and outbreak of the disease. Thus in one case—that of a woman aged 74—the disease did not break out till twenty-seven years after her leprous sister had left home. In another case there was a period of fifty-five years between the patient's last known exposure to infection and the outbreak of his disease; but infection may yet have occurred in the interval, for official investigations do not always reveal every "contact." The long latent period of the disease and its difficulty of recognition in certain cases have combined, Lie thinks, to stultify the prophecy that the disease would be stamped out in 1920. The remedy suggested is to familiarize the younger members of the medical profession with the clinical manifestations of early leprosy.

THE STEVENS CASE.

Many members of the medical profession have recently received from Mr. Charles H. Stevens a copy of a pamphlet purporting to set forth the medical evidence in the case of Stevens *v.* the British Medical Association. The pamphlet only contains the evidence of certain of Mr. Stevens's witnesses given at the first trial, which commenced on October 23rd, 1912. On comparing the pamphlet with the shorthand writer's transcript of the actual evidence given in the case, it would appear that certain portions of the evidence which might be considered in any way to question the merits of his so-called cure for consumption have not been inserted in the pamphlet. We have found no mention of the fact that in this first trial the jury disagreed, and that in the second trial, which began on July 15th, 1914, a verdict was returned in favour of the British Medical Association. We find on inquiry that the pamphlet has been in circulation since June, 1916.

At a meeting on November 10th of the Executive Committee to promote a memorial to the late Sir Victor Horsley, it was decided at once to issue, as widely as possible, an appeal for a fund for a research scholarship or lectureship.

Medical Notes in Parliament.

The Ministry of Health Bill.

Probable Abandonment of Financial Clauses.

For all Government measures which may involve money charges it is necessary after a second reading of a bill to pass in Committee a financial resolution which thus buttresses the bill. The financial resolution for the Ministry of Health (Miscellaneous Provisions) Bill came before the House of Commons on November 15th. It was not then possible either for the supporters or opponents of the various provisions to discuss them again at that stage, but in view of the hostility shown by a considerable group on the second reading, Dr. Addison made an important statement as to the willingness of the Government to curtail the proposal.

Before Dr. Addison spoke, Mr. Bonar Law announced that any amendments that might be made by the Standing Committee to which the bill had been referred, would be accepted by the Government if these changes did not affect vital points. He referred also to the fact that the Government intended to appoint a Select Committee to see what control Parliament could exercise over expenditure falling on the rates through legislation. These assurances, however, did not satisfy the critics, and thus it was that Dr. Addison, when pressed for further information as to the Government policy in regard to this bill, said that the Government would be willing to give up in Standing Committee all the clauses which could possibly raise the rates except Clause 11, which relates to hospitals. He enumerated fourteen clauses (out of the twenty-six which constitute the bill) that came within the financial definition and would, if it were wished, be dropped. He discriminated between those that could be omitted without trouble, inasmuch as such proposals could come up in different form in another session, and those which could be cut out regretfully in deference to such wish as might be expressed by a majority in Grand Committee. He made quite clear that Clause 10, dealing with homes for incipient mental disorder, and Clause 11, would be pressed forward. But as the bill may, under the intimation given, be relieved of more than half its provisions, and these the most controversial, there is good prospect that it will be returned from Standing Committee to the House of Commons in time for passage through Parliament this session. In justice to Dr. Addison, Mr. Bonar Law said that the bill was drafted and presented to the Cabinet and accepted by them before the summer recess, and therefore it was not the fault of the Minister of Health that it was submitted to the House of Commons with such a weight of matters so inconveniently near the end of the session.

The Standing Committee (or "Grand Committee") to which the bill has been referred included Dr. Farquharson and Dr. Murray; the names of Dr. Raw, Dr. Fremantle, and Dr. Molson have been added for the purpose of considering this measure.

In the second reading debate, on November 9th, Dr. Fremantle, speaking on behalf of the London County Council, reviewed most of the clauses in the measure. His references to Clauses 10 and 11 were necessarily brief, but he took care to give support to Clause 10, subject to safeguards. He indicated the feeling that the provision should be sparingly used so as not to interfere with work already in progress; that it should, in fact, be regarded only as a small contribution to the solution of the problem of dealing with the cases of mental deficiency and disorder in their early stage. As for the danger of abuse, he thought that perhaps one of the best safeguards would be that the Minister of Health, in appointing inspectors to visit the homes, should appoint them from the county medical officers, or the county medical staff, who were themselves concerned with the local conditions. In regard to this clause and Clause 11, the Finance Committee of the London County Council asked that, if there were to be contributions from the rates, there should be an equivalent grant from the Treasury.

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[1] *Tidsskrift for Den Norske Laegeforening*, October 15th, 1920.

The Patent Medicines Bill.

Although the hope of passing the Patent Medicines Bill through Parliament this session has not been abandoned, there is considerable doubt whether there will be sufficient time for it to be proceeded with. On the summer adjournment it was left for report in the House of Lords, where some small amendments have to be introduced in the measure in accordance with Government pledges. The intention was to introduce the bill in the House of Commons last month; but more urgent proposals have prevented this being done, and the programme of the Commons for the rest of the session is heavy. This bill can hardly escape opposition from powerful interests in the background, and there may be difficulty in getting the necessary opportunity for its discussion in all stages. If this cannot be allocated it may be dropped, and reintroduced next session.

The Tuberculosis Bill.

Dr. Addison on November 16th, stated that during this session part only of the Tuberculosis Bill would be proceeded with. The part to be taken would be that which was essential to be carried in consequence of the provisions of the National Insurance Act (which was passed last May) in order to continue the existing provisions from January 1st next.

Regular Army Medical Corps Officers.—Captain Elliot asked, on November 9th, whether several regular Army Medical Service officers with distinguished war records had recently been placed on half pay against their desires; if junior ranks were meantime forbidden to resign their commission on account of the shortage of medical officers; and if one officer who was [illegible] for [illegible] in the field, and received the D.S.O., the C.M.G., the C.B. and the French Croix de Guerre [illegible] had been placed on half pay six years before the age limit for his rank. Sir A. Williamson replied [illegible] had been [illegible]. The number of colonels in the Army Medical Service was largely in excess of the establishment, whereas among the junior ranks there had been a [illegible] owing to the number of temporary officers demobilized [illegible] for service overseas. Until recently [illegible] impossible to permit the retirements of such officers, but this was no longer the case.

Medical Record Cards.—Brigadier-General Colvin asked, on November [illegible], the cost involved in preparing, printing, and [illegible] to Insurance Committees the new medical record cards to be kept by insurance practitioners after January 1st, 1921, the estimated expenditure of Insurance Committees for writing [illegible] and supplying the cards to the practitioners; and the estimated annual expenditure of carrying out the [illegible] in the transference of record cards in the case of persons removing from one district to another. Dr. Addison replied that the estimated initial outlay for England and Wales on the new permanent medical record was, under the first part of the question, £8,000, and under the second £[illegible]. It was not possible to give a reliable estimate of the annual cost of transference of the record cards, but it should [illegible] the actual expenditure on the old [illegible] cards, both of which would be replaced by the new permanent record card.

Divisional Medical Officers.—The four divisional medical officers appointed in connexion with the medical insurance services are as follows: Dr. A. [illegible], North-Western Division; Dr. C. H. Milburn, O.B.E., North-Eastern Division; Dr. H. [illegible], C.B.E., [illegible] Division; and Dr. R. [illegible], [illegible] Eastern Division. The rate of inclusive salary [illegible] £1,600 a year.

The University of London and the [illegible] Site.—Replying to a question by Sir W. Davison, on November 17th, Mr. Fisher said that so far as he was aware no agreement had been entered into by the Government of which Lord Haldane was a member, [illegible] on behalf of that Government for the [illegible] site [illegible] offered to the University of London. The action of the present Government was in no way determined by anything which took place in 1911 or 1912. Sir W. Davison asked if Mr. Fisher was aware that Lord Haldane, in making the [illegible] was acting with the [illegible] of the Prime Minister. Mr. Fisher replied that he was [illegible] of that.

[illegible] of London [illegible].—Sir W. Davison asked, on November [illegible], [illegible] and the Minister of Education some time ago were informed by the Government spokesman that universities throughout the country were expanding beyond their means, and had been more anxious to extend their buildings than to pay adequately their existing staffs, whose salaries were much too low; and whether in the circumstances the Minister of Education would restrain from exerting further pressure on the University of London to issue an appeal for funds for the erection of new buildings, until such time as provision had been made for the payment of adequate salaries to its teachers. Mr. Herbert Lewis replied that the deputation was warned against the danger of attempting extensions into new fields of work unwarranted by their financial position. The question of new buildings for London University was, however, one of providing adequate accommodation for the existing activities of the university, and the Government did not consider that delay would be in the best interests of the university. The Minister had no evidence that the university was neglecting the important question of the adequate remuneration of teachers in its employ.

Maternity and Child Welfare.—Dr. Addison states that the following local authorities have made arrangements under Section 1 of the Maternity and Child Welfare Act, 1918: (a) All the 29 metropolitan borough councils (including the Common Council of the City of London); (b) all the 82 county borough councils in England and Wales; (c) all the 62 county councils in England and Wales, except the London County Council, which has no powers under the section, and the Glamorganshire County Council; (d) the councils of 306 of the 1,703 sanitary districts for England and Wales, including most of the larger non-county boroughs and urban districts. Of the remaining 1,397 sanitary districts, 1,390 are included in county councils' schemes, and are covered by arrangements made under such schemes. The seven districts in which no arrangements have been or are being made are small urban and rural districts.

The Registration of Chemists and Druggists.—Mr. Crooks asked, on November 11th, whether a by-law made by the Council of the Pharmaceutical Society and approved by the Privy Council in February, 1920, deprived all persons holding the assistant's certificate of the Society of Apothecaries who had served with the forces during the late war from being registered as chemists and druggists and restricted registration to persons who had been continuously employed in a strictly limited number of institutions and so deprived many fully qualified persons from registration contrary to the express intention of the Act of 1908. Mr. Crooks further asked for amendment of the by-law so as to allow of registration of all the assistants of the Society of Apothecaries who held certificates at the time of the passing of the Poisons and Pharmacy Act, 1908, provided they had been engaged in dispensing for a reasonable time, not necessarily continuous, since 1908, so as to admit of the registration of ex-service men. Mr. Balfour replied that the by-law aimed at meeting an old complaint of the certified assistants to apothecaries against the Pharmaceutical Society and was accepted as a fair compromise by the Society and the Association of Certified Assistants. There was no power to induce the society to go further on the road of concession.

Ex-service Men in Lunatic Asylums.—In reply to Mr. Swan, Dr. Addison, on November 15th, repudiated the suggestion that discharged soldiers and sailors, suffering only from temporary loss of memory, attributable to the war, were detained in lunatic asylums. He said there were, of course, many ex-service men, suffering from various forms of certifiable insanity, in which loss or impairment of memory might form one of the symptoms. Such men were kept as private patients under satisfactory conditions. To remove them to separate homes or institutions would be neither economical nor in the interests of the patients themselves.

The Casualties in Mesopotamia.—On inquiry by Mr. Kenyon, Mr. Churchill has given the following figures of the approximate number of casualties in Mesopotamia from the date of the armistice with Turkey, October 31st, 1918, to October 31st, 1920:

	British (including Officers with Indian Units).		Indian Natives.		Total.	
	Officers	Other Ranks	Officers	Other Ranks	Officers	Other Ranks
Killed in action and died from wounds	[illegible]	10	17	806	60	816
Wounded	18	8	47	2,325	[illegible]	[illegible]
Missing (including prisoners)	[illegible]	[illegible]	3	456	8	[illegible]
Total	[illegible]	[illegible]	67	[illegible]	[illegible]	[illegible]

Of this number [illegible] British and 91 Indian native prisoners have since been released.

A White Paper has recently been issued fully explaining the provisions of the Tuberculosis Bill, and giving an estimate of the additional charge upon rates and taxes consequent upon the bill.

Regulations to determine the standard for condensed milks are now in an advanced stage, and will shortly be issued.

THE CONDITIONS OF MEDICAL RESEARCH.

Address by Sir Almroth Wright.

At a meeting of the Royal Society of Medicine on Armistice Day Sir Almroth Wright, the first recipient of the Society's gold medal, gave an address on medical research.

Sir John Bland Sutton, who presided, said that a Fellow of the Society had furnished funds to enable a gold medal to be awarded triennially. The President was charged with the selection of a committee, who should choose three names for submission to the Council, with whom the final decision rested. The donor desired that at any rate the first medal should be awarded for work which had proved to be of service in the war, and Sir Almroth Wright's bacteriological researches amply fulfilled this condition, for they had been the means of securing immunity from typhoid fever.

Sir Almroth Wright said that his emotions would not permit him to express his gratitude, but one subsidiary reason for which he valued the medal was because it enabled him to give an address, and perhaps, such was the effect of honours, to reach an audience larger than the one actually in the room. If he ventured to say some disagreeable things, it was not by intentional offence, but every reformer was certain to meet with such necessity. He wished to consider the kind of knowledge required to improve prophylaxis and treatment.

Science consisted in the first place of descriptive detail. To name a muscle and say that it had a particular insertion, to say that a microbe had certain properties, or that certain manifestations followed each other in the course of a disease was all descriptive detail, and such description might be either narrative or attributive. The next step in science was generalization. In a particular group of people the observer might discover, among many points of difference, certain common characteristics, and might found a generalization upon that agreement. This was a descriptive generalization from a large quantity of detail. But there was another kind of generalization. The patient might inform his doctor that a certain thing had happened to him, and then something else, and so on—a story in itself not of much value, but enabling the doctor to predict that this syndrome of events always produced a further event or consequence, and this was a genetic generalization.

Generalizations the Aim of Research.

Most people quickly tired of descriptive detail. Every time a man was confronted with any considerable amount of detail his natural inquiry was as to the result or object of this collection. The thing which was wanted was generalization. It was impossible to do without a great number of details, but a great number of others were of no service whatever. Descriptive details were very easily obtained; they belonged to the lowest plane of science. Those whom he was addressing would not care to see people decorated or gaining admission to learned societies because they had accumulated a great mass of detail on some minute subject. Nevertheless, there were people who piqued themselves on their acquisition of detail. They said that generalizations were open to doubt, whereas details were ascertained facts; there was a good deal to be said for that contention. The details were probably mostly facts, and the generalizations might be erroneous, so that this point must be conceded to the lovers of detail.

Generalizations, however, must be the objective of research. It was when we got hold of descriptive generalizations that we became more or less educated people; but if we wanted to go on to something practical, the genetic generalization must be sought, or, in other words, the causes and consequence. What was commonly called "cause" was not singular but plural. The idea of a single cause for anything came down from the cave man and the savage. But the patient believed that there was one particular cause for his condition, and he could not be got to eliminate the word "cause" from his vocabulary any more than the corresponding word "cure." The tubercle bacillus was commonly regarded as the cause of tubercle, yet those whom he was addressing well knew that it would require much more than the tubercle bacillus to make them tuberculous subjects. It was quite erroneous to suppose that causation had been solved when one factor had been admitted. The question of cause and effect he had tried to settle by defining a genetic generalization as that complex or syndrome of events which produced another definite effect. It was very important, fundamental indeed, to get a definition of genetic generalization.

The next problem was, supposing genetic generalizations to be useful, how should they be made? Details of observation were within everybody's power to collect. A thousand men could go to work and get as many details as could possibly be wanted. The medical journals were full of such descriptive detail, much of it merely narrative and not attributive. On the other hand, there were very few new generalizations forthcoming. Generalizations were things of slow growth and were produced only by a superior class of intellect. If it was a question of finding a new disease, or, as it was in Jenner's day, of distinguishing between typhus and typhoid fever, an intellect of the Jenner kind was needed to make the generalization. To make a new generalization was a great feat. The man who could make careful generalizations had the same gift of mind as one who could diagnose. Only very great study and knowledge and insight would make it possible for a man to arrive at a good guess as to what genetic factor was connected with the particular disease resulting.

Verification by Experiment.

Having made the generalizations, the next thing was to verify them. He believed that four generalizations out of five which men made were wrong, and that nine generalizations out of ten which women made were wrong. The scientific worker was a man of imagination who afterwards knew how to verify. The affirmation that a certain thing was a cause of another required the test of experiment. It was of no use to say that this or that was a cause—or, what came to the same thing, that this or that was a remedial agent—unless experiments were made to verify such conclusions. The object of medical research was to get generalizations, if possible; but they could not be commanded, whereas verification or non-verification by experiment could be commanded. Every generalization was of slow growth; the work on some common generalizations was by no means yet complete. We did not yet know what was the cause of consumption; we had only an incipient genetic generalization in that case. Research had to occupy itself with the verification of generalizations for the purpose of prophylaxis and treatment. Experiment was the natural machinery by which this was done, although many experiments were futile and led to no result. Every man thought he could make and test a generalization. Take a perfect outsider, a layman—whom some would call a quack, but the speaker would abstain from opprobrious terms—who wanted by experiment to decide whether a particular remedy did good. This investigator proceeded by getting a number of cases together which he thought were all alike, intending to test the effect of a certain nostrum on cancer. But apart from other things which vitiated his experiments, they were invalidated at the start by the fact that among the cases he included as cancer were some which were not cancer at all. All experiments made by laymen on the efficacy of remedies or the truth of causation might be left out of account.

But what of experiments made by ordinary clinicians? The speaker instanced deductions arrived at from a large number of gas-poisoning cases at the front; the gas-poisoning cases were regarded as forming a single group, but they did not fall into one group at all, some men dying from central nervous system poisoning, others from acute inflammation of the lungs. Ordinary experiments done by clinicians in order to find out whether certain things were useful were not conducive to clear results. It was never known in such experiments how far one factor might be playing off against another. Then there was the statistician, who claimed from the outside to be able to correct the deductions of others. The statistician was incompetent to say whether a given group was quite homogeneous. His results also were tabulated in rough categories; only death on the one side and life on the other were taken into consideration. Further, a general doctor who had made a judgement, for instance, on the basis of experiment on a particular remedy, was, as a rule, extremely modest about it, knowing how open it was to error; but the statistician was inclined to speak pontifically about his results, and declare that they could not be questioned. Any method of verification which could not be repeated by the next man was a bad method, and the statistical method could not be repeated by others except at great labour and expense.

Sir Almroth Wright concluded that the scientist in a laboratory was in a better position than anyone else to determine the results of any method. If a hospital had not laboratory men at its command, it had no means of direct testing, and this was a serious matter, because it meant that medicine could make no progress. He pleaded for the institution of research in connexion with hospitals by a staff trained in methods of discovering immediate effects, not a staff of clinical men who were available for administering treatment. The business of the research staff would be to test new things, to make generalizations for themselves and verify those put forward by others.

To sum up: A layman could not do medical research; his lack of knowledge prevented him from proper experimentation. A man who had taken his medical degree authorizing him to practise was excluded by the fact that he had not received a laboratory training. Laboratory training should be given with a special view to research work. Scholarships should be devoted to this purpose, and the men who were trained in research and were found fit for it should have permanent posts and an increasing salary as in other walks of life. A good deal of research work could only be done in connexion with hospitals; little could be done in detached laboratories on account of paucity of ideas, but the hospital provided new material and problems. A staff of scientific workers in hospitals was an urgent requirement; without it little advance could be made, because there could be no adequate testing of results, and the men engaged in laboratory work should have their share in the direction of policy.

At the conclusion of the address a vote of thanks was accorded, on the proposition of Sir ALFRED KEOGH, seconded by Sir HUMPHRY ROLLESTON, both of whom bore testimony to the debt owed by medical science to Sir Almroth Wright's researches.

INTERNATIONAL HEALTH CONFERENCE AND VENEREAL DISEASE.

THE Ministry of Health has issued the following statement, dated November 10th, 1920:

The Office International d'Hygiène Publique has within the last ten days concluded its autumn session, and the conferences, which extended over a period of ten days, were of exceptional interest and importance. Among the several subjects connected with public health that were discussed, the question of venereal disease amongst merchant seamen occupied a prominent place, and considerable time was devoted to a problem that not only concerns the seaman himself, but closely affects the population of maritime and river ports in all countries. As is now well known, an active campaign has been instituted by the Ministry of Health in this country by the establishment by local authorities of treatment centres for venereal diseases in all populous districts, and similar steps have been taken by many health authorities abroad. But the value of such treatment depends to an extent not generally understood on its systematic continuance, in some cases for many months, and the merchant seaman, by the conditions of his employment, is frequently prevented from obtaining it. His long absences at sea render him peculiarly liable to contract these diseases on his occasional visits ashore and to become a means of spreading them at other ports and on his return home. The Office International considered that the matter was of such importance that it was not only advisable but urgently necessary that a regular system should be established by international agreement to provide the means by which merchant seamen might obtain continuous treatment for venereal disease at all ports, and they have prepared a draft international arrangement on the subject for submission to the different Governments and to the League of Nations. As the members of the Committee of the Office International are experts officially appointed by the Governments of the countries they represent, any recommendations they put forward must of necessity carry great weight.

The proposed international agreement would provide for the establishment of special centres in the chief sea and river ports of all countries at which merchant seamen, irrespective of nationality, could obtain free and skilled treatment for venereal diseases. By means of special confidential forms containing medical notes of diagnosis and treatment to be supplied to the seamen, the doctor at the next port of call would be enabled to continue the treatment with an accurate knowledge of the history of his patient and of the steps that had previously been taken to deal with the case. The seaman would also be provided without cost with such drugs or dressings as may be necessary for him during the voyage from port to port; and in order to bring the existence of these free treatment centres to the knowledge of the seamen, and to induce them to take advantage of them, a duty would be laid on ship-masters and port health authorities to inform the crews of all vessels entering a port of the situation of these centres and the hours of consultation.

Many other questions of great social as well as medical importance were discussed at the recent conferences, including the international aspect of industrial tuberculosis and the hygiene of ships' crews. Considerable time was also devoted to consideration of the revision of the International Sanitary Convention of 1912. The British delegates put forward a series of important proposals to bring international measures for the prevention of the spread of infectious diseases into accord with recent scientific knowledge and with the new conditions of administration which have arisen since the war. The proceedings were of special interest in view of changes that may shortly be brought about in the constitution of the Committee of the Office International d'Hygiène Publique. This office was established in 1907 by an international agreement, to which nearly forty different countries are parties, and at the session just concluded thirty States were represented, the British delegates being Dr. G. S. Buchanan (Great Britain), Sir Havelock Charles (India), Dr. A. Granville (Egypt), Dr. Perrin Norris (Australia), Dr. Steegman (Canada), and Dr. P. G. Stock (South Africa).

It is now proposed that the work of the Office International should be continued in association with the League of Nations, and that with certain modifications it should form an integral part of the scheme for an International Health Organization which is to be submitted by the Council of the League to the forthcoming assembly at Geneva.

Scotland.

THE SCOTTISH CONSULTATIVE COUNCIL.

SIR HAROLD STILES has been compelled, owing to the increasing pressure of his duties as Regius Professor of Clinical Surgery at the University of Edinburgh, to resign his seat on the Scottish Consultative Council, and Dr. Donald J. Mackintosh, C.B., M.V.O., medical superintendent of the Western Infirmary, Glasgow, has been appointed in his place. We understand that the report of the Council has been completed and that publication may very shortly be expected.

MIDWIVES IN SCOTLAND.

Dr. Michael Dewar and Dr. J. Wishart Kerr, the representatives elected by the Scottish Committee of the British Medical Association to the Central Midwives Board of Scotland, report that during the year 1919-20 five board meetings were held, three special meetings to deal with penal cases, ten committee meetings, and four examinations for midwife candidates. In connexion with the penal cases the names of seven midwives were removed from the roll and their certificates cancelled; one midwife was suspended, and a number of cases were held over for report from the local supervising committee. Of 392 candidates for examination [illegible] passed and were admitted to the roll, which now includes [illegible] names. About half of these women are engaged in the practice of midwifery. Opportunities are being afforded in many districts for giving instruction in the use of the thermometer and in the keeping of records to untrained midwives who were in bona fide practice at the time of the passing of the Midwives Act. With a view to encouraging the employment of properly trained midwives the medical officer of health of Port Glasgow has initiated a scheme approved by the local authority and by the Scottish Board of Health, in connexion with a maternity and child welfare scheme whereby a bonus of 5s. per case attended is paid to trained and certificated midwives.

FUTURE OF HOSPITALS.

A discussion on the future of hospitals under the Ministry of Health took place at the annual meeting of the Medical Guild, Edinburgh, on November 12th. The retiring president, Dr. John Playfair, introduced his successor, Emeritus Professor Caird, and the discussion was opened by Dr. A. Blackhall-Morison (London), who said that the future of hospitals was part of a larger political situation. Dr. Ebenezer Duncan (Glasgow) said that there were three ways in which hospitals could be carried on—the first was the German system, in which they were carried on by the Government and every member of the community had a right to admission; the second was the American system, in which there were three classes of patients—those who paid fully, those who paid partially, and those who paid nothing; the third was the system existing in Scotland and England. The Board of Health was really an autocracy, and an autocratic system ought to be opposed tooth and nail in medical matters. The committee of the hospital at Bellahouston, of which he was a member, had the greatest difficulty in getting the Ministry of Pensions to supply promptly means for the proper treatment of patients. Professor Caird, Dr. Alexander James, and other speakers, protested against the proposal to put voluntary hospitals on the rates. Eventually the following resolution, moved by Dr. Frederick Porter and seconded by Emeritus Professor Russell, was approved:

> As the present financial difficulties affecting voluntary hospitals have not been caused by any fault in administration, this meeting of the Medical Guild is of the opinion that, before any change is made in the system, steps should be taken immediately by hospital authorities to devise a scheme whereby patients should contribute towards their maintenance according to their circumstances.

SMALL-POX IN SCOTLAND.

No further cases have occurred in connexion with the outbreak, on October 13th, of small-pox at Craiglockhart Poorhouse, Edinburgh, referred to in the JOURNAL for October 23rd. A month has now elapsed, so that it may be fairly concluded that the speedy and thorough methods taken to prevent infection proved sufficient. Dr. Maxwell Williamson reported that no fewer than 900 of the inmates as well as the officials of the institution had been vaccinated. The patients under treatment were reported well. In Glasgow also the epidemic has greatly decreased; now and again a solitary case is reported, but the total number in hospital on November 12th was only 29, as against 70 on October 9th. On the other hand, there has been an outbreak at Kirkintilloch, about eight miles north-north-east of Glasgow. Seven cases were removed to hospital on November 4th, another (from the same family) on the 5th, two on the 6th, two on the 8th, four on the 10th, and two on the 11th, when there were 26 cases in all under treatment. Great numbers of people were taking advantage of the free vaccination offered.

England and Wales.

BRADFORD MUNICIPAL HOSPITAL.

We gave last week (pp. 753 and 763) an account of the position brought about in Bradford by the action of the Health Committee of the City Council in taking steps to establish a municipal general hospital without consultation with the medical profession. It was mentioned that a very large and representative meeting of the medical profession in Bradford was held on the evening of November 3rd under the auspices of the British Medical Association, at which certain resolutions were adopted, among others one asking the Ministry of Health not to consider the proposals of the Bradford Health Committee until the medical profession had been consulted. The meeting was adjourned until November 10th, when the following resolutions were adopted:

> That this meeting of the Bradford medical profession thanks the Minister of Health for withholding his sanction to the Bradford Health Committee's General Hospital Scheme until the local profession has been effectively consulted.
>
> That the past and present policy of the profession in Bradford has been and is in accordance with the principles of the "Dawson Report," especially as regards the fundamental importance of the general practitioner in the health service of the country.
>
> That the meeting urges the Minister to assist the local profession in getting the local health authorities to carry on their municipal medical work on the lines of the principles suggested in this resolution. In so doing the Minister will have the whole-hearted support of the Bradford medical profession.

Steps were also taken to provide for the election of a local advisory medical committee, to be composed of three consultants, nine general practitioners, and two whole-time officers.

ROYAL UNITED HOSPITAL, BATH.

The Royal United Hospital, Bath, established nearly a century ago, is embarrassed by the increase in the cost of maintenance accompanied by an increase in the demand for hospital treatment, and in its complexity. The conclusion has been reached that the time has come when the finances of the hospital must be placed on a different basis; not only must measures be taken to collect small weekly charges from the existing class of patients, when their means permit, but provision must be made for paying patients on business lines. It is proposed to acquire the site at Combe Park, formerly occupied by the Bath War Hospital and now by the Ministry of Pensions Hospital. The site extends to twenty acres, and can be easily reached from the centre of the city. An appeal is being made for funds to build and establish a hospital for paying patients, containing 100 beds and private rooms, and small wards, where patients can be accommodated for from 3 to 5 guineas a week, and where they can be attended by their own doctors. It is intended also to establish a maternity home containing 40 beds; some of this could be maintained by the municipality for the use of the poorer patients; the remainder will consist of private rooms for patients who can afford to pay. Eventually all departments of the hospital will be transferred to the new site. On Armistice Day (November 11th) Sir Wilmot Herringham gave an address at a public meeting at the Guildhall, Bath, on behalf of the scheme.

PRESENTATION TO DR. ALEXANDER FORBES.

Members of the medical profession in Sheffield entertained Dr. Alexander Forbes at dinner on November 11th, after which he was presented with a silver tea tray as a memento for his services to the profession. Dr. R. Gordon presided, and, in asking Dr. Forbes's acceptance of the gift, spoke of the self-sacrificing work he had done in the interests of the medical profession as a city councillor. The Chairman emphasized the importance of medical men with their special knowledge serving in such capacity to watch the interests of the health of the citizens. Dr. A. J. Hall and Dr. J. G. Mylan also spoke of the admirable services Dr. Forbes had rendered the profession. Dr. A. E. Barnes made a presentation to Mrs. Forbes. In acknowledging the gifts, Dr. Forbes referred to the amicable relations which now existed among the members of the profession, and urged that more doctors should enter public life in view of the great health schemes now being brought forward. The toast of the City and Corporation was proposed by Dr. Alfred Cox, Medical Secretary of the British Medical Association. He referred to the valuable services Dr. Forbes had rendered as a steady, straight, and wise councillor on the Central Council of the Association. It was, he said, a matter of the highest importance that public health matters should be administered in partnership with the medical profession. The Lord Mayor of Sheffield acknowledged the toast, and appealed to the profession to send representatives to the city council, not as doctors but as men with special knowledge of the needs of the city in matters of health. Dr. Forbes, who is a member of the Central Council of the British Medical Association, has served on the Executive Committee of the Sheffield Division since 1908, and was chairman of the Division in 1910. He has also been a member of the council of the Yorkshire Branch since 1912.

THE L.C.C. AND MASSAGE.

In pursuance of Section 23 of the London County Council (General Powers) Act, 1920, notice is now given that on and after January 1st, 1921, no person may carry on in the County of London an establishment for massage or special treatment (defined as "manicure, chiropody, light, electric, vapour, or other baths, or other similar treatment") without a licence from the Council. Certain hospitals, infirmaries, government, municipal and other institutions of a like character, philanthropic institutions, and "establishments carried on by qualified medical practitioners and by hairdressers under certain conditions" are exempt. Evidently, in the eyes of the London County Council, the old identification of the surgeon with the barber still exists; but, while the hairdresser is only required to have a certain open arrangement of his shop, the registered medical practitioner is required to furnish a certificate of being a suitable person from two other medical men in the County of London. The exact wording is, that the Act does not apply to

> an establishment for massage or special treatment carried on by a duly registered medical practitioner, subject to the Council being furnished with a certificate, in a form approved by the Council, signed by two duly registered medical practitioners practising or residing in the County of London, not being in partnership with such first-mentioned medical practitioner or with each other, and not having any financial or other interest in such establishment, to the effect that the medical practitioner carrying on or proposing to carry on the establishment is a suitable person to do so. All such certificates of exemption must be submitted in sufficient time (that is, at least fourteen days before December 31st in each year to enable the Council to satisfy itself that the required conditions have been complied with.

Although the Council is empowered to make by-laws as to the technical qualifications to be possessed by persons administering massage or other curative treatment in such establishments, it does not appear to have done so. It would not have been beyond its powers to have limited the practice of massage and curative treatment to persons who could produce evidence of competence to do so.

Ireland.

CHAIRS OF GYNAECOLOGY AND OBSTETRICS, BELFAST.

After the death of Sir John Byers, who was professor of midwifery and gynaecology, the Senate decided to separate the chairs, and at a special meeting held on November 8th appointed Mr. R. J. Johnstone, M.B., F.R.C.S.Eng., gynaecologist to the Royal Victoria Hospital, Belfast, to the chair of gynaecology, and Dr. C. G. Lowry, F.R.C.S.I., obstetrician and gynaecologist to the Ulster Hospital for Women, and assistant gynaecologist to the Royal Victoria Hospital, to the chair of midwifery and diseases of infants. Both these appointments are very popular in the profession and will strengthen the medical school. Both of the new professors had brilliant university careers, are tried men and experienced teachers and operators; everyone will join in congratulations and wishes for a long period of usefulness.

Correspondence.

THE FUTURE POSITION OF "A LA SUITE" OFFICERS IN TERRITORIAL HOSPITALS.

SIR,—It appears to be quite time that some action was taken by the profession and perhaps by the Naval and Military Committee of the British Medical Association, in this matter.

I have discussed this question with several administrators of these hospitals, and find that there is pretty general agreement on the following points:

1. The permanent personnel [illegible]
2. Consultants should act [illegible]
3. [illegible] at the hospital [illegible] at the civil hospitals.
4. [illegible]
5. [illegible]

Patients would just as soon, and probably sooner, be treated by a well-known consultant in civil attire as by someone in uniform.

6. *Payment.*—Work done for the State should be paid for by the State. The visiting staff should be paid so much per attendance. I suggest that two guineas per attendance would not be inadequate.

It was the desire of all sections of the civil profession to make the best of the available man-power during the late war, but it was manifest to many of us, and especially to those who served on the Central Medical War Committee, that this was not carried out by the authorities. Physicians and surgeons attached to large teaching hospitals had to act as orderly officers, to serve on boards, etc., these duties sometimes taking up the whole twenty-four hours. This led to neglect of our work in the civil hospitals, not only as regarded the patients but also the teaching of students, and it was work which could have been done as well, or better, by someone less skilled than a specialist. When mobilization is ordered, then junior officers, other than those in category A, should be appointed to act as—

House-physicians and house-surgeons.
Orderly officers.
Members of boards, and perhaps some other duties.

Another question which gave rise to some dissatisfaction was the meagre way in which our services were recognized at the conclusion of the war. No medals of any kind have been given, unless for service overseas. This, to me, is a matter of little or no importance and may be considered as a "growse," but the fact remains that very little recognition of our services was given, although we were mobilized at the commencement of the war and served almost continuously.—I am, etc.,

Birmingham, Nov. 11th. ALBERT LUCAS.

EARLY SYMPTOMS OF NERVOUS DISEASE.

SIR,—In a footnote in the BRITISH MEDICAL JOURNAL, p. 693, Dr. Henry Head calls attention to the necessity of expressing a diagnosis in a threefold terminology, and points out that this method is best exemplified in cardiac disease.

> For example, it is useless to say only that the patient suffers from "mitral stenosis." The full diagnosis should be expressed somewhat as follows: "Auricular fibrillation," the disorder of function; "stenosis of the mitral valve," the organic destruction; and "acute rheumatism," the pathological process responsible for the condition of the heart.

But why stop at acute rheumatism? Should we not go a step or two further and search for a cause of the acute rheumatism? To inquire, for instance, whether a defective activity of the kidney eliminative cells has not resulted in an accumulation of toxins ending in their general expression as acute rheumatism, and, if this is so, what has led to the defective activity of the kidneys? Has the patient been exposed to repeated chills? Or has there been continual error in diet, chronic constipation, excessive smoking? The advantage of this inquiry being that such possible ultimate causes as the latter are directly under the patient's control.

The busy practitioner is apt to forget what an important part the kidneys play in the causation of disease, and that it is a grave mistake to assume that because casual examination of the urine shows absence of albumin or sugar all must necessarily be well so far as the kidneys are concerned. Patients who are continually passing clear colourless urine of low specific gravity are far more liable to succumb to nervous diseases than those whose urine yields small quantities of albumin or sugar; in the latter there is little impediment to the elimination of toxins, while in the former toxins—that is, products of katabolism—are steadily accumulating in the blood and tissues, and when a certain percentage is reached the tissues, by their lowered vitality, lose their power of resistance to the onset of bacteria, the defenceless patient becoming more and more liable to the invasion of any disease.

It is fortunate for the human race that the glomeruli rarely lose their power of eliminating pure water, for when this is the case acute uraemia quickly puts an end to the scene; on the other hand, a patient may go on for years with defective activity of the tubular epithelium and live in a chronic state of ill health, the victim of any disease a toxaemia will give rise to, the particular tissue selected for attack being, of course, that one congenitally least able to resist the toxaemic invasion. Were defects of the tubular epithelium as quickly fatal in their inability to eliminate toxins as happens when the Malpighian corpuscles are unable to eliminate water, one might safely say that two-thirds of the human race would perish, the result being truly a "survival of the fittest," and such survivors would be indeed fit enough to please even the eugenists.

I well remember a case of progressive muscular atrophy where the urine stood continually at the enormous height of 1060 sp. gr., depositing heavy masses of mud-coloured urates. This patient could not understand the difference in the colour of the urine, which since his illness was heavy and muddy, but for years previously had been usually clear and colourless as tap water. The difficulty in this case is to understand why the tubular epithelium before the disease should have been practically dormant, and yet after the disease was manifest it should take on such extreme activity and readily eliminate the katabolic toxins of the rapidly disintegrating tissues. Had it been otherwise this case must have ended fatally in an early stage of the disease from acute toxaemia, long before a true diagnosis could have been arrived at, and yet the retention of toxins while the urine was colourless was probably the starting-point of the muscular atrophy. There was no history of syphilis.

Reviewing the papers on the "Early symptoms of nervous disease," one is struck with the want of attention to other causes of these troubles than *Spirochaeta pallida.* Dr. Theodore Thompson alone mentions intestinal toxaemia, and as defective kidneys are nowhere "called in question," I have ventured to write this reminder, feeling sure that, were this cause continually borne in mind, much floundering in search of a diagnosis and of the still more elusive etiology would be avoided.

The frequency with which certain nervous diseases are labelled hysteria reminds one of an amusing reply made many years ago by the late Edward Hallaran Bennett in the University of Dublin. A young student believing that the case of a certain young man described by the lecturer was one of hysteria, Bennett promptly refuted the diagnosis by the remark, "He hadn't a uterus."—I am, etc.,

Liverpool, Nov. 9th. William Bramwell.

A UNIFIED MEDICAL SERVICE.

Sir,—Your issue of October 16th contains a letter from Colonel Elliot, Chairman of the Naval and Military Committee of the British Medical Association, which may be construed as indicating that the late General Sir William Babtie was in favour of a scheme for a unified medical service, one of the provisions of which would exclude the R.A.M.C. from service in India as a body.

Having had the privilege of the intimate friendship for many years of the late General Babtie and numerous opportunities of discussing with him questions of medical organization—past, present, and future—I can with confidence assert that the unified medical service, the establishment of which he had so much at heart, did not involve any curtailing of the present activities of the R.A.M.C.; on the contrary, his view was that the R.A.M.C. should assume responsibility for all military medical duties in India, leaving civil duties to be performed by officers who may be transferred to that branch of the unified service.

It is not the purpose of this letter to enter in any way into a discussion of the merits of rival schemes for unification, but I may be permitted to remark that the above indicated arrangement would fit equally well with that proposed by the Verney Lovett report into any unified scheme.

I may add that several senior officers to whom I have spoken on the above subject agree with the view I have put forward of the late General Babtie's ideals of reform.—I am, etc.,

Wm. Donovan,
London, Nov. 8th. Major-General A.M.S.(ret.).

TUBERCULOUS MILK.

Sir,—Some confusion appears to exist in the minds of certain of your correspondents who have taken part in this discussion as to the distinction between infection or sensitization with a pathogenic organism and the development of the actual disease to which it can give rise. For instance, in his communication of November 6th Dr. S. Nicol Galbraith says:

> After being a medical officer in Brompton Hospital for eight months I, with four other residents, gave a positive von Pirquet's reaction. This may prove infection but certainly not immunity.

Some of us on the staff of the City of London Hospital for Diseases of the Chest carried out, or attempted to carry out, in our own persons an analogous experiment to prove the degree of our resistance; and although too much stress must not be laid on the quantitative results, we all showed a *plus* degree of resistance and a positive von Pirquet reaction. Our interpretation of the phenomena observed was apparently entirely opposed to the view Dr. Galbraith holds. We did not regard the evidence of a positive von Pirquet reaction as showing that we were suffering from what is commonly regarded as tuberculous disease; on the contrary, we rejoiced in our "relative immunity." But I do not think, however, that any of us would recommend life in a tuberculosis institution as a safe prophylactic against tuberculous disease.

Again, in the same letter Dr. Galbraith says:

> A child with virulent diphtheria . . . coughed in my face. Two days later I gave a positive swab, but did not develop clinical diphtheria. I do not therefore believe I am immune to diphtheria.

Surely it follows that if Dr. Galbraith, or anybody else, can carry such virulent germs as those of diphtheria in his throat without them entering his system and giving him the symptoms of the disease, he may be regarded as "relatively," if not "absolutely," immune to the disease, at any rate for the time being; if this is not so, I do not understand what the term "carrier" implies.

With respect to the infection of infants with tuberculosis, my personal experience is that all and each of them, without exception, become "infected" if they live in the same house with an open case of tuberculosis, and generally so if they drink unboiled milk which contains living tubercle bacilli, but this is a very different thing from developing the disease tuberculosis. Many infants exposed to such sources of infection, and giving a strongly positive reaction to Koch's "old tuberculin" when hypodermically injected, have during a prolonged period of observation shown no clinical manifestations of tuberculosis, and have remained in perfect health as far as I was able to judge. But there is always a great danger that definite tuberculous disease may develop in such children if their organs become damaged by intercurrent or debilitating diseases. For many years past I have been in the habit of attempting to raise the resistance of such infants by the regular injection of increasing doses of tuberculin during a prolonged course of treatment. That by such treatment the resistance can be raised I have convinced myself by much indisputable evidence. I prefer this method to the uncontrolled and uncontrollable method of allowing the infant to inoculate himself from the environment or with tuberculous milk containing an indefinite number of bacilli, and of indefinite degree of virulence.—I am, etc.,

London, W., Nov. 8th. Eric Pritchard.

Sir,—Recent correspondence has again brought to the fore the diversity of opinion held by the medical profession on milk and tuberculosis. In the Leeds and Liverpool tuberculosis conferences this was manifestly evident. Against sweeping statements on the undue recognition of milk as a great source of tuberculous infection—almost to frighten the lay public from using a valuable diet, which has been the chief food in the treatment of tuberculous and pre-tuberculous cases—whilst ignoring factors lowering individual resistance, let us examine available facts and recent research figures. The period of life when milk may be a source of infection and of greatest mortality from tuberculosis in childhood is under 5 years. In 1911 deaths from tuberculosis under 5 were 16.7 per cent. of the total for the whole of life. Admitting errors of diagnosis, the figures of the Registrar-General for England and Wales may be taken, and an abstract of the analysis by Louis Cobbett, in his valuable work *The Causes of Tuberculosis*, of the recent research of the Royal Commission, Park and Krumwiede, Rothe, Eastwood and F. Griffith, A. S. Griffith. Mitchell, Fraser, etc., including Continental and American experts, may be advantageously tabulated.

Classification of Deaths from Tuberculosis under 5 in 1911.

	Total Cases.	Bacteriologically Investigated.			
		No.	Cases Found.	Per Cent.	Type of Bacillus.
Meningitis	3,347	100	80	80	Human.
Peritoneum and intestine ...	2,700	30	17	56	Bovine.
Acute miliary or disseminated	1,512	51	41	80	Human.
Pulmonary, acute or otherwise	1,121	65*	61	93	Human.
Bone and joints or other organs	197	72†	39	54	Human.

* Under 12 years. † Bone and joint cases only.

Thus one clearly sees from the above laborious research that the fatal forms of tuberculosis in childhood are due to the human type of bacillus, excepting the abdominal cases. After the age of 15 nearly 90 per cent. of deaths from tuberculosis in 1911 were from pulmonary disease. Now in adults, in 26 cases of pulmonary disease 25 showed the human type of bacillus and one a mixture, the material being from the lung or other organs. In 938 samples of sputum 932 showed the human type. In cervical gland cases under 5 an estimate of 75 per cent. with the bovine type of tubercle bacillus is made generally from material of improved cases; irrespective of age, this estimate, according to Cobbett, is only 50 per cent. But cervical gland cases, bone and joint cases, and most abdominal cases, with proper treatment and timely diagnosis, should seldom prove fatal. In those fatal cases where bovine bacillus and milk infection can be proved we ignore factors like infectious diseases, etc., which lower resistance in children. Tuberculous meningitis accounts for the largest number of deaths in the above classified group. Besides the 80 per cent. human tubercle bacilli found in the majority of such cases, the primary infection is in the bronchial glands, all pointing to respiratory infection, possibly from human source when vitality is lowered. In over two years' work in a large fever hospital I came across a large number of deaths from tuberculous meningitis or general tuberculosis in cases under 5 sent on mistaken diagnosis or following infectious diseases. I saw less of such cases for the same age in dispensary or sanatorium work. Again, in district work one does not see among the children in healthier localities and better social position so much tubercle of glandular or abdominal type as in the poorer quarters, though with a common source of milk supply. By all means let us take all due precautions to ensure clean, wholesome milk, and enforce all necessary regulations for that purpose. But let us not condemn all milk; let us regard it as not the greatest source but as a possible source of certain forms of tuberculous infection in children especially, when other factors, social, economical, and environmental, are at work to reduce resistance and expose children to infection.—I am, etc.,

Z. P. Fernandez, B.A., M.D.

[illegible]
Oct. [illegible]

SIR,—Your correspondents writing on the presence of tubercle bacilli in milk appear to miss the point that bacteria must be killed before they can be relied upon to produce immunity. Bacteria are killed by boiling (pasteurizing is inefficient for most bacteria), but milk is not boiled in the country before it is sold and very few lay people will trouble to boil their milk after they get it; hence it is at present a vehicle for disseminating disease. My experience (which is quite contrary to what is taught) is that feeding babies on boiled milk is a complete success if the milk is good, and I have often wondered whether the bad results sometimes obtained have been due to a too drastic administration of dead bacteria. May not a really dirty boiled milk act on a susceptible infant like too high and too frequent doses of a vaccine? Whatever the explanation, I can assure any practitioner who may care to try this method that if so-called vitamines are necessary to the life and health of babies, they are not destroyed by boiling clean milk. In connexion with the question of clean milk, I think that the attention of the medical profession should be drawn to the extraordinarily comical ideas of the Milk Section of the Ministry of Food on the way to encourage the production of clean milk. They read like part of a Gilbert and Sullivan opera! For a certificate for Grade A milk (clean milk) to be obtained, an inspector of the section must visit a farm and allot marks for points. Out of 300 necessary marks 250 are given for method and the other 50 presumably for the cleanliness of the milk.

Thirty thousand organisms per cubic centimetre are allowed, but so long as they are not colon bacilli the certificate is not affected, and they may apparently be diphtheria, influenza, streptococci, etc., with impunity, and there is no guarantee at all that epidemics due to these bacteria may not be spread by this so-called clean milk. And the really important factor for our children—namely, the fat content of the milk—is entirely ignored.—I am, etc.,

Cambridge, Nov. 7th. HELEN G. LEYTON.

BLACKWATER FEVER.

SIR,—The very interesting "Notes on blackwater fever," by Dr. Alexander Goodall, appearing in your issue of November 6th, sum up in very concise terms the conclusions which have long been held by those who are interested in this subject. In his summary he says:

> "Fourteen cases are tabulated. In twelve of these malarial parasites were found. All the cases were treated with large doses of quinine and twelve recovered. It is contended that malaria is the essential cause of blackwater fever, and that exposure to cold may be an important factor in determining its onset."

In my thesis for the M.D. degree at Cambridge, written at the end of 1892, and quoted in the first edition of *Allbutt's System of Medicine*, I dealt with this subject. After referring to blackwater fever as a form of African malaria with the added symptom of haemoglobinuria, I made the following statement, which is in remarkable agreement with the views expressed by Dr. Goodall:

> "Perhaps the most interesting point which we have to consider is the relation of blackwater fever to paroxysmal haemoglobinuria. The history of the onset of changes in the urine in the two diseases and the appearance of the urine when voided is almost the same. We have the same suddenness of onset; the passing for a short time of porter coloured urine, with in many cases a rapid return to the normal colour. The results of analyses in the two cases are practically the same. Both are liable to be brought on by chill, and both are chiefly affected by the administration of quinine."

By the latter term I was referring to the beneficial results of quinine treatment, and I am glad to see that Dr. Goodall takes this view.

In my opinion we ought definitely to abandon the view that blackwater fever is a distinct specific disease. It is malignant malaria with the added complication of haemoglobinuria. This in most instances is brought on by chill in susceptible individuals, and it is the haemoglobinuria which is the cause of the great fatality in these cases.—I am, etc.,

London, Nov. 6th. CHARLES F. HARFORD, M.D.

PUERPERAL SEPSIS.

SIR,—The BRITISH MEDICAL JOURNAL of July 10th, 1920 (pp. 54 and 55), contains an epitome of the discussion on the above subject in the Section of Obstetrics and Gynaecology at Cambridge. The discussion is marked by the variety of opinions expressed. The view of Mr. Victor Bonney that the source of infection was autogenous and not heterogenous is a most remarkable one, and it is not surprising to find several speakers objected to it. It appears to me an instance of laboratory work and deductions being carried on without due regard to clinical work and history. Were the source autogenous, one would expect infection to be the rule and not the exception.

I would like to refer to my experiences when resident medical officer to Queen Charlotte's Lying-in Hospital in 1895. When I began my duties in that hospital there were several cases of puerperal fever in the wards, and others were occurring, particularly on one floor. Dr. C. Chapman Grigg, one of the visiting staff, suggested to me the use of iodine as a preventive. Following his ideas, I applied the lin. iodi to the skin under the nails and around the quicks. I immersed my hands in iodine water the colour of brown sherry, and also the instruments if they were required. On one floor no further cases occurred, and there was no more trouble. On the other floor fresh cases occurred and we were puzzled. The sister on this floor was most enthusiastic, keenly on the look-out for the slightest breach of surface—far too much so, for one night she would report to me that No. — had an abrasion, and the next night No. — had a rigor. She was sent away for a holiday and infection at once stopped. She was saturated with infection, and in her meddlesome activity infected almost every patient she examined. Probably no normal case is without some slight abrasion, and if the vagina is not explored it will heal without trouble if no infection is brought to it. All our cases were undoubtedly heterogenous.

The value of the iodine impressed me so much that I never, if possible, left my house to go to a midwifery case without first washing in iodine water. The lin. iodi always had a place in my obstetric bag. To this I attribute my good fortune in not having a septic case in my own practice. The alkalinity of the liquor amnii produces a soluble iodide, and there is no discoloration of the hands when labour is over.

If the patient is given a warm bath and the genitals are well washed with soap and water as soon as labour begins, and thorough cleanliness of doctor and nurse insisted on, every confinement should run a normal course, even if instrumental. Prevention is the object we should strive to obtain. In this light, also, too much care cannot be given to the perineum. Every tear is a possible channel of infection. To prevent these, for many years I have been in the habit of freely lubricating the tissues as the head began to dilate them. I used a mixture of balsam of Peru in white vaseline. Many a perineum softened under this and allowed the head to come through naturally or by the help of forceps without any tear. Shaving the vulva I look upon as barbarous and unnecessary. If kept clean, the hair is as much a protection against as a possible source of infection. There must be much discomfort to the patient whilst the hair is growing again. If any sutures have to be put in it may be necessary to clip away a few of the posterior hairs. In those days, of course, we had no serums, and the treatment was more or less empirical and fairly successful. It is particularly interesting to me to see how closely Dr. Amand Routh's views accord with the experience and practice at Queen Charlotte's in my time.—I am, etc.,

Leonard W. Bickle, F.R.C.S.Edin.

Sydney, N.S.W., Sept. 30th.

THE DENTAL BOARD.

Sir,—Your recent note (October 30th, p. 674) on the coming Dental Bill deals, naturally, with but few of the points this is likely to raise. Not the least—indeed to some of us the more important matter—is the composition of the "Dental Board," which, subject to the General Medical Council, the Dentists Act Committee recommended should have governance over the dental profession. The committee recommended that of this Board:

> "One, but not more than one, of the elected dentists for England and Wales should be a registered dentist whose admission to the *Register* was in virtue of being in practice at the date of this report. The remaining dentists elected for England and Wales and the dentists elected for Scotland and Ireland should be licentiates in dental surgery. We also recommend that if and as long as registered dentists admitted to the *Dentists Register* by virtue of being in practice comprise a majority of registered dentists, one of the Crown nominees should be selected from their number to represent them."

The report was signed by all the members of the committee. It may be taken to be a working compromise between divergent opinions, and therein, perhaps, lies its strength, so far as major matters are concerned. The composition of the "Board" is a major matter, and it is surely essential that the majority of its dental members should have passed through the dental curriculum, as now prescribed, if it, as it must do, is to control, alter, and amend that curriculum which in future shall be the road by which students will obtain admission to the *Dentists Register*.—I am, etc.,

London, W., Nov. 11th. W. H. Dolamore.

THE CONSULTATIVE COUNCIL'S REPORT.

Sir,—To my mind the most striking paragraph of the Consultative Council's Report, from the general practitioner's point of view, is paragraph 49, page 11, headed "Efficiency of Service." This was quoted by Lord Dawson at the Willesden meeting on November 2nd, and I am sure all those who take any real interest in medical work will agree that this part of the scheme is excellent, for it is an earnest endeavour to "lift us out of the mire" into which the Insurance Act has plunged us.

> "He leaves hospital for practice, and there is a sudden drop to the limited opportunities attached to the crowded surgery and the patient's home, and the more medical knowledge advances, the bigger the drop becomes. . . ."

How true this is! We all could quote instances when a patient has come under our notice in which the line of treatment was easy, for in hospital such a case was of minor importance—in a surgical sense but not the patient's—and no member of the staff would wish to deal with it. Having made all arrangements for the operation, and having pointed out to the patient and his numerous friends that there is nothing "obscure" about the symptoms, there comes a letter a day or two later saying "they would prefer to consult a specialist, as it may be a hospital case."

This state of things will in time surely be altered, for according to the scheme patients must approach the specialist by a definite route, according to his pocket, and it will be for the private doctor to exercise his option as to whether he or someone else should deal with the case.

Dr. Arthur E. Larking's letter in the current issue of the Journal (November 13th) is much to the point, and I agree with all he says. I might add that it is not only the cost of living and increased expenses which force men to do a lot of work in a perfunctory manner, for doctors with large panels are rich men; and yet, what is the state of efficiency of such service? For those who wish to know, ask the patients themselves.—I am, etc.,

Willesden Green, Nov. 12th. C. L. Traylen.

Sir,—The letter of Dr. Arthur Larking indicates his conversion, after careful study, to a hearty agreement with the Consultative Council's Report. He proceeds to make out a case, by means of twelve reasons, in which he declares what it will provide, which would surely be better rendered proposes to provide.

There is a wide difference 'twixt theory and practice, and the National Health Insurance Act has been in operation long enough to substantiate this statement. I am not entering upon a lengthy criticism of the working of the Insurance Act, which might well be done, but I want to indicate that the independence which we were led to believe would be preserved has been more and more encroached upon by the continued establishment of regulations, more and more subtle and irritably meddlesome, which, forsooth, have the force of law but over the formation of which we have no adequate control.

Now it is common knowledge and experience that such bureaucratic methods are, as a matter of fact, absolutely inseparable from State-organized schemes, and therefore, however well-intentioned and admittedly plausible in many aspects the report of the Consultative Council may be, I am sure we have sufficient history to warrant us in seeking to delay the evil day of Government management of our profession, and to maintain those principles of liberty, independence, and responsibility, which have to their credit such mighty achievements in the great history of individual medicine.

It is, strangely, often of far greater importance to the insured person who is on sickness benefit to demand his intermediate certificate on the appropriate day than to give the doctor any information concerning his health, and I am apprehensive that in any further development of clinical medicine under the aegis of the State there is a real danger of a lamentable waste of energy, in fulfilling a series of external mechanical details, at the serious expense of those essential ideals which have operated hitherto, and which ought to characterize the future, namely, the highest consideration of and devotion to the best interests of the patient's physical condition—first, second, last, and always.

In short, I am prepared to consider the Consultative Council's proposals seriously if and when I can be assured that the freedom of the practitioner in his work shall be absolutely unfettered, and the performance of his duties entirely divorced from red tape interferences, unnecessary regulations and restrictions, and a multiplicity of documents.—I am, etc.,

Bournemouth, Nov. 15th. WALTER ASTEN.

BLIND MASSEURS.

SIR,—I have read with interest the letter written by Colonel Mansell Moullin with reference to the blind masseurs. I had considerable experience of the work of these men when in command of the Third London General Hospital during the war, and very cordially support all that has been written by Colonel Mansell Moullin.

The whole question of massage is a very serious one for the medical profession, as we are held responsible for the results of the treatment we recommend, and, when there are so many trained and certificated masseurs and masseuses in the country as there are to-day, it is our duty towards our patients to make sure that, when we prescribe massage, it is carried out by trained workers who have obtained the certificates of recognized training societies, such as the Incorporated Society of Trained Masseuses (since reconstructed as the Chartered Society of Massage and Medical Gymnastics), and not by those who have had no training, or who are merely acquiring practice without having undergone a thorough training.

May I accentuate the fact that all members of the Association of Certificated Blind Masseurs, referred to by Colonel Mansell Moullin, have been thoroughly trained and hold recognized qualifications?

Finally, too much stress cannot be laid upon the fact that the members of the association only undertake the treatment of patients with the consent and advice of a registered medical practitioner.—I am, etc.,

London, W., Nov. [illegible] BRUCE BRUCE-PORTER.

Obituary.

THE LATE DR. WILLIAM BRUCE.—Dr. R. Fortescue Fox writes: I should like to record an impression of my old colleague, Dr. William Bruce. He was an outstanding figure in the medical profession of the north-east of Scotland and in some ways, I think, typical of the wide countryside in which he practised for so many years. He had a hardy physique, disdainful of fatigue, by road and rail, at all hours and seasons. His mental energy and power of work were not less remarkable, and he had the great gift of tenacious memory. Such men not only seize opportunities, but make them, and they generally achieve what they set out to do. For twenty years I was associated with him as a physician at Strathpeffer Spa, and had reason to appreciate his courtesy to a junior colleague, his amazing energy, his readiness and fertility of resource in practice, and not least the keenly critical edge of his mind which disposed him to move readily upon new and untried lines. I like to remember his sturdy figure coming up in the early mornings to mingle with the throng at the Wells; the constant, renewed battle on the cause of [illegible]—his pet theory against my nerve sheath; the intervals snatched on the Skye line for Hazlitt; and in the quiet evenings in his beautiful garden at "The Castle," how we walked beside the tulips.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on November 13th the degree of M.D. was conferred upon G. F. Beaumont and [illegible].

The following awards of Theodore Williams scholarships have been made:

Physiology: [illegible], B.A., New College.
Human Anatomy: [illegible] College.
Pathology: [illegible], St. John's College.

UNIVERSITY OF GLASGOW.

THE following degrees were conferred on November 13th:

M.D.—Archibald [illegible], [illegible]

* With Honours. † With high commendation.
‡ With commendation.

UNIVERSITY OF EDINBURGH.

THE following awards of scholarships, bursaries, etc., have been made:

Crichton Research Scholarship in Anatomy: J. A. L. Loudon, M.B., and C. W. Stump, M.B., divide. *Vans Dunlop Scholarship in Botany and Zoology*: Thomas B. Harvey. *Vans Dunlop Scholarship in Anatomy*: John Gray. *Vans Dunlop Scholarship in Physiology*: Robert K. Dewar. *Vans Dunlop Scholarship in Pathological Bacteriology*: Muriel J. Thomson. *Grierson Bursary in First Professional Subjects*: James P. Davie, M.A. *Grierson Bursary in Pathology*: George W. Ireland. *Grierson Bursary in Materia Medica*: Bruce M. Dick. *Archibald or M'Gugie Bursary*: Edward A. Wilson and David H. D. Young, divide. *Neil Arnott Prize in Experimental Physics*: James P. Davie, M.A.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on November 11th, when Sir Anthony Bowlby, President, was in the chair.

Diplomas of Membership.—Diplomas of membership were granted to 88 candidates found qualified at the recent examinations.

Court of Examiners.—A vacancy on the Court, occasioned by the retirement of Mr. H. J. Waring (who is not seeking re-election), will be filled up at the next meeting of the Council in December.

Centenary Celebrations of the French Academy of Medicine.—Sir D'Arcy Power and Mr. Charles Ryall were appointed delegates to represent the College at the centenary celebrations of the French Academy of Medicine, to be held in Paris during the second fortnight in December.

The following candidates have been approved at the recent special and ordinary primary examination for the Fellowship:

B. V. Abhyanker, J. G. Ackland, K. B. Bellwood, A. C. B. Biggs, D. M. Blair, W. H. Bleaden, Alice Bloomfield, R. Brooke, G. H. Caiger, N. L. Capener, D. S. Cassidy, R. B. Chandrashud, G. R. E. Colquhoun, D. C. Corry, R. Coyte, J. M. Craig, H. E. Cumming, J. L. Davies, O. De Muth, A. R. Dingley, Doris L. Durie, G. S. Escoffery, G. J. StC. Fisher, N. B. B. Fleming, Maud F. Forrester-Brown, H. V. Forster, R. M. Fry, R. A. H. Fulton, G. J. Gillam, Evelyn E. Gourlay, J. H. Gurley, Margaret C. N. Hadley, S. N. Hayes, A. H. Heslop, Nancy M. Hield, Dorothy M. Howgate, W. Ibbotson, R. Keene, Dorothy N. L. Leverkus, D. Levi, L. A. Lewis, L. C. E. Lindon, F. Louis, W. J. Lytle, H. J. McCurrich, J. L. McDonald, G. D. F. McFadden, R. G. Michelmore, L. J. Moir, V. E. Negus, D. C. Norris, E. S. Page, B. H. Pidcock, L. M. Rice, G. D. Robertson, A. W. L. Row, E. L. K. Sargent, W. R. Sparrell, F. A. R. Stammers, Doris M. Stone, G. F. Stones, F. B. Sudbury, D. M. Sutherland, T. M. Thomas, R. M. Tracey, A. B. K. Watkins, B. W. Williams, L. H. W. Williams, L. Wolff, R. S. Woods, H. W. Wookey.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

DR. JOSEPH THEODORE WIGHAM and Dr. John Speares have been admitted Fellows and Dr. A. F. Bernard Shaw a Member and Licentiate.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the ninety candidates whose names were printed in the report of the proceedings at the Comitia of the Royal College of Physicians published in our issue of November 6th, p. 724.

The Services.

HONOURS.

C.B.E.

THE honour of Commander of the Order of the British Empire has been conferred upon the following for services in or for the Commonwealth of Australia and in connexion with the war: Dr. Thomas Lane [illegible] Green; Dr. William Nathaniel Robertson (for services in connexion with repatriation, Queensland); and Dr. James Park Thomson.

Medical News.

THE next session of the General Medical Council will commence at 2 p.m. on Tuesday, November 23rd, when the President, Sir Donald MacAlister, K.C.B., M.D., will take the chair and give an address.

THE Secretary of the War Office draws attention to the fact that the use of the Red Cross emblem and of the words "Red Cross" for the purposes of trade or business, or for any other purpose, without the authority of the Army Council, is an offence under section 1 of the Geneva Convention Act, 1911, by which this country adhered to the Geneva Convention, 1906.

ON Armistice Day, 1919, the medical men in West Suffolk who did not hold commissions during the war invited all their colleagues who had served in His Majesty's forces to dinner at the Angel Hotel, Bury St. Edmunds, as a welcome home. This year, on Armistice Day, the guests of 1919 invited their hosts to dine. Both dinners were a great success. More than 60 per cent. of the medical men in the area were present, several of them driving from ten to twenty miles each way to attend. It was decided this year to make the dinner an annual event on Armistice Day, and a small committee was appointed for this purpose.

MAJOR J. R. WILLIAMS, T.D., M.B., of Penmaenmawr, has been nominated for election as High Sheriff of Carnarvonshire.

THE second annual dinner of the 4th Northern General Hospital staff was held at Lincoln on Armistice Day. Lieut.-Colonel F. S. Lambert presided, and twenty-one members were present. It was decided to hold the dinner on or about the same date every year, and to invite all other medical men living in Lincoln and the neighbourhood who had served in the R.A.M.C. during the war to be present as honorary members.

THE annual dinner of the Medico-Legal Society will take place at the Holborn Restaurant on Friday, December 10th. Tickets, price 14s. 6d. (exclusive of wine), can be obtained from the Honorary Secretary of the Society, 3, South Square, Gray's Inn, W.C.1.

THE inaugural dinner of the twenty-fourth session of the Chelsea Clinical Society, the first to be held since the war, took place on October 29th at the Café Royal, when sixty members and guests were present. Owing to a sudden bereavement, the president, Dr. A. G. Buchanan, was unable to be present, and Dr. D. M. Barcroft, vice-president, took the chair. The guests of the society were the Vice-Chancellor of the University of London and the Presidents of the Medical Society of London and the Harveian Society.

DR. J. MACDONALD BROWN has been appointed chairman of the Hampstead bench of magistrates.

DR. RALPH NORMAN has received a presentation from the Southend Lawn Tennis Club upon his resignation of the treasurership held by him for over ten years.

THE Chadwick Trustees have arranged another series of public lectures. On November 25th, at 5.15, Dr. J. B. Farmer, Professor of Botany at the Imperial College of Science, will give a lecture at the house of the Medical Society of London on "Some biological aspects of disease." On December 3rd, at 7.30, Sir Malcolm Morris will lecture at Manchester, with the Lord Mayor in the chair, on "Chadwick and his message for to-day." On the same day and hour Sir Robert Hill, Medical Director-General R.N., will speak at the house of the Literary and Philosophical Society, Newcastle-on Tyne, on "Naval and maritime hygiene in relation to shipbuilding." He will deal in particular with the problems of ventilation, accommodation, water supply, and the prevention of disease.

AN announcement from the Ministry of Health will be found in our advertising columns to the effect that a woman practitioner will be appointed medical officer of the Ministry for duties especially in connexion with maternity and child welfare.

CONTRIBUTIONS are invited towards the building fund of Queen Mary's Home for St. Bartholomew's Hospital nurses. Half the amount needed for the new home has already been subscribed. The honorary secretary is Mr. W. McAdam Eccles, who will gratefully receive and acknowledge contributions forwarded to him at the hospital.

A SPECIAL post-graduate course is to be held at the Prince of Wales's General Hospital, Tottenham, N.15, from December 6th to 18th inclusive. Each morning there will be practical demonstrations on the more important clinical methods and on laboratory methods as applicable in medical practice. In the afternoons demonstrations will be given on groups of selected cases at 2 p.m., and the hour from 3 to 4 p.m. will be devoted to the general work of the hospital. At 4.30 p.m. clinical lectures will be delivered by Sir Thomas Horder, Lieut.-Colonel Kirkpatrick, Dr. John Eyre, Dr. W. H. B. Stoddart, Dr. Philip Manson-Bahr, and others, and on two afternoons clinical consultations will be held on obscure medical and surgical cases. On Saturdays demonstrations will be given on the early diagnosis of the infectious fevers at the North-Eastern Fever Hospital, St. Ann's Road, N., on dementia praecox at the London County Council Mental Hospital, New Southgate, N., and on the electro-cardiographic examination of cases of heart disease at the Royal Hospital for Diseases of the Chest, City Road, E.C. Luncheon will be obtainable in the neighbourhood of the hospital, and tea will be provided each day at 4 p.m. The lectures at 4.30 p.m. will be free to qualified medical practitioners. Further information and syllabus may be obtained from the Dean at the hospital.

The forty-second autumn general meeting of the Irish Medical Schools' and Graduates' Association was held last week at Pagani's Restaurant, Dr. W. J. Corbett, Chairman of the Council, presiding over a large attendance of members. It was reported that the development of the Association continued to be most satisfactory. The autumn banquet took place the same evening, Dr. Michael J. Bulger, the President, being in the chair; there were over a hundred members and their guests. Lord Hemphill, in giving the toast "Prosperity to the Association," said that, as an Irishman, he felt proud to be entertained by a society in which the Celtic spirit of good fellowship was so strong that for the whole forty years and more of its existence there had not been even a whisper of a quarrel, albeit they had on the roll representatives of every religious creed and every political party. They might also be proud of the fact that their Association was the first medical society to the membership of which women were admitted in this country. The toast of "Our Guests," proposed by Dr. Gubbins Fitzgerald, was responded to by Lord Shaw. The enjoyment of the evening was increased by the singing of Miss Sophie Rowlands and Mrs. Tailleur-Andrews.

THE Registrar-General's last quarterly return gives the number of births and deaths registered in England and Wales during July, August, and September. The deaths numbered 93,690, being 25,593 fewer than in the preceding quarter, but 4,578 more than in the third quarter of last year. The total deaths during the three months correspond to an annual rate of 10.1 per 1,000 total population in England and Wales in 1919. Influenza was stated to be either a primary or a contributory cause of death in 705 (or 0.8 per cent.) of the total registered deaths. One death only from small-pox is recorded. Infant mortality, measured by the proportion of deaths under one year of age to registered births was equal to 65 per 1,000, being 36 per 1,000 below the average in the ten preceding third quarters and the lowest recorded rate for any quarter of the year. The cold and wet summer was reflected in a very low death rate from diarrhoea and enteritis in London and most of the great towns. In London the mean earth temperature was lower than that in any summer quarter during the past fifty years, and the mortality from diarrhoea and enteritis was considerably lower both at all ages and in children under one year.

THE Research Defence Society has lately published four pamphlets of general interest: (1) Vaccination, by Dr. Mary Scharlieb; (2) The Prevention of Tetanus during the Great War by the Use of Antitetanic Serum, by Sir David Bruce; (3) The Work of the Medical Research Committee, by Sir Walter Fletcher; (4) The Value of Experiments on Animals—Notes of Personal Experience, by Sir Leonard Rogers. The price of the set is 2s. Application should be made to the Secretary, Research Defence Society, 11, Chandos Street, Cavendish Square, London, W.1.

THE Express Dairy Company, London, inform us that they are now producing Grade A (certified) milk, under licence of the Ministry of Health. The conditions which must be fulfilled are stringent; in particular, the herd must be tubercle-free, the milk must be bottled on the producer's premises, must be free from *B. coli*, and must not contain more than 30,000 bacteria per cubic centimetre. Full particulars will be found in an article published in our columns on March 6th, 1920, p. 336.

THE medical officer of health for Huddersfield (Dr. S. G. Moore) reports that the adoption of the principle of giving help to infants and mothers in the home has been attended by results equal to the best obtained elsewhere, and superior to those obtained (often by more elaborate methods) in most localities. Since this principle has been adopted, the annual infant mortality has been reduced by about 30 per cent. Dr. Moore recommends that none but medical women should be employed in home visiting. He believes that one visit a week to each child during the first month, two a month during the next two months, and one a month during the ensuing nine months, will suffice, supplemented by the work of the local public health union. The measures recommended in the report have been approved in principle by the Huddersfield sanitary authority, and are to be applied to one-third of the borough.

THE next annual meeting of the Société d'Orthopédie will be held at Strasbourg on October 7th, 1921, when the following subjects will be discussed: Remote results of bloodless reduction of congenital dislocation of the hip, introduced by Dr. Froelich of Nancy; arthrodesis of the foot, introduced by Dr. Ombrédanne of Paris; operative treatment of ankylosis of the knee, introduced by Dr. Tavernier of Lyons.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

URETHRAL NAEVUS.

"COUNTRY DOCTOR" asks for advice in the treatment of a circular naevus of the vaginal opening of the urethra in a woman of 42, which causes considerable irritation at night as the only symptom.

Our correspondent will realize that "absent treatment" is always difficult. As a palliative carbolic acid in olive oil, 1 in 60, may be suggested. Radical cure consists in excision, drawing down the urethral mucous membrane, and suturing to the vaginal mucous membrane.

TREATMENT OF PSORIASIS.

"[illegible]" writes: I have a patient who has suffered for years from psoriasis of the scalp and body. The former is the bugbear, as the scabs are so obvious, whereas when removed by salicylic acid compounds the red patches are equally noticeable. Can any reader suggest some treatment which will either cure the condition or, at any rate, make it less of a trial for the patient? I have tried most of the usual remedies, but the bulk of ointments are too messy and unsightly. *X* rays cure the body patches, but others recur elsewhere.

*** It is sometimes possible by the judicious use of x rays to remove, at least temporarily, psoriasis of the scalp. Considerable experience is required to regulate the dose and avoid depilation. Where this treatment is impossible a preparation of resorcin gr. xx in olive oil and vaseline, each 1 oz., may be tried. In any circumstances treatment of some forms of psoriasis of the scalp is disappointing, and in the [illegible] nothing except x rays may prove successful.

INCOME TAX.

"[illegible]" states that he sold his practice in March, 1920. His income for many years was the product of accounts rendered in June and December. On ceasing practice he issued bills for outstanding debts and arrears, so that the receipts were beyond the average of many years, largely by an account which would normally have been taken as bad. He asks how much of this should pay tax and in what year.

In our view "[illegible]" ceased to be liable to income tax as from the date when he ceased to exercise his profession; he has already been assessed to income tax for the year to April, 1920, and has accounted for tax in respect of his earnings up to that date. The receipts which have since come to hand relate to profits for years for which he has already paid tax. The position will perhaps be clearer if it be remembered that the cash receipts which have in the past formed the basis on which the liability has been computed have been so treated on the assumption that they were equalized, taking one year with another, to the accruing income of that year; it is on the latter income that tax has in effect been paid. It follows, of course, that the successor of "[illegible]" is liable to assessment on the normal profits of the practice for the present financial year.

"F. M. H." owns the lease of his house and garage, and lets one consulting room and the garage, paying tax thereon as a profit received from letting. He also pays tax, under Schedule A, on the value of the whole of the premises. He asks: Is this correct?

On the face of it, no; but we should like to know a little more of the circumstances before saying that the inspector's procedure is incorrect. A proportion of the total annual value is presumably deducted in calculating the profits taxable under Schedule D, and if this proportion includes that part of the premises which is let, then it is correct. If, for instance, £200 represents the total annual value and two-thirds is allowed for Schedule D purposes, then the rent from letting must be brought into the gross income, as the garage and consulting room in question are included in the two-thirds of £200 deducted or excluded. If this hypothesis does not cover the facts sufficiently to make the matter clear, perhaps our correspondent will communicate with us again.

LETTERS, NOTES, ETC.

DR. EDITH BROWN, Principal of the Women's Christian Medical College, Ludhiana, Punjab, would be grateful to medical practitioners who would send her medical papers and journals after they have been read; postage will be repaid. The college, which is incorporated with the Punjab Medical School for Women, gives medical training to native Christians and other native women.

CEREAL EARS AS FOREIGN BODIES.

DR. G. C. M. M'GONIGLE (Darlington) writes: It may interest Mr. R. Eccles Smith (November 6th, p. 701) to know that John Evelyn mentions, in his well known *Diary*, a case of a woman who swallowed a whole ear of barley, and that the ear worked out of her side. The entry in his *Diary* is dated December 4th, 1662.

FIVE GREAT GRANDPARENTS ALIVE.

"A. G." writes: With reference to Dr. J. Robertson Hall's letter in the BRITISH MEDICAL JOURNAL of November 13th, I know of an authentic case in which the child (both parents aged 23 years) had at birth 5 great-grandparents (4 female and 1 male), and 3 grandparents (2 female and 1 male). This case differs from Dr. Hall's inasmuch as the great-grandparents were not all on one side of the house, but it is interesting on account of the six grandmothers (4 great grandmothers and 2 grandmothers) being all alive. A second child was born before the first death among the grandparents, five years subsequent to the birth of the first child.

MOTORING IN FRANCE.

DR. D. W. SAMWAYS (Mentone) writes: Sir StClair Thomson lately called attention to the fact that pneumatic tyres could be purchased in France much cheaper than in England, in his experience at about £5 less each. A week ago, on arriving at Dieppe, I bought a new Dunlop Magnum tyre, 820 × 120, for 371 francs, which is now equivalent to less than £7, the price in England being, I believe, about £13. In France petrol (essence) is obtainable everywhere. The price throughout my journey out never (except at one place) exceeded 13 francs, nearly 6s. a gallon. I should recommend motorists tempted to visit France not to do so unless their cars are equipped with wheels high enough to negotiate the French roads in their present state. The average British car is built with low wheels for smooth roads; they make poor running where potholes are rather the rule than the exception.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 39, 40, 41, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 37, 38, and 39.

THE appointment of certifying factory surgeon at North Tawton (Devon) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
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An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

A British Medical Association Lecture

ON

THE DIAGNOSIS AND TREATMENT OF SOME DISEASES OF THE ENDOCRINE GLANDS.

BY

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Endocrinology is one of the younger branches of medicine, but it has grown so rapidly of recent years that there are already several textbooks devoted to the physiological, pathological, and clinical aspects of the subject, and the Association for the Study of Internal Secretions in America publishes a quarterly journal entirely devoted to this subject. A brief consideration of the early diagnosis and treatment of some of the diseases of the endocrine glands in the light of our present knowledge will, therefore, be of interest to you. Time will not permit of a consideration of the special physiological action of these glands, but, speaking generally, it may be said that each forms a secretion containing one or more hormones, which are carried by the blood to the tissues. Each hormone has a special influence upon growth and development in the young and upon general metabolism throughout life. The symptoms of disease of an endocrine gland are therefore due either to changes in its size causing pressure upon surrounding tissues, or to alterations in its functional activity leading to an increase or decrease in the supply of hormones, or possibly to an alteration in their character. Thus, for example, in the case of the thyroid gland symptoms may be due to the pressure exerted by an enlarged gland upon the neighbouring structures, or they may be the result of hyperthyroidism, hypothyroidism, or dysthyroidism. Changes in size and function often occur together, but we may have great change in size without obvious alteration of function, or we may have marked change in function associated with but slight change in size.

Thyroid Gland.

It is somewhat remarkable, at a time when the importance of the diseases of the endocrine glands is fully recognized, that little, if any, mention is made in textbooks devoted to clinical diagnosis of the methods of either examining these organs or of estimating their functional activity. In other branches of medicine the tendency in the past has been rather to devote a great deal of care to the physical examination of diseased organs, while too little attention was paid to the study of the early symptoms which indicate change or failure in functional efficiency. Diseases of the endocrine glands have, however, generally been recognized by observing symptoms which result from alterations in their functional activity, and not by physical examination. In the case of the thyroid gland, at any rate, much may be learnt by a careful physical examination conducted on similar lines to those we follow in examination of other internal organs, such as the lungs. We may with advantage shortly consider the application of these familiar methods of examination to the investigation of the condition of a diseased thyroid gland and the information which may be obtained by their regular use in the examination of patients suffering from maladies of this gland.

On inspection in a good light any marked enlargement of the thyroid gland will at once be noted. In the case of a uniform parenchymatous enlargement the swelling in front of the neck is seen to retain the normal shape of the gland, the right lobe being usually larger than the left. When the size and shape of the swelling have been fully observed, the patient should be asked to swallow. During the act of deglutition the enlarged thyroid will be seen to rise and fall with the larynx and trachea. It must, however, be remembered that there are exceptions to this rule. Rarely, a tumour which is not of thyroidal origin, such as a tuberculous gland, a lipoma, an abscess or a sebaceous cyst, may become adherent to the larynx or trachea, and by moving with them simulate a goitre. On the other hand, a goitre may be prevented from moving owing to its large size or to fixation to surrounding structures. This fixation occurs in cases of malignant goitre, or it may be due to the presence of inflammatory adhesions. In a case recently seen an elastic swelling, about the size of a walnut high up in the neck, which was thought to be a branchial cyst, on removal turned out to be an enlarged accessory thyroid gland.

Slight uniform enlargement of the gland is common in young women, and it has certainly become more noticeable since the introduction of the modern fashion of wearing dresses which leave the front of the neck exposed to view. It has been thought by some that this form of enlargement has actually become more frequent of late. I do not, however, know of any reliable observations as to whether this enlargement really occurs oftener now than it did before the war. In some people an apparent fullness of the front of the neck is caused by two parallel creases in the skin crossing the front of the neck at about the level of the upper and lower poles of the lateral lobes of the thyroid gland with a layer of subcutaneous fat lying between. It will, however, be easily noted that this fullness extends laterally beyond the limits of the gland and does not move with deglutition. Irregularity in the outline of a goitre due to the presence of adenomata or cysts within it are obvious on inspection. Any distension of the external or internal jugular veins by the pressure of a goitre will also be noted on inspection.

On palpation of the front of the neck, except in fat persons, the size of the thyroid gland can usually be approximately determined. When it is atrophied the rings of the trachea can be more distinctly felt than usual and the finger can be pressed in on each side of the trachea to a greater extent than when the gland is of normal size. Any slight increase in size of the gland which may be regarded as pathological can be detected more easily than by inspection alone. Larger goitres can be more fully examined and the presence of an adenoma or cyst, unless deeply seated, can usually be determined. At the same time the position of the larynx and trachea should be determined as accurately as possible so as to ascertain if they are displaced to the right or left of the middle line. It is often difficult to distinguish between an adenoma and a cyst. Both are smooth and rounded in outline, and a tense cyst may feel like a firm adenoma, or an elastic adenoma may feel like a cyst. On careful fixation by the tips of four fingers fluctuation may be felt in a cyst which is absent in an adenoma. A reliable and simple method of recording the size of an enlarged gland is desirable. The following measurements are helpful but cannot be relied on to indicate slight changes in size: The circumference of the neck over the isthmus or most prominent part of the goitre; the transverse measurement of the goitre from the outer border of each lobe and the vertical measurement of each lobe separately. The transverse diameter of each adenoma or cyst may also be recorded. Thrills, which are frequently present in cases of exophthalmic goitre, are easily detected on light palpation of the goitre.

Percussion of a goitre is not often employed, but may yield valuable information in certain cases in helping to determine the position of the trachea or the presence of gas in a cystic adenoma. It is often important to determine the position of the trachea in relation to a unilateral or asymmetrical goitre so as to ascertain if it is displaced from the middle line. Careful light percussion on the left forefinger laid on the front of the neck, parallel to the long axis of the trachea, will often yield a tympanitic note when it is immediately over the windpipe. Finger-tip percussion may also be employed, the terminal phalanx of the left forefinger being flexed as nearly as possible at a right angle, so that the tip of the right middle finger may strike on the terminal interphalangeal joint as nearly as possible in the direction of the long axis of this terminal phalanx when it is placed on the front of the neck. Sansom's pleximeter may also be employed in percussing out the position of the trachea, the long arm being placed in a vertical position over the left edge of the goitre and gradually moved across the front of the neck until the tracheal note is obtained. The presence of gas in a cystic goitre is a rare occurrence, but it may easily be overlooked if a goitre is not percussed. Gas in such a situation can only be detected by percussion or by *x*-ray examination. Several years ago I saw a striking example of this with

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* Delivered to the South-Western Branch.

Dr. Albert Hopkinson. The patient was very ill, with a high irregular temperature and other indications of an acute toxaemia, for which there was no obvious cause. He had a large cystic goitre, which had been present for a long time without causing any special inconvenience. In the course of the examination of this patient the goitre was percussed and yielded a resonant note. As no other source of infection was found, we came to the conclusion that the cystic goitre had become infected by the *Bacillus coli communis*, which, being a gas-forming organism, had caused the formation of gas in the cyst, and that this infected cyst was the source of the man's acute illness. Drainage of the cyst was advised. This was done, and at the operation the cyst was found to contain gas and pus with the characteristic smell produced by *Bacillus coli*. After the operation the patient made an uninterrupted recovery.

Auscultation of the trachea is useful in cases of goitre in order to ascertain the presence and degree of compression of the trachea. In auscultation of the trachea the chest-piece of either a single or double stethoscope is placed over the front of the trachea between the cricoid cartilage and the upper end of the sternum. The loudness and character of the tracheal breath sounds normally vary considerably in different individuals, so that it is advisable to be familiar with the sounds as heard in a number of healthy persons. When the trachea is compressed by a goitre the breath sounds become higher pitched, and are as distinctly audible during expiration as during inspiration. If the compression is marked so that the trachea is much narrowed the breath sounds are stridulous in character. The amount of change from the normal serves as a useful indication of the amount of narrowing which has taken place. The alteration in the sound as normally generated by the passage of air between the vocal cords is probably due to the passage of the air through the constriction caused by the pressure of the goitre. The degree of compression does not of course depend on the size of the goitre. The largest goitre I have seen did not compress the trachea, as its weight dragged it downwards on to the upper part of the chest. On the other hand, quite a small retrosternal goitre may cause urgent and dangerous dyspnoea owing to the lack of space for expansion in this situation. In a case of "ligneous thyroiditis" recorded by Mr. F. A. Southam and myself,[1] there was urgent dyspnoea necessitating operation, although the enlargement of the gland was only moderate, and microscopical examination of the portion which was removed showed that the glandular structure had been replaced by dense fibrous tissue. Auscultation of the enlarged gland in Graves's disease frequently reveals the presence of murmurs. A continuous venous murmur or a systolic murmur synchronous with the pulse in the thyroid arteries may be audible.

Examination by x rays may be employed in some cases to determine the size and position of the trachea and for the detection of a retrosternal goitre. By the systematic examination of the thyroid gland just described we can obtain a good deal of useful information as to its size, shape and relationship to important neighbouring structures, such as the trachea, but physical examination alone tells us but little as to the functional activity of the gland, which in many cases is much more important than its size or shape. The functional activity of an endocrine gland can be roughly estimated by a careful consideration of the clinical symptoms and signs presented by the patient when the normal supply of hormones is either increased or decreased owing to structural changes in the gland. Further information can be obtained by estimating the changes in metabolism which occur in these maladies by the more accurate methods of the laboratory which are gradually coming into use. It will be useful here to consider the chief indications which enable us to determine, at as early a stage as possible, that a patient's symptoms are due to disorder of an endocrine gland. The symptoms caused by marked increase of the activity of the thyroid gland, as seen in fully developed Graves's disease, are well known. The symptoms of diminished function as seen in myxoedema and cretinism are also characteristic. Owing to the gradual onset of these symptoms their true nature is apt to remain unrecognized for long in some cases. In order to obtain full success in the treatment of the disorders in which the functional activity of the gland is altered it is most important that the change should be recognized at the earliest possible stage. When the gland becomes overactive an excess of thyroidal hormone passes into the blood and metabolism is increased, and it will be useful to consider the symptoms which occur during this period of simple hyperthyroidism when obvious enlargement of the gland may or may not be present. It must be remembered that such hypersecretion may develop in a thyroid gland which has previously been normal in size or in one which has been visibly enlarged for a longer or shorter period without causing any general symptoms. A goitre which is accompanied by some of the symptoms of hyperthyroidism may conveniently be described as a toxic goitre. All grades of hyperthyroidism occur, from slight forms of toxic goitre up to the most severe and fatal forms of Graves's disease, and no sharp division can be drawn between them.

When we inquire into the early history of a case of Graves's disease, it will often be ascertained that for some time prior to the appearance of any well recognized symptom of the malady there has been a period, extending over several weeks or months, during which the patient experienced a constant sense of fatigue. This symptom is present in the early stages of so many cases that it may be considered one of the earliest symptoms of hyperthyroidism of gradual onset. It is probably due to the increased metabolism of the tissues, and may be compared to the exhaustion which is experienced during the ambulatory stage of a fever of gradual onset. At the same time there may be a gradual but progressive loss of weight, even when more food than usual is being taken, owing to the increase of appetite, which is not uncommon at this early stage. Another early symptom is a change in disposition. This is shown by restlessness and a tendency to be agitated or worried by things which previously would have passed almost unnoticed. There may be marked mental depression, or periods of depression or anxiety may alternate with those of agitation. A fine tremor can usually be seen or felt in the hands when the patient extends both arms with the fingers fully spread out. During this early stage there is a slight persistent acceleration of the pulse rate by ten or twenty beats a minute, so that the frequency, even at rest, is raised to 80 or 90. The heart responds too readily to slight exertion or emotion. In order to appreciate this the pulse should be counted when the patient is sitting or lying down, when standing, and after some definite effort, such as stepping up on to a chair five times in fifteen seconds. It will generally be found that either standing or this simple exercise causes an acceleration of twenty or more beats a minute, and that it takes more than half a minute for the pulse to fall to its former frequency. In some cases the patient is conscious of the accelerated pulse rate, or complains of palpitation under the influence of exercise or emotion. It is naturally important in these cases to exclude as far as possible other causes of cardiac irritability before coming to the conclusion that it is thyroidal in origin. When the above symptoms alone are present they indicate hyperthyroidism. If they are associated with an enlarged thyroid gland they indicate a toxic goitre. At the stage we are considering no exophthalmos is present, but the patient may have a somewhat staring or startled expression which is due to a widening of the palpebral fissure caused by slight spasmodic contraction of the elevator of the upper eyelid. At first this sign may be unilateral, and even when it is bilateral the palpebral fissure may be obviously wider on one side than the other. The elevation of the upper eyelids may at first only take place when the eyes are suddenly directed to the right or left, so that the widening of the palpebral fissure is only present for a second or two, after which the upper eyelids fall to their normal position. A slight increase in moisture of the skin, especially of the hands, is perceptible in many cases. Any former tendency to chilblains or chilblain circulation is diminished, or may disappear altogether. In this connexion it is interesting to remember the value of thyroid extract in the treatment of these conditions. In those who are prone to suffer frequently from common colds the tendency diminishes as thyroid activity increases, only to return when the hyperthyroidism ceases. When these symptoms are present there may be no obvious goitre, though it is usually found on making a careful physical examination of the thyroid gland that it is appreciably enlarged. It is, however, quite possible, though unusual, for a gland which is not apparently larger than normal to be hyperactive ciently overactive to produce the symptoms already mentioned.

I wish to emphasize the importance of recognizing these early stages of the malady, as it is at this period that treatment is most effective, and a long illness may be prevented or curtailed by its prompt application while the symptoms are not yet fully developed. It is to those engaged in general practice that we must look for the detection of these early cases and for the observation of other early symptoms and signs which may occur during this period of the evolution of the malady. After this stage has been reached the pulse rate increases, the thyroid becomes obviously enlarged, the tremor of the hands is easily seen, and exophthalmos may or may not appear, and the disease becomes easily recognizable. A more accurate estimation of the amount of derangement of the gland may be made by a determination of the basal metabolic rate of the patient, as this is increased in hyperthyroidism and decreased in hypothyroidism. This method has been employed in the Mayo clinic by Dr. Irene Sandiford[2] with interesting results. After twelve hours' fast and twenty minutes' rest in bed, all the expired air is collected in a gasometer for a given period of time. The amounts of carbon dioxide and oxygen in it are then determined by means of the Haldane gas analysis apparatus, the total amounts of oxygen absorbed and of carbon dioxide produced in one hour are determined, and the total heat production ascertained. The total number of calories per hour is divided by the surface area, which varies according to the patient's height and weight. The number of calories for each square metre of the body surface is then compared with the normal. The basal metabolic rate is then expressed in plus or minus percentages according as the production of heat is greater or less than normal. In severe cases of exophthalmic goitre the basal metabolic rate may be as high as 100 per cent. over normal, while in advanced myxoedema it may fall to 40 per cent. below normal. The determination of the metabolic rate has proved of value in distinguishing between true hyperthyroidism and a neurosis simulating it, and it is also a useful index of the improvement resulting from treatment. Thus it was found in thirteen out-patients that the average metabolic rate was +59 per cent. and the average pulse rate 115. After rest in bed for about a week the average metabolic rate fell to +46 per cent. and the average pulse rate to 108. In a group of 22 severe cases of exophthalmic goitre treated by operation at the Mayo clinic the average basal metabolic rate was +66 per cent. and the pulse rate 123. After rest in bed and two ligations of the thyroid arteries the metabolic rate fell to +46 per cent. and the pulse to 115. After three months' rest at home the metabolic rate was +39 per cent. and the pulse rate 107. After subsequent thyroidectomy the metabolic rate was +16 per cent. and the pulse rate 89. In three cases the total result of the treatment was an average fall of 50 per cent. in the metabolic rate and a diminution of 34 in the pulse rate. Further investigations on these lines may render valuable assistance in the recognition of these early stages of hyperthyroidism. In severe cases of Graves's disease glycosuria may be present and the sugar tolerance is lowered, but in early cases the determination of sugar tolerance is not likely to be of much practical value.

As soon as a condition of hyperthyroidism or toxic goitre is recognized treatment must be undertaken, as these early cases are so much more amenable to treatment than those in which the fully developed Graves's disease is present. Rest in bed is advisable for a few weeks, after which twelve to sixteen hours a day should suffice. A liberal diet consisting of milk, fats, and carbohydrates should be regulated according to the necessities of each case. Red meats and meat extracts should be avoided, as they tend to stimulate thyroidal secretion. In these early cases treatment by radium or *x* rays is of considerable value. As a rule *x* rays have been used in my cases, when they can conveniently be applied at short intervals, and radium when long intervals between the applications are desirable on account of the distance to be travelled from home. In the use of *x* rays as large a dose is given as can be tolerated without injury to the skin. Dr. A. E. Barclay, who has treated many of my cases, employs from one to one and a half Sabouraud units measured before filtration, and then passed through 3 mm. of aluminium and a layer of boiler felt on the skin. This dose is repeated twice a week for the first few weeks, after that once a week, and later on at lengthening intervals according to the requirements of the case. The radium treatment has been carried out by Dr. A. Burrows at the Manchester Radium Institute by the application of plates, of a strength of 2.5 milligrams or millicuries to the square centimetre, over the enlarged gland. The plates were of such size that 45 to 76.5 milligrams were applied each time, screened by 1.5 millimetres of lead. The plates were applied for twenty-four hours about once every six weeks. In early cases radio-therapeutic treatment for three to six months may suffice, whereas in fully developed cases it may be necessary to continue it for one or even two years in order to obtain its full effects.

If these methods of treatment are not available the daily application of a mild faradic current by electrodes applied over the goitre and at the back of the neck for an hour twice a day may be used instead. Many drugs have been employed, but arsenic given in small doses for several months at a stretch has given the best results. No consistently good results have been observed after the use of organic extracts, with perhaps the exception of suprarenal gland. With the exception of fresh milk from a thyroidless goat, the various preparations made from animals after thyroidectomy have not fulfilled their promise. The various crises and complications which occur in Graves's disease require treatment which is largely symptomatic.

The recognition of the early signs of thyroidal deficiency in infants and young children is of vital importance as delay in the commencement of treatment may cause such arrest of development as can never be fully made good. One of the earliest signs of cretinism is a delay or arrest of normal growth, and this should at once lead to a careful search for other signs of the malady. Lack of the normal activity may be noted by the mother along with a tendency to coldness of the extremities and dryness of the skin. At this early stage the child will not have the appearance of a typical cretin, but slight thickening of the subcutaneous tissues, especially of the face, neck, supraclavicular fossae, and backs of the hands, may be discernible. The bridge of the nose may be slightly depressed and the complexion is pale. On examination of the neck the thyroid gland will be found to be too small, or absent. The maladies which may be mistaken for cretinism are mongolism, achondroplasia, and rickets. When there is difficulty in making a diagnosis it is advisable to treat the patient as a cretin. If decided improvement soon takes place the diagnosis of cretinism is clear. In an early case a small dose of one of the preparations should be given each night. In a child under one year it is advisable to begin with a dose of 1 minim of liquor thyroidei or half a grain of dry thyroid powder and gradually increase it up to double or treble this amount during the first three weeks of treatment. Subsequent doses must be regulated according to the effect produced. In older children larger doses may be given from the beginning. In any case gradually increasing doses will be required as the child grows older so as to supply sufficient hormones to maintain the basal metabolic rate at the level necessary for full development to take place. In the adult, symptoms of thyroidal insufficiency are apt to appear between the ages of 40 and 50, and less frequently earlier or later than this period. As they are much more frequent in women than in men they are apt to be attributed to the changes in the ovary which occur at this time of life. As the thyroidal hormones diminish the basal metabolic rate falls and the patient complains of gradually increasing loss of energy. Greater voluntary effort is required to initiate any action and more time is taken up in its execution. This is shown in a slowness in response to questions, which are, however, answered correctly. Some patients, though conscious of their difficulties, continue for a time their usual occupations, others soon begin to limit their sphere of action and tend more and more to lead a sedentary existence. The memory may become defective, especially for new names and recent events. Sensitiveness to cold and ill-defined visual and auditory sensations or even hallucinations may be present. The temperature may be slightly subnormal. Slight myxoedematous swelling of the subcutaneous tissues can usually be detected. At first the slight fullness of the face, combined with the pink flush in the check may give a false impression of good health to the patient's friends.

Careful inspection of the eyelids, of the supraclavicular fossae and of the backs of the hands will generally show the true nature of the swelling. The skin becomes drier and perspiration occurs less frequently than before. A fine powdery desquamation occurs especially on the legs, and the hair becomes thinner on the head. The thyroid gland will be found to be diminished in size though it is not as yet shrunken as in fully developed myxoedema. It is much easier to supplement a deficient thyroid gland than it is to control one which is overactive, so that the treatment of these cases presents no difficulty once their true nature is recognized. Two or three grains of dry thyroid or five minims of liquid thyroid extract given each night will usually remove the symptoms in the course of a few weeks, though in some cases larger doses may be necessary. The daily dose must, of course, be continued for the rest of the patient's life, and it may have to be increased as time goes on, owing to the progressive atrophy of the gland and further diminution in its secretion of hormones. In time this may fail altogether, so that the patient is entirely dependent on external sources for an adequate supply of thyroidal hormones to maintain the basal metabolism at the normal rate, Advanced cases of myxoedema in which the symptoms have been present for years without suitable treatment unfortunately still occur, as I have seen two recently; both of them rapidly recovered when treated with preparations of the thyroid gland. In such cases the dose should be soon increased up to 10 minims of the liquid extract once a day, which usually suffices to keep the patient free from symptoms of the malady as long as it is continued. As illustration of the long period for which health can be maintained by this means, it may be mentioned that the first case of myxoedema treated by thyroid extract, whose life-history I recently recorded,[3] lived in good health for over twenty-eight years, and only died last year from cardiac failure at the age of 74.

Thyroid extract has, however, other uses beyond the supplemental treatment of thyroidal deficiencies, which may be shortly considered. In the treatment of obesity it was expected to be beneficial, but it must be used with caution, and is of little service unless combined with dietetic and other measures directed to the reduction of excessive weight. In the treatment of some diseases of the skin, and especially in some cases of psoriasis, as was shown by Dr. Byrom Bramwell, the stimulating effects of the thyroidal hormones on the metabolism of the skin have a marked influence upon the course of the malady. In the treatment of chilblains I have found this influence of great value, and that it is increased by the simultaneous use of calcium salts.

PITUITARY GLAND.

The diseases of the thyroid gland have been considered first as they serve best to illustrate the principles which should guide us in the diagnosis and treatment of diseases of other endocrine glands. The pituitary gland is so inaccessible that no direct examination is possible. By the use of *x* rays a skiagraph may be obtained of the sella turcica, in which it lies. This gives useful information when there is a gross change in size, but is of little help in the early stages of either hypertrophy or atrophy of this gland. Owing to the confined situation of this gland any marked enlargement produces definite effects, which have been called "neighbourhood symptoms" by Cushing, so as to distinguish them from "glandular symptoms" due to changes in functional activity, so that in some cases tumour symptoms predominate and in others the glandular symptoms. When the hypophysis is large enough to cause pressure on surrounding structures the sella turcica is expanded and the patient complains of temporo-frontal headache, the fields of vision are diminished, and there may be partial bitemporal hemianopia and oculomotor paralysis. Epistaxis and anosmia may also occur. These symptoms are mechanical in origin and occur independently of any glandular symptoms, just as in the case of the thyroid gland. The fully developed effects of prolonged hyperpituitarism, as seen in acromegaly in the adult and one form of gigantism in the adolescent, are striking and well known, but it is much more difficult to recognize the early symptoms of overactivity of the hypophysis. Once the characteristic features of acromegaly have developed they remain permanently, although the gland may be no longer overactive, so that operative treatment at this stage at the best can only relieve pressure symptoms. If any treatment is to be effective it must be applied during the early stages of the malady, and it is for the symptoms of this stage we must learn to look. Dr. Leonard Mark[4] has given a good account of these symptoms as observed in his own case from the beginning up to the fully developed stage of the disease. The symptoms in his case first began to develop some thirteen years before their true nature was recognized. The earlier symptoms may be drowsiness, sense of fatigue, depression, post-nasal catarrh, and photophobia. To these sooner or later may be added the tumour symptoms already mentioned. The posterior lobe of the hypophysis influences metabolism, and it is probable that some of the early symptoms are due to the overactive stimulation of certain metabolic changes. Overactivity of the anterior lobe stimulates growth of the skeleton and cutaneous tissues. One of the earliest signs of this abnormal growth is the gradual advancement of the lower jaw until the lower incisors project in front of the upper, and biting the food is difficult. At the same time the nose and supraorbital ridges increase in size, and later the tongue becomes larger. Similar changes occur in the hands and feet, but these are difficult to recognize in the early stages unless the patient finds that he actually requires larger boots and gloves than formerly. The sugar tolerance may be diminished and there may be actual glycosuria. Thus acromegaly results from hypertrophy with hypersecretion of the pituitary gland, just as Graves's disease is due to hypersecretion of the thyroid gland. It is significant that both these maladies may occur simultaneously, but I have never seen myxoedema combined with acromegaly, nor Graves's disease with adiposo-genital dystrophy, so that overactivity of one of these glands is rarely, if ever, combined with loss of activity of the other. It is true that there is some enlargement of the pituitary gland in myxoedema, but this is probably a compensatory change, as there are no special symptoms referable to it.

The treatment of acromegaly is unsatisfactory. X-ray treatment of the enlarged hypophysis has greatly relieved the headache in some of my cases, but no other definite effect has been obtained. In an early case Dr J. H. D. Webster[5] has observed disappearance of the headache, marked diminution of the depression and irritability, decrease of weight, improvement in the fields of vision, and return of the discs almost to a normal condition, though the symptoms returned later after the treatment had been discontinued. The results so far obtained warrant a prolonged trial of *x*-ray treatment in the early stages of the disease in order to check further enlargement and overactivity of the hypophysis. Surgical treatment is only advisable when the symptoms indicate that the intracranial pressure must be relieved so as to save the vision or relieve an intolerable headache. Treatment by any form of pituitary extract is contraindicated just as much as thyroid extract is in the treatment of Graves's disease. Beyond this, treatment must be directed to the relief of symptoms as they arise. The opposite condition of adiposo-genital dystrophy, which develops as the result of atrophy or destruction of the pituitary gland, is a rare but very interesting disease. Loss of function of the pituitary gland may be due to a primary atrophy comparable to the atrophy of the thyroid gland in myxoedema, or it may be due to secondary changes following a period of hypersecretion. A similar sequence of events takes place in the thyroid gland when Graves's disease is followed by myxoedema. When the pituitary secretion fails early in life growth is arrested, the bones are not fully developed, the external genital organs remain undeveloped, the secondary sexual characters do not appear at puberty, and the skin is soft and smooth. These defects are chiefly due to loss of function of the anterior lobe. In consequence of failure of the posterior lobe sugar tolerance is raised and the subcutaneous fat is largely increased. In the adult this development of obesity is a striking feature. The fat chiefly accumulates in the supraclavicular fossae, in the lower part of the front and sides of the abdomen, at the back of the arms, over the hips, and upper part of the thighs. The face, hands, arms, legs, and feet usually are little if at all affected. The distribution of fat thus resembles that seen in adiposis dolorosa, but it is painless. The sugar tolerance is increased so that in some cases as much as 400 grams of glucose, if the stomach will retain it, may be taken without producing any glycosuria. The temperature tends to be subnormal and the pulse to be slow and of low tension. The metabolic rate was frequently found by Plummer to be as much as 25 per cent. below normal. The sexual power is diminished and there may be impotence in the male and sterility in the female, with atrophic changes in the external genital organs. The skin is soft, cool, and smooth. Polyuria occurs in some cases and so diabetes insipidus has been attributed to a deficiency of the posterior lobe, but recent investigations by Houssay and Leschke indicate that this malady is due to a lesion of the tuber cinereum rather than of the hypophysis itself. It is, however, to be remembered that the hypodermic injection of 1 c.cm. pituitrin every day or two often controls the polyuria for the time being, as a single dose has reduced the amount of urine passed in twenty-four hours from 13,000 c.cm. to 1,800 c.cm. the next day. It was naturally hoped that pituitary extract would be able to supply the missing hormones and remove the symptoms in these cases just as thyroid extract does so promptly in myxoedema. Some improvement does follow the administration of two or three grains of the whole dried gland several times a day. Cushing has found 12 grains three times a day necessary in one case to produce an improvement. The results have so far been disappointing, and clearly indicate that we are still unable either by oral or subcutaneous administration of pituitary extract to make good the loss of the special hormones secreted by this gland. Apart from these cases pituitrin has proved to be of service in raising blood pressure in cases of shock or heart failure and in stimulating peristalsis in inertia of the bowel. In obstetric practice also, as a uterine stimulant it is a powerful though sometimes dangerous therapeutic agent. It may be given subcutaneously in doses of 10 to 30 minims, or in the treatment of shock it may be added to an intravenous saline injection.

Suprarenal Gland.

The normal suprarenal gland cannot be detected by physical methods of examination or by x-ray examination, and only tumours of these glands may be large enough to be palpable during life. Disease of the gland can therefore only be detected by a consideration of the symptoms which occur when the normal functions are changed by alterations in their structure or functional activity. The cortex and medulla have different functions. The medulla produces adrenalin, which has been shown by Langley and Elliott to be a powerful stimulant of the sympathetic system. The cortex is probably concerned with the development of the genital system. These glands, like those we have already considered, may undergo changes which lead either to excessive activity, on the one hand, or to loss of function on the other. We know very little of the results of overaction of the chromaffin tissue of the medulla with excess of adrenalin in the blood, though it has been suggested that it may be a factor in the production of the high blood pressure associated with granular kidney and other conditions. The overactivity of the suprarenal cortex which occurs in certain cases of hypernephroma in early life leads to a rare and interesting condition of precocious sexual development associated with somnolence. Destructive lesions of the suprarenal glands, most commonly due to tuberculous infection, cause the symptoms of Addison's disease, which are characteristic in the fully developed malady, but difficult to recognize in its incipient stages. The progressive asthenia, gradual fall of blood pressure, and pigmentation of the skin, and especially of the mucous membrane of the mouth, are the most helpful early signs of suprarenal failure. The treatment of suprarenal insufficiency is unsatisfactory, as we cannot as yet replace the lost function by the use of suprarenal extract in any known form, administered either by ingestion or injection, and I have not seen any definite improvement following this treatment in Addison's disease. Cases of recovery have been recorded, but it is possible that the symptoms have been due to loss of one suprarenal gland and have disappeared owing to compensation by the other gland. In a recently recorded case of recovery it was ultimately found that the symptoms had been due to a destructive lesion of one suprarenal gland. The value of adrenalin as a therapeutic agent is so well known that it is only necessary to mention its powerful local action in arresting haemorrhage from the skin and mucous membrane by causing constriction of the blood vessels, and its useful action in stimulating the heart and raising blood pressure when given intravenously in shock or in the collapse of toxaemic conditions. Liq. adrenalini hydrochlor. may be given subcutaneously in doses from mj up to mx for the relief of spasmodic asthma with marked benefit. Professor J. N. Langley has found that adrenalin also relaxes the oesophagus, and suggested to me several years ago that it would be well to try it in cases of spasmodic stricture. In adopting this suggestion the adrenalin has been given by the mouth, in the hope that its local action on the oesophagus would relax the spasm, so as to avoid the frequent repetition of hypodermic injections. In two recent cases of oesophageal spasm under my care at the Manchester Royal Infirmary the administration of mxv of adrenalin solution in half an ounce of water five or ten minutes before each meal has had a striking effect in relaxing or preventing the spasm, so that the patients were able to take their food without difficulty.

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A FATAL CASE OF MALIGNANT TERTIAN MALARIA CONTRACTED IN THE NORTH OF ENGLAND.

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The following preliminary note of a fatal case of malignant tertian malaria contracted in the North of England is recorded:

M. B., a girl typist, aged 18, a resident in Liverpool, was admitted in a moribund condition to the Royal Infirmary, Liverpool, at 4.30 p.m., October 12th, 1920, under the care of Dr. J. C. Matthews. The only history obtainable at the time was the following: The patient had been seriously ill for a few days; on account of delirium her doctors thought she might have meningitis. After a slight haemorrhage, apparently from the vagina, she was also seen by a gynaecologist, who diagnosed metrorrhagia, and, finding her profoundly anaemic and unconscious, sent her to hospital.

On admission the patient, a poorly developed girl, was *in extremis*, unconscious, blanched but not jaundiced, and pulseless. The temperature was 102.6°. There was no evidence of meningitis, nor of the exanthemata. She died two hours later.

The *post mortem* examination was made twenty hours after death. Blood anaemic. Brain: apparently normal, no meningitis. Lungs: a moderate amount of oedema and muco-purulent bronchitis. Heart: weight 8 oz., normal, no fatty degeneration. Mouth: healthy, no trace of pyorrhoea. Oesophagus, stomach, and intestines opened from end to end—normal, no evidence of blood. Some of the lumbar lymphatic glands slightly enlarged, and red like haemolymph glands. Liver: weight 3 lb., slightly browner than normal, no haemosiderin reaction. Spleen: 1lb. 7 oz., retains its shape, of normal consistency, but dark, rather like malaria. Pancreas, suprarenals, kidneys and bladder normal. Uterus: normal size, but menstruating; one haemorrhagic corpus luteum. Bone marrow of the shaft of the femur a uniform terra-cotta red;* that of the sternum redder and more succulent than normal.

The salient features of the *post-mortem* examination were therefore the anaemia, the greatly enlarged spleen, and the marked erythroblastic reaction of the bone marrow. The patient's friends, who had very reluctantly granted the necropsy, demanded the death certificate before it was finished so as to obtain an order for burial before the registrar's office closed. A provisional diagnosis was therefore considered. There was no evidence of leucocythaemia—the spleen in particular was too small for the myeloid variety,* and the absence of greatly enlarged lymphatic glands negatived the lymphatic variety. The spleen was too small and not tough enough for splenic anaemia; besides, in our experience fatal cases of this disease are so rare, that there have only been three *post-mortem* examinations upon it in the Royal Infirmary during the last twenty years; all were adults and all were associated with cirrhosis of the liver.†

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* The colour closely resembled that shown by Carnegie Dickson in the transverse section of the bone marrow of the femur from a case of pernicious anaemia (Plate XI, Fig. 2). It was not so dark as the marrow from a case of acute streptococcal septicaemia (Plate XI, Fig. 1, W. E. C. Dickson, *The Bone Marrow*, Longmans Green and Co., London, 1908).

Therefore, to suit the convenience of the relatives, the death certificate was signed as "pernicious anaemia," but it was definitely stated in the *post-mortem* room that the macroscopic absence of fatty degeneration of the heart and of free iron in the liver, also the presence of a greatly enlarged spleen, made this diagnosis very unsatisfactory.‡ Though the spleen was noted to be "dark rather like malaria," the possibility of this disease was dismissed.

Films were next made of the blood; the spleen, portions of liver, and bone marrow were removed for further examination. The bone marrow was first investigated; a smear treated with alcohol and ether and stained by the Leishman method was found to contain pigmented parasite-like bodies. This was immediately shown to Dr. Blacklock and Professor Stephens of the Tropical School, who made a provisional diagnosis of malaria from the presence of pigment and of organisms resembling crescents. The blood films and smears of the spleen were next examined, and Professor Stephens found numerous segmenting malignant tertian parasites. An attempt was at once made to obtain portions of the brain,§ but the body had already been removed for burial.

At subsequent examinations of additional material numerous crescents were found in the bone marrow and a moderate number in the spleen and blood smears. Sections of the liver and spleen showed a moderate amount of melanin and numerous malaria parasites. The liver contained a minute trace of haemosiderin. The spleen was absolutely engorged with blood; there was no fibrosis. A differential count of a *post-mortem* blood film showed 10 per cent. polymorphs, 28.2 per cent. lymphocytes, 61.4 per cent. mononuclears, 0.4 per cent. eosinophiles—500 white cells examined. During this count 19 normoblasts but no megaloblasts were seen. The erythrocytes were deficient in haemoglobin; there was slight poikilocytosis, but no anisocytosis, and no polychromatophilia, nor punctate basophilia (J. C. M.).

Clinical History.

An investigation of the patient's past history was then undertaken by Drs. Blacklock and Matthews, and the following facts elicited:

The patient was born in Liverpool, and lived in the same house in the town for ten years. She was rather anaemic and liable to headache. She had not worked for about eight weeks; there was no necessity for her to work, and she was not very strong. On September 15th five or six teeth were removed under gas; there was little haemorrhage. On September 22nd she went with her brother to a North of England health resort; though pale she was apparently active and well. On September [illegible] she spent part of the day in a valley which was subsequently found by Dr. Blacklock to harbour large numbers of [illegible] larval and adult anopheles mosquitos. On September [illegible] she vomited once, but next day was apparently well and went for a long walk. On October 1st she arrived home tired and ill. For the next two days she remained in bed, vomiting occasionally. On October 4th she went to see a doctor. During the ensuing three days she was apparently better. On the 7th she felt faint. On the 8th, while walking in the street, sudden faintness came on; she asked a passer-by to take her home, and the doctor was sent for. She went to bed feeling very thirsty, but her head was clear. On the 9th she vomited; she became slightly delirious, got up, fell on the floor, and had to be carried back to bed; she said she could not move her legs. On the 10th she complained of very severe headache with photophobia, and was unconscious at intervals. On the 11th she was worse, and the haemorrhage occurred from the uterus. Her temperature, taken for the first time, was found to be 100°. On the 12th she was removed to hospital. At no time during the illness did she complain of shivering or sweating; there was apparently no diarrhoea, but there is some evidence that no urine was passed during the last two days of life.

This clinical history is consistent with a first attack of malignant tertian malaria of the pernicious type and algid variety.

The illness apparently lasted thirteen days. The absence of cellular hyperplasia and of fibrosis of the spleen and the comparatively small amount of melanin pigment in it, suggest an infection of recent origin; the absence of any obvious macroscopic lesion in the brain confirms this conclusion. On the other hand, the size of the spleen—namely, 23 oz., or 644 grams—suggests a subacute infection. Ross quotes Kelsch and Kiener, who "state that in eighty autopsies they found the weight to vary from 400 to 1,500 grams, and to average 914 grams (chronic malaria)." James, however, points out "that great splenic enlargement is a feature of many of the cases which occur in children of simple tertian malaria in England"; though our patient was not a child, she was only 18.

The development of the erythroblastic reaction of the bone marrow is remarkably rapid, but Carnegie Dickson shows a coloured drawing of the femur from a case of pneumonia of five days' duration in which nearly all the yellow marrow has been replaced by red marrow (Plate IX, Fig. 1.)

The Place of Infection.

Dr. Blacklock found no mosquitos in the house where the patient lived. She was, however, accustomed to walk in one of the parks and country round Liverpool, in which district anopheles mosquitos occur. A full account of the parasites, of the histology and of the mosquito survey, together with a discussion of certain problems connected with this case, will be published subsequently by Dr. Blacklock in the *Annals of Tropical Medicine and Parasitology.*

Malaria in England.

James (1920) refers to the special inquiry into indigenous malaria. He states that 330 cases occurred "from September, 1917, to the end of 1918—38 in the navy, 224 in the army, and 68 in civilians." The most northerly case occurred in Grimsby. "In 1918 about 85 per cent. of the cases were detected during August and September." He further "states that all the locally contracted cases of malaria so far reported in this country have been infections with the benign tertian parasite," also that "no death occurred." A few cases of malignant tertian have been noted in France. Lastly, he states that "among the civilians who contracted malaria in England between 1917 and 1919 no fewer than 75 per cent. were children." It appears, therefore, first, that the patient contracted the disease either about or beyond the reported northern limit of indigenous malaria in England; second, that it is the first case recorded in recent years in England of indigenous *malignant tertian* malaria, and of *fatal* indigenous malaria. It is very probably not the only case of malignant tertian malaria which has recently occurred in England.

Other "Foreign" Diseases Contracted at Home.

It is interesting to observe that other infective diseases besides malaria are now recognized to develop not infrequently at home, which were formerly thought to be practically confined to foreign, particularly tropical, countries. Perhaps we may be allowed to refer to our own recent experience, which doubtless agrees with that of others.

1. *Paratyphoid Infections.*—The agglutinative capacity of the blood of 10 uninoculated civilian hospital patients

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* [illegible]

† [illegible]

‡ [illegible]

§ [illegible]

suffering from "enteric" (?) was recently tested. In 15 there was no agglutination; 20 gave evidence of a pure typhoid infection, but 5 gave evidence of a pure paratyphoid B infection. Further, in two other cases of acute pleural effusion in civilians, paratyphoid B bacillus was isolated from the exudate.[1]

2. *Bacillary Dysentery.*—This was formerly thought to be confined to asylums, yet Flexner Y bacillus was isolated from a boy with acute diarrhoea, and from two out of 504 healthy recruits in a training camp; Shiga's bacillus was isolated from the spleen of a woman who had always lived in Liverpool, and who died of puerperal sepsis, but was found *post mortem* to have chronic ulcerative colitis.[2]

3. *Amoebic Dysentery.*—Fifty-nine patients in an English asylum suffering from acute dysentery were examined for protozoa, "in 3 cases vegetative *Entamoeba histolytica* were found in the stools."[5]

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MINER'S NYSTAGMUS: SUGGESTIONS FOR ITS PREVENTION.

BY

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SOME suggestions I made to Mr. T. H. Mottram, C.B.E., Divisional Inspector of Mines for the York and Midland Division, with the object of reducing the amount of miner's nystagmus in our coalfields, were embodied by him in his annual report for 1919. Further inquiry has strengthened my opinion that the only way to eliminate the "grave," or what might be termed "compensation," cases of miner's nystagmus is by some such method as therein outlined, and, as the outcome of an informal conversation with Dr. J. S. Haldane, I have endeavoured to state the case somewhat more fully in the following article.

The importance of removing the personal factor in the causation of the disease has been somewhat overshadowed by concentration of thought and effort on removal of the external exciting factors. Inquirers have centred their researches on questions of posture and illumination; that is, attempts have been made to eliminate nystagmus by improving the conditions in the mine instead of preventing the man who is predisposed to the disease from entering the mine.

No man the refractive condition of whose eye is normal will develop miner's nystagmus to such an extent as to incapacitate him from following his employment as a miner. Of this I am persuaded from investigations among men suffering from miner's nystagmus in the Doncaster area.

Astigmatism is by far the most frequent predisposing cause of miner's nystagmus, and the greater the degree or the more marked the abnormality, the more susceptible will the subject be when exposed to the exciting factors of this disease. A subject with mixed astigmatism in oblique meridians will almost certainly develop the disease when exposed to the conditions of a collier's life. Simple refractive errors, myopia and hypermetropia, also act as predisposing causes, though to a much less degree.

Most observers are agreed that ametropia is the rule in cases of miner's nystagmus. Various authors have published figures ranging from 90 per cent. downwards, but my experience has led me to believe that unless nystagmus is associated with ametropia it will not be so grave in type as to incapacitate a miner from following his occupation. Severe nystagmus may, of course, be due to the other known causes of the condition, such as affections of the cerebrum or cerebellum, diseases of the labyrinth, sclerosis cerebri, etc.

Age as a Factor in the Production of Miner's Nystagmus.

In my series of cases the highest age incidence was 40 to 44, as shown in Table I; the explanation is that physiological changes are then occurring in the lens resulting in presbyopia. This imposes an additional strain upon the neuro-muscular mechanism concerned in accommodation and convergence. Given, then, that there exists an error of refraction as mentioned above, the disease will be particularly prone to manifest itself at the age of presbyopia. That this should be so lends support to the theory that an error of refraction is an essential factor in the production of the disease.

TABLE I.—*Age Incidence of Miner's Nystagmus; showing Number affected in Five-yearly Age Groups.*

Age 20-24	3
25-29	5
30-34	10
35-39	16
40-44	24
45-49	19
50-54	16
55-59	8
60-64	2

Length of Colliery Life as a Factor.

Length of life as a collier bears no direct relation to the incidence of miner's nystagmus. It is not a matter of surprise that miners who have a long record of life underground should have a high incidence of nystagmus, as shown in Table II. As presbyopia increases so does its influence as a factor in the production of nystagmus when the eye is ametropic; and the greater the abnormality of refraction the greater the influence.

TABLE II.—*Showing duration of Work in Collieries in Five-yearly Groups and Number of Men with Nystagmus.*

1 to 5 years	2
6 to 10 ,,	4
11 to 15 ,,	9
16 to 20 ,,	12
21 to 25 ,,	12
26 to 30 ,,	19
31 to 35 ,,	16
36 to 40 ,,	11
41 to 45 ,,	5
46 to 50 ,,	2
51 to 55 ,,	1

Heredity as a Factor.

Other observers have found a hereditary history of nystagmus in as many as 20 per cent. of their cases. In my opinion it is not nystagmus that is hereditary, but the refractive error. Similar errors of refraction are commonly found in parents and children. What more natural, then, than that with the transmission of an error of refraction there should be associated a tendency to miner's nystagmus? The latter disease is thus not in itself hereditary, but the refractive errors—the personal predisposing causes of miner's nystagmus—are markedly so.

Classification of Causes.

The chief factors which result in the production of miner's nystagmus are thus:

Predisposing.

1. *Errors of Refraction.*—These, when associated with the conditions of a collier's work, may result in miner's nystagmus at any age period. When this occurs in early life the astigmatism present is usually severe in type or abnormal in character.

Exciting.

(*a*) *Presbyopia.*—This has a marked influence upon ametropic eyes in the production of nystagmus when associated with the conditions peculiar to coal miners' work.

(*b*) *Defective Illumination, etc., in Coal-mining Work.* This in itself cannot create "grave" miner's nystagmus in an emmetropic eye.

If we accept the theory that refractive errors are the main predisposing causes of the affection we should exclude men who have certain types of ametropia from following the occupation of a miner. In the great majority of employments the eyesight of young persons has to be tested before commencing work. This ensures correction of errors of refraction, whereas the eyesight of the collier is seldom if ever examined or corrected until the onset of disease renders it imperative. It is easy to understand how, in a man affected with uncorrected ametropia, the defective lighting of a coal mine and the posture at work would impose an additional strain upon the ocular muscles.

Improvement in the illumination will unquestionably reduce the strain and at the same time the incidence of nystagmus, but will never stamp out the disease from our mines whilst refractive errors exist amongst the colliers.

Types of Nystagmus found in Miners.

Two chief types occur—the minor, latent or transitory, mild in character and degree, and the major, incapacitating, grave type. The minor type, which does not incapacitate a man from his work, exists in a very considerable proportion of men employed at the coal faces, whereas the major type occurs in less than 1 per cent. of men similarly engaged. In each there are two principal personal factors in production: (*a*) Refractive errors, structural and other defects of the eye; (*b*) abnormalities of the neuro-muscular mechanism of the eyeball. When these conditions are slight the minor type as a rule results, when marked the major type. In no other employment do we get the same combination of exciting factors; defective illumination I have no doubt is the most important, and great improvement has been made in this respect; but there has been no advance in the removal of the personal predisposing cause of the disease, and without this we can hardly hope for success. It seems essential to establish a refraction standard for miners, and thus prevent men from taking up a form of employment totally unsuited to their physical powers. By this means we can eliminate the major cases of disease from the mines, and although the minor types may occur they will be reduced in severity and in frequency.

A Fixed Refraction Standard for Coal Miners.

The benefits derived from a fixed refraction standard would be:

1. *To the Individual.*—(*a*) A man would be prevented at the beginning from following an employment for which he was unsuited, and which sooner or later would prove detrimental to his health and his life prospects. (*b*) He would at an early age, if ametropic, come under the observation of a skilled oculist, and would thus learn the importance of correctly adjusted glasses and save his eyes from further injury. (*c*) The standard would eliminate these distressing examples of miner's nystagmus, who tend to become a burden to themselves, being unable to work as miners and unable or unwilling to follow other occupations. (*d*) It would tend to prevent injury to other workmen. The man with marked refractive errors is a source of danger to his fellow workers.

2. *To the Owner.*—(*a*) There would be a saving in the money expended on compensation, as the major types of the disease would be kept out of the mines. (*b*) The standard would tend to prevent accidents. (*c*) It would enable better coal to be got, "the men being able to see whether they are filling coal or dirt," as Sir Arthur Markham put it.

3. *To the Nation.*—(*a*) It would exclude men from unsuitable employment. (*b*) It would protect the eyesight of the nation, giving useful instead of handicapped men in other employments. (*c*) It would tend to reduce poverty, disease, alcoholism. (*d*) It would give a higher average output of coal per man.

Standard Suggested.

The standard which I would suggest for admission to pit life is the ability to read Snellen [illegible] at twenty feet with each eye separately or Snellen [illegible] (at least three letters) with both eyes at twenty feet. In the event of failure to pass the above tests the man would be referred to the certifying factory surgeon, who should have a knowledge of eye work. With a considerable amount of hypermetropia or myopia (which might be arbitrarily fixed at 1 D) the man's attention would be directed to the abnormality, and such abnormality noted on the register. Although he might not be excluded from work as a miner, he would be advised to seek other employment, and to wear suitable glasses. If the error of refraction exceeded 1 D hypermetropia or myopia or if astigmatism was present, the man would be excluded from work as a coal miner.

These suggestions as to standard are only intended as provisional and could be modified in the light of experience.

COAL MINER'S NYSTAGMUS AND ITS PREDISPOSING CAUSES.

BY

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Coal miner's nystagmus is a disease which, owing to its most obvious sign being oscillation of the eyeballs, has been most discussed by the ophthalmological sections of our medical societies and only rarely considered, as I believe it should be considered, as a functional disease of the nervous system. Nystagmus is only one of its signs and that one not necessarily always the most prominent.

The disease is essentially one of exhaustion. First the visual centres and then the higher centres become worn out by constant effort. Any one who is doing much work on pensions boards and at the same time is engaged in colliery practice, cannot fail to be struck by the similarity between cases of nystagmus of the coal miners and anxiety neurosis of the war-strained. Each is a replica of the other, the only difference being the accentuation of the signs in the latter. Each has the same nervous, depressed and often haunted aspect; the same loss of self-confidence; the same fine general tremor; the same alteration of reflexes. (In bad cases of miner's nystagmus the accommodation reflex is sluggish.) The same headaches, giddiness, and at times fear of the dark. In each the blood pressure is often abnormally high. Cases of miner's nystagmus may remain latent for years, so long as the disease of the eyeballs is the only sign of the disease. It becomes manifest so soon as tremor of the head or general tremor begins—for example:

Case 12. Stallman, aged 56; examined March 24th, 1909. Nystagmus, but no tremor. Is still working regularly.

Case 20.—Nystagmus, but no tremor, for seventeen years. Tremor first noticed April 17th, 1913. Refused to give up work until June 17th, 1918. A hard worker and a hard drinker. Is now working in a candle pit.

Case 21. Stallman, aged 56; examined January 9th, 1911. Nystagmus, but no tremor. No complaint except that the right eye was weaker than the left. Worked regularly until he "retired" two years ago. Re-examined October 20th, 1920: no nystagmus.

The subjective distress is not proportional to the extent of the nystagmus, its rapidity, or amplitude, but is to the accompanying nervous symptoms. Some of my cases, in which time has shown the prognosis to have been bad, have had nystagmus of such small amplitude that it has been difficult to detect it without the ophthalmoscope. But the nervous symptoms, particularly tremor, have been very obvious. This tremor is so very fine that it is impossible of simulation by voluntary effort, and is easily distinguished from the coarse head-wagging of the "income neurotic." These men complain just as much of "dancing lights," or of the "lamps going round in a circle," as do those with nystagmus of coarse amplitude.

That the exciting cause of the disease is deficiency of light is now generally admitted,[1 and 2] but what are its predisposing causes? And can anything be done to diminish or remove at least some of them?

Bad ventilation in the mines, or the breathing of gases given off by the coal, or the result of shot firing can be ruled out.[1] Ventilation is more efficient than ever it was, yet the cases do not become fewer. The balance of informed opinion appears to be that errors of refraction do not influence its incidence. I believe the main predisposing causes are as follows:

1. *Nature of the Work done.*—Stallmen (that is, the actual coal-getters) suffer in the highest proportion; they constitute 88 per cent. of my cases. The greatest strain falls on them. They, as a rule, work harder than the drivers, loaders, or datallers, and their vision is more strained; in addition they are responsible for the safety of those working in the stall with them.

2. *Excess of Alcohol and Tobacco.*—As regards the latter, the excess is especially of the cheaper brands of cigarettes. As for the former, nystagmus is often worse on Mondays, and many latent cases become manifest after bank holidays.

3. *Illness.*—Several cases followed attacks of influenza during the recent epidemic.

4. *Accident*, especially to the eye—for example:

Case 6.—Injury to the right eye, July 14th, 1909; manifest nystagmus, September 30th, 1909. Oscillation more marked on the injured side.

Case 21.—Injury to the left eye, February 11th, 1910; scar across iris; manifest nystagmus, July 23rd, 1910. On converging eyes, nystagmus on the injured side only; on divergence, both sides, beginning a few moments after fixation.

Case 115.—Foreign body in the left cornea. Then found to have latent nystagmus, which became manifest nine days later.

5. *Heredity.*—In one rural district which I know well there are three large groups of families—I will call them A, B, and C—all the male members of which are miners and who work, or have worked, at the same colliery.

In group A there has only been one case of nystagmus in the last twenty-five years—namely:

Case 37.—First examined February 22nd, 1912: his age was then 37; he had worked in the pit for twenty-eight years, as a stallman for thirteen of them. He had well marked nystagmus, but in spite of this he worked regularly until recently, when he had a severe accident. Since then he has been disabled.

There are three generations of this group. The first is now represented by an old man, who still works regularly and hard, but drinks even more regularly and harder. The second generation also work well, but are all very temperate or total abstainers.

Groups B and C tell an entirely different story. So far as I have been able to find out, and I have made careful inquiry and examination where possible, there are no members of group C, and I think none of group B, who have worked in the mine all their working lives and are over 25 years of age, who are not suffering from latent or manifest nystagmus.

Also the disease is more severe in the younger generation than in the older. The first generation of group C is represented by several brothers and two sisters. Apparently the tendency to the disease is transmitted as readily by the mother as by the father.

6. *Exhaustion*, due to want of food and prolonged strain without rest, is, I believe, the most important, most effective predisposing cause of the disease. The miner's habits and their relation to his day's work must be considered. As a general rule he takes very little breakfast. Even when he says he always has a good one, he means a piece or two of bread-and-butter or of toast and a cup of tea. He then starts out to work at a period varying from 5 to 7 a.m., the time depending partly on the distance of his home from the pit and partly on the nature of his work. He works, and as a rule works hard, straining his eyes all the time, until 11 a.m., when he has a quarter of an hour's rest for food. By this time he is hungry perhaps, and bolts a good deal of food in a few minutes; then he at once sets to work again in a more or less cramped position if a holer, or continually stooping if loading, until 2 or 2.30 p.m. He gets home at from 3 to 4 in the afternoon, and then has his first decent meal of the day. This is bundled into an exhausted stomach, washed down with tea *ad lib.*, and followed later on by a pint or two of beer, and then supper. Is it any wonder that he suffers from indigestion more and more commonly; that he gets exhausted; that his eyes and his nervous system, on which the greatest strain of his work falls, become affected; and that nystagmus, at first latent then manifest, follows, and the man's usefulness as a miner comes to an end?

The Eight Hours Act came into force in January, 1908. Before then the miner had forty minutes' rest in the middle of his working day. He was able to take his food in comfort, and to give his eyes a substantial rest. Now he has fifteen minutes! Digestion had a chance to at least begin before he restarted work. Before 1908 miner's nystagmus in the lamp pits of this district was far from common. At that time I was surgeon to seven colliery companies, and did not see more than five cases of nystagmus a year. The number was five in 1908. In the first seven months of this year (1920) I had fifteen new cases from one colliery alone, and not all the cases now occurring at that colliery come under my care. The number of cases is steadily growing, and, what is worse, I believe the average age at which incapacity to work underground begins is becoming lower. Of the last thirty cases I have had under my care or examined, eight have been 50 years or over, and twenty-two under 50.

The disease is a serious one for the miner and for the industry. It is becoming more so. Good electric lamps are already in use in most of the lamp pits of this district, though their introduction in large numbers is of too recent a date to form any conclusion as to their value. They should be a great help. But I am convinced that to get rid of miner's nystagmus, not only is better lighting necessary for the men while at work, but they must have a reasonable time for rest and food in the middle of their day's work. Forty minutes would only mean their being in the pit for half an hour longer each day—seven and a half hours in all. Why should not the experiment be tried at a few mines? The results would be interesting. The ordinary man has an hour in the middle of his working day for rest and food. Give the miner the same, or as near it as possible. Exhaustion is the explanation of some of the absenteeism we hear so much about nowadays. A miner with indigestion is a miner with exhaustion, and is therefore a candidate for nystagmus. And, quite incidentally, is a man with indigestion ever a contented man?

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TREATMENT OF RHEUMATOID ARTHRITIS BY VACCINES.

*NOTES OF ONE HUNDRED AND FORTY-THREE CASES.**

BY

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There is no satisfactory definition of rheumatoid arthritis. Nor is a universally acceptable definition possible until the pathology has been worked out and opinion is more settled as to what really constitutes this disease. No definition will therefore be attempted here. But for the purpose of this paper the great majority of the cases may be taken as conforming to the usual conception of rheumatoid arthritis.

Essentially it is a disease presenting trophic disturbances as one of its most characteristic features. Later manifestations include changes in the joints of a degenerative nature. Swelling of the periarticular structures is a constant sign of activity. Anaemia, cyanosis, muscular degenerations and contractures complete the final picture.

The cases extend over the period from December, 1910, to the present time, excluding the last three years of the war. Fifty-two were not seen personally, but pains have been taken to make as certain as possible that these were cases of genuine rheumatoid arthritis. With few exceptions the remainder received treatment for longer or shorter periods at the hands of the writer.

A critical review of the literature recording vaccine treatment is much hampered by the difficulty of definition. It is also unfortunate that authors for the most part have been content only to publish their successes. This is misleading, for the fact is that hitherto the application of vaccine therapy to rheumatoid arthritis has given but few encouraging results. Those that have been successful, almost without exception, fall into one of two groups: either a focus of infection has been found and vaccines have been made from the germs present, or such large doses of vaccine have been given that the effect may well have been entirely non-specific, as in the method of protein shock.

Previous to 1912 a few reports had appeared. Bannatyne and Lyndsay[1] isolated organisms from the blood of two cases and treated them successfully by autogenous vaccines. The organisms grew in clusters and were presumably staphylococci. This is interesting in view of Case I described below. Lyon Smith[2] treated four cases by a vaccine of a small streptococcus. Ball[3] ascribed the cure of four cases to a vaccine of a mouth streptococcus. In America Painter[4] treated nine cases with a bacillary organism without improvement, though exacerbations followed the injections. This is one of the few recorded instances of failure. In his Hunterian lecture of 1911, Goadby[5] records forty-nine cases of fibrositis and arthritis. There is no attempt to differentiate the diseases further, but the symptoms of each are carefully described and it is clear that some of the cases in his groups A and C were rheumatoid arthritis. Goadby considered his *Streptobacillus* [illegible] to be causative in the great majority, and an autogenous vaccine of this organism was given in doses of from 10 to 200 million. Oral sepsis was treated radically. A fair proportion were cured or improved. In 1912 Horder[6] gave a useful warning against the indiscriminate use of vaccines in the disease, which is evidence of some misplaced activity in this direction. Possibly he had been struck by the extreme sensitiveness of rheumatoid cases and the disastrous results which were found to follow excessive dosage. A few other reports appeared about this time but the diagnosis of rheumatoid arthritis is doubtful.

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* Read before the Therapeutic Section of the Royal Society of Medicine, November 16th, 1920.

Efforts to treat the disease were encouraged by good results in other forms of arthritis, as reported for example by Collins.[7] Sherman[8] described his own work in America and referred to that of his brother. These observers had good results by using alternately 30 million of a small streptococcus and 100 million of a mixed staphylococcus vaccine. Their method seems to have been empirical. From the size of the doses it is almost certain that the response was not specific. Greene[9] reported success from a vaccine made from two organisms isolated from the blood—the one a bacillus similar to Blaxall's and the other a diplococcus resembling that described by Poynton and Payne. In 1913 there were several contributions, notably by Hughes,[10] Veitch,[11] Wynn,[12] and Rowlands.[13] These writers all agree that to find a focus of infection, treat that radically, and to use an autogenous vaccine gives the best chance of success. In the absence of any discoverable focus vaccine treatment had failed. Stock vaccines had not been of use. Wynn, like Goadby, lays particular stress on oral sepsis.

So far, then, opinion seemed to be crystallizing in favour of the radical and specific treatment of an infective focus. In the absence of a focus vaccine treatment was not successful. The inference drawn by a good many writers was that rheumatoid arthritis might be due to many different organisms, or from absorption of toxins from the colon.

In 1913 I described a new organism,[14,15] and Soltau[16] treated four cases by means of a stock vaccine with excellent results. This was the first time that small doses of a stock vaccine had been successful. The only other observer who claims to have isolated a specific germ recently is Vipond,[17] who gets it from the juice of enlarged glands, which he finds to be a constant feature of rheumatoid arthritis. Protein shock therapy has had a good many adherents, though not always under that name. Several French writers have claimed a measure of success by injecting large doses of tuberculin. Oppenheim and Lang[18] gave a tuberculin test to 49 cases of severe arthropathies. A positive tuberculin reaction occurred in every one with one or other of the three doses. The last dose was 1 mg. A "joint reaction" was noticed in 25 per cent. The claim was made that a large proportion of arthropathies are tuberculous in origin. Two cases out of eighteen treated by increasing doses of tuberculin showed definite improvement.

The modern methods of protein shock do not come within the scope of this article; yet, from the fact that an injection of 150 million typhoid bacilli caused focal joint reactions in rheumatoid arthritis (Miller and Lusk), it is clear that such reactions do not necessarily indicate that a vaccine is specific. Professor Hastings,[19] however, considers that reactions following small doses are strong evidence of specificity in the vaccine. That the organisms he employed were specific was established, in his view, by positive complement deviation tests. Though doubt must certainly exist as to how far a focal reaction can be taken as evidence of specificity, it is clear that the smaller the dose the greater the probability that such a response is evidence of the injection of a homologous toxin. Fairly frequently, in mixed infections, where two vaccines are being used alternately, their action seems to be selective. A striking example of this occurred in the practice of the writer.

In [illegible] a lady was receiving inoculations for muscular rheumatism and [illegible] neuralgia. In the urine were found a typical faecal streptococcus and the *M. deformans* (Crowe). Vaccines of each were given separately. After deformans vaccine the patient used to complain of "the burning pain in the arm," and after the streptococcal vaccine the "rheumatism" was worse. The sequence was then varied without informing the patient. Thus on January 9th and 23rd 1 million streptococci were given and on the 16th and 20th 1 million deformans. On each occasion the patient knew from her sensations which was the vaccine. On the 27th carbolized saline alone was injected. Following this the patient's words were: "I'm afraid you've stumped me this time, as I did not notice any reaction at all," which testified both to the patient's honesty and to the actuality of the symptoms. Appearances in this case were decidedly in favour of the vaccines being specific.

The basis of the treatment in this series was the hypothesis put forward by the author in 1914.[15] Briefly stated, it was that rheumatoid arthritis was primarily due to an organism, the *Staphylococcus epidermidis albus* (var. *deformans*); that, just as in tuberculosis, there were present in the majority of cases secondary infections, with or without a local focus; that it was these secondary infections which caused the variety of joint manifestations; that where the radical treatment of a local infective focus, with or without vaccines, resulted in amelioration or cure of the disease, the explanation was that the system, relieved of some of its microbic enemies, had then been strong enough to overcome the primary organism; and, finally, that the *M. deformans* or its toxin acted primarily on the nervous system and was responsible for the neuropathies which are the predominating, if not the sole, symptom of uncomplicated rheumatoid arthritis.

All the cases were treated, without exception, on this hypothesis, and no other treatment was given to any of the successful cases, with the exception of simple symptomatic measures, such as occasional aspirin for the relief of pain and latterly some mild hydrotherapy (Cases 109 to 143). Deformans vaccine was given to every case. Although some nine years have elapsed, the same vaccine is still in use with no apparent deterioration. It was prepared originally from two strains as described in a communication of 1913.[14] This vaccine was either combined or given alternately with autogenous vaccines when a definite infective focus was found, or if the urine was infected. When the symptoms were such as to suggest a coincident rheumatic infection, then a streptococcus vaccine was also given prepared from a large number of strains isolated from severe cases. None of the strains were isolated from joints, but from such conditions as acute nephritis with joint swellings and strepto-bacteriuria, and acute tonsillitis and rheumatism. No pyogenic streptococci were combined in the vaccine, but all conformed to one or other of the alimentary types.

Results.

One hundred and seven cases were treated more than four years ago, 35 recently. The earlier cases have been tabulated under fifteen headings: (1) Number and initials of patient and doctor in charge; (2) sex; (3) age; (4) length of history; (5) condition when starting treatment and date; (6) bacteriology; (7) vaccines employed; (8) dosage of vaccines; (9) whether sensitiveness developed; (10) length of treatment; (11) immediate result; (12) condition a few weeks after cessation of treatment; (13) relapse and if vaccines readministered; (14) condition in 1920; (15) abstract of results. With regard to the condition a few weeks after cessation of treatment, it has been noticed that in some sensitive cases where treatment was stopped because the patient seemed to be getting worse, a few weeks later symptoms had so far improved that the verdict was completely reversed.

To judge of the result of treatment each patient has been placed in one of six classes. Class I comprises all those who were cured as far as cure was possible. Cure implies the complete absence of any signs or symptoms of active disease, together with a return to a fairly normal life. Further than this, the condition of cure must be maintained—that is, either no relapse at all or only very slight, or having relapsed, returned for treatment and again got well. Class II: Cured, yet relapsed seriously, but with more than twelve months' good health, or very greatly improved and ground well maintained for some time. Class III: improved definitely, but may have relapsed again soon. Class IV: Not improved, no worse. Class V: Definitely worse after vaccines. Class VI: Data insufficient to justify classification.

Rather than incur the suspicion of describing only selected cases, every case known to the author, which has been treated by his vaccines has been entered in the table.*

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* Difficulties of publication prevent the insertion of the table in the [illegible]. A copy can, however, be seen on application to the author, who hopes to publish the table in full elsewhere at a later date.

even though in a few the particulars are too meagre to be of any interest. Largely owing to the war, too, about 40 per cent. of the earlier cases have been lost sight of. No particular sequence has been observed in drawing up the table, but patients have been grouped as follows; Nos. 1 to 8 are monarticular cases. Nos. 9 to 71 comprise those whose notes are fairly complete. These are again subdivided into two subgroups according to the severity of their symptoms. Nos. 72 to 108 are incomplete, and Nos. 109 to 143 are recent cases arranged in chronological order.

The strain of the war has put the final result of treatment to a severe test. Mental strain is recognized by all authorities as a frequent contributory factor in this disease. It is known that several relapses dated from the shock of losing relatives. The first case, which has already been published,[15] was an acute monarticular inflammation in the right knee-joint, associated with brachial neuralgia. Fluid obtained from the joint was sterile. *M. deformans* (Crowe) was isolated from the blood. A vaccine was successful. For five years the patient suffered no relapse and as far as is known has remained well to the present day.

The other monarticular cases on the whole responded badly. Three only obtained some measure of relief. In two of them the result was undoubted. There has been no relapse in one, where the shoulder was affected, though five years later osteo-arthritis developed in another joint. The subsequent history of the other is not known.

Nos. 9 to 39: General rheumatoid arthritis, not severe; histories and notes fairly complete. The abstract of results places 15 in Class I, 8 in Class II, 3 in Class III, and 5 as failures in Class IV; 26 out of 31 showed definite improvement; 8 are still free from symptoms; the remainder have suffered some degree of relapse; 3 remained free for more than four years, 3 for three years, and 6 for about two years. It is almost certain that a renewal of treatment, when the symptoms reappeared would have met with success. Two patients came back for treatment recently, and the result justifies this assumption. Both had tried other vaccines during the war without success. Both commented on the immediate effect of deformans vaccine.

Nos. 40 to 70: Severe general disease; notes fairly complete. Results: Class I 8, Class II 12, Class III 3, Class IV 5, Class V 3; 23 out of 31 definitely improved, though 2 relapsed within a year; 1 relapsed only after six years, 4 others held their own for two, three, four, and five years respectively. Of these one (51) who was an absolutely helpless cripple, and had even to be fed, and who regained most of her powers of movement, has recently had another course of vaccine with complete success. One case had no sign whatever of rheumatoid arthritis up to the time of her death five years after treatment. Five are reported as still perfectly well.

Nos. 71 to 108: Particulars incomplete. In this group are the greater number of those not seen personally. Results: Obviously none can be placed in Class I; 6 are found in Class II; 6 in Class III; 5 in Class IV; 1 in Class V; and 20 in Class VI, which it will be remembered are too incomplete for a judgement to be formed.

Nos. 109 to 143 are the recent cases. To suit these the method of tabulation has had to be altered. Final results are omitted, and the results have been abstracted under four classes only:

Class A.	Treatment markedly successful ...	16
,, B.	Treatment giving a fair measure of success	6
,, C.	No improvement	3
,, D.	Insufficiently advanced for a judgement to be formed	10

In two of those in Class C the treatment had to be given up owing to the extreme degree of sensitiveness which developed. It is hoped to resume again later.

Data Extracted from the Tabulated Cases.

Males, 18.44 per cent. Females, 81.66 per cent.

Ages.	
Under 20	1 case
20 to 30	8 cases
30 to 40	21 ,,
40 to 50	33 ,,
50 to 60	28 ,,
60 to 80	24 ,,

That the age of the patient had some influence on the probabilities of cure is clear from the chart, where the three middle decades, in which the numbers are approximately equal (of those providing a final result), are divided by ordinates, the number of cases as abscissae, and curves of the various classes are plotted. From the age of 50 to that of 69, Classes I and II are at their lowest, whilst Classes III and IV (with V) are at their highest.

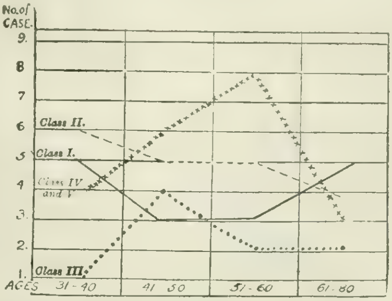

Chart showing relation of patient's age to results of treatment.

Etiological Factors.

In the majority none could be detected. The disease dated from marriage in three, from parturition in three, menopause in two, and hysterectomy in one. Rheumatism, either acute or chronic, preceded the condition in six, nasal catarrh in three, definite pyorrhoea in four. No doubt many others had had pyorrhoea. It was remarkable how many had had all their teeth removed years before ever the rheumatoid arthritis developed. Three patients ascribed the onset of the disease to being run down through nursing sick relatives. Seven cases began with neuritis or sciatica.

Other exciting causes given were bronchitis, malaria, accident, mental shock, exophthalmos, tonsillar trouble, scarlet fever, influenza, gout, exposure, gastric catarrh, constipation, and gonorrhoea.

Bacteriology.

M. deformans was found in the urine in 31.59 per cent. of the cases, but it must be said that if it were not noted at the first examination, no particular pains were taken to isolate this organism; deformans vaccine was always used. Streptococci appeared in the urine in 36 cases; coliform organisms in 16, but only in four of these in sufficient numbers to justify the description of coli bacilluria. The later cases (among women) have all been catheter specimens, and only 2 cases of coli infection have been met with, though *M. deformans* and streptococci appear frequently.

The presence of a mixed infection has had a very definite bearing on the result of the treatment, and this is the point where the present series differs most markedly from all other cases hitherto published. It will be remembered that the view was expressed by a number of writers that success in the vaccine treatment of rheumatoid arthritis depended on finding a focus of infection and extracting the organisms for the vaccine from that. If no such focus were to be found the treatment had been useless and stock vaccines had failed. The figures given below show that the success of the treatment was less, if anything, among those patients who provided a mixed infection. From the sixty-two cases with fairly complete notes we find:

Infection.		Classes I and II.	Classes III, IV, and V.
Mixed	29	18	11
M. deformans only	33	26	7

Sensitiveness developed amongst the completed cases fifteen times. Unless extreme, it apparently did not influence the result, but only the method.

Dose of Vaccine.

The dose of deformans vaccine is too variable for any useful data to be given. As low a dose as 10,000 germs of ordinary vaccine, or of 10 million sensitized, has aroused a focal reaction. On the other hand, quite sensitive cases have taken up to 500 million toward the end of treatment.

The initial dose in the enormous majority of cases was half a million. The daily weight has been found to be a satisfactory method of controlling the dosage. The interval with small doses has been three to four days: with larger doses a week. Patients do not seem to have been quite so sensitive to the secondary organisms when present, but still great caution had to be exercised; streptococci were given in doses of half a million to 5 million and *B. coli* the same.

Length of Treatment.

It has been difficult to obtain reliable information as to the total length of the treatment in a good many of the cases, where the treatment had been either continued or carried out in full by the patient's own doctor, but taking those known and averaging out the rest, a method which could to some extent be checked by noting the dates of the cessation of correspondence, it works out at five months. Excluded from this are two or three whose treatment extended intermittently over two years or more, and also some where interruptions occurred.

Discussion.

I do not bring forward these cases as proof that the *M. deformans* is the primary cause of rheumatoid arthritis, but as evidence tending in that direction. I do, however, claim that, used as a working hypothesis, better results have been obtained than by any other method of treatment. Among the sixty-two cases of whom the notes are fairly complete, only 21 per cent. failed to respond in some degree. Other 9.5 per cent. improved but slightly or relapsed early; 70 per cent. may be said to have been cured for the time being as far as cure was possible, and of these it is known that 15, or 25 per cent. of the total, still maintain their position. From recent experience it is suggested that those who have relapsed would have regained their health under further vaccines, and only the war, in the majority of the cases, prevented this.

There is no other method of treatment which can show anything like these results in rheumatoid arthritis. Hitherto the results of vaccine treatment have been unsatisfactory, and in fact the method seems largely to have fallen out of fashion. Professor Stockman does not even mention the possibility in his book on arthritis published this year. S. Boorstein, of the Montefiore Home in America, whose experience must be considerable, made the following statement as recently as last March[21]:

> VACCINE TREATMENT: A great deal has been written on, and many patients abused by, vaccine treatment. As shown before, it is very hard to state definitely the bacteria which are the true etiological factors in a given case. Even if the source of entry is exactly found, it is doubtful whether the organism in the joint is the same as in the focus, as the organism changes under different environments. It is, therefore, absolutely worthless to give vaccines, perhaps even harmful. Some have injected non-specific protein antigen with the idea that the proteins of the bacteria are responsible for the cases. *Those cases which I have observed following all forms and kinds of vaccine injection have turned out badly, and I have therefore abstained from using them.*

One very substantial benefit conferred by the treatment has been that after a course of vaccines, when the active signs of the disease have subsided, joints can be manipulated under an anaesthetic without fear of lighting up further trouble. In three of the recent cases operations have been performed. Tendons have been cut, joints cleared up and freed, and in several others adhesions have been broken down under gas, so that limbs have been brought into use again after long periods of inactivity.

In conclusion, the author desires to make his best acknowledgements to all those of his medical confrères, too many to mention individually, who have so kindly assisted him with notes of their cases, and many of whom have taken great pains in the matter of treating their patients.

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REFERENCES.

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A DIPHTHERIA CARRIER OF UNUSUAL TYPE.

BY

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A CASE of pharyngeal diphtheria occurred on July 26th, 1920, in one of the sons of a family consisting of father, mother, daughter, and three sons. The patient was removed to the Isolation Hospital the same day, and the premises and eating utensils disinfected. Another son developed the disease on July 28th, 1920, and was removed to the Isolation Hospital, and disinfection was again carried out. On August 10th, at 5 p.m., an interval of twelve clear days having elapsed since the last case, the sister complained of sore throat and malaise; no membrane or nasal discharge could be seen, but there was some increased redness of the pharynx and tenderness of the cervical glands. A swab was taken from the throat. On visiting her the next day a patch of membrane the size of a florin was seen on each tonsil, and there was marked narrowing of the space between the tonsils; the swab was reported to show *B. diphtheriae*.

The remaining brother, who slept in the same room, also had a small patch of membrane on one tonsil. After removal of these two cases and disinfecting, swabs were taken from the father and mother. That from the latter was reported to show *B. diphtheriae*, but no clinical signs of diphtheria were present. On admission to hospital she was found to have pediculi capitis, and a small area of impetigo on the scalp; a swab from this was returned showing *B. diphtheriae*; she had therefore *B. diphtheriae* present both in the throat and in the scalp lesion.

It was then found that another son had died from diphtheria in September, 1914. The mother may have been the cause of this case, or she may have become a carrier after contact with it. She herself had never had any marked illness which might have been diphtheria. It appears probable that she was at least the infecting agent in the last two cases, the interval of twelve days being overlong for infection from the first two. As no other source of infection could be traced for the first two cases, it is possible that she was the infecting agent here also.

In view of the possibility that the bacillus found on the head of the mother, though morphologically indistinguishable from *B. diphtheriae*, might be merely a diphtheroid bacillus, this bacillus was isolated, and its pathogenicity proved by animal inoculation. The strain proved to be of medium virulence; 2 c.cm. of a forty-eight hour broth culture killed a guinea-pig weighing 600 grams in less than three days; the *post-mortem* examination showed haemorrhagic oedema at the site of inoculation, and marked congestion of the suprarenal glands.

The impetigo of the scalp had been "present for several months." The series of cases indicate very strongly the necessity of swabbing all contacts in the home irrespective of age, and also of searching for and examining any other lesions.

LIFE-HISTORY OF ASCARIS LUMBRICOIDES.

BY

F. H. STEWART, M.D., D.Sc.,

MAJOR I.M.S.

THE following is a note of work on the life history of *Ascaris lumbricoides*, in continuation of that published in the BRITISH MEDICAL JOURNAL, July 1st, October 7th, December 2nd, 1916, January 25th, 1919, and in *Parasitology*, February, 1917, January, 1918, October, 1919.

Four sucking pigs three days old were fed with ripe eggs of *Ascaris suilla*, Dujardin, the round worm of the pig, probably identical with *A. lumbricoides*, the common round worm of man. All four suffered from ascaris pneumonia on the seventh and eighth days after infection, proving that the larvae of the worm were then passing through the lungs. One died during the night of the seventh-eighth. The remaining three pigs were killed on the fifteenth, seventeenth, and nineteenth days, and larvae of ascaris, measuring from 3 to 7 mm. in length, were found in the small intestine. They still required to undergo a further moult before becoming adult. The small intestine was in a condition of catarrh, the larvae embedded in abundant muco-pus. In previous experiments I had traced them to the fourteenth day, when they measured 3.3 mm., but had failed to find them on later days. The present positive result replacing the negative result renders it extremely probable that the worm can undergo full development in one host alone—that is, man or the pig.

I hope that a full account of the experiments and of the anatomy of the larvae, together with a summary of recent work on the same subject by Ransom and Foster and Yoshida, will be published shortly in *Parasitology*.

I wish to express my thanks to the governing body of the Lister Institute of Preventive Medicine for their kind permission to work in the institute; to Dr. Martin and Dr. MacConkey for much assistance; and to the Medical Research Council for the grant covering the cost of the animals employed.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FIBROMA OF THE ILEO-CAECAL VALVE.

A woman, aged 24, was admitted to the Rochdale Infirmary on January 15th as a case of appendicular abscess. She gave a history of three previous attacks of pain in the right iliac fossa during the last six months; they were accompanied by vomiting and constipation, and had each been of only two or three days' duration. The present attack had begun four days before, and had been the worst she had so far experienced. On seeking medical advice she had been immediately sent to the hospital.

On admission she stated that the pain was considerably better and that the attack was passing off. The pulse and temperature were normal, the tongue was slightly furred. The bowels had been moved the previous day. She had vomited last on the morning of admission. There was tenderness but no rigidity in the right iliac fossa. A mass was palpable in the area of the appendix. This mass was tender and fairly movable. The movable mass and the absence of rigidity, fever, and rapid pulse led me to the opinion that this was a case in which the inflamed appendix was wrapped in omentum.

The abdomen was opened through a McBurney's incision; it was at once seen that the appendix was normal, and that the mass was due to a tumour projecting into the caecum from the region of the ileo-caecal valve. It was significant that the terminal portion of the ileum was slightly invaginated into the caecum—that is, there was a very definite sulcus about half an inch in depth at the ileo-caecal junction.

As far as could be gathered from an examination of the outside of the caecum the tumour was smooth, rounded, and incorporated in the bowel wall. In order to determine exactly the origin and limits of the tumour I delivered the caecum entirely—a procedure quite easily carried out through the original incision on account of the caecum being extremely mobile. A clamp was placed upon the terminal portion of the ileum and upon the ascending colon above the caecum, and an incision made through the bowel wall over the growth. It was then seen that the tumour was incorporated in the upper lip of the ileo-caecal valve, and that it projected very considerably into the lumen of the bowel. On its visceral aspect it was smooth, regular, and covered with mucous membrane, except at the most projecting part, where there was an ulcer the size of a sixpence, with a hard, smooth, white floor.

It appeared to me that it would be impossible to excise this tumour thoroughly without removal of the whole caecum and ileo-caecal valve. I therefore removed the terminal three inches of the ileum, the caecum, and part of the ascending colon. It was then necessary to close the original incision, and through a right rectus incision to perform an end-to-side anastomosis of the ileum with the transverse colon. Through this incision I was able to satisfy myself that there were no secondary deposits in either glands or liver. This was as I had expected, because I looked upon this tumour as benign.

The patient made an uninterrupted recovery, though a few days after admission she developed a typical secondary syphilitic rash. The Wassermann reaction was strongly positive, and she received treatment for this condition until her discharge on February 28th.

The tumour was as large as a hen's egg and of similar shape, the more rounded extremity projecting into the lumen of the bowel, the narrower extremity being embedded in the bowel wall in the region of the upper lip of the ileo-caecal valve. It was uniformly hard and fibrous on section and white and glistening in appearance. The pathological report was that the tumour was composed of fibrous tissue and had the structure of a fibroma.

The attacks of pain were, in my opinion, caused by the attempts of the bowel to expel this tumour. The sulcus at the ileo-caecal junction was significant; it showed that at any rate for the last six months before operation the patient had been in imminent danger of intussusception.

Rochdale, Oct. 29th. JOHN C. JEFFERSON.

INTRAUTERINE DIAGNOSIS OF CONGENITAL HEART DISEASE.

Some time ago, in a medical journal, the question was raised as to the possibility of diagnosing *in utero* a condition of congenital heart disease. The details of a case that occurred in my practice this year may be of interest:

Mrs. H., aged 34, a multipara, was expecting her fourth child; about six weeks before the confinement was due I made my usual routine examination. On auscultation the fetal heart was easily audible, the point of maximum intensity being about 2 in. below and 1¾ in. to the right of the umbilicus. The ordinary fetal heart sounds were largely, though not entirely, replaced by a loud blowing bruit, systolic in time, the rate being 128 per minute. The mother's pulse rate was 60. The uterine souffle was hardly audible on the right side, but easily heard on the left. It will be understood that in saying a loud bruit was heard one is speaking relatively. But the sound was loud enough to be heard over a larger area than is usually the case with a fetal heart, and of sufficient intensity to make the fetal heart sounds more easily detected than I can recall in any of some hundreds of cases previously examined. About a month later—that is, a fortnight before the confinement was due—I again auscultated the case; although the fetal heart was not audible to the right, it could be heard at the corresponding spot to the left of the umbilicus, the child having made, roughly, a quarter-turn in a vertical axis. On this occasion, as regards quality and intensity, the sounds were similar to what I had heard four weeks previously, but the rate was now 132 per minute and the mother's pulse 66. The degree of pressure of the stethoscope on the abdominal wall made little or no difference to the sounds. On my calling the attention of the nurse to what I had heard, she informed me that one child had died, when about 6 months of age, quite suddenly and unexpectedly. A fortnight later the child was born and the heart was normal in every respect, with no evidence whatever of any congenital imperfection.

The points of interest appear to be the presence of this marked systolic murmur, and its definite, persistent, and unvarying nature over several weeks, even when the fetus had altered considerably in position. The bruit is difficult of explanation. If due to circulation through the foramen ovale, or ductus arteriosus, why should the presence of such a bruit be so rare an occurrence? If the sounds are not of cardiac origin the presence of a funic souffle is a possible explanation. This is stated to be due to cord compression by the stethoscope, or by some position of the cord in relation to the child, which leads to stretching. But in this instance a varying stethoscope pressure made no difference to the sounds, nor had they perceptibly altered when the child had rotated very considerably in the vertical axis. If any inference can be drawn from a single case, it is that auscultation cannot be relied upon in all instances as a means of diagnosing congenital heart disease *in utero*.

Barnet. B. H. Stewart, M.D., B.Ch.(Cantab.).

THE CHOLECYSTITIC HEART.

The term "cholecystitic heart" is taken from Sir Berkeley Moynihan, who first drew my attention to the irritability of the heart in cases of cholecystitis. The following is an explanation of this condition: Stimulus material is constantly being built up within the heart muscle. When this stimulus material reaches a certain summit it, as it were, explodes and originates a muscular contraction. The time at which the stimulus material explodes depends upon the degree of irritability of the muscle cells.

In the resting state the lining membrane of the cardiac muscle cells is semipermeable—that is, it is permeable to only one electric ion, the positive or negative. The cell is in a state of physiological polarization, or what is known as a Helmholtz double layer.

In the state of excitation the lining cell membrane becomes permeable to both positive and negative ions, the state of polarization of the Helmholtz double layer undergoing depolarization; and between the active and nonactive part of the muscle there is a difference of potential which can be recorded by the galvanometer. Excitation therefore is associated with an increased permeability of the cell membrane.

Any substance which increases the permeability of the cell membrane will increase the irritability of the cell, and give rise to an early explosion of the stimulus material, from which an early muscular contraction will result. A repetition of this process will cause an increased rate of the heart beat. Now bile salts are known to cause an increase in the permeability of the lining cell membrane, and therefore to increase the irritability of the cardiac muscle and the rate of the heart beat. In cholecystitis the bile salts circulating in the blood are increased, and this is the cause of the irritable character of the cholecystitic heart.

The reverse also holds good—that is, that a diminution in the bile salts circulating in the blood causes a decrease in the permeability of the lining cell membrane and a diminished irritability. In jaundice the bile salts circulating in the blood are diminished, which accounts for the slow pulse rate associated with jaundice.

H. L. Flint, M.D.,
Physician to the Mansfield Hospital.

Reports of Societies.

TUBERCULOUS STRICTURE OF INTESTINE.

At a meeting of the Medico-Chirurgical Society of Edinburgh, held on November 4th, the President, Emeritus Professor F. M. Caird, read a paper on tuberculous stricture of the intestine, based on a series of 43 cases, and illustrated by colour-drawings of the operation specimens. After alluding to the acute ulcerative type of lesion, secondary to pulmonary phthisis, which seldom came to the surgeon, he said that all his cases belonged to the formative chronic type, with quiescent or no pulmonary affection. Sometimes there was extraordinary hypertrophy of the tissues—a fibromatosis which might closely simulate malignant disease. Symptomatology and the differential diagnosis from subacute appendicitis and malignant disease were discussed. The age-incidence of the series showed 33 cases almost equally divided between the second, third, and fourth decades; the majority were women. The sites of stricture were as follows: Jejunum, 1; ileum, 14; ileo-caecal valve and colon region, 26; transverse colon, 2; two were abscesses of indeterminate site. As to operative treatment Professor Caird advised resection of the whole affected area, though short-circuiting might be done in some cases of multiple stenosis. He had performed resection in 40 cases, in which the immediate results were 27 recoveries and 13 deaths, and short-circuiting in 5 cases with 1 death. The after histories showed that 12 cases were now dead (nearly all of some form of tuberculosis), 4 could not be traced, and 13 were still alive at varying periods from the operation.

Mr. [illegible] said that the condition was [illegible] in Scotland as the result of feeding with [illegible]. Though the common site of ulcer and stricture was the [illegible] region, it was more [illegible] than [illegible] and also was not rarely [illegible] occasionally perforated. He entirely [illegible] the operation of [illegible] was resection of the affected area. Mr. Scot [illegible] gave his operative experience in a boy of 14 years with ulcer, stricture, and [illegible] high up in the ileum.

[illegible]

[illegible]

cent. sterile; in 50 cases investigated in another laboratory by the ordinary method, 48 per cent. were sterile. In a series of 7 cases investigated by both methods, the speaker had found bacteriuria in all by Panton's methods, but five were sterile by the ordinary method. Further investigation along these lines might possibly throw light upon that large group of chronic medical disorders associated with intestinal stasis and toxaemia.

Sir David Wallace referred to the great difficulty in obtaining a sterile specimen of urine, even from the bladder, and suggested that in many of these cases the bacteriuria was not genuine, but derived from the urethra. Dr. F. Porter said that an adequate and simple method of testing for bacteriuria was to evaporate a drop of urine, and at once stain and examine. In this way he had examined about 500 cases and found results similar to those of Dr. Chalmers Watson. He cited illustrative cases, and said that there was some connexion between acute seborrhoeic eczema and bacteriuria. Mr. D. P. D. Wilkie made a plea for a large number of control examinations in healthy cases.

Blood Transfusion.

Mr. J. M. Graham read a paper, based upon seventy-five cases, on transfusion of blood. He detailed the methods for the recognition of suitable donors, and also the apparatus and technique of the various methods of transfusion. Good results were obtained in cases of primary and secondary haemorrhage; where these were complicated by sepsis or shock the results were not so good, and in pure shock they were disappointing. In pernicious anaemia he obtained a temporary benefit in most cases; in some real and lasting improvement followed transfusion as an adjuvant to arsenic, given simultaneously. As a whole, in pernicious anaemia, no permanent therapeutic benefit could be claimed. Both in haemophilia and in purpura haemorrhagica he had had definitely successful results, probably due to prolongation of the coagulation time of the blood. In all the cases cited the results had been checked by exact enumeration of the red blood corpuscles and estimation of haemoglobin. Professor Meakins said that the main indications for blood transfusion were found in conditions where there was great reduction both in haemoglobin and in blood volume—that is, cases of sudden severe haemorrhage, and also of chronic bleeding. In shock, however, where both blood volume and haemoglobin were probably increased, the treatment called for was not blood transfusion, but intravenous injection of saline or gum solution.

LETHARGIC ENCEPHALITIS IN CHILDREN.

At a meeting of the Royal Medico-Chirurgical Society of Glasgow, held in the Faculty Hall on November 5th, Dr. Leonard Findlay made a communication on epidemic encephalitis (encephalitis lethargica) in childhood, based on an analysis of 25 cases observed during the present year. Most of the cases sickened during the month of May, and 20 were boys. The salient features were sudden onset (with or without fever), choreiform movements, and some form of paralysis, most frequently of a cranial nerve and especially of the intrinsic or extrinsic muscles of the eyeballs. In some of the early cases marked congestion of the optic discs was observed. The chorea passing off the child usually sank into a state of lethargy, which was more or less pronounced, and lasted for varying periods. On recovering from the lethargy, a peculiar night restlessness appeared; this had been a typical and striking feature of the cases. The children were unable to sleep at night but spent the time shaking the pillows, arranging the bed-clothes, performing duties of the toilet, muttering and singing to themselves. They might even get up out of bed, dress themselves, and go out into the street to play; they also developed dirty habits. During the day, at this period, [illegible] save the remnant of paralysis, [illegible] a certain degree of drowsiness might be present. Suggestion was tried without effect, although from the tendency of the nocturnal restlessness to disappear on change of surroundings, the condition seemed to be of psychic origin.

Dr. [illegible] recorded the results of the examination of the cerebro-spinal fluid in the cases dealt with by Dr. Findlay. Like other workers, she had found no marked change in pressure, colour, sugar content, cytology or bacteriology. Lange's colloidal gold test was performed in twenty cases, and a luetic type of reaction was obtained in sixteen cases. In some the reaction was as marked as in the case of general paralysis of the insane, but the Wassermann reaction was always negative. It was found that the positive Lange reaction was only obtained when excess of globulin was present. It was suggested that the reaction depended on a combination of globulin and toxin, and that the etiological factor was of the nature of a spirochaete. This thesis was supported by finding a normal cerebro-spinal fluid act like one from a case of meningitis on being secondarily infected, but in experiments where normal cerebro-spinal fluid was inoculated with spirochaetes it was not found possible to induce the luetic type of reaction. In the discussion that followed, Dr. A. K. **Chalmers**, the Medical Officer of Health for Glasgow, suggested a possible relationship between influenza and the condition described by Dr. Findlay. Dr. **William M. Elliott** showed a series of microscopic sections illustrative of brain lesions in epidemic encephalitis.

TREATMENT OF ANTHRAX.

At a meeting of the Liverpool Medical Institution, held on November 11th, with Dr. J. E. **Gemmell**, President, in the chair, Mr. G. C. E. **Simpson** read a note on anthrax. After noting the symptoms and treatment, he described twelve consecutive cases cured, six of them manifesting severe constitutional symptoms in addition to the pustule. In each case from 20 c.cm. to 500 c.cm. of anthrax serum were injected in cumulative doses. Excision with carbolization was performed in three cases. In some the sore was dressed with glycerin of biniodide of mercury. In one there was apparently dry gangrene of a finger with extensive streptococcal infection of hand and arm, and, pending bacteriological investigation, amputation of finger and incisions of hand and forearm were performed. Generally the temperature fell within a period varying from a few hours to six days. Occasionally a slight rise followed the injection; in some cases the fall was by crisis with collapse and a very slow pulse, One patient's condition was acute for several days, and 440 c.cm. of serum was given subcutaneously in 120 hours before improvement supervened, the subsequent slough, measuring 3 in. by 2 in., involving malar region and both eyelids. In one case, that of a farmer, multiple pustules appeared in the arm together with oedema of the chest, after cutting up the carcass of an infected beast. On the third day of treatment the patient appeared moribund, with vomiting, severe diarrhoea, and melaena; but 380 c.cm. were injected in ninety-six hours. He was discharged with wounds healed on the twenty-fifth day. In these two cases the first dose of serum was given intravenously; the farmer, when apparently moribund, rallied after 90 c.cm. of serum intravenously on the eleventh day, temperature and pulse falling to normal after a further 310 c.cm. subcutaneously. The oedema of arm and chest resolved on the sixteenth day. He was treated by eusol baths for the streptococcal infection, the subcutaneous gangrene having spread to the middle of the upper arm. Mr. Simpson was convinced that the present 15 per cent. mortality could be abolished by the use of anti-anthrax serum. The intravenous route is of value for urgent cases. Excision is rarely called for in unmixed anthrax: it merely delays cure and adds to the risk of transmission of infection.

Dr. **Burton Robinson** read a paper on "The sun cure" in the High Alps, dealing with pulmonary and surgical tuberculosis as treated at Leysin, and illustrated by lantern slides. The "Rollier clinics" for surgical tuberculosis showed, he said, remarkably interesting and good results. The pictures of cases before and after treatment bore witness to complete reconstitution of the general health, and at the same time consistently good recovery of function in spondylitis and other articular tuberculosis, as also in adenitis and peritonitis. The importance of methodical insolation and full pigmentation was emphasized. The speaker advocated schools in the sun for delicate children, as conducted in alpine heights, so far as this was possible under the difficulties of the English climate. Legislation in regard to cows and milk and the housing question was needed. Reference was made to attempts in England to cure surgical disease by open-air treatment in hospitals, such as the Treloar Cripples' Home for Children at Alton and the Leasowe Hospital in Cheshire.

TREATMENT OF PROLAPSUS UTERI.

A meeting of the North of England Obstetrical and Gynaecological Society was held at Liverpool on October 15th, with the senior vice-president, Dr. J. E. **Gemmell**, in the chair. Dr. F. **Hamilton Lacey** read a paper on the "After-results of colporrhaphy performed in 470 cases of genital prolapse," the number traced out of 690 operations performed at St. Mary's Hospitals, Manchester, during the years 1914 to 1916.

The cases grouped themselves into four classes—cystocele, rectocele, prolapsus uteri, and inversion of the vagina around the elongated cervix. Operations for the repair of the perineum only were excluded. The operations performed were anterior colporrhaphy, posterior colporrhaphy combined with perineorrhaphy, and, in some cases, amputation of the cervix in addition. Of the 470 patients who replied to the questions, 391, or 83 per cent., stated that they were cured of their prolapse. Of the remaining 79 cases 29 came for examination and 17 of these had some prolapse, slight in most cases. Of the remaining 17 per cent. a considerable number had no prolapse but were suffering from such conditions as cystitis, prolapsed kidney, adherent appendages, haemorrhoids, and senile vaginitis. In only one instance was a case of procidentia encountered, a woman aged 76 suffering from chronic bronchitis. In one case the patient had gone back to work in the mill within two months of operation. In two others the trouble was caused by the hypertrophied and elongated cervix, and probably would not have occurred had this been amputated at the operation. In the series taken as a whole the results were much the same, whether the cervix was amputated or not; this might only mean that the cervix was always removed when likely to cause trouble. As regards subsequent pregnancies, the results showed that the colporrhaphies stood the strain very well, but, as was to be expected, the failures had a higher percentage of subsequent pregnancies than the successes.

In sum, the figures proved that prolapse could be successfully treated by the operation of colporrhaphy.

Dr. **Briggs** (Liverpool) had been disappointed with his results from colporrhaphy, and did not like leaving the uterus in a retroverted position. He doubted if cases of prolapse could be cured by creating a mass of scar tissue in place of the normal support of the pelvic floor. Dr. **Donald** (Manchester) had been convinced for many years of the success of these operations, and believed that colpoperineorrhaphy, properly carried out, was the best operation for prolapse, and that no other method was necessary. He had had cases with four or five subsequent labours where the result had remained good. The tissues, of course, were much stretched during labour, and in some cases the prolapse recurred, but he generally found that these patients came back to have the operation repeated, thus showing that they had felt benefit from it. He considered it quite unjustifiable to remove the uterus in the treatment of prolapse. There were many variations in the method of carrying out the operation, in some an attempt being made to keep the uterus in a forward position. He personally did not think the position in which the uterus was left mattered at all, narrowing of the vagina was the important point. Dr. **Stookes** (Liverpool) had performed colporrhaphy for the last six years and was well satisfied with his results. He disagreed entirely with the statement that complete prolapse could not be cured by perineal operations. Dr. **Gemmell** (Liverpool) thought that a fixation operation was sometimes required; he had met with cases where a ventrifixation, combined with colporrhaphy, had given better results than the latter operation alone.

At a meeting of the Nottingham Medico-Chirurgical Society, held on November 10th, at the society's rooms, 64, St. James Street, Dr. Blurton (the president) gave his presidential address on "The report of the Consultative Council and our attitude towards it." The lecturer gave an interesting summary of the report and commented briefly on its suggestions. He advised an attitude of sympathy towards its aims, and this attitude was warmly supported by the members present.

At the meeting of the Council of the Pharmaceutical Society on November 17th it was decided to suggest to the Government the appointment of a committee to inquire as to what changes, if any, are necessary in the law relating to the prescribing and dispensing of medicines and the supply and use of poisonous weed killers.

Reviews.

OSLER AND McCRAE'S "MEDICINE."

The appearance of the ninth edition of his world-wide textbook, *The Principles and Practice of Medicine*,[1] inevitably strikes a note of sadness, as we are reminded that the late Sir **William Osler** was engaged on its revision when his fatal illness began, and, according to his devoted pupil and collaborator Dr. **Thomas McCrae**, had practically completed the numerous changes necessary since the eighth edition saw the light in 1912. He had, indeed, perhaps from some unconscious premonition, decided long ago to give up active participation in this classic when he reached the allotted span of 70 years.

During the twenty-eight years since the first edition appeared in 1892 this textbook has been remarkable not only for clear condensation of the latest advances and a wonderful sense of proportion, but for personal touches, often with a subtle humour, which make an attractive story of what might otherwise have been a string of details dully strung together. No one is better fitted to preserve these characteristics and carry on this tradition than Dr. McCrae, who has, so to speak, grown up with the textbook and whose name appeared on the title-page of the eighth edition; his preface admirably voices medical opinion about his chief in the words: "It is doubtful if any man of his generation exercised a greater influence. From all who knew him has come the tribute to the man even more than to his learning." A recent photograph of Sir William Osler has appropriately been placed opposite the title-page.

Much thought and care have obviously been given to this revision, for in spite of the insertion of the thirteen new articles mentioned in the preface, some of which, such as paratyphoid fever, trench fever, and gas poisoning, became prominent during the war, and of many additions elsewhere, especially to the sections on the circulatory and nervous systems, the volume is considerably smaller than on the last occasion. Writers of books must all admit that while it is easy to add new matter, excision of the existing text is a painful and difficult procedure; the usual course of a textbook is to increase in weight with years and to die of unwieldiness; it is therefore a good omen for its future that the new "Osler and McCrae" contains fifty-seven pages less than the eighth edition. The absence of matter hardly necessary for the student and practitioner of medicine, such as the introductory or general articles, often rather pathological in tone, which were formerly common in textbooks, has always been a feature in this work; and a reviewer of the first edition expressed mild surprise at the unusual event of a textbook beginning with an account of typhoid fever.

The classification and arrangement of diseases must always be a thorn in the flesh to authors who desire to be consistent, and it is probably the best course to sacrifice uniformity to the convenience of the reader, but here again there may be difficulties in the way. The problem of deciding between the etiological and the anatomical basis of classification is well shown in the case of infections that mainly attract attention by well defined local manifestations. Dr. McCrae disarms criticism by frankly admitting embarrassment, and the following examples from the text illustrate the difficulties: pneumonia and pneumococcic infections, tuberculosis, and syphilis of all parts of the body, pyogenic infections, and cerebro-spinal fever are conveniently classed as specific infectious diseases on an etiological basis, but malignant and subacute bacterial endocarditis are considered locally, under heart disease, and acute poliomyelitis and epidemic encephalitis under diseases of the nervous system. Dysentery appears in two places among the specific infectious diseases, so that the bacillary and amoebic forms are widely separated, a course not without disadvantages. In any large work [illegible] it is fairly certain that [illegible] will sooner or later bring to light some [illegible], and [illegible] in one instance the printer's devil, by substituting "French fever" for "Trench fever," has produced a synonym which though novel is not, perhaps, entirely inappropriate.

It would obviously be impossible to notice all the changes or even to discuss the additions pointed out in the preface, but a few references to the up-to-date character of the leading work on the practice of medicine should not be omitted. The account of influenza naturally touches on the features of the recent pandemic; subcutaneous emphysema is explained as due to rupture of a subpleural emphysematous bulla tracking by way of the mediastinum into the tissues of the neck; the severity of the disease in American camps and transports is illustrated; and on the much debated question of the relation of the influenza bacillus to the disease the conclusion reached is that, though conflicting, the evidence does not justify the denial of the causal nature of this organism. There is a new and admirable summary of epidemic encephalitis with full recognition of Dr. McNalty's work. The account of cerebral arterio-sclerosis, which has been entirely rewritten, contains the graphic turn of speech, "Often it is not a question of the petrol tank—the blood supply—but the whole machine is worn out." This recalls the famous sentence, fortunately retained on p. 834: "Entire families sometimes show this tendency to early arterio-sclerosis—a tendency which cannot be explained in any other way than that in the make-up of the machine bad material was used for the tubing," which was thought by the late Sir William Osler to provide the answer to the question set in "An examination paper on Osler, edition iv" (vide *St. Thomas's Hospital Gazette*, March, 1902), "What internal evidence is there that Osler has had an unhappy experience with cheap bicycles?" The section on the circulatory system has been considerably altered in response to recent work, especially that of Dr. T. Lewis, and contains some well-reproduced electrocardiograms. As an example of a telling phrase the following sentence in connexion with the causation of high blood pressure may be quoted: "Some have attributed it to over-activity of the adrenals, but it is more likely that the primary difficulty is somewhere in the capillary bed—in that short space in which the real business of life is transacted." In speaking of arterio-sclerosis of the pulmonary artery, the symptom-group of cyanosis, dyspnoea, polycythaemia, repeated haemoptysis, angina, cardiac enlargement, and chronic passive engorgement, entitled "Ayerza's disease," finds a place. Much new material has been added to the section on nervous diseases; for example, progressive lenticular degeneration (Wilson's disease) is portrayed in a thumb-nail sketch, and the article on Huntington's chorea has been enlarged by the inclusion of Davenport's interesting study of nearly 1,000 cases traced back to some half dozen individuals who migrated to America in the seventeenth century.

HUMAN PARASITOLOGY.

It would probably be admitted by anyone who has practised in hot countries that a good knowledge of medical zoology is well-nigh essential; it would also be admitted that the liaison between medicine and zoology is at present weak, and that textbooks containing sound zoology, but within the grasp of the medical man, are a desideratum. Dr. D. Rivas, of the University of Pennsylvania, has attempted this in his book, *Human Parasitology*,[2] and we are confident that he realizes more than most of us the difficulty of the task he undertook. It is a task which demands knowledge both of medicine and of a number of specialized branches of zoology, and in our opinion the production of a successful textbook of the parasitology of man will be best accomplished by four or five specialists, and not by any one man. It is indeed difficult to keep in touch with all that is now written on this subject, and it is impossible for one man to read all the entomology and protozoology, and helminthology and mycology, with that expert critical acumen which is required. If one man attempts to summarize all our knowledge relating to man's parasites he may possibly avoid actual error, but he will certainly fail to emphasize the essentials or to exercise right judgement when authorities are in conflict.

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[1] *The Principles and Practice of Medicine.* [illegible] McCrae, M.D. [illegible] D. Appleton and [illegible]

[2] *Human Parasitology*, with Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By D. Rivas, M.S., M.D., Ph.D. Philadelphia and London: W. B. Saunders Co. [illegible] plates. [illegible]

We have examined Dr. Rivas's book in a charitable spirit, and have found much to criticize. Zoological nomenclature is troublesome to every tropical practitioner, but it is well known that there is an international code, the "law of priority," and that it is believed that the application of this code will produce uniformity, perhaps at no distant date. Dr. Rivas, while professing allegiance to this code, breaks it constantly but not consistently. He speaks sometimes of *Esophagostomum*, at other times of *Oesophagostomum*, and a certain proportion of his readers may fail to realize that there is only the one worm. He is consistent, but consistently wrong, with *Ameba*, *Endameba*, and *Tenia* when he uses these names as definite generic names. Of course, if one wishes to speak of "ameba" or "amebas," not as strict generic terms but as Americanisms by adoption, the spelling and the formation of the plural are optional. Similar mistakes in generic and specific names are not merely common but actually abundant throughout the book; they are not only violations of the international code, but confusing to the people for whom the book was written.

In the section which deals with protozoa many errors are encountered. Three species of "*Endameba*" are given—*coli*, *histolytica* and *tetragena*; the appearance and life-history of each is related at length, and it is stated that the third is a commoner cause of dysentery than the second, but that "it is probable that these two parasites may be identical." The identity of *E. histolytica* and *E. tetragena* was established nearly a decade ago. The life-histories as given are, each one of them, disbelieved in by the majority of modern protozoologists; we had supposed the budding of *E. histolytica* to be absolutely discredited. We have come across no reference to the mass of important literature relative to Amoebiasis, which has grown up during the war, hardly a paper in the bibliography later than 1912, and no mention of Wenyon or Thomson or Dobell. The life-cycle of "*Haemoproteus noctuae*" is figured: a number of well established life-cycles of haemosporidia are known, from which to draw examples, but that of "*H. noctuae*" is certainly open to criticism, and quite probably compounded from two or three separate genera of blood parasites infesting the little owl.

We cannot discuss the rest of the book in detail, but we must remark on the fact that there is no mention of *Phlebotomus* (though a number of non-biting flies are included), on the absence of any reference to trench fever as carried by lice, and on the statement that sulphur fumigation is of value against bugs. The author tells us that he cannot keep captive *Musca* alive for more than forty-eight hours, but he should have given the experience of the dozen or so investigators who have written during the last fifteen years, and have kept this insect alive for three or four weeks.

Apart from corruptions of scientific names, pure misprints are numerous. The borrowed figures are good, though some are archaic; the original figures are most disappointing and no magnification is given in the majority of cases.

SUGAR.

One of the facts which every schoolboy ought to know, but which most adults have forgotten, is that the sugar beet began to become a serious rival of the sugar cane a little over a century ago, when, in 1811, France being cut off from her colonial cane sugar supply by the British blockade, Napoleon ordered 70,000 acres in France to be planted with sugar beet. At that time the percentage of sugar in the beet was only 7, or half of that in the sugar cane, and the extracted beet juice contained so much saline impurity that it was difficult to cause the sugar to crystallize. By methods of cultivation the amount of saline constituents was diminished, and by breeding new varieties of beet the proportion of sugar was increased as much as 20 per cent. Probably the highest yield of sugar from the cane is obtained in the Hawaiian Islands, and from the beet, before the war, in Germany. Under the very best conditions in the islands the yield of sugar might be as high as six tons an acre, but this is very exceptional; in Java the yield was not much more than half. The best yield from beet (Germany) was 1.7 to 2 tons an acre.

These facts we extract from a book on *The Manufacture of Sugar from the Cane and Beet*, which Mr. T. H. P. Heriot, lecturer on sugar technology at the Royal Technical College, Glasgow, has contributed to the Monographs on Industrial Chemistry, edited by Sir Edward Thorpe. The book, though intended rather for the general reader than the specialist, gives a fairly full account of the various elaborate processes followed in the extraction of sugar from the cane and the beet, and the purification of the crude product. An immense amount of ingenuity has been expended on the design of machinery, but except in Germany and France, scientific inquiry has not been encouraged, and the growers and refiners have been too much disposed to rely on rule-of-thumb so-called practical methods.

At present the by-products of the cane sugar factory have not attained much importance; the most bulky is the bagasse, which consists of the fibre of the cane, with a small amount of sugar. It is a cheap and convenient fuel for the pans and boilers of the factory, and probably for this reason little other use has been made of it, although as long ago as 1838 it was shown that it could be used to make paper. Good wrapping paper has been made both in Trinidad and Cuba, and recently a patent was taken out for making newspaper pulp. Another by-product, "final molasses," which is useless for the manufacture of sugar, has been used for the production of alcohol. It is possible that important developments in this direction may take place in the case of the beet as well as of the cane.

Another by-product in Germany is yeast. During the war fixation of atmospheric nitrogen was adopted in Germany on a large scale as a source of nitrates for explosives; considerable quantities of ammonium salts also were produced, which were used to feed yeast, which, when used as food for cattle and horses, and even men, helped to make good the scarcity of nitrogenous fodder. For use as human food the pressed yeast is mixed with starchy material and baked, or is digested with a concentrated sugar solution which is then reduced to a thick syrup resembling in appearance malt extract and containing 2 per cent. of proteins.

The last part of the book is concerned with refining of cane and beet sugars, primarily for the production of white sugar in lump or crystals, but yielding also treacle and golden syrup; the former is, in fact, a by-product, but golden syrup is specially manufactured. It is made from cane syrup of high purity, and crystallization is prevented by inverting part of the sucrose. The inversion is produced by the addition of dilute sulphuric acid to diluted syrup in lead lined vessels fitted with mechanical stirrers and steam coils.

At the present time, when much practical interest is being shown in the cultivation of the sugar beet in this country and the manufacture of sugar from it, the book ought to find many readers. They should take to heart Mr. Heriot's concluding observation to the effect that the remarkable technical progress made within the past century in the production and refining of sugar has not been effected by the so-called practical man or sugar producer, but by a comparatively small number of men of science who built the theoretical foundations upon which the modern practice rests. In this way the new plant, sugar beet, was evolved, and a new method of extracting sugar discovered and perfected, so that within eighty-four years Germany was able to produce over a million tons of beet-sugar a year.

INCOME TAX GUIDES.

The recent drastic changes in the method of graduating the income tax, and at the same time the extension of the allowances for wife and dependants to all taxpayers irrespective of their total incomes, has produced a large number of publications written for the guidance and assistance of taxpayers, and incidentally for the pecuniary benefit of their authors. We doubt whether it will ever be possible to deal at all adequately with so complicated a subject as the income tax in a small handbook, useful as such a production may be in its own sphere. As fairly typical of this kind of handbook, we may mention one which has

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[8] *The Manufacture of Sugar from the Cane and Beet.* By T. H. P. Heriot, F.I.C. With illustrations. 1920. London: Longmans, Green and Co. (Crown 8vo, pp. x + 426. 21s. net.)

reached us, *The Income Tax for 1920–21 : Rates, Relief, Repayment*.[4] As an explanatory pamphlet dealing with the allowances to which a taxpayer is now entitled it is deserving of praise; the phraseology is clear and the printing excellent, but, after all, the official memorandum which is issued with the forms of return and notices of assessment is reasonably intelligible, and is apparently free from the few minor inaccuracies which we have found in the handbook in question. What a taxpayer really wants is assistance in preparing his computation of gross liability rather than a guide to tell him what allowances should be made in assessing him on that amount of income, and in this the average handbook necessarily fails. Business and professional activities are too manifold in character to-day to be dealt with as a whole and within the very narrow limits implied by a small handbook dealing with allowances, relief for Colonial taxes, and claims for repayment. In the handbook referred to, for instance, there is little to assist a professional man in the task of calculating his income for tax purposes, though it explains that alum works are assessable on the profits of the previous year, and that repayment can now be claimed on the 6 per cent. dividends payable on the income debentures of the Underground Electric Railways of London, Limited.

Another little handbook on somewhat similar lines is the *Financial Times Income Tax Guide, 1920*.[5] Within the unavoidable limits of space a great deal of clear and useful assistance is given in the understanding of the new procedure. The author includes a summary of the former income tax regulations, but would have been well advised to drop the use of the word "current" in doing so; its use is misleading, and—as, for example, in the paragraph on farmers' tax—involves a rather serious misstatement with regard to super-tax. The *Guide* states that "the question of special reliefs in respect of service men is not apparently altered by the present Act." We doubt the accuracy of that statement, as the special reliefs required specific re-enactment to maintain their existence, so that the silence of the Finance Act 1920 on the point seems to imply their cessation. Apart from these and one or two minor blemishes, the author has done his work well and given good value for the modest price demanded for the *Guide*.

We much prefer the method of dealing with the problem adopted by the writer of a pamphlet entitled *Doctors' Income Tax*.[6] By dealing separately with a distinct species of income—in this case professional profits, and especially those of medical practitioners—it is possible to convey really useful assistance in the preparation of a return of income. The pamphlet is succinct, and the examples given are chosen to bring out the explanations clearly. It is accompanied by a draft calculation sheet ruled to serve for the computation of three years' profits, with cross-references to the notes in the explanatory pamphlet. On one point we find ourselves at variance with the writer. He says: "When from any cause a motor has to be replaced, the cost of the old one, less any sum realized for it, is to be charged as a working expense. The cost of the new one is excluded." In our view if the new car is similar—or at least no better—in power, capacity, and general grade to the car replaced, the amount allowable is the difference between the cost of the new car and the amount received for the old one. This view appears to have been endorsed by the recent Royal Commission, and in these days of high priced cars the point is of some importance.

NOTES ON BOOKS.

A [illegible] handbook [illegible] health [illegible] Dr. [illegible] will be found [illegible] [illegible]

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[4] [illegible]

[5] [illegible]

[6] [illegible]

[7] [illegible]

itself progresses as freely as ever in the community. Hence the greater part of the book is devoted to the description of the various means that have been found useful in dealing with the established disease as it presents itself in daily practice. Most of it will probably be already well known to trained nurses and visitors, but it contains many valuable hints that are apt to be forgotten in dealing with the many domestic difficulties that must arise from time to time. The advice given is on the whole most judicious and very clearly expressed; it may be cordially commended to the notice of those for whose assistance it has been written.

A second edition of Dr. J. B. MENNELL's useful volume on *Massage: Its Principles and Practice*,[8] has been published, completely revised by the author. Notwithstanding the legion of books on massage published during the last decade, Dr. Mennell's work still fills a niche of its own, as it emphasizes principles more than details of treatment—not that it neglects detail either in the text or in the many admirable illustrations. The author thus addresses himself more to the medical man than to the masseur, for the day is past when "try a little massage" (after trying everything else) was enough direction on the part of the physician or surgeon.

The twenty-ninth edition of *The Annual Charities Register and Digest*[9] has now appeared. This most useful work of reference is issued by the Charity Organization Society. The information is classified on a convenient plan, and there is a full and careful index.

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[8] *Massage: Its Principles and Practice*. By James B. Mennell, M.A., M.D., B.C.Cantab. With an introduction by Sir Robert Jones, F.R.C.S. London: J. and A. Churchill. 1920. (Demy 8vo, pp. xvi + 536; illustrated. 21s. net.)

[9] *The Annual Charities Register and Digest*. Being a Classified Register of Charities in or available for the Metropolis. Twenty-ninth edition. London: Charity Organization Society. 1920. Pp. 611. 5s. net.

THE INTERNATIONAL PROBLEM OF MEDICAL EDUCATION.

BY

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THE discussion which took place at the meeting of the Education Section of the British Medical Association on July 1st at Cambridge was important, and specially so to a stranger like the writer of the present article, since the debate ran on lines so familiar to him that, apart from a few details, he might have believed himself listening to a debate taking place in his own country. Never was the substantial identity of the problems of medical education so evident; and even if the well known and charming English courtesy and the friendly welcome of his colleagues in the university had not in themselves brought home to him the strong ties uniting the members of all universities, the discussion on Medical Education alone would have convinced him that in respect of the substance of the didactic and educational problems of medical university education no difference exists between countries on the same level of civilization and culture.

As a veteran in my profession, I was convinced years ago of the necessity of a reform of medical studies which are still being woven on the old loom that may have been good for the fabric of half a century ago. However great the elasticity of the organization of university studies to permit an adaptation to the gradual changes in science and its application, yet in all that concerns the whole body of sciences which constitute medicine such an adjustment was found to prove unsatisfactory. The main reason is that the changes and improvements which can be introduced into the university curriculum presuppose corresponding changes in the preparatory studies in secondary schools. These schools remain unaffected by the movements which determine the continuous changes taking place in the universities, and tend, therefore, to remain rigid or to reform themselves only in conformity with such general humanistic culture as is considered sufficient to begin the [illegible] of university teaching. When the student reaches a certain age, say [illegible] or [illegible], the practical application of studies and the strain of economic factors bring about pressure for the shortening of the preparatory classes and for placing him into a position to derive immediate profit from intellectual labours carried on for many years. Moreover, the character of the secondary school, interested in the past rather than the present or the future, has produced the universally regretted split between it and the university. The university has therefore been obliged to fill the gap with elementary preparatory instruction which is outside its scope and naturally prolongs the duration of the courses.

What is therefore required is a reform of the secondary school teaching. This is the fundamental point on which all who took part in the discussion in the Education Section agreed. Although no such substantial agreement exists between the English secondary school and what in Italy is called "scuola media" as was found to exist concerning the needs for a reform of the studies directed to producing the medical practitioner, the man of science, or the research worker, the solutions proposed are the same in both countries. The secondary school should include certain kinds of instruction which at present are given at the university, and should impart to the prospective medical student certain fundamental notions of chemistry, physics, and biology, together with mathematical teaching so far as may be necessary for the ordinary current use of mathematics in experimental science. It is not, in my opinion, necessary to develop special classes for medical or engineering students in the secondary schools; it is sufficient that, once a certain stage of literary, philosophical, historical and classical education is reached, two main divisions are formed, the one providing the basis for literary, philosophical, and juridical studies, the other leading up to instruction in the positive and experimental sciences generally.

This is precisely what is asked for as a first reform of medical studies in England; it is precisely what I included in certain proposed reforms of medical studies in Italy, and published at the end of 1911 in the *Corriere della Sera*.

There remains, then, the question of the changes desirable in the university courses which a student, properly prepared, would begin at the age of about 18. Here, again, the bulk of the conclusions reached by those competent to judge in England are identical with those formulated in the series of articles just quoted. Intrinsic considerations suggest the introduction of courses of physics and chemistry specially directed to the problems of biology and the applications of medicine; of a course in general biology, which (in the place of the courses of botany and zoology, some of which are antiquated) should aim at giving the student exact notions concerning the science of life, co-ordinating and relating all functional and morphological phenomena, and elaborating laws applicable to physiological as well as pathological conditions. The subject of this biological course should be the general laws of evolution and heredity, and the phenomena due to the interference in the development of organisms accidentally in contact and mutually influencing each other. In this manner the course in general biology would present a great synthetic picture in which the separate medical sciences appear as constituent parts, and all the applications of medicine to any particular disease and to the development and well-being of man appear as episodes, and can be grouped in social complexes. In any perfectly organized system of teaching every single line of study should keep count of its function as an integral part of general biology, and should take every opportunity to emphasize the links, already discovered or yet to be investigated, connecting it with the other sciences. In this way it would be possible to combat the existing habit of watertight compartments, which is justly deplored as one of the grave disadvantages of the present system of teaching.

In this connexion I can quote an instructive experience: At the end of the war a large number of young ex-officers returned to our medical schools in Italy, and the problem was how to give them an education that would fill the gaps in their knowledge as effectively and quickly as possible. The Ministry of Public Instruction, rightly anxious not to place these students at a disadvantage by causing them to lose altogether the years spent at the front, had arranged for them to take shortened courses of a value equal to the usual annual courses. But they had not ventured to shorten the stages devoted to the primary scientific teaching—namely, anatomy, physiology, general pathology and pharmacology—so that the advantages of the shortening of the courses were finally lost, or the attempt to graft instruction upon these primary stages of the study had to be abandoned. In the University of Turin the professors of the above-mentioned subjects, desiring to safeguard the interests of their students, held a meeting at which they drew up a programme of their courses, with a special view to the order of instruction essential for the medical man and of fundamental importance for his education; they settled the lines of demarcation between their respective studies and divided between themselves the borderlands lying between science and science, thus avoiding the overlappings which usually occur, and are after all by no means devoid of usefulness, because they involve discussions which, presenting different points of view, have a special utility. The result of our efforts was excellent; we had the proof of it in the examinations—a proof which may be disputable in an isolated instance, but is convincing in large numbers; and the system of teaching, less formal, more conversational and wider, was much liked by the students, who admitted having derived great benefit from it, as it cleared their ideas and served as an introduction to future studies.

Another point is to be borne in mind—namely, that the teaching should aim at producing a good type of general practitioner, competent to deal with the ordinary ailments, and possessing in respect of certain special diseases that modicum of knowledge necessary for their diagnosis and required for a first treatment before passing the case on to a specialist. Now, it is generally recognized that five years of study suffice to produce a good type of general practitioner, always provided that secondary schools take over in part the preparatory instruction which at present falls upon the first year of university teaching. The additional knowledge required by the intending specialist ought to be acquired only after the standard of the general practitioner has been attained. The universities ought, according to the means at their disposal, their condition and traditions, to be able to provide a good theoretical and practical instruction in all branches of medicine. But what ought to be put an end to is the present state of affairs, certainly not very reassuring, in which a few more enterprising men set themselves up as particularly expert in certain branches in which their competence is anything but proved. This is the solution which the "Superior Council of Public Instruction" in Italy recommended to the Minister, and from the results of the discussion at Cambridge it appears to me that this system in its general outline might also be adopted in England.

When we come to examine the problem of medical education in its external aspect, it seems to me important to point out that in England, as well as in Italy, it occupies far more the attention of those engaged in teaching scientific subjects than those engaged in clinical practice. If we consider, for instance, the papers circulated in proof for the meeting of the Education Section at Cambridge, of which only a few were amplified by verbal communications by their authors, we find that, apart from the admirable introductory address of the President, Sir George Newman, they all discussed the question from different sides—from its zoological (Hickson), anatomical (Keith), physical (Rutherford), pathological (Lorrain Smith), and chemical (Smithells) aspects. The teachers of the scientific branches of the first three years are also in Italy much the most active in proposing reforms. What is the reason? There may be two; perhaps reforms appear specially desirable in the scientific and preliminary part of the curriculum; or perhaps the explanation is a certain indifference on the part of the clinical teachers towards the problems of medical education. Both reasons may be operative; but we must, above all, remember what the history of medicine teaches us—namely, that the discoveries which advanced medicine and have remained as a permanent acquisition, even on the practical and curative side, were always directly derived from scientific research in the physical-chemical and biological branches. This is the soil from which medicine in all its individual and social applications has sprung, and it is intelligible that the exponents of these constructive sciences should be the first to suggest the rational use of the materials on which they work; that they should regard with a certain diffidence the structure of traditional medicine as it is understood and accepted not only by the layman but also by the practising doctor; and that they should be anxious to rejuvenate the systems of instruction as in time they become obsolete, and to modify the whole of its structure, though it may be venerable in point of age and be found convenient by routine in the eyes of practical medical men, especially of that large number who are unable to add to the heavy burden of their professional work by trying to keep up with the continual progress of biology and experimental science.

Under these conditions, essentially human and explicable by the interference of various factors, partly working in opposite directions but of equal force, emerge ever more luminous the figures of those great clinical teachers who in the midst of the attractions of medical practice and of a reputation justly acquired among the public, have preserved the clear sense of the essence and functions of medicine as an evolving scientific organism and not as a rigidly dogmatic system. The figure of Sir Clifford Allbutt is eminent especially in this sense, and his manner of understanding the task of modern medicine and its renascence is proof of the width of his outlook. But such men are rare; yet with the weight of their authority they are able to shift the balance of public opinion in favour of that reform of medical studies which the professors of the scientific branches of the medical faculties regard as essential. I have known another clinical teacher who was always guided in his teaching by the complex studies pursued in the field of physiology, pathology, and pharmacology, and founded a medical school famous for its pupils—Professor Camillo Bozzolo, who taught general clinical medicine in the University of Turin, and died within the last few months.

As the result of the foregoing explanations one important conclusion seems to me worthy of being emphasized. It is that two nations, not immediate neighbours, who, however, both played a most important part in the history of medicine, are agreed not only in recognizing that the education imparted to the medical man does not correspond to the present state of science and to the position due to the medical man as a coefficient in individual and social well-being, but in pointing out the measures which are called for to remedy a state of things which in the long run may prove definitely harmful. If the recognition of the present defects can in itself not claim to be a complete diagnosis, it is at least one element needful for the understanding of the evil, and if in addition, as I believe I have shown, there is also agreement on the system of a cure, we cannot, I think, call the ultimate success in doubt. All depends on whether we dispose of the necessary means. In this case they must be furnished by provisions which do not all lie within the compass of university organization, but require the assistance of the State and of the bodies in general charge of education.

The question, therefore, assumes the importance of an affair of State, a political character, and must appeal to action of a higher and wider order, must, above all, be supported by an enlightened public opinion—an opinion exceeding the limits of any one State, seeing that what is at stake is a civil, cultural, and social interest common to all nations. As regards the remedies, their selection, their preparation and extent, international agreement has already been reached. It appears, therefore, all the more opportune to extend these agreements to the exact definition of what is meant by "medical man" and to his education. Henceforth different types of medical men should no longer be permitted in the different countries, because this diversity can, after all, be but the gradations of one intrinsic value. Hence it would be desirable that, on the basis of concrete proposals such as have been put forward perfectly spontaneously in different countries, an attempt be made to adopt measures which, without being absolutely uniform, without fettering in details the tendencies, traditions and habits of work of any nation, without, in short, interfering in any way with the special aptitudes of the national mind, should yet lead to producing everywhere the best possible result in medical science and in the art of healing.

It is in this sense that I believe I have not made any new proposal, but have indicated the need for a preliminary international understanding among those who have devoted themselves to the problem of medical education, are conscious of its importance, and are fitted by experience to contribute to its solution. It is not a question of bringing together round a table another diplomatic conference—Heaven forfend!—of men, each having *in petto* a number of personal claims, and resigned with a bad grace to see them worn down in conflict with those of others. No; what is needed is to bind together into one sheaf forces which at present are already conscious of agreeing on the direction of their action, if not upon its intensity, but are as yet acting in isolation from each other. Sir George Newman is singularly fitted by his position to judge if and how a step in the direction indicated might be attempted. But, more than by his position, his competence is to my mind proved by the admirable Memorandum, which is to me the clearest and most convincing exposition of the present state of medical education in general and of the reforms which should be introduced, although the title of his book, *Some Notes on Medical Education in England*, appears to limit his observations to that country. That little volume, written with much knowledge and much [illegible], should be in the hands of every one who has to deal with the subject. It has recently been confirmed and completed by the arguments developed by him in the Presidential Address which opened the Section of Medical Education at Cambridge.

The congress of the Royal Institute of Public Health next year, which will be of an international character, will take place in the University of Geneva from May 10th to May 16th, 1921.

MEDICINE IN THE SCHOOLS.*

(Concluded from page 761.)

The Medical Staff.

By the end of 1919 the school medical inspection staff in practically all areas had regained at least pre-war strength, so that with few exceptions local authorities found it possible to undertake the whole of the statutory inspections. Of 5,118,000 children attending public elementary schools, 1,800,000 were examined. In the year ending March 31st, 1920, there were, excluding the specialists employed at the London school treatment centres, 1,630 school medical officers and dentists, an increase of 257 in comparison with the previous year. Of the total, 160 were women, including 114 whole-time officers. Upwards of 700 private practitioners, exclusive of those engaged at hospitals, undertook medical inspection or treatment, or both.

Sir George Newman defines the guiding principle and fundamental purpose of school medical inspection as "prevention rather than cure." It is suggested that during 1921 school medical officers should make special inquiry into the causes and treatment of dullness and backwardness, the incidence of rickets, and the effects of industrial processes on the physical welfare of the elder and adolescent pupils; a medical register of all exceptional children should be compiled as a starting-point for further inquiry and action. Regarding the position and duties of the school medical officer, Sir George Newman says:

"It should be borne in mind that the physical examination of children affords opportunity for valuable scientific work. Mere mechanical inspection may readily degenerate into a form of drudgery, and the school doctor should be watchful that his work is constructive, and, as far as practicable, is applied to the advancement of knowledge. The opportunity is exceptional. For example, the school doctor may throw much new light on the incidence and degree of defect or disease, on the physiology of the child and its wide variation (the functional disturbances of the heart, circulation, or nervous system), on the beginnings of disease, on the relation of physique to mental capacity, on the standardization of signs and symptoms, on local variations or age and sex incidence of abnormality, on the place of catarrh, on the 'effort syndrome,' on relation of child and adult physique, on types of constitution, and on the range of normality." . . . "Now that authorities are reorganizing their school medical service after the war, it is important that special attention should be devoted to the position and duties of the school medical officer and his medical and dental colleagues. Whilst it is essential that the principal medical officer responsible to the authority for the smooth and proper working of the service would be *primus inter pares* and the recognized chief of his department, it is equally necessary that all the professional officers of the authority should be accorded the status to which their profession and duties entitle them. It is only thus that the best medical work can be done. Their duties should be reconsidered by the authority from time to time in order that the full value of their skill and advice is obtained in behalf of the children. There should be variety in their work, scope and time for necessary investigations, and entire freedom to express their findings. . . . The medical staff are placed in the charge of the school medical officer for purposes of practical administration, but not that their individual professional services should be subordinated to his opinion or lost to the authority or of no advantage to the children. They form a vital part of the public health services of the State and should be brought into close touch with the authority. Attention should be given to the adequacy of their remuneration, their status, and their duties."

The Findings of Medical Inspection.

The gross defects are, on the whole, declining steadily, but in many areas there is still present the same high figure of preventable defects, pointing frequently to lack of intelligent care and foresight. The grosser forms of uncleanliness among children are now rarely met with, malnutrition is less in evidence, and protracted absence from school as the result of skin disease is less frequent; on the other hand, the minor grades of uncleanliness, dental defect, visual defect, rickets, diseases of the ear, nose, and throat, rheumatism, and tuberculosis, continue to make heavy claims on children. Inquiries bearing on the relation between physique and environment were made by Dr. H. H. Thomson, who compared the physical condition of school children in Letchworth Garden City and in the adjacent area of Hitchin, and by Dr. Lawrence, who compared that of the children attending schools on the Port Sunlight estate, and of those living in the immediate neighbourhood. The general health, cleanliness, and mental condition of the Letchworth children were on a slightly higher level than that of the Hitchin children; the Port Sunlight children were superior in respect of nutrition, cleanliness, and vision, but inferior in regard to severe dental caries.

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* Annual Report of the Chief Medical Officer of the Board of Education, 1919. Cmd. 995. H.M. Stationery Office. (Price 2s.)

Treatment.

Speaking generally, Sir George Newman regards the expansion of medical treatment as the principal characteristic at present of the school medical service; upwards of 300 local education authorities, out of 318, provide some form of treatment, and 53 make some provision for all defects. The scope of the treatment—at first mainly directed to defective children, and to minor ailments such as uncleanliness, ringworm, defective eyesight, discharge of ears, adenoids and enlarged tonsils, and dental caries—has widened so as to include rheumatism, certain forms of paralysis, all forms of tuberculosis, diseases of the nose, and mastoid disease. In the areas of twenty local education authorities school clinics have been established for the first time, and twenty-five authorities have opened additional clinics. There are now 700 school clinics in the country—an increase of over 100 during the year. In London 47,414 children—nearly 12,000 more than in 1918—were treated for minor ailments. For ringworm 101 local authorities made provision of *x*-ray treatment; at Kingston-on-Hull, Dr. Fraser prefers ethyl iodide treatment, and at Harwich Dr. Porter reports successful and speedy treatment of ringworm of the scalp by massage with equal parts of common salt and vaseline. In 193 areas there were 75,355 children in whom treatment of enlarged tonsils and adenoids was necessary; of these, 36,221 received treatment (operative or otherwise), with 22,681 cures and 8,062 improvements. About half the authorities (151) made provision for operative treatment—carried out in sixteen instances by the school medical staff, in forty by doctors not on the school medical staff, and in the remaining instances at hospitals. In London and elsewhere there has been an extension of the provision of in-patient accommodation for the days immediately following the operation.

The report as to the prevalence of dental caries could not well be worse. Even in London, where some improvement is shown in comparison with previous years, 51.5 per cent. of the children examined have some dental defect. In Sunderland 94.5 per cent. required dental treatment; in Hull, 85 per cent.; in Devon, 68.9 per cent. Much parental ignorance and apathy are reported; at Stoke-on-Trent, for example, in 49.5 per cent. and at Leeds in 52.3 per cent. of the children found to require dental treatment, this was withheld. At present the services rendered by the school dental staff do not cover more than about one-tenth of what is required to deal with the school population; the shortage of dentists constitutes one causative factor that cannot at present be easily remedied, but it is suggested that the assistance, properly supervised, of dentists by trained but unqualified dental dressers, as approved in principle by the Dentists' Act Committee, may be of value.

Special Schools.

The recognition of 23 new special schools brings their total number to 488, providing accommodation for, roughly, 3,300 blind, 4,600 deaf, 15,800 mentally defective, 6,300 physically defective, 2,800 tuberculous, and 500 epileptic children; there are also 2,710 places in open-air schools. For the deaf, in addition to the special schools and classes, there are trade schools and evening schools, but so far no secondary schools; 199 schools for the mentally defective include 21 residential institutions. Special classes have been instituted with much success by many authorities for those children who are on the borderline between being dull and backward and being mentally defective. Facilities for open-air education are still very limited, but 8 new open-air schools have been recognised and proposals are being considered by the Board in respect of 40 additional schools. Day open-air schools number at present 25, and residential open-air schools of recovery 20. The incidence of tuberculosis amongst school children appears to show a slight increase; at routine examinations 0.64 per cent. of children showed signs of definite tuberculosis in 1919. There are 8 day schools, of which 3 are in London, for children suffering from pulmonary tuberculosis; in addition, four London hospitals providing for children suffering from non-pulmonary tuberculosis have been certified as day special schools. Thirty-eight residential sanatoriums have been recognized by the Board for the treatment of tuberculous children. Close co-operation between the school medical officers and the tuberculosis medical officers of the district should, it is said, be secured, and it is desirable that all children's sanatoriums should be recognized by the Board of Education under the Elementary Education (Defective and Epileptic Children) Acts, in order that provision may be made for early treatment combined with educational training, which has a definite therapeutic as well as economic value.

Physical Education.

Much importance is attached to physical education, which "if properly conceived and employed is one of the most powerful instruments of preventive medicine." In public elementary schools the alterations introduced in the syllabus in 1919 have been well received, and the daily lesson, in addition to organized games in the playgrounds and parks, is speedily gaining ground. Other means of promoting physical education are the teaching of English folk and country dances, for which many teachers evince much enthusiasm, and the institution of play centres. The break in the continuity of physical education which occurs at the end of the school age will be remedied to some extent in the new continuation schools, but there is said to be need for a voluntary representative body of experts and others (working in co-operation with the local education authorities) to organize physical exercises and recreation for the great mass of the people.

Physical Deficiency and Juvenile Employment.

According to the provisions of the Education Act, 1918, children under 12 years of age may not be employed in any circumstances; over this age their employment is restricted and regulated. A model form of by-law is suggested, according to which in scheduled occupations the employment of children is conditional on the granting by the school medical officer of a certificate that such employment will not be prejudicial to health or physical development, and will not render the child unfit to obtain the proper benefit from his education. The local education authority is empowered also to prohibit or to modify employment which is reported by the school medical officer to be prejudicial to the child. The Board lays great stress on the importance of ascertaining and maintaining the condition of health of employed children; education authorities are advised that:

> (1) The school medical officer should make a careful examination of children about to be employed; (2) adequate arrangements should be made for following up these children by school nurses, care committees, or school attendance officers; (3) arrangements should be made for the speedy treatment of any defects found at examination and for the re-examination of such defects at a later period; (4) the clothing and boots of employed children should be inspected by the school attendance officer, especially in the case of those who are employed out of doors before school hours; (5) arrangements should be made to ascertain that children are properly nourished and obtain sufficient recreation.

Close co-operation is enjoined between the school medical officers on the one hand, and on the other the certifying factory surgeon and the juvenile employment committee of the education authority or of the Ministry of Labour. The report contains a valuable memorandum, which has been prepared by Dr. Hamer for the guidance of children's care committees, showing the disabilities from a medical point of view attaching to certain employments. The new power conferred upon local education authorities by the extension of the work of the school medical service to continuation schools is described as a far-reaching and fundamental reform which marks a new chapter in preventive medicine. The duties of a school medical service now include:

> (1) The medical examination of the child employed under the age of 14, both at the beginning of its work and thereafter at regular intervals. (2) The medical examination of all "leavers" and the advising of their parents with regard to their future employment. (3) Attendance of the school medical officer at school conferences, at conferences of employers and employees, and at meetings of juvenile advisory committees, in order to advise as to the employment of children having defects which make some types of employment unsuitable or injurious to the child's health. (4) Provision of medical treatment for "leavers" with as little delay as possible, in order that they may begin work without physical defect as a handicap. (5) Medical examination and periodic re-examination of children whose parents have applied for a licence for them to take part in entertainments. (6) The establishment of a closer co-ordination between the school and industrial occupation.

British Medical Journal.

SATURDAY, NOVEMBER 27TH, 1920.

NATURE'S TERATOLOGICAL EXPERIMENTS.

Monstrosities have hitherto been regarded as being among the useless things. If they have been looked at discriminatingly at all, they have probably been labelled as strange failures to reach the normal or as weird deviations from embryogenetic formation hardly deserving a front place on the shelves of a pathological museum, sometimes troublesome to bring into the world, always embarrassing to doctor and nurse, and terribly distressing to expectant mothers and fathers. Their causation, attractive simply from the extreme difficulty which it presents to the investigator, is still dark, and to many it has seemed not sufficiently practical even to invite research. It may be, as recent workers have supposed, that monstrosities are due to exactly the same causes (toxic, toxaemic, microbic, traumatic) as produce diseases, the striking difference in results being due to the period (the embryonic) when these morbid forces are in operation; but although discoveries along this line may raise hopes of ultimately preventing teratological productions, the investigation of individual monsters will still remain rather a waste of time because of its inherent futility. Such is a fair estimate of the way in which teratological specimens have been looked at in the past.

The convinced ante-natal pathologist has never taken this gloomy view of the possibilities of his subject, and has quietly worked on, dissecting, recording, cogitating; and recently the Medical Research Council has encouraged him to go forward, and has made three or four grants to well qualified research workers to enable them to make careful *post-mortem* examinations of all stillbirths and early neo-natal deaths in three or four of the maternity hospitals of Great Britain. Dr. F. J. Browne of Edinburgh, one of these workers, has published in the October issue of the *Edinburgh Medical Journal*[1] an article on the "Anencephalic syndrome in relation to apituitarism," in which he shows that from even so uninviting an investigation as the morbid anatomy of the anencephalic monster conclusions of an eminently practical and suggestive nature may be drawn. In other words, teratology is being led within the charmed circle of the subjects which will repay investigation in something more than the paper money of abstruse and merely recondite interest.

The outstanding feature in anencephaly is the absence of the cranial contents, of the cranial bones, and often also of the spinal cord, but with this leading and very striking feature there are very often associated other secondary characters, such as protruding eyeballs, [illegible] ears, projecting tongue, and well-marked adiposity. Dr. Browne in his investigation has been struck by the constancy with which these secondary characters appear and by their association with changes in such internal organs as the thymus, the suprarenals, and the ovaries. The idea came to him that these secondary characters, which he has termed, perhaps with a little violation of the exact meaning of the term, "the syndrome of anencephaly," might be explicable by the destruction of some organ which lay inside the cranium. Having arrived at this point, it was comparatively simple to take another step in reasoning and whisper to himself the word "pituitary."

Obviously the next step was to satisfy himself and others that the pituitary gland, even in its minutest part, was absent in anencephaly. This he may justly claim to have accomplished when he read his article and showed his specimens at a meeting of the Edinburgh Pathological Club in March last. The most rigorous search on the basis cranii of his anencephalic fetuses showed absolutely no trace of a pituitary gland; it had been destroyed, or more probably it had never been permitted to exist there, in the early weeks of ante-natal life by some morbid agent whose exact nature Dr. Browne does not at present attempt to state. It may be suggested that the causal agent was adhesion of the amnion, but in the meantime the argument need not be delayed till that matter is elucidated. The next stage in the investigation was naturally enough the attempt to answer the question what changes in the embryo and fetus would destruction (equivalent to operative removal) of the pituitary gland produce. They would be, it may be supposed, the changes which follow pathological or experimental destruction of the pituitary gland after birth, as they would be modified by the peculiar features of antenatal life in its embryonic and fetal stages. The rest of Dr. Browne's paper is occupied by the demonstration, anatomical and histological, that that is just what the anencephalic syndrome is. The syndrome, consisting of protruding tongue and eyeballs, of nasal aquilinity, of obesity, of thymus hyperplasia, of suprarenal and genital hypoplasia, and of stunted growth of body and limbs, agrees in the main with the features of what are called hypo- and a-pituitarism.

Here, then, is Nature herself experimenting upon the growing and developing infant in a laboratory perfectly situated and completely equipped for the purpose: for the interior of the uterus is germ-free; in it the most rudimentary or maimed fetus can continue to live till birth. We must look at the matter in an impersonal way and avoid even the suggestion that Nature incurs or invites blame in any way with regard to the production of monstrosities; the correct standpoint is that, an anencephalic embryo having been caused by (say) a syphilitic toxin or a mineral toxic substance, or something else, the uterine environment serves as a location in which all the structural and physiological consequences can be carried through without interference. Dr. Browne's paper does, however, imply a very interesting question, namely, would a critical investigation of the anencephalic fetus twenty years ago have expedited or anticipated the information slowly acquired by experiment regarding the pituitary gland? If so, may it not be well to look for the syndromes of other marked types of monstrosities, such as the exomphalic, the sympodic, and the cyclopic, and see whether these have any relation to the functions, known or unknown, of other endocrine organs?

Dr. Browne is himself so careful not to press beyond the reasonable conclusions warranted by the facts he has discovered that it may seem injudicious to go outside the limits he has imposed on himself, but we would venture to make two suggestions. The first is that the destruction of the cranial and spinal contents involves many other important structures besides the pituitary—such, for instance, as the pineal gland and the basal ganglia; this may make the resulting changes more complex than is at present suspected. In the second place some anencephalics do not show the syndrome completely. Some are of what may be called the pretty type, it being of course clearly conceded that "pretty" is here used relatively, for only by a violent effort of catachresis could any anencephalic fetus be regarded as other than superlatively ugly. Now, it would be most interesting to know whether in these less ugly specimens there are traces of the pituitary gland to be found amongst the débris on the basis cranii. In other words, would a defective development of the anencephalic syndrome point to a partial functioning of the pituitary gland?

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[1] *Edin. Med. Journ.*, N.S., xxv, p. [illegible], October 1920.

At any rate, teratology may in future look her sister subjects in the face, her reproach of scientific infertility having been taken away.

TUBERCULOSIS IN AUSTRIA.

The Austrian Government has issued a report by Dr. Siegfried Rosenfeld[1] on the mortality from tuberculosis during and since the war within the territories of the present republic of Austria. It is deserving of attention. Throughout the country there has been a great increase of mortality, but this has most seriously affected the industrial districts. Before the war the deaths from tuberculosis were decreasing, as in other countries. Thus, in Vienna (excluding deaths of non-residents) 2,725 females died of tuberculosis in 1912, and the figure had fallen to 2,635 in 1914; there was an appreciable increase, to 3,004, in the first complete year of war, and the quotas of the four following years, 3,543, 4,469, 4,729, 5,018, show the *via dolorosa* trodden by the victims of irresponsible and unscrupulous power. In our own country the war was associated with a slight but quite sensible increase of mortality from tuberculosis amongst women, which chiefly affected the adult ages of life and has been, with some probability, attributed to the introduction of large numbers of women to factory work with consequent overstrain. The scale of the increase in Vienna has been vaster, and whereas in England and Wales the rates at most ages for 1919 fell to a pre-war level, the Viennese figures for 1919, especially at ages between 35 and 65, are worse than those of any former year.

The inference drawn by Dr. Rosenfeld is that the prime factor has been the progressive worsening of nutrition due to the economic consequences of the war. Dr. Rosenfeld pushes his argument further than this: he suggests that the war has afforded an experimental proof that the decline in the death rate from tuberculosis going on before was not a consequence of measures to segregate "open" cases or to diminish in other ways opportunities of infection, but was dependent upon a general amelioration of economic conditions leading to the attainment of a better standard of nutrition. We have noticed before in these columns that many writers in this country have recently advocated similar opinions, and although, apart from the war-time data, Dr. Rosenfeld does not produce any new evidence, his exposition is clear and interesting. Dr. Brownlee has suggested that the response to environmental conditions of different types of phthisis is not uniform, and Dr. Major Greenwood has argued that the statistics of occupational phthisis and a comparison of male and female mortality lend support to the contention of Dr. Leonard Hill that a lowering of general resistance dependent upon the unphysiological conditions of factory life is a factor of prime importance.

Quite recently some distinguished bacteriologists have put emphasis upon the immunizing value of early non-massive infection. Dr. Rosenfeld discusses this topic at some length, but argues that the curve of age incidence is irreconcilable with the theory. This argument is, we think, precarious; it is not a necessary consequence of the theory that the death rates at ages should uniformly decline, and Dr. Rosenfeld's remark—"What sort of immunity is this which can be destroyed by external conditions?"—is merely *ad captandum*. The heavy incidence of tuberculosis upon non-European troops in the war zones is a fact difficult of explanation upon the hypothesis favoured by Dr. Rosenfeld. Whether, however, those who attribute the result to absence of immunizing infections in childhood have sufficiently attended to the possibility of selection—whether we call it natural selection or artificial selection is a matter of words—is open to doubt.

The practically important point is that Dr. Rosenfeld's report, like the publications of the writers we have named and several recent letters in our columns, brings out the lack of agreement respecting the fundamentals of etiology which is found amongst competent students of the tuberculosis question. The dispute is not of mere theoretical interest; its settlement would gravely affect administration. To take only two points: Were Dr. Brownlee in the right, the routine employment of tuberculin must be unscientific. If the doctrine of protective natural inoculation in childhood be accepted, the scale of values attaching to different items in the programme of social reform will be changed.

The most hopeful feature of the position is, we think, the better temper in which the discussion is conducted. It is now found not only to be possible but to be easy to avoid that *odium theologicum* which was the fashion of the last decade. The team work which the war encouraged is responsible in part for this. The value of different lines of research is more generally realized; this realization will, we believe, lead, perhaps within our generation, to the discovery of great truths.

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LETHARGIC ENCEPHALITIS.

Lethargic encephalitis, both in its clinical and pathological aspects, continues to excite interest all over the world, and the increasing experience of many observers has inevitably enlarged our conception of the disease. The steadily increasing volume of literature devoted to its various aspects is sufficient evidence of the amount of work which has been directed to its study. Much attention has been focussed upon the disease in France, and the *Revue de Médecine* has published[1] a series of contributions which may be said to crystallize the present opinions of French authorities, in so far as any finality of view can be attempted. Durand, who deals with its clinical aspects, points out once more that it is by no means the new disease it was at first considered to be; epidemics with very similar features have been reported at various times in many countries. The characteristic syndrome is composed of fever, somnolence or lethargy, and ocular palsies, and Netter's statistics place the frequency of lethargy and ocular palsies as high as 75 per cent. of all cases. It is suggested, therefore, that the virus shows a special disposition to attack the mesencephalon, possibly by a process of direct extension through the cribriform plate or the ethmoidal sinuses. But while this triad of symptoms is regarded as constituting the most typical clinical picture, it is recognized that almost any combination of nervous symptoms may be produced. An acute inflammatory lesion of the central nervous system may reasonably be expected to produce very different effects, and further experience fully bears out such an expectation. Thus Dunn and Heagey, from a study of 115 American cases, have postulated no less than eight different clinical types.[2] Little benefit, however, is to be gained by an attempt to establish new clinical syndromes in a disease whose nature and pathological characters render a wide diversity of symptoms inevitable. One clinical variety, however, certainly deserves special mention—namely, the so-called Parkinsonian type, which gives a picture of an acute case of paralysis agitans. Recently a case has come under our notice in which the symptoms almost exactly resembled those of a classical case of disseminated sclerosis; we do not consider it necessary, however, to erect this into a new clinical type. As we have previously stated in these columns, the epidemiological and general features of the disease are of greater diagnostic value than the particular localization of the lesions in the central nervous system. In the same number of the *Revue* Harvier summarizes the various experimental researches hitherto undertaken to elucidate the nature of the infection, as follows: (1) The virus of epidemic (lethargic) encephalitis is pathogenic for the rabbit, and can be maintained by successive passages through these animals, producing nervous symptoms and histological lesions identical with those observed in man. (2) The virus may be inoculated into the rabbit by intracerebral or intraocular injection and by injection into the peripheral nerves and through the previously damaged nasal mucous membrane. (3) The virus is a filtrable one. (4) The virus is not pathogenic for the monkey or the guinea-pig when it is obtained direct from man, but it becomes so after several passages through the rabbit. In this respect it differs from that of acute poliomyelitis, which is directly pathogenic for the monkey. At present no absolute diagnostic criterion can be said to be established, and it cannot be too strongly urged that every care must be taken to exclude such conditions as vascular lesions of the brain, tuberculous meningitis, and syphilis of the nervous system in its different forms. It is more by the painstaking exclusion of such factors and by the careful study of the symptoms of onset, particularly in its epidemiological aspects, than by trying to fix any particular case into one of the many described clinical types of the disease, that diagnosis should be reached. Increasing experience, again, is leading to a more cautious prognosis, for in many cases the symptoms last much longer than might at first be expected. The final duration of its sequelae in the shape of the many disturbances of function in the central nervous system has yet to be ascertained. In a certain small proportion of cases actual relapses seem to have occurred. Treatment is still far from satisfactory, as might be expected from the nature of the disease. Beyond purely symptomatic treatment there are only two methods which can claim any success. The first is that of fixation abscess, practised largely in France for this as for other conditions. Another is by the administration of hexamine or urotropine. This has usually been given by the mouth, and its value by this route is much open to question. Recently Crawshaw[3] has reported in our columns a case treated by the intravenous injection of hexamine, as much as 45 grains dissolved in 10 c.cm. of normal saline being given at a time. Further experience of this method of treatment will be awaited with interest.

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[1] *Die Aenderungen der Tuberculosehaufigkeit Oesterreichs durch den Krieg.* By Dr. S. Rosenfeld, Wien. 1920. (Issued by the Volksgesundheitsamt.)

[1] *Revue de Méd.*, Paris, 1920, No. 6.

MALARIA IN ENGLAND

In to-day's issue of the Journal (p. 811) will be found a very interesting account of an indigenous case of malignant malaria. Professor Glynn and Dr. Matthews, who report the case, state that the patient, a girl of 18, was admitted into the Royal Infirmary, Liverpool, suffering from obscure symptoms pointing to meningitis. She was *in extremis* on admission and died shortly afterwards. The autopsy revealed the true nature of the case, malarial parasites being found in abundance in the blood and in smears from the spleen. An investigation was carried out by Dr. Blacklock to determine where the infection could have been acquired, and it then transpired that the girl had been at a health resort in the North of England at the end of September, just before the fatal illness developed. She had spent part of a day in a valley which contained many hibernating larval and adult anopheles mosquitos, and presumedly must have been bitten by one of these mosquitos, which, somehow or other, had got infected with malaria. Indigenous malarial cases have cropped up quite commonly of late, and the authors quote James's figures of 330 cases occurring between September, 1917, and the end of 1918. All of these were benign tertian infections. Malignant infections have, however, also been met with, and this now furnishes another example with a fatal result. The moral is that in all obscure cases the blood should be examined, with the view of eliminating the possibility of malaria. It would certainly have been done in the case mentioned, but there was no time before the patient died. An examination conducted earlier would probably have shown the parasites, and quinine might have saved the patient's life. The authors note at the end of their paper that some other tropical maladies, notably dysentery, have also been cropping up in England. The moral again here is that the stools should be examined carefully in all cases of diarrhoea or bowel disorders.

THE PRESCRIPTION SIGN.

Since the days of the Romans it has been the practice of medical men to head their prescriptions with either the Latin word Recipe, "Receive," or with its abbreviations Re or ℞, or with the symbol ♃; since towards the end of the nineteenth century the faultily formed abbreviation R or r has also been employed at times. The interpretation of the symbol ♃ has long been a matter of discussion, and it is now generally held to be one of the astrological denotations of the planet Jupiter, alleged to have been employed by Roman physicians as an invocation to the most powerful of the Olympian gods to augment the efficacy of the drugs prescribed.[1] Professor Gilbert of Paris devotes a chapter in his recent book on *The Art of Prescribing*[2] to showing that this interpretation of the symbol ♃ is erroneous, and that in medical prescriptions it represents no more than a "lower case" letter r with a bar to show that it is an abbreviation for the Latin word recipe. He points out that the symbol ♃ has several different interpretations in literature. In astronomy it stands, as has been indicated, for the planet Jupiter, and is explained by Flammarion as a barred letter Z or abbreviation of the word Zeus, Jupiter being the Latin form of the Greek Zeus pater. In alchemy ♃ represents the metal tin. In botany it is used as an abbreviation to indicate that a plant is intermediate between annuals and perennials in duration of life, a *plante vivace*, to use the French term. Why, Professor Gilbert asks, should the use of ♃ in prescribing be taken as an allusion to a plant or a metal, or even to Jupiter, in view of the fact that the Olympians counted among their numbers the most celebrated of all medical specialists, namely Aesculapius? He reproduces an example from a manuscript dated 1154, in which the symbol ♃ is undoubtedly a barred letter r, occurring at the end of an abbreviation of *garyofilorum*. According to Professor Gilbert, therefore, the notion advanced by Stokvis five-and-twenty years ago, that the symbol ♃ placed at the head of a medical prescription stands for an invocation to Jupiter, lacks both proof and probability. The confusion is due to a mere typographical coincidence; ♃ represents both the barred lower case letter r, short for recipe, and the barred letter *z*, short for the planet Jupiter originally, and, by extension, also short for the metal tin and a *plante vivace.* The most correct abbreviation to employ in writing prescriptions is, in his opinion, the barred capital letter ℞.

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[2] Dunn and Heagey, Amer. Journ. Med. Sci., clx, No. 4, October, 1920, p. [illegible]

[3] Crawshaw, British Medical Journal, 1920, i, 628.

[1] See British Medical Journal, 1911, i, 81.

[2] *L'Art de Prescrire.* Par Professeur Gilbert, Professeur de Clinique Médicale à l'Hôtel Dieu de Paris, etc. Paris: J. B. Baillière et Fils. 1920. (Cr. 8vo, pp. [illegible]. Broché, Fr. 12; cartonné, Fr. 16.)

UNIVERSITY POVERTY.

We publish elsewhere brief particulars of appeals made by two more universities in England and by one in Scotland for large capital sums to enable them to carry on. In all three instances the sum asked for is half a million. The justification for the appeal offered by the two English universities is identical with that put forward by several other universities which are making similar appeals: teaching and investigation are more costly than they were, and there are more subjects in which teaching and investigation are needed. The appeal by Edinburgh is on a somewhat different footing. The university finds itself faced with the urgent necessity of at once spending about half a million sterling on new buildings in the departments of medicine, chemistry, and natural history. A site of 115 acres at Liberton, on the south side of Edinburgh, has been acquired, and buildings for the new school of chemistry are in an advanced stage, and others for zoology will, it is hoped, shortly be begun. To meet the needs of medicine a site has, with the co-operation of the Royal Colleges, been secured close to the Royal Infirmary, on which the Lister Institute, consisting of a group of buildings for the scientific study of medicine, will be erected. The Edinburgh appeal is addressed in the first place to its alumni, who are told that if half a million can now be raised the university will be able to tide over its present difficulties. The appeals of Newcastle and Birmingham are primarily to local patriotism, and both universities can give special reasons why those interested in local industries should deal liberally with them. It was Mr. Joseph Chamberlain, when making his appeal for money to found the University of Birmingham, who first laid down the principle that State aid of a university in an industrial area could not be expected unless the people of the area proved the sincerity of their desire by putting their hands in their pockets; and the University of Birmingham now appeals to the local education authorities, the industries, and the citizens of the Midlands to make substantial grants and benefactions, because "such grants or gifts will in all probability secure an equivalent from the Government."

THE SURGICAL TREATMENT OF CHRONIC GASTRIC DISORDERS.

The founders of lectureships at medical colleges and societies, if they could pay a brief visit to the scene of their former activities, would often be surprised and much perplexed by the substance of the discourses they originally endowed. These lectures serve a most useful purpose by providing opportunities for the publication of researches which otherwise might never see the light of day or be left incomplete, and of reviews of contemporary medicine. Three lectures given by Mr. A. E. Maylard are a case in point, and certainly Dr. James Watson (1787–1871), who founded these lectures for the encouragement of medical science, would wonder at this eminent surgeon's remarks on "Some chronic gastric disorders."[1] Four James Watsons find a niche in the *Dictionary of National Biography*, but as none of them is medical, it may not be out of place to draw attention to the high position held in the first half of the last century by Dr. James Watson in Glasgow; he was on three separate occasions President of the Royal Faculty of Physicians and Surgeons, was President of the Glasgow Medical Society, and later of the (now Royal) Medico-Chirurgical Society of Glasgow, an honour shared by Mr. Maylard; and as successively surgeon and physician to the Royal Infirmary would have taken a keen interest in the medico-chirurgical discussion of gastric disease. Mr. Maylard rightly believes that the problems of gastric disorder are so complicated that the responsibility for treatment should rest upon the combined opinion of both physician and surgeon. He has lived through the period of what may be called the surgical invasion of the stomach; this is shown by the record of gastric cases admitted into his wards; between 1892 and 1919 a total of 979 gastric cases were admitted, but only 13 of these were before 1899. His experience leads him to the conclusion, which would have appeared extreme not very long ago, that cases of undoubted gastric disease which fail to recover completely after a reasonable period of conservative treatment should be operated upon. But in the first lecture, which appeared in our issue of May 8th, 1920, page 626, on chronic gastric disorders dependent upon causes other than those of an ulcerative, carcinomatous, or obstructive nature, stress is laid on the large number of chronic gastric disorders that come under the surgeon's notice, and, though requiring careful discrimination, should not be submitted to operation. Among the varied forms of dyspepsia commented on, that termed "students' dyspepsia" may be recalled, as it is a more or less chronic disorder, ascribed to the abstraction of blood from the stomach to the brain by mental activity directly after food, and often alarms the sufferer, who, if a disciple of Aesculapius, invariably decides that he has cancer. Thirty years ago chronic ulcer was diagnosed with much greater confidence than it is now, when laparotomy so often reveals the real cause for the symptom complex. The diagnostic difficulties were clearly stated by Sir Berkeley Moynihan in our columns a year ago (December 13th, 1919, p. 765): he considered that a correct opinion could be obtained by *x*-ray examination in about 90 per cent. of the cases. Mr. Maylard, in discussing this dictum, concludes that it must be taken with a grain of salt, or, rather, with the added assistance of the clinical phenomena; for although skiagraphy may suggest, and sometimes very strongly, the presence of an ulcer, the symptoms must in many cases support the suggestion to justify any degree of certainty in diagnosis; he therefore maintains the view that exploratory laparotomy remains the only means of arriving at a certain diagnosis. Believing that a well-marked ulcer of the stomach or duodenum very rarely heals, Mr. Maylard advocates its excision, and finds that in experienced hands partial gastrectomy, though a somewhat severe procedure, is a particularly safe operation. Among 878 cases of gastric disorder he found that 17 per cent. were carcinoma, and that of these 50 per cent. were in an inoperable state; early exploration is therefore urgently required, and to facilitate this some attempt to promulgate information on the subject among the public, such as has been adopted about other diseases, should be made. At the end of his third lecture, on "pyloric obstruction," he summarizes his experience and expresses his conviction that many professed specialists in stomach diseases often do much more harm than good by persisting in palliative measures, and thus increasing the number of cases of inoperable carcinoma.

VACCINATION.

Quite recently the important work of the Jenner Society was taken over by the Research Defence Society. This action has been quickly followed by the publication of a most useful pamphlet entitled *Vaccination*, by Dr. Mary Scharlieb.[1] Inquiries are continually being made by medical men and members of the general public for a concise and up-to-date statement of the case for vaccination. Dr. Scharlieb's excellent pamphlet exactly supplies this want in the brief space of 30 pages. An interesting narrative is given of the history of vaccination. The controversial aspect of the question receives impartial consideration. Recognizing the dislike of compulsion as "an exaggeration of one of our national characteristics," Dr. Scharlieb advocates the substitution of argument and urges more careful education of the public and an endeavour to influence public opinion by this sound method. The case for vaccination is clearly demonstrated, and the pamphlet should be widely circulated in the interests of the method of education so wisely advocated. Undoubtedly the recent recrudescence of small-pox in various parts of England and Scotland has caused anxiety to the authorities. The neglect of vaccination is one of the chief sources of this anxiety. For this reason the Research Defence Society may be congratulated on the opportune issue of such an excellent addition to the popular literature in defence of vaccination. Much has been said and written about the so-called "Leicester Method." The average person who knows anything about the vaccination controversy is apt to conclude that any method associated with Leicester must of necessity exclude vaccination. Dr. Scharlieb devotes a considerable portion of the limited space at her disposal to a fair and reasonable statement and discussion on the "Leicester Method," and concludes that this is not a triumph for the anti-vaccinist, since it relies on vaccination as an effectual resource even when used at the eleventh hour. A quotation from Dr. J. C. McVail's Milroy Lectures (1919) shows how the Leicester Method has been changed almost beyond recognition as against the "method" given in evidence before the Royal Commission of 1896, which did not include recourse to vaccination. On the first page will be found a very impressive graphic argument in the shape of a photogravure reproduction of a portion of the Gloucester cemetery where lie buried 279 unvaccinated children, under 10 years of age, who fell victims to the epidemic of small-pox in Gloucester in 1895-96. The concluding portion has reference to the recent epidemic of small-pox in Glasgow. It can confidently be said that this well written pamphlet admirably serves the purpose for which it is intended.

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[1] *Some Chronic Gastric Disorders.* The Dr James Watson Lectures delivered by A. Ernest Maylard, Consulting Surgeon to the Victoria Infirmary, Glasgow, at the Royal Faculty of Physicians and Surgeons, Glasgow, on March 11th, 18th, and 25th, 1920. Reprint.

[1] *Vaccination.* By Mary Scharlieb, C.B.E., M.D., M.S. Price 1s. Published by the Research Defence Society, 11, Chandos Street, W1. 1920.

THE NEED FOR A RADIOLOGICAL INSTITUTE.

Dr. Robert Knox, in his presidential address before the Röntgen Society on November 18th, discussed the radiologists' need for fresh apparatus. He deplored the lack of unanimity regarding the development of instrument design which made standardization impossible. Nevertheless a recognition of certain special needs was emerging: the need for increasingly powerful apparatus, for x-ray tubes capable of steady output, and for a method of exactly measuring radiation. He called upon the designers of high-tension apparatus to set to work to produce more powerful apparatus. It seemed likely that radio-therapeutic work would be impeded in its advance unless a more penetrating radiation were available; at all events, if such high penetration were not required for treatment, this could only be proved after extensive experimental work for which the apparatus was lacking. At the suggestion of the British Scientific Instruments Research Association a meeting of medical men, physicists, and manufacturers had been called, and this resulted in the formation of a small committee empowered to draw up a list of questions about the design of apparatus required for radiographic and therapeutic work, and these questions were now being circulated among the radiologists of the country. Dr. Knox maintained that the development of radiological apparatus and technique called for co-operative experiment by physicists, technicians, and medical men. These problems could only be handled comprehensively in a radiological research institute with a suite of laboratories, lecture theatres, and demonstration rooms. The establishment of such an institute was the object of the Mackenzie Davidson Memorial Fund. It would be directed by a general committee, with subcommittees for the physical, technical, medical, and photographic sides of the work, each subcommittee supervising a section of the institute, and all conferring together in cases of difficulty. An Institute of Physics was coming into being; why not an institute of radiology adjoining it or incorporated with it? At Petrograd a new institute of radiology had lately been inaugurated in a building of recent construction. If Bolshevik Russia, asked Dr. Knox, could erect an institute of radiology in the midst of its great upheaval, was the United Kingdom going to be outdone?

THE NEW "LANGHAM" TELEPHONE EXCHANGE.

The controller of the London Telephone Service informs us that, in order to provide additional telephone facilities in the area between Oxford Street and Regent's Park, and to relieve the pressure at the existing Mayfair Exchange, preparations are in hand for the opening of a new exchange in Vere Street, W.1, which will be called "Langham," and probably be ready in January next. The area to be served by the "Langham Exchange" includes Harley Street and the adjacent thoroughfares, and about 600 exchange lines rented by members of the medical profession will be changed to "Langham" numbers. The new numbers of all the lines to be transferred will be published in the next issue of the *London Telephone Directory* due in April, 1921; but during the interval between the opening of the "Langham" Exchange and the distribution of the directory, and afterwards if necessary, special arrangements will be made both to advise callers of the changes and to divert calls to the new numbers.

Professor Hugh MacLean, M.D., D.Sc., has been appointed director of the Clinical Medical Unit at St. Thomas's Hospital.

The first scientific meeting of the new Section of Tropical Medicine of the Royal Society of Medicine will be held at 1, Wimpole Street, on Tuesday, November 30th, at 5 p.m. After the brief formal business a paper will be read by Dr. F. G. Rose on "The Incidence of Filariasis in British Guiana," giving a summary of his work under the auspices of the Colonial Office. This will be followed by demonstrations.

The Colonial Secretary has appointed a committee to consider what steps can be taken to secure the assistance of the universities of this country in carrying out the research work essential to the protection of the inhabitants of the colonies and protectorates from disease and to the successful development of their veterinary, agricultural, and mineral resources. The chairman is Lord Chalmers, and among the members are Sir John Rose Bradford, K.C.M.G., F.R.S., physician to University College Hospital, Sir Walter Fletcher, K.B.E., F.R.S., secretary of the Medical Research Council, Professor E. B. Poulton, the distinguished incumbent of the Hope chair of zoology in the University of Oxford, Sir David Prain, C.M.G., C.I.E., I.M.S. (ret.), director of the Royal Botanic Gardens, Kew, and Sir Stewart Stockman, chief veterinary officer to the Ministry of Agriculture.

The Edinburgh Medical Missionary Society is now in its eightieth year. Its function is to supply to all the churches fully qualified physicians and surgeons for service as medical missionaries all the world over. At least eighty men and women are required at this moment to fill vacancies which have occurred during and since the war. The president is Mr. C. W. Cathcart, C.B.E., F.R.C.S.; the vice-presidents, Dr. A. G. Miller, Dr. James Ritchie, Dr. A. H. F. Barbour, Dr. J. W. Ballantyne, Emeritus Professor A. Crum Brown, and Dr. G. Keppie Paterson. The treasurer is Dr. R. A. Fleming, and the secretary Dr. H. F. Lechmere Taylor, 56, George Square, Edinburgh.

Medical Notes in Parliament.

The Ministry of Health Bill.

THE HOSPITALS CLAUSE.

A LARGE amount of attention has naturally been drawn to the meeting of Peers and Commoners held last week to consider the hospitals clause of the Ministry of Health (Miscellaneous Provisions) Bill. The gathering was private, but the chairman (Colonel F. B. Mildmay, M.P.) was empowered to convey in a letter to the Prime Minister and to Dr. Addison the views expressed. Having regard to the importance of the matter, we give the text of the communication:

Dear Prime Minister,

A meeting attended by between fifty and sixty members of the two Houses of Parliament concerned with, and interested in, the management of voluntary hospitals in all parts of the country, was held in a Committee Room of the House of Commons on Thursday last, the 18th inst.

Amongst those present were:

The Duke of Portland, the Earl of Athlone, Earl Cromer, the Earl of Arran, Viscount Hambleden, Earl Winterton, Lord Islington, Lord Dawson, Viscount Duncannon, M.P., the Hon. W. Ormsby Gore, M.P., Sir Philip Magnus, M.P., General Davidson, M.P., Sir Samuel Scott, M.P., Sir Robert Newman, M.P., Sir A. Hunter-Weston, M.P., Sir Beville Stanier, M.P., Sir Henry Craik, M.P., Viscountess Astor, M.P., Sir John Butcher, M.P., Sir Godfrey Collins, M.P., Mr. Evelyn Cecil, M.P., Mr. Betterton, M.P., Mr. Atkey, M.P., Mr. Glynn, M.P., Colonel C. R. Burn, M.P., Lieut.-Colonel F. E. Fremantle, M.P., and Colonel F. B. Mildmay, M.P.

The following resolution was passed, and as chairman, I was requested to convey the same to the Minister of Health and to the Prime Minister:

> That, before any legislation is passed on the subject of State or rate aid for voluntary hospitals, an immediate inquiry into the whole subject should be held by an impartial committee, and that such committee should report at the earliest possible moment.

In conveying to you this resolution, I am particularly anxious to make it absolutely clear that those whom I am representing are very anxious not to retard legislative action in connexion with the future of voluntary hospitals. It is most certainly in no spirit of obstruction that they press upon you the terms of this resolution; for, being themselves, as regards most of them, members of managing Boards of various hospitals, and therefore familiar with the straits to which some of these have been reduced, they recognize that legislative reconsideration of the whole subject will not brook delay.

While, however, fully conscious of the responsibility possibly attributable to them for any such delay, however short—and, in their view, this delay should not measure more than a month or two—they desire me to urge upon you that it is quite impossible to deal comprehensively and satisfactorily with so big a question as the future of voluntary hospitals in a single clause of an omnibus bill of twenty-six clauses, which concerns itself with matters so diverse as housing, local finance, inspection of aliens, mortuaries, sale of food and drugs, loans, expiring laws continuance, powers of trustees, purchase and appropriation of land, composition of borough councils, etc. Moreover, they contend that the proposed 11th (Hospital) clause does not go to the root of the matter, which is but superficially dealt with by the permissive provisions.

The position is complicated by the fact that the circumstances of the various hospitals differ so widely as regards pecuniary resources, endowments, and the wealth of the particular district served by the hospital. It is difficult, admittedly, to legislate for these greatly varying requirements. No time has been afforded for gathering and co-ordinating the considered opinions, founded on long experience, of medical authorities, of hospital boards, of hospital staffs, and of others whose views would be valuable. A sound and lasting solution can result only if such opinion is available, and be the foundation for your legislative action.

We learn that, realizing this, and with a view to the tabulation of such expert opinion, the London Committee of the British Hospitals Association has determined to call to counsel, during the first week of December, representatives of the private hospitals, so that in the conclusions of this body, thus adequately augmented, the Government will find a reliable basis, provided by those most experienced in hospital management, for sound legislation.

It is, however, to be remembered that as, according to the present intentions of the Government, consideration in detail of the provisions of this bill by the Standing Committee will proceed *de die in diem*, the Committee stage, involving discussion of the details of the bill, will be over before the conclusions of the British Hospitals Association are available. Under those circumstances those whom I am authorized to represent are anxious that the Government, at this Committee stage, should view with favour the amendment to postpone the consideration of Clause 11, or preferably the amendment to provide for the omission of this clause from the bill, pending the consideration of the whole question by an impartial committee to be appointed by the Government. As to the composition of such a committee, they venture to suggest that its members should be quite few in number, and that in the light of recent experience in connexion with important committees of inquiry they should be absolutely impartial. Medical authorities, however eminent, and representatives of particular hospitals should not be included, while the valuable evidence to be furnished by these should be subjected to attentive and exhaustive examination by the committee.

There remains one consideration. Need the dropping of Clause 11 and the setting up of such a committee mean considerable delay? We who know the position, and who dread delay, strongly assert that no such consequence is necessarily to be feared. All the requisite evidence is to hand, for it has been already tabulated by the various hospitals; the sittings of the committee of inquiry, if it be appointed forthwith, need not be protracted, so that not more than a month or two's delay to legislation need be contemplated.

It may be urged that while some London hospitals confidently hope to surmount their difficulties without recourse to public funds, the pecuniary position of some hospitals is immediately critical; but there is good reason to believe that, however critical the emergency, there are funds available which will enable such hospitals to tide over the month or two which must elapse before the situation is dealt with. Granted that the position of these can be temporarily alleviated the short delay is justifiable, provided that it means a more sound and well-considered solution.

I will not discuss at length the particular attempt to solve the difficulty provided by Clause 11. It suffices to say that, if responsibility for the upkeep of hospitals is thrown upon the ratepayers as therein contemplated, we shall see, as a result, an enlightened and progressive policy of hospital development on the part of some local councils, while others, perhaps adjoining them, will refuse any expenditure, will arrest any activities in this direction. Co-ordination of hospital efforts throughout all England would seem to be a first requirement, and, to that end, direction from a central body.

You will not have lost sight of the fact that, by universal admission, there is a general outcry from all localities against the continually increasing pecuniary obligations laid upon the rates, and which are being forced upon local governing authorities by recurring legislative enactments—expenditure over which the ratepayers have no real control. The spirit of the revolt thus engendered locally against expenditure of the nature foreshadowed by Clause 11 does not augur well for its success as a solution of the difficulties which are besetting hospitals. If it should ultimately appear that aid from public funds to the hospitals in some form or other is indispensable, it was strongly felt by those on behalf of whom I speak that such public funds should be made available in return for particular services ungrudgingly rendered in the past by hospitals to the State—for research work, for services in connexion with health insurance, in connexion with venereal diseases, etc., public money being thus paid for public service. But I do not wish to be drawn into an examination of possible alternatives to the provisions in the clause. I wish only to press for the establishment immediately of a committee of inquiry, and for the corollary the exclusion of Clause 11 from your bill, while ever pressing upon your notice at the same time the keen anxiety of those I represent that legislative action should not be materially delayed on any account.

The second copy of the above letter (addressed to Dr. Addison) was presented by Colonel Mildmay in an interview. The Minister of Health, in reply, promised to give it every consideration.

Amendment Proposals in Committee.

Meanwhile the bill is being taken in Grand Committee. The earlier clauses are concerned with housing, and progress with them has been slow. As regards Clause 11 (of which the full text was printed in the JOURNAL of November 13th, p. 758) members of the Committee are bound to assume that Dr. Addison intends to proceed with it, and a large number of amendments have been tabled.

Before receiving the letter from Colonel Mildmay, Dr. Addison himself had put down a number of amendments—some of them to redeem pledges he had given since the introduction of the bill and others to clarify the phrasing. At the beginning of the first section, which lays down that "the council of a county shall have power," Dr. Addison proposes to add "on such terms and conditions as may be approved by the Minister." As the bill was introduced Subsection (*a*) went on to lay down that the power should be "to supply and maintain hospitals." Dr. Addison now proposes that the power shall be:

> to acquire by agreement with any Poor Law authority any Poor Law hospital or infirmary belonging to that authority within their area and maintain the same as a hospital,

Consequentially he asks the Committee to omit from the clause Subsection (*c*), which set forth that one of the objects shall be for county councils

> to undertake the maintenance of any Poor Law hospitals or infirmaries within their area.

Other consequential amendments are also omitted.

As regards Section 4, which lays down that the expenses of a council shall be defrayed, in the case of a county council, as expenses for general county purposes, Dr. Addison proposes to add that, if the Minister so directs, the expenses may alternatively be charged on such part of a county as is provided for under an order.

The notices of amendment by private members include one put down by both Mr. Ormsby-Gore and Earl Winterton for postponing Clause 11, and others by various members for omitting different sections. Mr. Ormsby-Gore presents a series of amendments which need to be read together to be understood. He would exclude the London County Council from power to act under the provisions of the bill, and he would place the powers in the hands of county boroughs instead of county councils. Instead of giving such authority power to undertake the maintenance of any Poor Law hospitals or infirmaries within their area, he would allow them

> to make agreements with boards of guardians providing for the reception, maintenance, and treatment in Poor Law hospitals or infirmaries of any class of sick persons for whom the council is empowered by law to provide indoor maintenance and treatment.

Alternatively, failing acceptance of this amendment, he proposes that the councils should have power to contribute to the maintenance of Poor Law infirmaries instead of being given the power to maintain them contemplated under the clause. This proposal he submits, subject to qualification—

> that in any hospital or infirmary previously provided by the Poor Law guardians the council shall set apart for the use of the board of guardians concerned a sufficient number of beds to be maintained by the board of guardians for the treatment of necessitous poor, such number to be not less than that required for this purpose by the board of guardians on March 1st, 1920.

Mr. Ormsby-Gore has also down another amendment to make the whole arrangement with boards of guardians a matter of agreement such as might be approved by the Minister after a local inquiry has been held.

Several members propose that the power for dealing with Poor Law hospitals should not be vested in county councils, but in county boroughs, boroughs, urban or rural districts. Mr. Rupert Gwynne would give the local authority the right to contribute without reference to the Minister. Colonel Lambert Ward would allow the Poor Law hospitals to be used both for paying and non-paying patients.

Dr. Fremantle would enlarge the proposed right of authorities to contribute so that the contribution might be made to institutions either within or without their areas. The clause would permit of contributions being made only to institutions within a council's area. Dr. Raw would limit the contribution by a council to a sum not exceeding a penny rate in any one year.

Lieutenant Commander Kenworthy would add a provision that Poor Law officers whose offices are abolished or reduced under the clause should receive reasonable compensation.

Mr. Ormsby-Gore proposes the following clauses.

> [illegible] to a board of guardians that there is any hospital [illegible] for the sick [illegible] for the due administration [illegible] it shall be lawful [illegible] for the [illegible] other than the sick [illegible].
>
> [illegible] Act of Parliament [illegible] Minister [illegible] the Minister [illegible] in carrying [illegible].

Suggested New Clauses.

The most remarkable of all the amendments are a number of new clauses submitted by private members in reference to a variety of subjects. Ordinarily the title of a bill restricts the initiative of private members in their desire to secure legislation in this way. But the "omnibus" title of this measure leaves great possibilities, and it remains to be seen how the Chairman of the Committee may regard these notices.

[illegible] a clause to strengthen the position of [illegible] of remuneration [illegible]. Dr. Fremantle proposes that a medical officer of health or inspector of nuisances shall be [illegible] by the authority with the consent of the Minister of Health [illegible]. [illegible] submits that the representation of the M.O.H. to a local authority shall be [illegible] on the local authority [illegible] of a dwelling [illegible] health [illegible] appeal to the Minister.

[illegible] proposes

> [illegible]

[illegible] Mr. [illegible] further proposes that the [illegible] report of a M.O.H. shall be provided [illegible] free and without any [illegible].

[illegible] new clause [illegible] the following provisions [illegible] to the treatment of venereal disease.

> (1) If any person, not being a qualified medical practitioner, (a) for reward, either directly or indirectly, treats, or offers to treat, another person for venereal disease; or (b) offers to treat others for reward for venereal disease; or (c) prescribes or offers to prescribe for reward, any remedy for venereal disease, he shall be guilty of a misdemeanour.
>
> (2) If any person, whether a qualified medical practitioner or not, by any advertisement—(a) treats or attempts to treat, or offers to treat or procure the treatment of, any person for venereal disease; or (b) prescribes or offers to prescribe any remedy for venereal disease; or (c) recommends, or attempts or offers to recommend, any drug, matter, or thing for the prevention, cure, or relief of venereal disease, he shall be guilty of a misdemeanour.
>
> (3) Where in any proceedings under subsection (1) it is shown that a person, not being a qualified medical practitioner, has treated or attempted to treat another for venereal disease, or has offered to treat others, or has prescribed or offered to prescribe a remedy for venereal disease, whether in any particular case or generally, he shall be deemed to have done so for reward, unless he shall satisfy the court that he did not do so.
>
> (4) Any person guilty of a misdemeanour under this section shall be liable (a) upon conviction on indictment to be imprisoned, with or without hard labour, up to two years, or to a fine up to £500, or to both; or (b) upon summary conviction to be imprisoned, with or without hard labour, up to six months, or to a fine up to £100, or to both.
>
> (5) Nothing in this section shall apply to an advertisement by a local or public authority; or an advertisement sanctioned by the Minister of Health; or any advertisement bona fide intended for the information of qualified medical practitioners or wholesale or retail chemists only, and relating to their lawful practice or business only.
>
> (6) In this section "venereal disease" means syphilis, gonorrhoea, or soft chancre; and "advertisement" includes any notice or announcement, whether oral or written, and any handbill, label, or enclosure, and any other communication in the nature of an advertisement.

The Unionist Reconstruction Committee, at a meeting held on November 22nd, passed a resolution asking the Government to withdraw all clauses in the bill beyond Clause 5, and urging that, before any further legislation dealing with voluntary hospitals is introduced, an independent committee should be appointed to inquire and report on the subject at the earliest possible moment.

Poor Law Hospitals and Infirmaries.—At the instance of Mr. Ormsby-Gore, Dr. Addison has given the following information as to Poor Law hospitals and infirmaries:

No. of Beds in Poor Law Institutions of Various Kinds on January 1st, 1920, according to Returns Supplied by the Clerks to the Guardians.

Separate infirmaries	[illegible]
Separate institutions for defectives and other special classes	3,368
Separate institutions for children	34,673
Other Poor Law institutions	[illegible]

Included in the above figures are 1,644 beds in children's institutions and 54,090 in "other Poor Law institutions" set apart for the sick. In a certain number of cases beds were on the date of the return still in the hands of the military authorities, and have generally been excluded by the clerks in their statements. The total number of unoccupied beds was, approximately, on March 1st, 107,000, and on September 1st, 112,000. Dr. Addison states that he has not consulted the Association of Poor Law Unions regarding the proposed transfer of hospitals to the County Council, under Clause 11 of the Ministry of Health Bill.

Position of the London Hospital.—Sir F. Hall asked, on November 18th, whether the attention of the Minister of Health had been called to the report that the London Hospital might have to close some of its wards owing to lack of funds; if in the absence of hospital service, supported mainly by voluntary contributions, the charge on the National Exchequer for medical and surgical attendance under the National Insurance Act would be greatly increased; and if the Government had under consideration any proposal to give financial support to the London and other hospitals. Dr. Addison replied he was aware of the statement referred to, and he hoped that the National Relief Fund would have regard to the special difficulties of the London Hospital in distributing their grant of £700,000 towards defraying the war deficit of the voluntary hospitals of the United Kingdom. He was most anxious to preserve the voluntary system and Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill was put forward with a view of meeting the present urgent necessity.

Epidemics in London.—In reply to Mr. Lyle, on November 18th, Dr. Addison said that scarlet fever and diphtheria had been exceptionally prevalent in London this autumn, but both diseases were of an extremely mild type and the death rate in each case was far below that experienced in previous epidemics. There was no evidence of the existence of epidemic influenza in this country at the present time. The origin of these waves of epidemic disease was obscure. Similar, although more fatal, outbreaks occurred in [illegible] and [illegible]. He was glad to say that the existing machinery and the available hospital accommodation had proved equal to the task of coping with the present outbreaks.

Curative Treatment and Training.—Major Tryon, in reply to Mr. A. M. Samuel, stated that at the end of last month some [illegible] officers and ex-service men had been recommended by medical referees for admission to convalescent centres for concurrent treatment and training. Arrangements were now in progress for providing substantial additions to the existing accommodation, and a first instalment of 500 places would be available in the course of a few weeks.

INDUSTRIAL HOSPITALS.

BY

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The character of the British hospital of the future will be largely determined by the first steps taken to make use of the hospital beds at present vacant in Poor Law institutions. That use must be made of these beds, or a portion of them, almost at once is generally agreed. Patients cannot much longer be allowed to lie untreated in their homes, often within a stone's throw of admirable hospital accommodation.

At first sight the problem would appear to be one as easy of solution as was that which confronted the country on the outbreak of war. Buildings were then commandeered, staffs appointed, and in a surprisingly short time hospitals for the treatment of sick and wounded soldiers established in every town. Indeed, the problem might be thought to be an easier one, since suitable buildings are now standing ready for use, while the number of sick to be dealt with is perhaps as one to ten, or even to twenty. The difference, however, between these two problems is fundamental. In warfare cost cannot be counted—victory is everything — but victory once gained there follows a period of financial sickness. At this moment the country is financially sick and the limit of bearable taxation has been reached. Cost is therefore one of the controlling factors in the problem of how to make use of the Poor Law accommodation.

Again, warfare breaks only for the period of hostilities the ingrained habits of peace. It may alter, it may develop institutions, but if those institutions are in consonance with the genius of the people and are grounded in their affections, then warfare need not destroy. There are no institutions more typical of our race, more firmly established in the affections of the great mass of our people, than the voluntary hospitals. Any step taken that would tend to injure permanently their usefulness could result only in taking from us something we really like and giving us something we do not really want.

Cost and the voluntary hospital, therefore, cannot be left out of consideration in solving our problem. They are the two main controlling factors. Keeping, then, in view that we have patients to be treated, that we have accommodation for the purpose, that cost is of paramount importance, and that the voluntary hospitals must be preserved, we propose to examine the suggestion that the Poor Law hospitals should be utilized without delay as general hospitals.

Before doing so, however, we think it desirable to consider shortly certain aspects of the voluntary hospitals—their patients and their sources of support. A patient in a voluntary hospital pays nothing for his treatment; he may contribute towards the cost if he wishes; there is, in the main, no compulsion, nothing of the nature of a tax. It is true that a gradual change is taking place; but, in order not to confuse the issue, it is better to regard him as a patient who costs the State nothing and who contributes, if he does contribute, of his own free will. It is true also of the untreated patient, whether his name appears on the waiting list of a general hospital or not, that he expects if he secures admission to have nothing to pay. Now, a large number of these are industrial patients, some wholly incapacitated by accident or disease, some able to follow their employment intermittently, some able to work continually but requiring treatment of one form or another to render them capable of full effort. What the volume of these may be it is difficult to assume. Probably we are not far out in regarding one-third of the patients in a general hospital, and a rather larger proportion of those on the waiting list, as industrial. For the purpose we have in view we limit the term industrial to those patients who can be definitely associated with some organization economically interested in their speedy return to work. At the present time the voluntary hospitals have difficulty in finding money to carry on. In their search for support they are being compelled to modify their purely charitable constitution. In taking stock of their situation they have found that they are being made use of by a large number of patients able to contribute materially towards the cost of treatment. They find also that prosperous mining companies, large insurance organizations, city corporations, and employers of labour generally rely upon them to treat their sick and injured. One of the most striking instances of this is to be seen in the attitude of city corporations towards the hospitals within their boundaries. Street accidents have always been received and treated without delay. Now it is taken as a matter of course that the voluntary hospitals should provide instant and efficient treatment for all injured in fires, in railway disasters, in collisions in the street, in brawls, in riots, by acts of violence and of crime. It is expected that charity should do this work free of cost. The knowledge gained by this stock-taking has opened the eyes of the committees of the voluntary hospitals to the fact that they are being taken advantage of; that there is an attempt to place on the shoulders of charity a burden charity was never meant to bear—a burden which it can no longer bear. In certain districts realization of this fact has resulted in a very considerable increase in support derived both from workmen themselves and from their employers. But this support is still quasi-voluntary. City corporations, speaking generally, do little in this direction; insurance companies do nothing at all.

Now there are three methods by which money can be raised, and three only:

(A) By voluntary gifts.
(B) By taxation, governmental or local.
(C) By payment on the basis of work done from
employers, employees, private persons.

So far as the last method is concerned it is immaterial whether payment is made direct or through some form of insurance so long as the insurance does not take the form of State insurance, in which case it becomes in part, or in whole, a form of taxation, and should be considered as such.

If we examine the income account of a voluntary hospital—we take the one with which we are most intimately acquainted—we find it can be divided up roughly as follows:

(1) Voluntary gifts	£21,000
(2) Taxation, partly governmental, partly local	7,000
(3) Employers, employees, patients, students ...	35,000
Total	£63,000

Note.—We have left out of consideration payments made for the treatment of soldiers and pensioners.

With regard to (1) there is no need to comment further than to say that it is made up of annual subscriptions, donations, voluntary collections of various kinds, and amounts to one-third of the total.

In this particular instance the sum under (2) happens to be almost entirely for the treatment of venereal diseases, and as such differs in a certain sense from taxation for general hospital purposes. The taxation is for the purpose of providing a protection against a real and terrible danger and is comparable to taxation levied, say, for police purposes. In any case it affects neither favourably nor adversely the principle of voluntary contributions. The work for which it is paid is one which does not engage the sympathies of the public. The voluntary hospital undertakes the task because it may be in a position to do it better and less expensively than any other organization, and it is also of scientific interest. In other hospitals the amount raised under the heading taxation may bear a rather higher proportion than one-ninth of the total, but it is probable that in none of the large ones does it amount to as much as one-seventh.

Division (3) is the important one — it is five-ninths of the total. It is hardly possible to regard it yet as coming wholly under the heading, "payment on the basis of work done." The employers' contributions are still tinged with the idea of charity. Some of them may be wholly charitable, as, for instance, in the case of an employer of labour making a grant in excess of the cost of treatment of patients coming from his works. Again, many such contributions, even when they in no way cover the cost of treatment, are regarded by the employer as purely charitable because he has not yet realized that the restoration of his workmen to health at the earliest possible moment saves his pocket. In essence, however, they are contributions in return for which something is given, whether the gift is realized or not, and as such a payment pure and simple under the heading (C).

The contributions from employees resemble those from employers in the main. Ostensibly they are a voluntary levy for the purpose of helping the unfortunate; in reality they have come to be subscriptions, more or less inadequate, to a benefit club. The contributors expect to receive treatment should they fall ill. These contributions have not yet by any means reached the stage of bearing a definite relationship to the cost of work done, but they are tending to do so in certain districts, and appeals made to bodies of workmen now show the number and cost of treatment of patients coming from their works or from their area.

Such are the sources of income of the voluntary hospitals. From what has been said it will be seen that we have hospitals still bearing the name "voluntary," still enjoying the confidence and affection of the people because of that name and of the spirit that animates them, and yet drawing only one-third of their support from truly voluntary sources. It cannot, then, be contended that to retain the voluntary spirit it is necessary to trust wholly to charitable sources of support. The conclusion we draw, therefore, is that, as in the great voluntary hospitals a large proportion of the support is given on the basis of work done, so, if there is to be no destructive rivalry between voluntary effort and the State, it is to this source of support that the Poor Law must first look for money; if, that is, we are prepared to admit, as we must admit, that to attempt to run two classes of hospitals—the voluntary and the Poor Law, the latter being supported entirely out of funds derived from taxation—will inevitably result in the disappearance of the former.

It will be agreed that the most urgent need of the country at the moment is the re-establishment of industry. Obviously, then, we should turn our attention first to that part of hospital treatment that tends to make the industrial worker a more efficient workman. As we have already said, a large proportion of patients in hospitals are engaged in industry. In many cases they are patients because of their work. In others they are a clog on industry because, through ill health, they are industrially inefficient. Any step taken, then, to cure them must benefit industry as a whole. If, then, the Poor Law accommodation is first used for this purpose it will be helping directly towards providing the necessary money for wider and more ambitious schemes of health. Only a country industrially prosperous can afford elaborate health schemes.

Suppose we set apart in the Poor Law hospitals sufficient accommodation to deal with the general hospital industrial patients we shall relieve the pressure on the voluntary hospital and treat those on their waiting lists who, while not medically or surgically urgent in the hospital sense, are yet industrially urgent. By doing so we may be laying the foundation of great industrial hospitals. Let us take a concrete case, that of a large industrial area served by two comparatively large voluntary hospitals, one of which has a medical school, and by several Poor Law institutions with accommodation suitable for general hospital purposes. Each of the voluntary hospitals deals with a large number of industrial patients and each has a waiting list on which are the names of many men. Consideration of the list of one hospital alone shows roughly a total of 1,500 suppliants for admission. Of these, over 400 await operation for hernia and 150 for conditions such as haemorrhoids. The majority of these are workers. Three weeks, on the average, in hospital, followed by a brief holiday, would return them to the ranks as efficient workmen. In this area we have reason to believe that 200 beds would not only treat the industrial waiting list patients but would treat also at least a third of the industrial patients at present in the wards of the voluntary hospitals. The relief thus given would enable voluntary hospitals to admit many of the non-industrial patients at present on their waiting lists. Such accommodation could readily be found in one of the Poor Law hospitals. We do not suggest that 200 beds would relieve the present hospital situation, but we do suggest that it would deal with a definite class of hospital patients the responsibility for the treatment of which may fairly be laid on shoulders other than those of the State.

Let us look at this from another point of view. On the waiting list of a voluntary hospital is the name of a miner suffering from a complaint which incapacitates him from hewing coal. There his name may remain for weeks, months, in certain cases for more than a year. Is it conceivable that in these days when output means so much the mine managers will allow such a man to remain one day longer untreated when they know that for £10 they can, in three weeks' time, have his disability removed? Four months' absence from work and on the waiting list means the loss of the labour which hews nearly 100 tons of coal. The matter may be looked at from many other points of view. For example, the value of this man as indicated by his wages—the economic balance is still in favour of immediate treatment; or, again, from the compensation point of view (if a compensation case), treatment beats compensation in the financial contest. We present this case to the employer, not as a lesson in ethics, but as a lesson in his own sphere—economics. The lesson is true whatever the length of the unnecessary waiting may be. It is only a matter of degree. The lesson is equally true in principle in the case of the intermittent worker, or in the case of a constant but inefficient worker—inefficient through ill health.

We lay no stress whatever on an estimate of beds required for an area. There are no completely reliable figures, but if more beds are required, then there are more beds to be had. We do suggest, however, that a comparatively small number of beds will relieve the present pressure in a very remarkable way. We submit that this industrial line is the easiest and the least controversial method of initiating the Poor Law institutions in their new rôle of general hospitals.

So far, then, we have accommodation; we have suggested the class of patients to be admitted, and we have suggested a source from which money may be expected. We do not suggest that the whole cost should come out of the pockets of the employers; on the contrary, we are of opinion that it is of the utmost value in the building up of character that the workmen should themselves contribute towards their own cure. Evidence is not wanting that the workers are willing to contribute pound for pound with their employers to such an end. There are many employees, too, who feel that they have neither the desire nor the right to claim either full or partial assistance from their employers, and who are ready—nay, anxious—to find such a sum as £10 if only they might be restored to full working capacity thereby. The lines upon which this can be done are given us in the example of the voluntary hospital mentioned above, the only difference being that in the industrial beds payment would be guaranteed *before* admission.

There remains now staff and method of control. We suggest that at first there should be close co-operation between the industrial hospital and the voluntary, that members of the staff of the voluntary hospital should give part of their services to the industrial. In every large voluntary hospital there are assistant surgeons and surgical registrars who are either fully trained in work of this character, or who in their training are daily in the closest touch with those who set the standard of surgical work in the district. It is important that the industrial hospitals should secure the confidence of the workmen and of their employers from the outset. This confidence can most easily be gained by employing members of voluntary hospital staffs to do the work. As time goes on the industrial hospital will no doubt grow more and more independent, but even when fully established there is everything to be gained by friendly ties with the voluntary hospitals and the medical schools.

For an industrial hospital of 200 beds a staff of four part-time surgeons, two resident medical officers and [illegible] specialist assistance [illegible] would be necessary. Such a staff could deal with the operative work of such a hospital, in which the length of stay would average three weeks. Assuming the ordinary rate of occupation, there would be about 60 admissions per week, and if these were all patients requiring operation and each of the four surgeons gave two days a week, the daily list would not be beyond their powers.

The services of these officers would have to be remunerated. Assuming that the cost per patient in an industrial hospital is as much as the cost in the voluntary hospitals, namely, £10—the addition of 30s. to that amount would provide a sum, on a turnover of [illegible] patients per year, more than sufficient to pay each a salary of £[illegible], the addition of 40s. would pay £1,000 each.

As a matter of fact, it is probable that the cost per patient in the industrial would be less than in the voluntary hospital, and that the figure £10 would be sufficient to cover the cost of payment of staff on the smaller scale. The industrial hospital would escape many charges which the voluntary, due to its elaborate departments and equipment, has to meet.

We have seen the suggestion that the Poor Law hospitals should be handed over to voluntary committees. It is difficult to imagine any practicable method of attaining this end. We submit, however, that it might be possible in each area to create an industrial body which, while in no way assuming the functions of administrative control, might yet be expected to interest itself in matters of vital importance to the well-being of the worker. It is in every way to be desired that both employers of labour and their workmen should realize that output and efficiency depend as much upon health as they do upon accurate bookkeeping, accurate costing, energetic salesmanship, and the like. An Area Committee representative of employers, workmen, chambers of commerce, insurance companies, and so on, specially charged with the survey of the means of treatment of the industrial sick and disabled within their area, might serve a useful function without in any way interfering with any organization which already exists or which it may be in the mind of the Ministry of Health to establish for the control of the Poor Law hospitals.

If it be asked how are the beds to be acquired, the answer is clear. They cannot be claimed or compelled, but if the Poor Law Guardians offer the beds, they can be used provisionally. So long as there remain, or are elsewhere provided, sufficient beds to satisfy the demands of the sick poor, the guardians may, if they will, utilize those vacant in the manner indicated. We are well aware that in certain districts already Poor Law beds have been offered and accepted for the purpose of relieving pressure on the voluntary hospital with gratifying results. The practical difficulties encountered in coming to a working arrangement have been:

1. The selection of the class of patient to be treated.
2. The awkwardness of treating the same type of patient on different terms in the voluntary hospital and in the Poor Law beds.

Both these difficulties appear to be surmounted by the scheme outlined.

Admission and discharge to hospital would be through the medical superintendent, just as through the resident medical officer in many large hospitals. Since the medical superintendent must be held by the guardians to be responsible, he would be nominally supervisor of the whole staff and its work. Given goodwill and tact, there is no reason why such arrangements should not speedily and successfully be entered into.

By way of summary, we submit that the proposition advanced offers an immediate partial solution of hospital difficulties, a solution which does not injure existing voluntary institutions or prejudice the proper development of larger schemes of utilizing Poor Law beds. It predicates the establishment of industrial wards, or even industrial hospitals, to deal with (1) workers incapacitated by industry; (2) workers unable through curable disabilities to do full work. Its adoption would be of profound economic advantage by clearing the waiting lists of industrial patients, and would open up the transition of the Poor Law beds to general hospital uses—

(a) Without cost to rates or taxes.
(b) With the co-operation of employers and employed.
(c) Without arousing opposition from the voluntary hospitals.

It demands beds relatively few in comparison with the number actually vacant. It could be carried on equally well by the present Poor Law authorities, or by other local authorities to whom the beds or institutions might be temporarily or permanently transferred.

Finally, no stigma can attach to any patient who pays for what he gets; and no adverse criticism can be sustained against treatment carried out by a staff substantially the same as that of the voluntary hospital.

Owing to the impossibility of obtaining foreign literature, the publication of the *Zentralblatt für Physiologie* will be suspended at the end of the current year.

THE CARE OF PHYSICALLY DEFECTIVE CHILDREN.

A joint conference of the Invalid Children's Aid Association and the Central Committee for the Care of Cripples was opened on November 16th at the Guildhall. Sir **William Bennett**, chairman of the Invalid Children's Aid Association, presided at the morning session, and in the absence of the President of the Board of Education, the opening address was delivered by Mr. J. **Herbert Lewis**, M.P., Parliamentary Secretary to the Board.

Mr. Lewis expressed the sense of the community's gratitude for the work done by the voluntary associations for child welfare, especially in the linking together of local educational authorities and hospitals for the purpose of securing treatment for those needing it. Lest the children, when cured of their physical ailments, should find themselves without the intellectual equipment necessary to maintain themselves, it was essential, he said, that education should go hand-in-hand with remedial treatment. During the past twenty years 123 day schools, accommodating 9,000 of these children, and 12 residential schools, providing for 540, had been established. Early recognition and early treatment of these cases were dependent on information supplied by health visitors, infant welfare centres, voluntary associations, hospitals, and general practitioners. A large increase would be required in the numbers of orthopaedic surgeons, nurses, and teachers available for prevention and treatment of crippling ailments. With proper treatment 75 per cent. of child cripples could be turned into satisfactory workers; money thus expended was a sound investment.

Mrs. **Townsend**, of the Invalid Children's Aid Association, urged the need of combination and co-ordination in the work of the State, the local authorities, and the voluntary agencies. The Association had thirty-six affiliated societies, and the children dealt with annually by it had increased from 584 in 1888 to over 33,000 during 1919. There was still need for much greater provision of residential accommodation and educational facilities for invalid children. The conference adopted a resolution that:

> The time has come when a national inquiry should be made into the nature and extent of crippling among children, with a view to its prevention and remedial treatment.

At the evening session, at which Sir **Arthur Stanley** presided, Dr. **James Wheatley** described the orthopaedic scheme in operation in Shropshire:

The scheme consisted of three parts—the hospital itself, arrangements for after-care, and a body of health visitors. The equipment of such a hospital was expensive, and therefore the establishment should not be too small; a hospital of from 200 to 250 beds seemed to be the ideal. For the purposes of after-care fourteen centres had been started in the country, and these centres were also used as places where preliminary examinations could take place before admission to hospital. The most important consideration of all was the organization of an efficient body of health visitors, upon whom it depended whether orthopaedic cases were taken up in the early stages when they could be readily cured.

On the motion of Dr. **Fraser**, deputy medical officer for Cumberland, a resolution was passed expressing the opinion:

> That the age at which grants are available for the treatment of cripples should be extended to the maximum age for continuation classes under the Education Act, 1918.

Sir **Robert Jones**, Chairman of the Central Committee for the Care of Cripples, presided at the morning session held on November 17th. Mr. H. S. **Platt**, in the course of a paper describing the work done in America, said that few general hospitals in that country were without a special department for the treatment of crippled children; the work, as a general rule, was still founded on the co-operation of voluntary organizations. Dr. J. **Anderson Smith** described the treatment of heart cases at the Edgar Lee Home.

At the evening sitting, at which Sir **Napier Burnett**, presided, Sir **Robert Jones** said that, roughly speaking, half the deformities were due to tuberculosis and rickets, and the rest were congenital or due to poliomyelitis, but there was hardly a crippled child, however distorted, who could not be improved sufficiently to make him a valuable industrial asset. In most of the deformities of children there was a stage when, to the uninitiated, recovery seemed complete and all parental anxiety was allayed; this was often the most critical moment in treatment, and was a period which should be provided for in any Government scheme. From his observation of the results achieved in various hospitals, Sir Robert Jones had no hesitation in saying that those children who were in the open air day and night were at a great advantage. A sketch was given of the essential elements of a national scheme, consisting of a central co-ordinating body working with the Ministry of Health and the Board of Education; local committees for the care of cripples in every district; and hospital schools, working in touch with which should be out-patient clinics, as well as day and residential schools for invalids. Whatever the cost, the investment would be a sound financial proposition which would pay interest a hundredfold.

England and Wales.

Appeal of the University of Birmingham.

The University of Birmingham, established in 1900, mainly through the exertions of the late Mr. Joseph Chamberlain, is making an appeal for a capital sum of £500,000. The justification offered is similar to that put forward by other universities which are making appeals, but Birmingham is in the unfortunate position of having incurred a capital debt of £130,000, the interest and the sinking fund of which amount to more than £8,000 a year. The appeal is founded partly on the need for better remuneration of teachers and partly on the need for extension. The efficiency of a university, it is pointed out, depends on the efficiency of its teaching staff, but owing to the poverty of the University of Birmingham the stipends, particularly of the non-professorial staffs, are miserably low and quite inadequate to attract and remunerate the ability required. The loyalty of the staff has been remarkable, but a university has no right to exploit that loyalty. The most urgent and crying need of the university is, it is said, to pay its professors and their assistants stipends commensurate with their qualifications, with the services they render to the community, and with the enormous rise in the cost of living. The cost of administration and maintenance has more than doubled owing to the rise in the wages of labour, cost of material and apparatus, of repairs, and of the administrative and clerical staffs. The university has, to its great regret, raised students' fees by 25 per cent., but, as in other British universities, students' fees do not pay much more than one-quarter of the expenses. The buildings of the Faculty of Medicine in Edmund Street require extension, and it is essential that the group of biological studies there, which have outgrown their accommodation, should be removed to new and suitable quarters in Edgbaston. Additional chairs are needed in various sciences, including biology, and greater facilities for research. Further, the university is pressed to meet the demands of the industrial workers of the Midlands outside its walls; in recognition of a national duty, it has created a diploma for social studies—that is to say, a training in social and welfare work; but to meet the demands of workers the university must extend especially its arts side, strengthening and increasing the staff of that faculty. Another purpose for which money is wanted is for a hostel for men students; the university already possesses a hostel accommodating about seventy women students. Not quite half the amount needed has already been subscribed or promised, but a large part of this is earmarked for special purposes.

The Appeal of the Colleges of Medicine and Science in Newcastle-upon-Tyne.

The College of Medicine and Armstrong College have joined forces and are shortly about to appeal to the public for half a million of money. It has for long been felt that if the colleges are adequately to fulfil their function as teaching institutions they must be more liberally supported by the people in the North of England. The need which exists in Newcastle is similar to that which is felt by the British universities generally. At a meeting presided over by the Duke of Northumberland the requirements of the College of Medicine were set forth by its President, Professor David Drummond. There is an annual deficit in the College of Medicine of [illegible] or more while at the Armstrong College it is upwards of £20,000. The appeal will be for £500,000 and should this be obtained one fourth of it will be allotted to the College of Medicine. The College of Medicine recognizes the necessity of having a larger number of all time professors, particularly in the higher subjects, and of the holders of these appointments being adequately remunerated for their services; also, in order to be abreast of the times, the necessity of founding chairs of biological and pathological chemistry, of having research scholarships, additional laboratories, and an extension of the present buildings.

Armstrong College requires money to enable it to pay its professors and lecturers more adequately, also for general equipment and fresh extensions. The college has been for several years a training centre for young professors, but many of them are soon called away by other institutions owing to the higher salaries offered. This is a serious loss to the college.

The appeal has not yet gone forth, but a considerable amount of spade work has been done. Several committees have been formed—for example, canvassing, propaganda, and one for the provision of speakers. It was proposed to hold a pageant, but owing to the late season of the year and the uncertainty of the weather, this, at any rate for the present, has been abandoned. The students of the colleges have taken up the matter and are making the cause their own. On one afternoon last week, after having been addressed by the heads of the colleges, 1,600 of them, male and female, marched in procession through the principal streets of the city to the general post office, where telegrams were forwarded to the students' associations of Birmingham, Leeds, and Sheffield. The students, singing and carrying banners, returned to the Armstrong College in excellent order, nothing but simple fun having been indulged in *en route*.

The L.C.C. and the Tuberculosis Bill.

The London County Council, at its meeting on November 16th, considered the Public Health (Tuberculosis) Bill. The Public Health Committee reported that in its opinion the power proposed to be conferred on the Minister of Health by subclause (1) of clause 1, whereby councils have to make provision to the Minister's satisfaction for the treatment of tuberculosis at sanatoriums and other institutions, was far too wide, as no limit was placed on the requirements which might be imposed by the Minister on the local authority. It was also the view of the Committee that the power of the Minister to withhold Government grant from local authorities who failed to discharge their obligations was sufficient without providing, as in subclause (3), that the Minister might make arrangements for the carrying out of the obligations by some other authority. The Committee recommended that the Council should urge the deletion of this subclause, and, further, that the position of the dispensary service in London should be dealt with specially in the bill, by placing on the borough councils the duty of making dispensary provision, subject to the Council's approval, and, through the Council, the approval of the Minister. The proposal to empower the County Council to appoint co-opted members on the Committee through which its powers in relation to the treatment of tuberculosis would be exercised was deprecated by the Public Health Committee, not because of an objection to the principle of co-option, but because of the inconvenience of having on a standing committee exercising numerous functions certain members whose co-operation would be limited to a single function. The Council endorsed the views of the Public Health Committee, and a general resolution was proposed by Mr. C. H. Norman:

> That the powers proposed to be conferred on the Minister to exercise control in respect of local administration and expenditure over local authorities in connexion with the making of provision for the treatment of tuberculosis is subversive of the fundamental principles of local self-government.

This was opposed by Dr. Helen Guest and other members of the Labour group who maintained that local authorities had been deficient in their administration of tuberculosis services, and that the Ministry of Health had perfect justification for assuming drastic powers. After a long debate the resolution was adopted by 61 votes to 7, and a motion to refer the whole matter back was lost by a large majority.

Financial Results of the Carlisle Experiment in Liquor Control.

A summary of the accounts recently issued for the year ending March 31st, 1920, shows that the capital involved in the whole area at that date, consisting largely of accumulated profits, amounted to £916,226, while the total trading profits were £168,115. After providing for the interest on the money supplied by the Exchequer for the purposes of the undertaking and for all other charges, including all taxes and duties—except income tax (Schedule D), excess profits duty and corporation tax—the net surplus accruing to the State for the year was £139,263. This sum gives a return of nearly 16½ per cent. on the average capital employed, in addition to the interest already provided for. From the inception of the scheme up to March 31st last the total surplus which had accrued to the Exchequer was £343,174. After (a) meeting all ordinary recurrent expenditure and depreciation; (b) defraying the charges for preliminary expenses and the cost of improvements not estimated to add to the realizable value of the properties; and (c) paying interest on Exchequer issues and unpaid purchase moneys, upwards of one-half of the average capital cost of the undertaking had been repaid by the date—that is, after allowance is made for the fact that the acquisition of the undertaking as well as the payment for it was gradual.

Scotland.

Edinburgh University Appeal for New Buildings.

An appeal signed by the chancellor of the University of Edinburgh, Mr. A. J. Balfour, and the principal and vice-chancellor, Sir J. Alfred Ewing, K.C.B., and the secretary, has been issued to the graduates and alumni and other friends of the university to help it to obtain the sum of £500,000, which is urgently needed for the erection of new buildings in the departments of medicine, chemistry, and natural history. Not only are the requirements of practical teaching now such as can be properly met only by large addition to the existing laboratories, but the number of students has increased enormously; last session there were 4,634 matriculated students in attendance. Two schemes are in progress; and one has to do with medicine. The university, with the co-operation of the Royal College of Physicians and the Royal College of Surgeons of Edinburgh, has secured a valuable site, now covered by dwelling houses of the poorer class, close to the Royal Infirmary; on this it is intended to erect a group of buildings for the scientific study of medicine, to be called the Lister Institute in memory of the late Lord Lister, whose work in revolutionizing modern surgery was mainly accomplished while he was professor in Edinburgh. The other scheme has already made considerable progress. A site of 115 acres on the south side of Edinburgh was purchased some time ago for university buildings, and on it a school of chemistry, of which the foundation stone was laid by His Majesty the King on July 6th, is being erected, and is now nearing completion. Buildings for zoology and other subjects will follow. These additions are indispensable for the teaching of old subjects under modern conditions, and to enable the university to maintain its position as a national and imperial centre of study and research.

Class Fees in Scottish Universities.

At a meeting of the Edinburgh University Court on November 15th, the Principal, Sir Alfred Ewing, reported that a meeting of representatives appointed by the University Courts of the four Scottish Universities to confer on the question of university fees, held at Perth, unanimously favoured increasing all tuition fees by 50 per cent. in the Faculties of Arts and Science, 33⅓ per cent. in the Faculties of Divinity and Law, and by not less than 33⅓ per cent. and not more than 50 per cent. on the aggregate amount in the Faculty of Medicine. The Court adopted the recommendations of the conference, and instructed the secretary to intimate to the University Courts of the other Scottish Universities that it was prepared to take action in accordance therewith.

Epidemic at St. Kilda.

The medical officer who recently visited St. Kilda on behalf of the Scottish Board of Health, in his report to the Board, states that the epidemic was mumps, which seemed to be introduced into the island during the latter part of August. Since that time cases have been occurring so regularly that it was safe to assume that fully half of the 74 inhabitants—37 males and 37 females—had been affected. The epidemic was not restricted to young persons. No deaths took place, and in the main the cases were not very acute, although a few were sharply ill for two or three days. The salient features of the epidemic were the variability of the symptoms and a high incidence, especially among males, of some of the known complications of the disease. Not one single inhabitant of the island could recollect a case of mumps having occurred in St. Kilda.

One Hundred Years of Gynaecology in Edinburgh.

At a meeting of the Edinburgh Obstetrical Society on November 10th the following officers were elected: President, Dr. William Fordyce; Vice-Presidents, Drs. Robert Jardine and Haig Ferguson. Dr. William Fordyce, in his presidential address, referred to the loss sustained by the society in the death of Dr. Berry Hart, whose contributions amounted to seventy-two papers, including his classical works on the anatomy of the pelvic floor. His teaching on this subject as well as on the cause of the internal rotation of the fetal head was now generally accepted. His *Manual of Gynaecology*, written in collaboration with Dr. Barbour, marked a distinct epoch in British gynaecology. This work might be said to be the first scientific textbook on modern gynaecology. The President then dealt with some of the respects in which Edinburgh was associated with the development of gynaecology during the past century. He recalled the fact that Ephraim McDowell—whose first operation in America for the removal of an ovarian tumour, carried out in 1809, was the birth of abdominal surgery—came to Edinburgh in 1792 to study for a period of two years. His subsequent surgical successes were probably the result of the teaching received in Edinburgh from his teacher, John Bell. In the year 1816 he drew up a report of three successful cases of ovariotomy. In 1824 Lizars in Edinburgh performed the operation once, and in 1825 three times with indifferent results. The operation was not repeated in Scotland for twenty years. In 1846 Handyside of Edinburgh read a paper advocating the operation to the Edinburgh Medico-Chirurgical Society, and this was the beginning of a long-drawn-out feud between the obstetricians headed by Sir James Simpson and the surgeons headed by Syme, who condemned the operation. The opposition only began to die down thirty years later, when Charles Clay of Manchester, Spencer Wells, and Thomas Keith of Edinburgh firmly established the operation in surgery. In the middle of the century the two prominent pioneers in gynaecology were Marion Sims of America, whose vaginal speculum, and Simpson in Edinburgh, whose advocacy of the uterine sound gave an impetus to gynaecology which could hardly be exaggerated. It was doubtless due to the importance with which Simpson's work and genius had invested the subject that the Edinburgh Royal Infirmary managers in 1850 for the first time in this or any other country instituted a distinct gynaecological department.

Ireland.

Memorial to the late Mr. Robert Campbell of Belfast.

The medical friends of the late Mr. Robert Campbell have thought it appropriate that steps should be taken to commemorate the pioneer work he did for surgery in Ulster. An endowment fund has been established for this purpose, and at a meeting of the subscribers, held in the Medical Institute, Belfast, on November 8th, it was decided that the memorial should take the form of a prize, to be called the Robert Campbell Memorial Prize, to be awarded periodically for distinguished work in any branch of medical science to that member of the profession in Ulster or to that graduate of Queen's University, Belfast, whom, at the time of the selection, the committee should consider most deserving of the honour. It was also decided that the award should entail on the recipient the duty of delivering an oration to the profession, to be called the Robert Campbell Oration. The following Executive Committee was appointed:

The Professors of Surgery, Medicine, Midwifery, Gynaecology, Ophthalmology, Pathology, Anatomy, and Physiology in Queen's University, Belfast;
The Presidents of the Ulster Branch of the British Medical Association and of the Ulster Medical Society;
The Chairman of Staff of the following hospitals: Royal Victoria, Mater Infirmorum, Queen Street, and the Ulster;
Dr. John Campbell and Dr. J. Walton Browne. Dr. James Colville was appointed treasurer, and Dr. Thomas Houston secretary.

This Executive Committee was given power to appoint five trustees, two of whom must be general medical practitioners, and, along with the trustees, to award the prize from time to time.

The following subscriptions to the endowment fund have already been received:

	£	s.	d.
W. Monypeny	10	10	0
C. Graves (Cookstown)	5	0	0
Wm. Burns	10	10	0
S. Blakely	5	5	0
W. M. Killen (1st instal.)	5	5	0
W. G. MacKenzie	10	10	0
W. R. MacKenzie	5	5	0
T. S. Holmes	5	5	0
S. B. Boyd (Ballymoney)	10	10	0
Foster Coates	5	5	0
G. St. George (Lisburn)	5	5	0
I. Wallace (Knockaholiet)	5	5	0
R. Marshall	3	3	0
W. Smyth (Antrim)	5	0	0
J. Walton Browne	10	10	0
T. Houston	21	0	0
T. Sinclair	21	0	0
R. Johnston (Portrush)	21	0	0
J. B. Johnson (Gilford)	5	5	0
S. R. Hunter (Dunmurry)	3	3	0
R. R. Leathem	5	5	0
A. P. B. Moore	5	5	0
G. M. Irvine (Mount Norris)	2	2	0
A. F. Knight (Donaghadee)	2	2	0
Sir John Fagan (Monasterevan)	5	5	0
H. Moreland McCrea (London)	5	0	0
George Hart Measham	10	10	0
H. W. Cunningham (Londonderry)	2	2	0
James A. Clarke (Carrick)	5	0	0
David [illegible] ([illegible])	5	0	0
J. R. Greenfield (Holywood)	5	5	0
T. D. Warnock (Donegal)	10	10	0
C. G. Lowry	10	10	0
R. McDowell	5	0	0
John McCaw	5	5	0
Boyd Campbell	2	2	0
J. S. Morrow	21	0	0
L. Rentoul	5	0	0
J. A. Lindsay	10	10	0
I. A. Davidson	10	10	0
T. H. Milroy	10	10	0
D. P. Gaussen (Dunmurry)	5	5	0
R. M. Beatty (Heckmondwike)	5	0	0
S. J. Killen (Carrick)	3	3	0
T. Killen (Larne)	3	3	0
T. C. D. Cathcart	3	3	0
R. J. Johnstone	21	0	0
Wm. M. Burnside	10	10	0
James Huston (Carrick)	10	10	0
G. G. Lyttle	5	5	0
John McCrea (Wargrave)	5	5	0
Howard Stevenson	10	10	0
T. B. Pedlow (Lurgan)	10	10	0
H. L. McKisack	10	10	0
Brice Smyth	5	5	0
M. Brice Smyth	5	5	0
H. R. Irvine	2	2	0
R. Martin (Banbridge)	1	1	0
Joseph Martin (Donaghadee)	2	2	0
A. Gardner Robb	10	10	0
W. J. Wilson	2	2	0
S. I. Turkington	2	2	0
Alex. Burns	5	0	0
Total received	£456	12	0

Members of the profession who wish to subscribe are requested to send their donations to Dr. James Colville, 7, University Square, Belfast.

Correspondence.

SURGICAL TREATMENT OF ANGINA PECTORIS.

SIR,—Your annotation (BRITISH MEDICAL JOURNAL, November 20th, p. 793) under the above title refers to an important subject important not only because of its scientific interest, but also as to the advisability of procedures Jonnesco appears to have practised frequently, and apparently with success or impunity. His example has not been followed in this country to any extent, and the results of double sympathectomy or sympathotomy low down in the neck, with the view of influencing the symptoms of Graves's disease, have not, so far as I know, been encouraging.

I remember meeting my late friend Mr. C. B. Lockwood on one occasion on his way to St. Bartholomew's Hospital when he stated he intended that morning performing a double sympathotomy for Graves's disease. With the hostility of an intimate I told him he would kill his patient. He replied that the brilliant results reported from the Continent scarcely justified my prophecy. His surgical skill and accurate anatomical knowledge no one who knew "C.B." will dispute. He was not deterred by my [illegible] forecast. The patient was a young woman. Both sympathetics were divided. The condition of the patient was aggravated forthwith and she died in about twenty-four hours. Lockwood characteristically sent me the news of the case. Jonnesco has been singularly fortunate in having met with no fatality in "150 operations."

As regards the surgical treatment of angina pectoris, it is of interest to note Jonnesco's apparent success in a case showing anginal symptoms. The operation is stated to have been unilateral, but was certainly thorough and avulsed or cut athwart much respected physiological paths to and from the heart. Here also we must congratulate the surgeon on a result which was gratifying, although the success will have to be repeated before he finds imitators. In this case Jonnesco adopts the well known view of Sir Clifford Allbutt as to the causation of angina pectoris. The etiology of the condition is not, however, in my opinion, only explicable on one hypothesis, although aortic stress probably plays a part in many cases.

I believe I was the first to employ precordial thoracotomy in a case of aortic valvular disease for severe anginal symptoms. The operation was performed by my colleague, Mr. Ewen Stabb, at the Great Northern Central Hospital on May 1st, 1908, with a very gratifying measure of success, although the anginal symptoms did not entirely disappear. The patient survived for four years, and then died accidentally from septic endocarditis. The case was reported in the *Lancet* in July, 1908.

We shall await with interest further successes or failures of Jonnesco's procedure in angina pectoris, but I would suggest that in the meantime the glory of establishing the advisability of this heroic measure in such cases be not disputed by this country.—I am, etc.,

London, Nov. 22nd. ALEXANDER BLACKHALL-MORISON.

VENEREAL DISEASES AMONG SEAMEN.

SIR,—We have read with much interest the account of the recent meeting of the Office International d'Hygiène Publique, which appears in your issue of last week, and the decisions arrived at there with reference to combating venereal diseases among the seafaring population.

It may be of further interest to your readers to know that the National Council for Combating Venereal Diseases has been dealing with this question for more than a year past, and that we are justified in believing that the matter has now become an international one as the outcome of their action and their constant negotiation and communication with the Shipping Federations, Seamen's Unions, and other bodies connected with the health of the merchant seamen.—We are, etc.,

W. G. MACPHERSON,
Chairman, Services Committee.
OTTO MAY,
Honorary Medical Secretary.

National Council for Combating
Venereal Diseases, Nov. 23rd.

INTRAVENOUS PEPTONE THERAPY IN EPILEPSY.

SIR,—Professor Edgeworth has recorded (p. 780) such good results that it seems rather unfortunate he should have shrunk from attempting any classification of the conditions to which peptone therapy in some form has been applied. Perhaps, therefore, a few observations may not be out of place with a view of bringing some order out of chaos.

With regard to the first four conditions on Professor Edgeworth's list—haemophilia, purpura, paroxysmal haemoglobinuria, and intestinal haemorrhages—peptone was used about ten years ago by Nolf in order to increase the coagulability of the blood. In animal experiment it is found that Witte's peptone in doses under 2 cgm. per kilo of body weight hastens coagulation, while doses over that quantity retard it. Nolf injected (usually into muscle) 10 c.cm. of a 5 per cent. solution Witte's peptone for the sole purpose of rendering the blood more coagulable. This forms the first group of cases.

The second group is represented in Professor Edgeworth's list by streptococcal septicaemia and "multiple arthritis of various kinds." This is the group of certain acute, subacute, and more or less chronic infections which in recent years have been treated by pyrogenic agents in order to produce a systemic reaction of greater or less intensity. Typhoid and coli vaccines are mostly employed, but peptone in large doses and sterilized milk are also amongst the other agents used. The suggestion of Nolf was that in this way "a violent reaction is induced in the apparatus which regulates the colloidal balance in the blood plasma."

A third and last group is represented by asthma and epilepsy. Here the use of peptone differs *in toto* from either of the above, and consists in a series of minute immunizing doses with avoidance of reaction. This was designed by the writer in order to induce a tolerance to the anaphylactic poison, which is identical with a poison produced in the body by peptone. At first used for asthma, I latterly (BRITISH MEDICAL JOURNAL, 1920, vol. i, p. 567) recommended this treatment for other recurring explosive disorders independent of gross organic lesion and doubtless anaphylactic in nature, mention being made of such explosions in the central nervous system, of which migraine and epilepsy are the most outstanding.

May I suggest, in conclusion, that the discrepancy in the results found by Professor Edgeworth may be due, in part at least, to what may be termed "defective linkage"? By giving weekly instead of four-day doses the critical point may have been passed, as the body disposes of peptone much more rapidly than of bacterial vaccine.—I am, etc.,

London, W., Nov. 21st. A. G. AULD.

THE WASSERMANN REACTION.

SIR,—In connexion with the letter of Dr. H. Wansey Bayly (BRITISH MEDICAL JOURNAL, August 7th, 1920), in which he casts doubts on the reliability of the Wassermann test, it may be of interest to your readers to know that this question has been the subject of a certain amount of controversy in the columns of the *Medical Journal of Australia* during the past year. In the issue of that journal of April 24th, 1920, I put forward certain aspects of the test which, in my opinion, prejudiced its reliability, and invited comment from bacteriologists and others in the hope of establishing or refuting the correctness of these opinions. So far I have received practically no response locally, and I feel that in view of Dr. Bayly's "campaign" it is justifiable to repeat my remarks in the BRITISH MEDICAL JOURNAL.

Briefly, the basis of my doubts as to the accuracy of the Wassermann test is the fact that the test is essentially one for the presence of the antibodies excited by the spirochaete and not for the organism itself; and it seems obvious that in order to establish its reliability the following questions must be settled:

1. Does a positive reaction signify that syphilitic antibodies are present?
2. Does the presence of syphilitic antibodies signify that living spirochaetes are present?

The first question can only be answered in the affirmative if absolute proof is forthcoming that a non-specific antigen (heart extract) will produce complement fixation in the presence of only one out of the hundreds of bacterial antibodies presumably always present in the human blood. Surely, in the present state of our knowledge regarding bacterial antibodies, such proof must be quite impossible.

An affirmative answer to the second question is even more difficult to reconcile with everyday clinical experience. Is it not universally recognized that the immunity following an attack of an infective disease lasts for months, years, or indefinitely after the exciting cause has ceased to exist; or, in other words, that the antibodies for that particular disease persist in the blood for a variable time after the disease has completely disappeared? Unless we assume that syphilis differs from all other infective diseases, there is every reason to suppose that the syphilitic antibodies (and therefore a positive Wassermann reaction) may persist in the blood long after the death of the last spirochaete.

This latter question is of vital importance, because it throws grave doubts on the practice of demanding a negative Wassermann reaction as proof of the cure of syphilis; perhaps the majority of cases in which the test comes under suspicion are those in which a patient, having received a full and efficient course of antisyphilitic treatment, still gives a positive Wassermann reaction at the end of it.

It would seem that Dr. Bayly's efforts to collect information from practitioners on this subject will not materially increase our knowledge, for at best it can only result in a mass of statistics proving an unreliability in the Wassermann test which is already well known to those who have much to do with the treatment of syphilis. At the same time there is an implied lack of faith in the workers in different laboratories, which must be deplored; let us confine our criticism to the test itself, for we should have nothing but thanks for the painstaking workers who perform it for us.

I would suggest that more good would result from an attempt to elicit from those authorities who champion the test some satisfying arguments which would enable us to think as they do, without flying in the face of our common sense and clinical experience.—I am, etc.,

H. C. COLVILLE,
Assistant Surgeon, Venereal Diseases Clinic,
Alfred Hospital.
Melbourne, Oct. 8th.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

SIR,—I crave your indulgence to reply to two criticisms of my recent paper on this subject which have appeared in your issues of October 30th and November 13th, the former by Dr. Edgar Cyriax of London, and the latter by Dr. W. H. Broad of Liverpool. Both these gentlemen have done me the honour of carefully reading my article, and I am indebted to them for their by no means unfriendly remarks.

Dr. Edgar Cyriax and Dr. Broad are well known and highly reputed exponents of Swedish remedial exercises, and it is very natural that they should have taken up the cudgels in defence of what they consider are the prior claims of their art in the non-operative or purely muscular side of the treatment of infantile paralysis. The point at issue is their contention that neither Dr. Mackenzie in his published works extending over the last ten years, and mainly embodied in *The Action of Muscles*, which I had the privilege of editing, nor I myself in my recent article, have brought forward any new principle or idea in muscle work in this disease, which was not known to the Swedish school of remedial exercises for nearly a century.

In any system of medical remedial treatment principles as a fundamental base for the structure are essential, and are naturally included in any textbooks on the subject.

Here I may fittingly quote an impartial scientific writer —Professor Arthur Keith, in *Menders of the Maimed*, page 217, speaking of Ling's work and that of his pupils, states:

> "We have been searching Europe of the nineteenth century to discover the principles and practice of the men who sought to repair the human machine by throwing it into actiion, sometimes by active and at other times by passive means. It must be owned we have discovered practice rather than principle. Anyone who examines critically the writings of the modern representatives of the Swedish school will discover that Ling's system of 'medical gymnastics' has grown into a bewildering code of arbitrary and empirical practices which can be justified only by the benefits which are said to attend their application."

Dr. Mackenzie's system of muscle re-education, in contradistinction to this empiricism, attempts to place muscle work in infantile paralysis on a sound scientific basis, and he does lay down for guidance and future advance certain definite principles; my contention is that as regards Swedish remedial exercises these are absolutely new principles, and the above quotation substantiates this.

The plan of treatment is immediate anatomical rest for weak muscles in the zero position; and biological re-education of muscle, beginning in the zero position. The zero position is defined as that position of anatomical rest in which the individual muscle is relaxed and both its own action and that of its opponent prevented. Muscle work should begin each day at zero, and gradually work up to and beyond the highest point achieved before. The object of treatment is to find some work the muscles can actually do—the minimum for a healthy muscle but the maximum for the weak muscle—and after attempts at movement to immediately rest the muscle again in the zero anatomical position by means of scientifically devised and accurately fitting splints.

To quote Professor Keith again: in speaking of the orthopaedic principles of John Hunter (*Menders of the Maimed*, page 12), and referring to this subject, he states:

> "Dr. Mackenzie makes no claim to be the discoverer of the 'minimal load' treatment of disabled muscles, but I am certain that no one has realized its practical importance more than he, and no one has realized and applied the right methods to the restoration of disabled muscles with a greater degree of skill."

Biological muscle re-education is, on the other hand, a completely new idea. Dr. Mackenzie states that muscle action is a complex function, one made up of several separate activities, and hence the term "paralysis" of muscles is really referable to the loss of some, not necessarily all, of their functions. The recovery, like the loss, follows in ancestral or evolutionary sequence. He again states: "The particular functions of any muscle are the result of the evolutionary history of that muscle."

The late Professor Osler, in the last edition of his famous textbook, *Principles and Practice of Medicine*, on the subject of the treatment of acute poliomyelitis, quotes Dr. Mackenzie exclusively and extensively, and makes no mention of Swedish remedial exercises. Dr. Mackenzie would be the first to admit our great debt to the Liverpool school of orthopaedics, where, under the guidance of Owen Thomas and Sir Robert Jones, scientific anatomical rest for paralysed muscles was first studied and brought to the notice of the medical profession.

Without a sound knowledge of the principles of the application of splints to weak muscles in cases of infantile paralysis I fail to see how any specialist in Swedish remedial exercises can hope to achieve any real benefit to sufferers from this disease.

When the use of splints is no longer necessary, and resistive exercises can be begun, then Swedish remedial exercises come into their inheritance, and it is then I find them of great value, and admire the care with which they have been designed. I use them freely for strengthening muscles which have recovered function, but not strength of action, and I have never considered that they could initiate muscle function from zero; this is the sphere of pure muscle re-education. What the two ideas have in common is that the patient's brain must be one of the essential factors in the treatment.

How Dr. Cyriax can contend, and Dr. Broad support him, that this method of muscle re-education which I have briefly outlined is the same as the exercises devised by Ling, when neither scientific muscle rest, zero position, nor biological muscle re-education can be quoted from Swedish remedial textbooks, passes my comprehension, and reminds me only of those ardent followers of Bacon who in their zeal ascribe to him not only his own works and those of Shakespeare, but also those of all the other Elizabethan poets and dramatists as well.—I am, etc.,

London, W., Nov. 8th. CHARLES MACKAY.

WATER RATES IN DISPENSING PRACTICES.

SIR,—A case was recently brought to the notice of the Council of the Medical Defence Union which is of considerable importance to the profession. A member who dispenses his own medicines discovered that he was being charged a special water rate in respect of his surgery. After considering the position carefully and taking counsel's opinion the Council decided to fight the case, and invited the Water Company to take police court proceedings against our member in order that a case might be stated for the High Court.

This the Water Company decline to do, as it appears that their present functions will be taken over next March by the City Corporation under a new Act of Parliament. Meanwhile, the claim against our member is not being proceeded with, but as it is probable that a similar charge is being made on other dispensing doctors, possibly without their knowledge, it is hoped they will carefully examine any demand they receive for water rates and will resist payment of any special rate levied in respect of their surgery.

The Union is determined to contest the point wherever any member is victimized in this way.—I am, etc.,

JAMES NEAL,
London, W.C., Nov. 22nd. General Secretary.

THE INDIAN MEDICAL SERVICE.

SIR,—The officers of the I.M.S. have received a communication from the Association pointing out that the pay, pension, leave, and other matters have now been put on a satisfactory basis. It is apparently assumed that all disadvantages have now been removed, and officers are therefore being called on to praise the service and beat up recruits as a mark of gratitude. The I.M.S. is heartily grateful to those who have brought about the bettering of their terms of service, but is it certain that these material conditions are the only ones that count in considering the question of service in India at present?

Many men now serving in India in various professions are not convinced that such service will offer in the future a career acceptable to Europeans, and are giving advice accordingly. Will the Association accuse of ingratitude those men serving in India who hold opinions and give advice different from those held and given at home?

> The toad beneath the harrow knows
> Exactly where each tooth point goes.
> The butterfly upon the road
> Preaches contentment to that toad.

—I am, etc.,

October 22nd. OUT THERE.

PRIMARY HEALTH CENTRES.

SIR,—In the Interim Report of the Consultative Council the primary and secondary centres are made a great point of; we are also told that the general practitioner will be able to have his patients then under his own care. The question arises, Who is going to pay the general practitioner for these services? The buildings will be State buildings, and everything in them will be State property, paid for by the taxpayer, who will also be the patient. Is it likely that any patient will consent to pay his doctor fees in a building of this kind? In a building which he—the patient—has paid for, and which he himself keeps up, he will expect to have everything done for him without any expense. That being so, who will pay the doctors? The State? If this is so, we all become servants of the State, and will only get State fees, and we know what that means. Can we imagine the State paying a fee of twenty guineas for an operation for appendicitis? Probably two guineas would be considered ample, and probably 2s. 6d. would be considered sufficient for a visit. If this scheme is carried through we shall not only become servants of the State, but most of us would be paupers.

With regard to the diagram of the proposed primary centres for Gloucester in the Interim Report of the Consultative Council, may I call attention to the following:

1. Every primary centre in the diagram is within half an hour's run in a motor ambulance of an existing hospital. Nailsworth (population 3,051) and Painswick (2,587) are within four miles of Stroud; these are marked down for Type No. 2.
2. The initial cost of building these centres, buying and laying out sites, etc., would be respectively at present day £100,000, £175,000, and £250,000, or thereabouts.
3. The upkeep would be enormous, requiring matron nurses, servants, pharmacists, radiographers, laboratory assistants, electrical engineers, gardeners, etc.
4. According to *Burdett's Hospitals and Charities* the beds in the present hospitals in the district are not fully occupied.
5. X ray apparatus, operating theatre furniture, etc., is daily being improved, and the fittings would be obsolete in ten years and have to be renewed.

The conclusion I have come to is that it would be better to enlarge existing hospitals and have a good motor ambulance attached to each. I cannot believe that 25 beds are required for "hospital cases" in a population of under 5,000, especially if tuberculous and cancer cases were excluded: it means that one person in every 200 of the population is so seriously ill that he requires hospital treatment. Moreover, in any event, the obscure cases and those requiring major operations would after all have to go into the secondary centres. The idea that the general practitioner could keep his patients under his own care is put in to delude him. The cases which could afford to pay the general practitioner good fees would have homes fit to remain in, and if the case were too bad to be nursed at home, it would probably have to go into the secondary hospital. The establishment of a primary centre in any place with less than 15,000 inhabitants is unnecessary, and even then Type No. 1 would be large enough.

The whole report of the Council shows that they have overestimated the amount of sickness in the country; they must think the whole nation is rapidly degenerating and dying like flies. Perhaps their information is derived from hospitals or consulting practices, where one only sees the obscure or serious cases. I doubt whether more than one case in five hundred seen by the general practitioner requires "hospital treatment," except in mining and factory districts.—I am, etc.,

[illegible], Nov. 19th. ARTHUR T. TODD WHITE.

GONORRHOEAL MASTITIS.

Sir,—The case described by Drs. Oxley and Dundas in the Journal (November 13th, p. 744) is interesting from many points of view, but I am of opinion from the description given that it was not a case of "primary gonorrhoeal mastitis."

Where there is a systemic gonococcic infection, one occasionally, though rarely, finds abscesses containing gonococci forming. Such cases have been described by Sahli, Meyer, Kerassotis, Campbell, and others. I personally have seen one such case. They originate by metastasis from a gonorrhoeal infection; the *locus* of the abscess seems to be determined by a trauma. In your correspondents' case the engorgement of the genitalia due to the pregnant state would account for the metastasis, and the injury to the breast explains the localization of the abscess.

The denial of the husband ever having had gonorrhoea does not exclude the possibility that signs, apart from symptoms, of old-standing infection were present, and further experience in venereal practice teaches one not to place too much reliance upon statements made by women when suffering from venereal disease.

In conclusion, I would contend that the condition described by Drs. Oxley and Dundas was a mammary abscess secondary to gonorrhoea.—I am, etc.,

Manchester, Nov. 16th. M. W. Browdy.

NOMENCLATURE OF DISEASES.

Sir,—I have the honour to ask the attention of your readers to some proposals for unifying the terms used in the nomenclature of disease which the delegates of Peru had the honour to present at the recent International Conference held in Paris to revise the classification of the causes of death. This memorandum indicates that practical medicine might derive advantages similar to those which have long been obtained in chemistry by attaching definite significance to particular terminations.

The proposals made for the purpose are simple and logical. The termination "itis" should in all cases be applied to inflammatory diseases, and the termination "algia" to painful conditions. All diseases caused by a well determined bacillary agent should have the termination "osis"—for example, tuberculosis, typhosis, syphilosis, leprosis, etc., a group which would be added to as knowledge advances. Similarly the termination "iasis" should be restricted to diseases caused by parasites, as is already the case with many diseases, such as trichiniasis, trypanosomiasis, elephantiasis, etc.; this should be extended to paludiasis, acariasis, etc.

It is not proposed to ask for the disuse of terms like small-pox, cancer, and diabetes, which belong to the language, but it is suggested that if, for scientific purposes, and particularly for purposes of international comparison, an official nomenclature is constructed, it can with great advantage incorporate such simple rules as those which are suggested.

The conference adopted the terminology suggested as alternatives to the terms at present in use.—I am, etc.,

Paris, Nov. 21st. J. Guillermo Arbulú.

⁂ Dr. Arbulú encloses a copy of a memorandum, printed in French, which gives further examples of the proposed terminology.

THE SUPPLY OF ORTHOPAEDIC SURGEONS.

Sir,—In the British Medical Journal of November 20th you have printed the interesting remarks of Sir Robert Jones in regard to orthopaedics and the working of a department in a general hospital. In Sir Robert's closing remarks he says: "At present, alas! there are not enough orthopaedic surgeons to meet hospital demands." At the present moment there are several surgeons with experience of orthopaedics anxious to obtain posts, one, if not two, after twelve months' search, contemplating emigration rather than continue a fruitless search. As Sir Robert rightly says, a hospital appointment is essential to the practice of orthopaedic surgery.

May I give my own case, which is not unique? Public school, university, F.R.C.S., four and a half years R.A.M.C., major i/c of a surgical division, and surgical specialist to a special surgical military hospital, unable to resume pre-war work.

I am at present in touch with two other medical men in much the same condition and only asking for opportunity to start work, willing to make a beginning in a junior post provided there is scope. Are posts for orthopaedic surgeons available?—I am, etc.,

November 21st. Fifteen Years' Special Work.

Obituary.

THOMAS WHITESIDE HIME, B.A., M.D.Dubl., L.R.C.S.Edin.,

Formerly M.O.H. Bradford.

The announcement of the death on November 9th, at Sheffield, at the age of 78, of Dr. Thomas Whiteside Hime will recall to those engaged in the public health service in the last quarter of the nineteenth century a vigorous personality, a versatile intellect, and a fearless preacher of what he believed to be the truth. He graduated at Trinity College, Dublin, in 1868, and for a time took an interest in gynaecology, lecturing at the old Sheffield Medical School on midwifery and the diseases of women and children. In 1878 he was elected, for a term of five years, medical officer of health for Sheffield, and he entered upon his duties with characteristic zeal and thoroughness. In 1883 he succeeded Dr. Harris Butterfield as medical officer of health for Bradford, at that time a town with a population of about 200,000 persons and with much work ready to the hand of such an enthusiastic reformer as Hime. For example, the conservancy system was not only permitted but encouraged, and a form of privy was in use "capable of containing a cartload of filth, which was emptied as a rule not oftener than once in three months, and in many cases still less frequently." Hime was elected, under the pernicious system then in vogue, for five years, and during that period he worked hard to improve the condition of the town. As may be imagined, his reports and his recommendations were not altogether palatable to a reactionary local authority, and he suffered the fate of many pioneers who are ahead of their time. At the expiration of his five years of office he was not actually dismissed from office, but he was not re-elected. He had no appeal; the central authority could or would do nothing. This scurvy treatment of a chief official at the hands of the Bradford Corporation was resented very much by many of the inhabitants and by all the medical practitioners in the town, and he was presented with a purse of money "as a mark of their approval of the manner in which he had discharged his duties." The committee which promoted this testimonial had for its chairman the late Sir Henry Mitchell, and for its treasurer the late Sir William Byles, who expressed the hope, still unfulfilled, that the occasion might be the commencement of a successful movement to obtain for all medical officers of health the right of appeal to the Local Government Board in order that they might be able to perform their duties with due security and independence. Hime was by no means crushed by this rebuff. He established for a time an institution for the production of calf lymph, and carried out important researches, more especially in connexion with rabies and anthrax. In 1892 he was in Hamburg in connexion with the outbreak of cholera.

His prescience is well exemplified by the following extract from his first report to the Bradford Corporation in 1884:

> It is very much to be desired that benevolent persons would endeavour to improve the state of knowledge of poor women as to the feeding and managing of infants. This could be done by means of cottage lectures, the distributing of instructive leaflets, etc., and would be a most beneficent work.

In the same report he advised the isolation of consumptives, the destruction of tuberculous expectoration, and the sterilization of infected handkerchiefs and other articles. As a writer Hime is best known through his "Handy Guide to the Sanitary Laws" which is a monument of painstaking research into the realms of case law. He contributed the articles on offensive trades to Stevenson and Murphy's *Hygiene*, and on anthrax to Fowler's *Dictionary of Medicine*. Like so many of his countrymen he was an accomplished linguist and translated many foreign works, including Pettenkofer's *Cholera*. Also like many Irishmen he was generous almost to a fault, and among the working classes in Bradford there are many who have cause to remember him with gratitude for having helped them over a stile at a critical period of their lives.

SAMUEL STRETTON, M.R.C.S., J.P.,

Consulting Surgeon, Kidderminster Infirmary.

We have to record with regret the death, on November 13th, of Dr. Samuel Stretton, in his 89th year. He was born in Leicester, and was a student of St. Bartholomew's Hospital. He took the diploma of M.R.C.S. in 1854, and held the post of house-surgeon to that hospital. On the outbreak of the war with Russia in that year he was one of a band of young men, which included Sir Spencer Wells, Dr. E. A. Parkes, and Sir John Kirk, who volunteered their services as civil surgeons. By Mr. Stretton's death Sir John Kirk remains the last survivor. Dr. Stretton was attached to the military hospital at Scutari for over a year, and experienced all the rigors of terrible winter. On returning to England he began practice at Kidderminster, and became honorary surgeon to the old Kidderminster Infirmary and Dispensary. His experience there led him to press for a new building, and eventually this end was achieved, and later on a children's hospital was erected. He was also medical officer of the Poor Law institution, and during his term of office had the satisfaction of seeing the erection of a workhouse infirmary. He enjoyed a large practice, but was able to find time to show interest in ambulance work, and also in education; he was a director of the High School for Girls. He was a magistrate for the borough and the county. He retired from practice about sixteen years ago and went to live at Droitwich, where he interested himself in the success of the town as a health resort. Dr. Stretton married in 1857 a daughter of Dr. W. Birch, and had the happiness of celebrating his golden wedding. They had ten sons and two daughters; one son is Mr. J. Lionel Stretton, senior surgeon to the Kidderminster Infirmary and Children's Hospital.

Universities and Colleges.

UNIVERSITY OF OXFORD.

The [illegible] of Dr. J. A. Hadfield's Dale Lectures at Mansfield College [illegible] "The contribution of psychotherapy to ethics and religion."

Mr. [illegible] Peel has been elected to an Honorary Scholarship [illegible] at University College.

The following candidates have passed the examinations indicated:

D.P.H. *Part I*: C. N. Atkins, Ina Marion Clarke, W. V. Corbett, [illegible], G. W. [illegible], R. H. Sampson, A. Viney. *Part II*, *and awarded the Diploma*: H. M. [illegible], C. N. Atkins, [illegible], C. L. Browne, F. C. Davison, A. P. [illegible], M. R. A. [illegible], C. [illegible], J. S. Moore, R. H. Sampson.

[illegible]

UNIVERSITY OF CAMBRIDGE.

Mr. [illegible] Wollaston, M.A., [illegible] has been elected a Fellow of King's College. [illegible]

UNIVERSITY OF LONDON.

The following candidates have been approved at the examination indicated:

[illegible]

* [illegible]

The following candidates have passed in one of the two groups of subjects:

Third M.B., B.S.—*Group I:* G. C. Agarwala, H. J. Blampied, P. N. Cook, R. B. Green, Gwenvron M. Griffiths, Kathleen H. Matthews, J. Y. Moore, A. H. Richards, L. M. Smith, I. G. Williams. *Group II:* J. R. Banks, F. M. Barnes, A. Bearblock, E. V. Beaumont, E. V. Corry, Elsie E. Cowperthwaite, L. ap I. Davies, J. O'F. Fletcher, Ada M. Freeman, I. Frost, G. F. W. Howorth, Teresa J. Iyer, E. H. E. Le Clezio, I. H. Lloyd-Williams, Gladys Matthews, Sybil G. Overton, H. N. Pritchett, S. Sacks, C. H. St. John, B. B. Sharp, Katherine J. Shaw, L. F. Strugnell, Norah E. Trouton, W. C. S. Wood.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual meeting of Fellows and Members took place on November 18th. Sir Anthony Bowlby, President, was in the chair. The proceedings were delayed for a quarter of an hour in the absence of a quorum. Later about thirty-five were present.

The President summarized the annual report of the Council, Mr. Charles Ryall spoke on the subject of the College finances, which he said were now again prosperous, and Mr. H. J. Waring described the rearrangement of the museum, and said that negotiations were now in progress as a result of which it was hoped that the war pathological collection of the Royal Army Medical Corps would be handed over permanently by the War Office into the custody of the College as a national collection. In reply to questions, the President said that the Fellows of the College numbered 1,614, and the Members 16,028.

Dr. J. Brindley-James moved a resolution again affirming the desirability of admitting Members to direct representation on the Council in order that the constitution of the Council might be in keeping with modern ideas of representation. To procure from Parliament a new charter might or might not be difficult, but in any case justice imperatively demanded it. The present government of the College was in the hands of an extremely narrow oligarchy. Dr. S. C. Lawrence seconded, and the motion was supported by Dr. Lapthorn Smith and others. It was carried *nemine contradicente*, sixteen voting. Dr. Lawrence then moved a second resolution, in the same terms as the one carried at the previous annual meeting, requesting the President and Council to nominate at least two members in general practice to represent the interests of general practitioners in College affairs. Dr. F. G. Lloyd seconded, and Mr. Dennis Vinrace spoke in support of what he described as a conciliatory resolution which asked for something far less than the Society of Members considered ought to be granted. This motion was also carried *nemine contradicente*, fifteen voting.

The President said, in closing the meeting, that it was a pity to suggest, as some speakers had done, that the Council entertained any save the most cordial feelings towards the Members. There was no body of men in this country for whom he personally had a higher regard than the Members of the College; during the war he was much in contact with them in various parts of the world, and he was quite certain that no body of men by their work reflected greater credit upon an institution to which they belonged.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The next award of the Triennial Reuben Harvey Memorial Prize will be made on July 1st, 1921. The prize, value £25, will be awarded for the best essay, on a subject to be selected by the candidate, evidencing research in animal physiology or pathology, the essay to be illustrated by drawings or preparations. Further particulars will be found in our advertisement pages.

The Services.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS.

The usual quarterly committee meeting was held on October 29th, at 11, Chandos Street, Cavendish Square, W.1. Eighteen grants were made to cases in the Benevolent Branch for the orphans of officers, amounting to £[illegible], and fifty-two grants in the Relief Branch for widows and children of the rank and file, amounting to £1,[illegible].

These funds are for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force, and new armies, and also for the relief of the children of those who have been so severely damaged in the late war that they need help for the education of children.

Requests for relief should be addressed to the honorary secretary, at the offices of the funds, at 11, Chandos Street, Cavendish Square, W.1.

The Erb medal, which is given every three years to German neuropathologists who have published the best work in their speciality, was recently conferred on Professors Foerster of Breslau and Nonne of Hamburg, the judges being Professors Strumpell, Obersteiner, and Mingazzini.

Medical News.

A COURSE of five lectures on influenza will be given by Dr. F. W. Twort, superintendent of the Brown Institution (University of London) in the Theatre of the Royal College of Surgeons, Lincoln's Inn Fields, W.C. (by kind permission of the Council of the College) on Monday, Tuesday, and Wednesday, December 13th, 14th, and 15th, and on Monday and Tuesday, December 20th and 21st, at 4 p.m. Admission is free, without ticket.

THE annual dinner of the Medical Society, University College Hospital, London, will be held at the Criterion Restaurant on Monday, December 13th. All old members are invited to attend. Tickets may be had from Mr. G. O. Montgomery, Honorary Secretary, at University College Hospital.

THE next meeting of the Newcastle-upon-Tyne and Northern Counties Medical Society will be held on Friday, December 3rd. At 4.30 p.m. Sir William Macewen of Glasgow will give an address in the Connaught Hall, Newcastle, and in the evening, at 7.15 o'clock, the first annual dinner of the society will be held in the Grand Assembly Rooms, Barras Bridge, Newcastle. All medical practitioners and students are cordially invited.

IN recognition of his thirty-four years' service as medical officer to the St. John Ambulance Brigade, Dr. A. A. G. Dickey, M.B.E., J.P., who is shortly leaving Colne, has been presented with an inscribed silver salver. The presentation was made last week, and many tributes were paid to Dr. Dickey's devoted work on behalf of the ambulance movement in the town.

DR. F. HALL, of the Inner Temple, and Dr. T. Campbell, of Gray's Inn, have been called to the Bar.

THE London County Council has agreed that medical officers in its mental hospital service who require occasional daily leave in order to attend a course for a diploma or degree in mental disease shall be granted facilities, and shall also have leave, with full pay, for the period of the examination; and that leave of absence from a mental hospital, with pay, for a period not exceeding six weeks in one year shall be granted to a medical officer who desires to undergo a course of medical instruction at a university.

THE Department of Scientific and Industrial Research announces that a licence has been issued by the Board of Trade to the British Motor Cycle and Cycle-car Research Association.

THE Institute of Physics has now been incorporated and has begun work. Its object is to secure the recognition of the professional status of the physicist and to co-ordinate the work of all the societies interested in physical science or its applications. This co-ordination has already been secured by the participation of the Physical Society of London, the Optical Society, the Faraday Society, the Royal Microscopical Society, and the Röntgen Society. The first President of the Institute is Sir Richard Glazebrook, K.C.B., F.R.S., and Sir J. J. Thomson, O.M., the retiring President of the Royal Society, has become the first Honorary Fellow. It is a tribute to the status already acquired by the newly formed Institute that its diploma is now being required from applicants for Government and other important positions requiring a knowledge of physics, and thanks in great part to the Institute, the physicist is now becoming recognized as a member of a specific profession. Particulars with regard to membership can be obtained from the Secretary, 10, Essex Street, London, W.C.2.

THE invasion of Upper Silesia by the Poles last summer was followed by outbreaks of small-pox and typhus and by an epidemic of 1,200 cases of typhoid fever due to contamination of a reservoir.

IN September 619 cases of plague occurred in Java, all of which were fatal.

A MEDICAL society has been formed at the Russian Hospital, Tel-el-Kebir, where Russian refugees and wounded have been received since March, 1920. At successive meetings Dr. Mokin described the therapeutic use of the ultra-violet rays for war wounds, and Professor N. Dobrovolskaya demonstrated the symptomatology of arterio-venous aneurysm. Other subjects discussed were antiseptic wound treatment and peripheral nerve injuries.

IN Prussia the deaths from tuberculosis in women increased from 25,000 in 1914, to 30,000 in 1916, and 39,000 in 1917. In Leipzig the mortality from tuberculosis was 91.6 per cent. higher in 1918 than in 1914.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

MOTOR SCOOTERS.

WE are asked whether motor scooters can be recommended for use by medical men. We are advised that it is a type of vehicle which probably has a future, but at present it is not possible to speak with confidence. The Auto-Cycle Union had intended to hold a trial of motor scooters this autumn, but financial and other difficulties were encountered. It seems possible that these difficulties may be overcome in time to enable the Union to conduct a trial next year. A definition of motor scooter is required. The type in which the rider stands appears to be the best, but the public and the makers seem to favour the sitting type, in which there must be much vibration. The results of an official test under comparative conditions must be awaited.

HYPERHIDROSIS.

"BEATEN" writes: I have a patient who suffers from extreme sweating of the palms of the hands. As the patient is a person of some social position, it can be readily understood with what anxiety a cure is looked for. I should be glad if any reader can offer suggestions for treatment.

INCOME TAX.

"J. F. G." inquires as to the allowance for expenses under Schedule E.

*** Expenses "incurred wholely, exclusively, and necessarily in the performance of the duties" are admissible as deductions. Two of our correspondent's deductions appear to be open to objection by the income tax authorities. £52 per annum is rather high for the use of one room; we have known the analogy of a clergyman's allowance for a study applied in such a case—that allowance is based on one-eighth of the rent, etc. There is also no allowance for depreciation under Schedule E, and we think that "J. F. G." will have considerable trouble in inducing the inspector of taxes or the Commissioners to make him an allowance over and above that which he receives in cash from his county council. Possibly a car of the power and seating accommodation used is not "necessary" for the performance of his duties. As a minor matter the 10 per cent. allowance for earned income has to be calculated on the salary less expenses, not on the salary as unreduced by the deduction made—that is, in this case on £600 – £x (the amount of allowable expenses) not on £600.

"X RAYS" wishes for information as to whether he is entitled to claim deductions for the cost of plates, chemicals, pastilles, x-ray tubes (repairs and replacements only), and repairs, etc., to his x-ray apparatus in arriving at his profits.

*** He is certainly entitled to deduct such expenses, as being incurred to maintain his professional equipment in proper condition, and thereby to continue to earn his professional fees; in fact, such expenditure was accruing due as against fees received for the use of the apparatus. It is perhaps advisable to add that such expenditure would not be admissible to the extent to which it may be incurred for private experiment and research.

"BILL" asks for information with regard to the allowance of the cost of replacing an old car. He asks whether a practitioner selling his old car for £100, and buying a new one for £1,000, can legitimately claim the difference of £900 as an expense, pointing out that the taxable income in such a case would disappear if the gross receipts of the practice did not exceed £1,000.

*** The £900 can be treated as a professional expense, provided that the car purchased was of similar power and grade. If, for instance, a similar car could have been purchased for £800, then £200 of the £1,000 represents additional capital outlay, and only £700 can be claimed as cost of replacement. At present the taxable income might not disappear owing to the operation of the three years' average basis of assessment, and in any case our correspondent's case is rather an extreme one. A £1,000 car is not usually regarded as reasonably required for a practice of £1,000 gross income. If the three years' average basis is discarded in the future in favour of the previous year's basis, we presume that it will be accompanied by the adoption of the other proposals of the Royal Commission, including the allowance of depreciation at, say, 15 or 20 per cent. in lieu of cost of replacement.

"H. E. B." inquires whether he is right in entering in his income tax returns *under Schedule D* all his varying fees from guardians, county council, and other local bodies, and stating he has done so on the Schedule E form.

*** Yes. Strictly, such fees are assessable under Schedule E, but the Board of Inland Revenue some years ago, recognizing that in the present day such work forms part of the ordinary activities of a medical practitioner, agreed to waive the technicality and to acquiesce in assessments on the general profits under Schedule D being made to include such fees.

LETTERS, NOTES, ETC.

CEREAL EARS AS FOREIGN BODIES.

DR. R. FORBES SMITH, O.B.E. (Barry), writes: I note with interest the reference of Dr. G. C. M. M'Gonigle to the ear of barley quoted in the *Diary* of the late John Evelyn, 1662. Dr. James Robertson, the tuberculosis officer of Cardiff, has [illegible] the notes of a case admitted to the Brompton Hospital in [illegible] in which an abscess was opened in the side and an ear of barley or rye grass evacuated. The specimen [illegible] hospital. In [illegible] also the "[illegible]" [illegible] appear to have been very [illegible] and the cause [illegible] appeared and was dealt with.

DELIVERY OF CHILD AND PLACENTA IN UNRUPTURED MEMBRANES AT TERM.

DR. H. H. MARSDEN, M.B.E. [illegible] writes: Following the report of Dr. [illegible] in the JOURNAL of October [illegible], perhaps this case may be of interest. On July [illegible] of this year I was sent for by the district nurse of a [illegible] patient who [illegible] qualified midwife [illegible] could [illegible]. On arrival I found a [illegible] infant [illegible] The [illegible] infant and [illegible] was expelled intact after a rather prolonged first [illegible] stage of labour. [illegible] she [illegible] extracted the child. [illegible] the child [illegible] nearly four months old, a fine, [illegible] infant. The mother [illegible] 42. She has a son, aged 17, who [illegible]. Fourteen months after his birth she had [illegible]. One died [illegible] and the other died three months [illegible] in March, 1914, [illegible] and October, 1917, at term. [illegible] The parents are perfectly healthy, [illegible] for these [illegible].

POSTURE IN DEFAECATION.

[illegible] defaecation [illegible] applied, but when "squatting" the natural pressure of the thigh is sufficient. In the East "squatting" seems the natural position. In Turkey and India, for example, the natives, men and women alike, squat during defaecation and micturition. In India, and I believe in other countries also, it is interesting to note, washing rather than the use of paper is the custom, and in some cases the parts are washed after micturition also, "using the hand which is not used for curry." I found when serving in small ships—destroyers and mine-sweepers—that there were usually many cases of constipation after rough weather. Most of these were attributable to the inability to defaecate, though the desire was there, when balancing on a high seat with the ship rolling. Lack of exercise and lack of fresh food were less important factors. In passenger ships constipation is also common, and in many cases this is due to the same difficulty of balancing, but in addition the passenger fearing sickness postpones a visit to the lavatory as long as possible. Years ago I appreciated these advantages of the squatting position, and I have suggested its adoption in cases of constipation, hernia, and also as a precautionary measure in the use of public lavatories. In the case of railway trains, however, it is well to remember that the contents of the trouser pockets can be easily strewn on the permanent way! Perhaps some day the marble slab will supersede the modern seat at home and remove one temptation for indulgence in the morning pipe and daily paper.

PUBLIC GARDENS.

THE Metropolitan Public Gardens Association was formed in connexion with the National Health Society in 1882. Its object is to provide breathing and resting places for the old and playgrounds for the young in the midst of densely-populated localities; in this way it is thought not only to add to the amenities of life in the poorer districts, but also to contribute to an improvement in the health of the general population. From the thirty-sixth and thirty-seventh annual reports we select instances of the activity of the Association. The Southwark Bill, which sought powers *inter alia* for the sale of the disused churchyard of St. Olave's Church as a building site was successfully opposed. In conjunction with other societies the provision of "open space" forms of war memorials was advocated as being more lasting, less costly to maintain, and of greater public benefit than other proposed forms. The suggested erection of a permanent war museum in Hyde Park was opposed, and the removal (as well as the cessation of erection) of "temporary" buildings in Regent's Park and other public spaces was urged. It is the policy of the association to press for immediate resumption of public spaces suitable for organized games, allowing allotments to continue for a further season on public ground that cannot be utilized in this manner; it is stated that out of 1,600 acres (under the control of the London County Council) available for games, 42 per cent. are now occupied by allotments, and that during the summer 25 per cent. of applications for cricket grounds had to be refused, while in winter only 33 per cent. of the applications for football grounds could be granted. With the cessation of the war the association seeks to revive many old schemes and to bring forward a number of new ones; other parts of its work are the provision of gymnasiums in elementary schools and playgrounds, the opening of such playgrounds out of school hours; the planting, pruning, and felling of trees, and the placing of seats in thoroughfares and other public places. There is need for further subscriptions and donations, which will be gratefully received by the Earl of Meath, chairman and honorary treasurer, or by the secretary, at 296, Vauxhall Bridge Road, S.W.1.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 49, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 47, 48, and 49.

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A Lecture
ON
PSYCHOPATHOLOGY AND DISSOCIATION.[*]

BY

WILLIAM BROWN, M.A., M.D.OXON., D.SC.LOND.,
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HYSTERIA AS A DISSOCIATION.

THE following case illustrates the conception of hysteria as a dissociation, involving mental conflict and repression, in a specially clear way, and seems worth reporting in some detail.

A soldier, aged 47, unmarried, had had three hysterical attacks in his life. The first attack occurred at the age of 26, the second at the age of 36, and the third attack a month or two before I saw him. When he came to me he was suffering from extreme loss of memory, and could remember very little of what had happened during the war. He was suffering also from weakness of the legs, a tendency to anaesthesia, especially in the right leg, and a very definite tendency towards dissociation—towards dreamy states, states of mental distraction, when he is unable to concentrate on what is before him.

I will consider the case in the order of my gradual insight into his mental condition. All that is emphasized in the medical case-sheet is that he has recently had an hysterical attack, in which he lost consciousness for some time, and has since suffered from paralysis of the right side, with anaesthesia of the right leg below the knee. In talking to him I do not at first get very much help. He does not tell me very much about himself. And so I proceed to use the method of word association which Jung was the first to introduce into psychology—that is, I draw up a list of words and call them out one after another to my patient. (One calls out the word and starts the watch going, after first instructing the patient to reply with the first word which comes into his mind. If one calls out the word "house," he may reply with the word "garden." Thus:

Stimulus Word.	Reaction.	Association Time.
House	Garden	1.8
Grass	Green	1.2″

So one goes on, calling out one word after another, interspersing words which one thinks may bear upon the earlier associations of the patient, and may be connected with his dissociation.

I called out the word "death," and the subject remained absolutely silent for twenty seconds, then gave the word "geranium." He smiled as he gave the word, and said it seemed a curious word to give—he did not know why he gave it, but it was the first word that came into his mind. This was all that I got of value from the association test in my case.

I question the man further, and get a certain amount of information from him. He tells me that the first hysterical attack he had was at the age of 26, as I said before. He had just recovered from an attack of influenza, and had walked out to visit a great friend of his. By some mistake he was shown by his friend's sister into a room where the man lay dead in his coffin. His friend, whom we will call J., was dead—had died suddenly after an accident in the football field. My patient had not heard of the death, because of his own illness. This was about eight o'clock at night. My patient staggered out of the house, noticing, however, to his surprise, that he felt very little. He felt shaken, but very cool. He was surprised and annoyed that he felt no grief. Then he lost consciousness, and evidently wandered about London until he came to himself, about four o'clock next morning, in a part of London which he did not recognize. He tried to find out where he was. He met a policeman, who, of course, imagined that he had been drinking. He could not remember his name or address, or anything about himself, but they searched his pockets and found out where he lived, and then took him to a hospital. He lay there for several days, suffering from pain down the right side of the head, over the right eye, pins-and-needles down the right side of the body, weakness of the right leg, giddiness and nausea. At first he had very vivid dreams which he could not remember. Later on he began to get better, however, was allowed up, and finally left the hospital. That was at the age of 26—that is, twenty years before I saw him.

Ten years later he happened to be walking from Boscombe to Bournemouth along the parade, when he suddenly felt giddy again, and had to stagger to the side of the esplanade and support himself against the wall. He nearly lost consciousness, but pulled himself together, got home, and was seen by a doctor. He was again suffering from the same pains and the same tendency towards a dreamy state of consciousness. He went into a hospital on the doctor's advice. (This time, too, he had just recovered from an attack of influenza.) He recovered after he had been in hospital some weeks.

His third attack occurred in October, 1917. He had just had a bout of sciatica, and was thoroughly tired out by drill and all the routine of a soldier's life. This attack resembled the two previous ones, with similar pains in the head and body. He was taken to a military hospital and afterwards transferred to another, where they treated him in a masterly way with electricity and massage and got him on his feet again, so that when he came to me he had roughly recovered from most of his symptoms, but had this extensive loss of memory. He could remember very little that had happened during the war.

As I said, the first thing I discovered about him was that the word "death" gave a long reaction time, and produced as a reaction the curious word "geranium," which he himself could not explain. I then proceeded to hypnotize him, which was of course very easy. He at once passed into a very emotional state, and began to remember things which he had not been thinking about for some years. "Geranium" he then knew to correspond to the nickname of a girl he had known over twenty years before. She had been called the "Geranium Girl" after an advertisement for cigarettes. She was like the girl in the picture which appeared as part of the advertisement. He proceeded to tell me a rather dramatic story of his early life. He had been extremely fond of his friend who had died, whom I have called J. They had been close friends for years, when J. became engaged to this Geranium Girl. While he was at college he asked my patient to help amuse this girl, to take her out to theatres, etc., as she was very lonely. The result was that the girl fell in love with my patient, though he was not in love with her. (It was on his friend J. that his own affections were fixed.) The situation was a very difficult one. He felt disloyal to his friend. He obviously thought much more about his relations with his friend J. than about his feelings towards the girl. His friend never knew the facts, but a coolness sprang up between them, which was intensely painful to my patient. As a result he shot himself, but was taken to hospital and recovered. He saw less of his friend, however, and then the friend died. This was a definite mental wound to my patient, and set up a mental conflict, the result of which seems to have been an amnesia, a loss of memory. There was a tendency for his mind to split up. The memories were not absent from his soul, however, but remained below the surface to produce these attacks in which he went through all these disturbing experiences again — through all this time of mental conflict.

What can one say of his earlier history? As a boy he was fairly normal, except that he noticed that he always had a great desire to sleep in the middle of the day. He would find that the sight of anything bright, like a field of snow, would make him drowsy. The candles in the chapel of the Benedictine monastery, where he was at school, had the same effect upon him. He was at school at this monastery from the age of about 11 to 17, and formed a friendship there with a much older boy. In the course of this friendship an event occurred which disturbed him very much. (I cannot tell you what it was.) It was his duty as a good Catholic to confess, but he did not do so. He tried to put it out of his mind instead. He knew that if he confessed it would be serious for his friend, but if he did not he would be committing a sin. He preferred to commit the sin. The result was a state of mental conflict, followed by repression and amnesia.

These, roughly, are the main facts about his life. He had never known what it was to fall in love with anyone of the opposite sex, but all through his life he had had strong feelings of friendship towards certain people, especially feelings of loyalty. Although he was a private soldier, he was a most intelligent man. He was an inventor, and struck me as being very able. By hypnosis, you see, I brought up some of these facts which he had himself forgotten. I urged him to attempt to synthetize his own mind—to try to improve his memory. And his memory *did* improve. Under hypnosis he worked off a good deal of emotion. (His three hysterical attacks had all been cases of what Breuer and Freud call "abreaction"—the working off of emotion—but an abreaction which was imperfect and incomplete.)

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[*] The second of two lectures delivered at King's College. The preceding lecture appeared in the BRITISH MEDICAL JOURNAL of January 31st, 1920.

He now began to dream. He dreamed night after night that he was trying to get to a certain village in Sussex, but that briars and thorns and thick hedges kept getting in his way, and he could not cut his way through. At last he met an old man in rags, who was about to tell him something about this village, when he woke up. I tried to interpret the dream for him, but things did not go very rapidly, so I again had recourse to hypnosis. At once he had the same dream again, and could tell me who the old man was; he was a man who used to clean windows in this village in Sussex. He also knew the reason of the dream. He was very anxious about the fate of a young friend of his who had gone to France during the war, and whose name had been posted among the missing. This boy had been in the habit of going to this village. My patient did not know why he went there, but he had guessed that there was a romance going on. He therefore thought that his friend, whom I will call C., would, if he wrote at all, be likely to write to someone in this village, possibly to the window cleaner. That was why he was trying to get to the village. Now, there were certain reasons why he had tried to disguise the intensity of his feelings even from himself. The result of the analysis of the dream was, therefore, that he became much more communicative, and could tell me very much more. His friend, he said, was many years younger than himself, and, years ago, they had been in the habit of going fishing together a great deal, and had had a very pleasant friendship. They had thought a great deal of one another.

This dream ceased after it had been interpreted, but a few days later he walked in his sleep. He could not tell me what he had dreamt that night, but what actually had happened was that he had walked from the ward, which was upstairs in the hospital, downstairs, and had awakened to find that he was carrying his pillow case. I discovered under hypnosis that he had been back with his young friend. They were fishing together, and his friend had sprained his ankle. My patient had taken a canvas bag and had fetched cold water and bathed the ankle. The pillow case was the canvas bag. The curious fact was that he did not remember the dream. But that is typical of somnambulism. I have never met a case where the somnambulist remembered the dream, though hypnosis will bring it back. There is always a mental cause for somnambulism.

My patient now tells me other things about his friend, about whom he is still very much worried. He remembers that, years ago, he himself noticed that he could tell fortunes by looking into a black polished stone, and on one occasion, when his friend was 14 years of age, he saw him in the stone bleeding at the mouth and at the point of death, and he now fears that his prevision has come true, and that his friend has been killed by the Germans.

A week or two later he came to me and asked me to have him confined to the hospital, as otherwise he was afraid that he might break away and go down to this particular village. I offered to let him go, but he said he felt that he ought not to go. He wished to get well first. However, a day or two later I hear that he is missing, and he comes back a few days later and tells me this story: He was having his hair cut when suddenly he had seemed to lose consciousness, and the next thing he had remembered was that he was right in the country, not very far from this particular village. He could not remember how he had got there, but, being in the neighbourhood, he had thought he would go to the village. He had done so, and to his great joy he had discovered that his friend C. had escaped from the Germans and was now safe in Egypt.

He is unable, then, to tell me how he did this. Under hypnosis, however, he tells me that he had an impulse to go, ran the gauntlet of the military police, and took a bus into the country. He was taken up by a motor car and given a lift. Then his consciousness changed. That was the point at which his main consciousness resumed its sway. The result of all this is that his mind is at last at ease about his friend C., and he makes a good recovery. All the time his memory for earlier experiences during the war has been improving.

Such a clinical history illustrates, very typically, the nature of hysteria. This flight from hospital is what the French call a "fugue." It was a symptom frequently observed in France. A number of my patients were in danger of court-martial and death for flight from the line. (Many others pretended loss of memory, but it was quite easy to distinguish such malingerers. Genuine cases are always extremely easy to hypnotize.) This case also illustrates dissociation. It is just the sort of case that Janet quotes by the dozen in his writings. It is similar to hundreds of cases one met in France immediately after the men had been under shell fire. It also illustrates mental conflict, the prolonged reaction-time of Jung, and the ignorance of the main consciousness as to what is going on below the surface. It illustrates the significant character of dreams—their symbolic nature—and how, in many cases, apparent clairvoyance is merely hysteria. This man was convinced that he had clairvoyant powers, and was (wrongly) convinced by this that his friend was dead.

Another thing I ought to have mentioned was that, just after his last attack, he was allowed in the grounds of the hospital, and suddenly thought that he saw his friend C. about twenty yards in front of him, walking along. He was delighted to see him, and hurried after him, but then noticed that he made no sound in walking, although he was wearing heavy service boots. Then he disappeared. It was an hallucination. (Extreme cases of hysteria show hallucinations of this kind. They are curable.) His dreams were of the same nature. After all his attacks he dreamed very vividly, but he could not tell me what his dreams were about, except under hypnosis. I became rather tired of hypnotizing him so often, and sometimes tried talking to him for a long time, but progress by this means was slower, and there seemed to be no theoretical or practical reason why I should not use hypnosis to accelerate the analysis. His ultimate recovery was due to this analysis and resynthesis.

Before I turn to another part of my subject I should like to make it quite clear—or as clear as I can—in what respect one may consider hypnosis a justifiable method of treatment, and in what respect not only the ordinary popular, but the ordinary medical, idea of it is wrong.

Unfortunately, the members of the Nancy school, who undertook to criticize Charcot and his disciples of the Salpêtrière, whilst making a great advance in the subject of suggestion, have hopelessly confused the question of hypnosis. I am probably speaking in a minority of one, or perhaps two, in this matter, but, as a result of my experiences in hypnotizing five or six hundred patients out of about six thousand shell shock cases seen during the past five years, I have come to the conclusion that Pierre Janet is absolutely right when he says that only the hysteric can be hypnotized, and that hypnosis is an artificially produced hysteria. More than that, I agree with Janet that the word should be limited to the production of artificial somnambulism. (If we do this we shall get a clear system of ideas without necessarily distinguishing things which ought to be kept together.)

It is a fact that hypnosis is not the same thing as suggestion. It is a fact that one can hypnotize a patient again and again and find him no more suggestible than he was before; indeed, generally speaking, one may find him less suggestible in certain respects. It is a fact that, if one finds a patient suffering from a functional amnesia—that is, a loss of memory, of greater or less extent due to an emotional shock—if there is no sign of physical injury, and if one has no reason to suppose that he has sustained a definite physical shock, one may then be absolutely certain of being able to hypnotize him. On the other hand, if one turns to cases, equally free from organic lesion, which do not show this tendency towards "functional" dissociation, one will find that hypnosis fails. The Nancy school—Bernheim and his followers—say that it should be possible to hypnotize 98 per cent. of one's cases, and that anyone who fails to hypnotize 98 per cent. does not know his work. Personally, I should there again agree with Janet in saying that these people are calling by the name of hypnosis something which is very different. It is true that, in cases of shell shock seen immediately after the shock has occurred, where there is amnesia and dissociation, one can almost always hypnotize one's patients. Literally 100 per cent. of these cases could be hypnotized if one took the trouble to draw the proper distinctions and did not attempt to hypnotize cases that belonged to another category—that is, if one made one's diagnosis first; but, on the other hand, if one turns to what have been called "anxiety states"—cases of obsessions or ordinary cases of neurasthenia—these cases are not hypnotizable, if one follows Janet in his use of the word to signify the production of a second state, where the patient does not remember what has previously occurred and will again fail to remember what has just been going on unless one gives a post-hypnotic suggestion that he will. It is true that in 98 per cent. of cases one can, by using certain means, get a state of increased suggestibility, so that, if one suggests that the patient's eyelids will get heavy, that he will lose feeling in his limbs, and so on, all this will come about; but if, in cases like this, one succeeds in producing the hypnotic state, then one has either to do with a case of hysteria or one has made the patient hysterical.

Is it possible to make a person hysterical who is not so originally? That is a doubtful matter. Personally I should be inclined to disbelieve it. A person who is hysterical has probably been hysterical from his birth—it is probably an inherited form of mental weakness.

Suggestion, then, is different from hypnosis. It is used, or may be used, for a different purpose. We have advocated the use of hypnosis as a means of recovering dissociated memories, functions, etc., and also as a means of giving outlet to bottled-up emotion, to use a rather popular phrase which will have to be defined more clearly in a subsequent paper. We have not used it as a means of applying suggestion. One certainly finds, in many cases, that the more deeply one hypnotizes the patient the more suggestible he becomes, but, in other cases, one may find that suggestibility is not increased. More than that, one may find that people who are not hypnotizable may be suggestible, and that their suggestibility may be increased without any sign of hypnosis coming on. One can use suggestion without using hypnosis at all.

This view is certainly different from that of the Nancy school. It is nearer to Charcot's view, for Charcot worked extensively with hysterics by methods of somnambulism artificially produced, which is definitely the hypnotic state. Charcot was misled, however, in his ideas of the regularity of the phenomena. He thought that he could distinguish definite stages in all cases of hypnosis, including, for example, the "*attitudes passionelles*" of major hysteria. The question of sugestion with him was mixed up with that of hypnotism, lthough his own cases mainly illustrate the facts of ypnotism itself.

Finally, the question arises with these cases of artificial somnambulism, might not the same curative results be obtained by longer methods without having recourse to hypnosis? To a certain extent this is possible, but the results are not quite the same. In the first place, if you are going to use the ordinary method of questioning your patients again and again, and encouraging them to tell you more and more of what comes to their minds, you will certainly find that their dissociated memories will tend to come to the surface, and, as the investigation proceeds, the recovery of these memories may become more and more complete. But the method requires a much greater expenditure of time, and the memories are seldom recoverable thus in all their details. In the second place, you do not obtain the hallucinatory vividness of emotion obtained under hypnosis. The abreaction under suggestion is not so vivid. If anyone objects that by hypnotizing a patient you are making him hysterical, the reply is that he must be hysterical already, otherwise he would not be hypnotizable, and that one is justified in using a pathological state to assist a cure, if it really does so. There are medical instances of the use of vaccines, etc., which are perhaps analogous. Anyhow, the final test is the test of results, and one finds in these cases that if the hypnotizing is not repeated too frequently, and if it is carried out by someone who understands to a certain extent what is going on, and who knows that the subject is suffering from dissociation, that he must resist this tendency in the subject, and must help him more and more to a resynthesis of his personality, then the results justify its use. You do not get recurrences of the dissociation. Pierre Janet[1] has reviewed nearly two hundred of his earlier cases of major hysteria, and shows that in the vast majority of them there is no recurrence. In the cases where relapses did occur, Janet found that he had not gone deeply enough into the causes of the dissociation, that he had not brought *all* the causes to light.

As regards the many hundreds of cases that I myself sent down from the casualty clearing stations, it was, of course, difficult to get after-histories, but I was able to get such after-histories with thirty extreme cases of hysterical dissociation. These patients had all suffered from loss of voice and hearing, paralysis, intense tremors, and extensive amnesias. In all of these cases but one the reports that have come to me from the base hospitals in England admit that there have been no relapses at all; that the cure has proceeded still further under the later treatment at these hospitals; and that there has been no tendency for other symptoms to appear. In one case alone a hysterical tendency remained. It was the case of a boy whom I had treated for loss of voice, and who showed weakness of the legs at the time when he reached England. I saw from the analysis of the case, however, that he was suffering from a shock received in early life. In such cases one had not time to go fully into the past histories of the patients, as one can do now in England; one had not always the opportunity of using the method of hypnosis to discover more deeply buried memories. In the large majority of cases the patients seemed to be naturally predisposed to hysteria, but to have been quite healthy before the shell shock, and in such cases the working off of the bottled-up emotion and the resynthetizing of the mind was quite sufficient to produce a permanent recovery.

Hypnotism is a method which should only be used in cases of definite loss of memory combined with loss of other psycho-physical functions. Such cases are easily hypnotized—anyone should be able to hypnotize them. You do not need to hypnotize them deeply, only just sufficiently to recover the lost memories and produce abreaction. Then, later, you should resynthetize the patient, and always, as a matter of course, you should investigate his past history and endeavour to link up his dissociated stretch of memories with his past, and also with his more immediate present. If you do this you will find that you have made him less hypnotizable than he was when he first came to you. That is, after all, the test. If you have done real good to your patient he should leave you less hypnotizable than he was when he came to you. This, however, is not always possible. In some cases the patient is so hysterical and suggestible, his powers of mental synthesis are so weakened, that this character of hypnotizability persists unabated. In many cases, on the other hand, one can observe its gradual diminution, and, corresponding with this, one finds that the patient's general mental condition improves.

NEURASTHENIA AND COMPULSION NEUROSIS.

We come now to a consideration of other forms of functional disease which are described under the names of neurasthenia and compulsion neurosis. Compulsion neurosis comprises the different forms of phobias and obsessions. Pierre Janet describes these cases of compulsion neurosis, along with others, under the heading of psychasthenia, and, although his clinical descriptions are very detailed and very valuable, they do somewhat confuse the question, because he has not made a very clear distinction between what the Germans and some of the French have designated compulsion neurosis and other forms of neurosis.

First, let us consider neurasthenia quite briefly. Dejerine points out that the neurasthenic suffers from preoccupations and increased suggestibility as regards personal health. He has become worried, perhaps, by some mental difficulty in his life which he cannot adequately grapple with. He worries about it more and more—finds himself spending more and more time in thinking about it, and thinks about it in an emotional way, in a personal, subjective way. He is unable, through lowering of his powers of mental resistance at the time, to take an impersonal, objective view of the situation. He identifies himself with it more and more until it becomes a preoccupation—not an obsession; an obsession is something that is past a certain stage towards abnormality. The emotional character of the preoccupation perhaps itself tends, on the one hand, to fatigue the patient—there is nothing so fatiguing as emotion, continual anxiety and worry—and, on the other hand, it makes him more suggestible in reference to anything bearing upon the preoccupation. If his health fails, as it is almost sure to do, if his digestion, etc., gets out of order, his attention will be directed towards this inadequate functioning of his digestive organs, and this attention will be of an emotional nature, and will increase the disorder. Thus a vicious circle is set up. The rate of digestion may perhaps be slowed down, owing to the patient's fatigued condition, with the result that the process of digestion is itself disturbed, and this disturbance then produces real intestinal disorders. The beginning of it all, however, was mental, and the cure is again mental. In order to break through that vicious circle you must attack it in the right place—namely, on the mental side. If you attack it on the physical side, you may get a temporary improvement—you may be able to reduce the acidity of the stomach, etc., but the worry will still be going on all the time, tending to set up the same condition again. Once the body has given way in any particular function, as a result of a mental trouble, that particular part of the body has become weaker, and as the mental trouble increases again it will break through in the same place. Dejerine points out that the neurasthenic is more suggestible even than the hysteric. One is inclined to agree with him. The neurasthenic is very suggestible with regard to his health.

How is a neurasthenic patient to be treated? Obviously by reasoning with him—not by ordinary moral reasoning, but by inquiring into the original cause of his symptoms. He may tell you that his stomach gave out, etc., etc., a year or two before, but you must not stop there in his history. You must go back to what happened years before, for there is often a long period of incubation with these disturbances. Then you may get a history of an emotional shock—not necessarily a sudden shock—though sometimes a sudden shock which with an hysteric would perhaps have caused a dissociation straight away, will in these cases produce an aggravation of that tendency to worry and to feel anxious that we all have. This tendency to experience anxiety is a normal tendency; it is a very important one, because in these mental cases it is so frequently exaggerated. Anxiety is an emotion which stirs us up and makes us really investigate a matter. Let us consider the typical example of an undergraduate who is preparing for his finals. Perhaps he has not been working very hard, but as the examination draws near he begins to get into a panic and really feels too ill for anything and does not seem able to do any work. It is a very good thing for an undergraduate to experience anxiety of this sort, as it makes him take stock of his knowledge and find out what he really does know. His [illegible] then worked up to meet the situation. If, again, we are faced with any definite peril, physical or mental, we [illegible] some form of anxiety, which wakes us up and makes us more alert, though if it is too intense it defeats its own end. It is a different emotion from that of fear. The French have described it in very great detail (cf. *Les Anxieux*, par Devaux et Logre, Masson et Cie, 1917). This state of anxiety is concentrated in the neurasthenic. He fails to pass on to a more ordered form of mental activity, to grapple with the situation (as, of course, all these people sometimes fail to do in one way or another), and he expends the energy which he should be using to deal with the situation in intensifying the idea still more, in keeping up the worry, and finally disturbing the state of his physical health.

If you go over the matter again with him, if you talk over his past with him and get him to look at it from his present point of view, to take an objective view of it as if he were reviewing it as someone else's history, you will find that he will recover. One might suggest that the result is partly due to a diminution of suggestibility. That at least is my own view. What analysis does in helping neurasthenic patients is, I believe, to diminish their suggestibility. The better they understand how their symptoms arose and what exactly was the sequence of their mental experiences, the less suggestible they become, not only as to their own past but also as to the future. You have made them stronger personalities, [illegible]. That is why I have suggested a word to sum up the matter—the word "autognosis," self-understanding. (The Germans talk of "Krankheitseinsicht.") What you do in these cases is to help the patients to understand how their disease arose and to understand their symptoms. Autognosis is simply a word corresponding to such insight. This does not comprise the whole method of cure, however. The patient has in many cases to be re-educated. You have not only to get him to understand how and why he went wrong in the past; he must have practice in using his energies in a different way in the future. This is the case with physical disabilities, and it is the same with mental disabilities.

Now, a method like this is obviously far superior to the method of hypnosis. No one who understood his business would dream of attempting to hypnotize a neurasthenic. In the neurasthenic, as in the hysteric, there is certainly bottled-up emotion. It seems to be a tendency in everyone's life for emotion to cling to experiences. We must all have noticed this. If we hate a person we find that the feeling of hatred clings to all sorts of things connected with that person; it links them up with the experience itself. If we make it up with the person afterwards, it is not easy at first to get rid of the emotional feeling connected with him. The same thing happens, as is well known, in the experience of falling in love. If we fall in love we experience certain sentimental feelings in regard to a certain person, and we extend this feeling to some degree to a great many things connected with him. If we afterwards fall out of love again, these sentimental feelings will continue to be connected in our mind with certain experiences, and this association only dies out very gradually. In these cases of neurasthenia too much emotion has been linked up with certain experiences, too little with other experiences. This has tended to produce conflict, strain. The more this has happened the more a person is repressed and unnatural, or mentally awkward. Certainly this characteristic of repression, of awkwardness of the mind, is definitely reduced to a minimum by an autognostic working over of past experiences, affording an opportunity for the dammed-up emotion to flow out along association channels to other thoughts, to come out in talking things over and explaining past experiences. This does not mean, however, that in the end you will have drained off all the emotion from a person's past—that certainly does not happen—you do not by releasing bottled-up emotion leave the experience without emotion at all. (You can test this quite easily in hypnotic cases.) The patient works off a lot of surplus emotion, but if you return to the same experience again later on, you will find that there is still emotion there though it is not so intense. You can test this again and again, and, after the first one or two times, you will find that the amount of emotional reaction remains constant—it will not be absent. You can go back to certain memories as often as you like, but you will always find some emotion there. It is my view that all memories of one's past life carry their own emotion with them, but it is additional emotion that has to be worked off in the neurasthenic as in any other form of psycho-neurosis.

OBSESSIONS AND PHOBIAS.

I now turn to obsessions and phobias, called by German writers compulsion neuroses, because the patient feels compelled to think or to do certain things. A very common symptom which most of these patients exhibit is a feeling of doubt and uncertainty as to what they have just done. Perhaps they are going to bed at night and are not quite sure that they have turned off the electric light or the gas downstairs. This is a very common symptom indeed. Another very common symptom is the feeling that they must be continually washing their hands. Another is that they must read everything that is in the newspaper, or, perhaps, that they must read every advertisement that they see. I knew one man who used to read all the advertisements that he saw on his way home from work. On one occasion he decided that he would give this up, and he did manage to reach home without reading any of them but he could not be happy until he had returned and had read them all carefully. That is, of course, an extreme case. A very simple tendency which one may find in a great many people is the tendency to walk along the pavement in such a way that at each step their feet avoid touching the line of demarcation between the paving stones. It is a tendency that people who are quite sane and normal may have, but it is an incipient form of the same sort of thing. These are obsessions—the patients are obsessed by a tendency to think or to act in a certain way.

Then there are phobias, or fears—pathologically intensified fears. A very common phobia is the fear of heights. A phobia seems sometimes to be an exaggerated fear of the ordinary type, but in other cases one may find people fearing things that no ordinary person would dream of fearing.

Before turning to explanations, one ought to describe in a little more detail the state of mind of these patients. Besides the actual obsession or phobia, one has to attack in these patients a constant feeling of anxiety. Constitutional anxiety seems to be intensified in them, to be continuous throughout their lives, and to become more acute under certain conditions. To anticipate what I shall say later, one usually finds that, if one succeeds for a time in curing a patient of his obsession or phobia, he will return to this mental tendency. One of my patients felt a constant anxiety lest he should return to an obsession of some kind or other—a feeling which could not be allayed. Freud has a very interesting theory as regards compulsion neurosis. He says that the patient is really obsessed about the wrong thing. What has happened is that in the past, at some time or other, something has gone wrong with the development of his psycho-sexual life. He has done something that he is ashamed of, and which was charged with an intense emotion of a painful nature which he has tried to repress and to drive out of his mind. He has only succeeded in dissociating the emotion from the memory. The memory thus becomes harmless and walks quietly into the unconscious, but the emotion has still to be dealt with, and finds its way along association channels to other less suspicious ideas and memories. The patient, who should be worried about some guilty thought or act of the past, is now worried about something which is obviously innocent and harmless. Thus the obsession is really disguised vice. In certain cases this does work out according to theory. You do sometimes find that you gradually bring up past experiences which are out of harmony with the patient's general character, and which have been repressed. When these memories are recalled, they and the obsessing emotion link up together again, and everything is all right once more—the patient is no longer obsessed. In the case I referred to just now, my patient, who was a bank clerk, had an obsession of infection. He used also to tear up circulars, and then worry as to whether he ought to have read them before tearing them up, etc., etc. He was a homo-sexual, and I discovered that, at the age of 15, he thought that he had led a younger boy astray. He described this incident to me with great emotion, with the result that the obsession disappeared, permanently as far as I know, but there remained a general feeling of anxiety. My further treatment naturally was to carry my analysis still more deeply into his past. This analysis definitely helped me to trace back his tendency to homo-sexuality, and to bring out many other emotional experiences of his past life, and, as far as I can make out, he recovered. Some Freudians hold that all such cases are homo-sexual, but this does not seem to be correct, though it is true that a great many of them are.

In other cases the results were not of a similar nature. A case occurs to my mind of a well-educated patient, also homo-sexual, who had obsessions about the technique of his own particular work. I traced this back to a feeling of intense respect for his teacher and worry as to whether his views were out of harmony with those of his teacher. We traced this back for many years to a moment in his past, at the age of 8, when his sister, who was two years older than himself, had told him that God would punish him for every single little act of wrong-doing he committed. She told him that God was everywhere, and that He could see all the wrong things that he did. He remembered very vividly that he had gone up to his bedroom and had wept bitterly. His imagination, which was very vivid, had helped him to realize what such a situation would mean, and, as far as I could make out, that was the most important of his memories. I took him back earlier still to memories of intense affection for his mother. He had also appreciated her great affection for him, and he was always on the look-out for a love which should be as intense and as spiritual as his mother's love for him had been. This particular case has recovered from his obsessions completely, but the mechanism seems not to be quite the same as the Freudian one. There was no question of his ever having reproached himself for any specific sexual or psycho-sexual actions. The conflict was of another nature. Other mechanisms seem often to be at work. It seems to me that one cannot well lay down a single definite generalization about such cases, but one is certainly tempted to believe that a very important factor in compulsion neurosis is great exaggeration of the innate tendency towards anxiety which these patients possess. That is why analysis sometimes does not help the patient much—may even make him worse—and why suggestion treatment often does make the patient better. In the past people have often claimed to have hypnotized such cases and to have made them better by this method. Janet, however, says in his latest book that he does not understand these reports, and my experience bears him out. I do not think that these cases are hypnotizable, though one may temporarily increase their suggestibility by making them passive, and thus help them to fight down their fixed idea and also to get rid of this general tendency towards anxiety. One may keep them in this attitude whilst they regain their physical and mental health.

Nevertheless, in many cases a course of autognostic treatment, with little or no suggestion, is sufficient to produce a cure.

REFERENCE.

[1] *Les médications psychologiques.* Paris: Félix Alcan, 1919.

Observations

ON

SUBACUTE INFECTIVE ENDOCARDITIS.

BY

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(*A Report to the Medical Research Council.*

THERE are in the United Kingdom about 80,000 men receiving pensions for some cardio-vascular affection. In the London Area there are, roughly, 8,000 pensioners with some cardiac disability, and 1,200 to 1,500 of these have structural disease of the heart. All of them come before the Resurvey Boards for re-examination and assessment at intervals of nine to twelve months. They are called up on special days, and all those with signs of structural disease are seen by a heart specialist. During the past year and a half I have acted as heart specialist at two Resurvey Boards. Such cases as required treatment or further examination I have referred to the Cardiographic Department at University College Hospital. At this clinic they receive out-patient treatment or are admitted to the wards of the hospital. Here I have been able to observe during the past year and a half a large number of selected cases presenting signs of structural disease of the heart.

The most striking clinical feature of this clinic has been the large number of subacute infective endocarditis cases that have been under observation.

From September, 1919, to June 1st, 1920, there were admitted as out-patients 159 pensioners presenting signs of aortic regurgitation, 136 with signs of mitral stenosis, and 65 with mitral stenosis and aortic regurgitation. In 30 of these the diagnosis of subacute infective endocarditis was made, and 11 were suspected as having this disease—that is, 8 per cent., and possibly more, of 360 patients with gross valvular disease had subacute infective endocarditis.

The observations which follow are based on a clinical study of 15 of these cases, together with a larger group of 40 patients with subacute infective endocarditis, whom I had under my care while in charge of the clinical services at the Sobraon Military Hospital, Colchester. Both at Colchester and at University College Hospital the conditions have been most favourable for making a careful study of the symptoms and signs which these patients presented; and through the Medical Research Council I have been able to obtain full after-histories of nearly all who were discharged from hospital. I hope to show from a study of these cases that subacute infective endocarditis is not an uncommon disease; that infection plays a most important, if not *the* most important, part in a certain number of patients with chronic valvular disease; that the signs of an active infection are easy to recognize; and that these signs enable one to prognose with indubitable accuracy the clinical course of structural heart disease.

At a meeting of the Association of Physicians in 1908 Sir William Osler reported 10 cases of chronic infective endocarditis. He emphasized the chronicity of the disease, the [illegible] course ranging from four to twelve months. He noted that the fever was remittent in type, not usually high, and that during the terminal stage of the disease there was often an afebrile period. He observed that there was slight change in the character of the heart murmurs, and he indicated the special significance of tender spots on the skin, lasting from a few hours to several days, usually on the tips of the fingers and balls of the toes: these are now known as Osler's nodes. At the next annual meeting of this Association Sir Thomas Horder presented an analysis of 150 cases of infective endocarditis, and dealt especially with the chronic form of the disease; 88 of these cases he recognized as subacute infective endocarditis, the commonest form of the disease, and 18 cases of chronic infective endocarditis, a form occurring less frequently in his experience. He looked upon the remaining cases as acute infective endocarditis. In the diagnosis of the disease he laid stress upon the following signs: chronic valvular disease, the occurrence of embolism, and the presence of micro-organisms in the blood stream. This valuable contribution drew the attention of the profession in this country to the importance of recognizing the subacute and chronic forms of this disease.

Libman in America in 1912 reported cases, and stated that there were two stages of the disease—an early stage, when the *Streptococcus viridans* could be nearly always isolated from the blood if the temperature was not high; and a later stage, when the bacteria disappeared from the blood stream, and also from the valvular lesions. The explanation which he offered for this bacteria-free stage, together with the tendency for the valvular lesion to heal, was that the pathological condition at the seat of the infecting agent—that is, the valve—becomes stationary, although the clinical course of the disease is a progressive one. He attached great importance to certain signs in recognizing the bacteria-free stage of the disease. These are: a progressive anaemia, brown pigmentation of the skin, red blood cells in the urine, and enlargement of the spleen.

For reasons which I shall give later I have not found it possible to distinguish between subacute and chronic infective endocarditis, and I have therefore considered the 55 cases on which this study is based as cases of subacute infective endocarditis. Nor have I been able to divide this disease into the bacteria and bacteria-free stage, as the bacteriological examination will show.

All of the patients on whom these observations are based were soldiers who had served in the war or pensioners invalided from the army with structural heart disease. Their average age was [illegible] years, the oldest 51 and the youngest 19. The average duration of symptoms in 40 was fourteen months; [illegible] for [illegible] years, and one had had a long period of [illegible] without a single complaint until two months before [illegible]. 22 gave a history of gradually increasing unfitness, and no cause could be found to explain the onset of their symptoms; in 23, or 46 per cent., the symptoms followed after an infection; this number includes 2 cases of gas poisoning. The infections associated with the onset of symptoms in 3 were rheumatic fever, in 4 influenza, in one trench fever, and P.U.O. (pyrexia of uncertain origin) in one, dysentery in 3, pneumonia, rheumatism, cerebro-spinal fever, I.C.T. (inflammation of connective tissue), and tonsillitis in one each; in one only did the symptoms arise after a severe effort. The onset was sudden in 4, but in these no history could be obtained of a preceding infection. In 16, or 29 per cent., there was a history of rheumatic fever; in 7 the Wassermann reaction was positive, in 28 it was negative; one only gave a history of syphilis. The low incidence of syphilis might be anticipated, for syphilitic disease of the heart is uncommon below the age of 40. One would have expected a larger incidence of rheumatic fever in valvular disease of the heart in men of this age. I found in [illegible] cases of aortic regurgitation and 50 with mitral stenosis a history of rheumatic fever in [illegible] per cent. and 44 per cent. respectively, or an average incidence in the two groups of [illegible] per cent.

The number of cases with symptoms dating from an infection [illegible] in this group with infective endocarditis than that recorded in fifty cases of mitral stenosis in soldiers. In the former group the onset of symptoms occurred after an infection in 46 per cent., in the latter in [illegible] per cent. I make this comparison for the reason that I do not wish it to be understood that the average period of fourteen months during which symptoms were present represents the course of the disease. There is no striking difference in the symptoms or the clinical course up to the time these cases came under observation between chronic valvular disease without signs of infection and subacute infective endocarditis. There are exceptions, I admit, when embolic symptoms occur early. I do not therefore feel justified in [illegible] that the course of the disease dates from the onset of symptoms, and for this reason I have not subdivided infective endocarditis into the subacute and chronic types.

Symptoms and Signs.

The symptoms complained of were breathlessness on exertion, palpitation after slight effort or when excited, pain in the region of the heart or left costal margin, sharp and stabbing or dull, and felt with slight effort, but rarely anginal in character or distribution. Many gave a history of giddiness after effort or with change of position; a few had fainting attacks. Exhaustion, lassitude, headaches, sweating, and loss of weight were common complaints. Tender finger-tips or painful swellings of the hands or feet were not often complained of. Chills were infrequent, although a sense of feeling hot and cold was noted in a large number. Symptoms of embolism were present in a third of the cases. The large majority had symptoms of heart failure while under observation. In a few the clinical picture was one of toxaemia, and the symptoms were more uraemic than cardiac.

I have treated briefly the symptomatology of these cases. The history of a large number is that of chronic valvular disease. During the early period of the disease the symptoms are those felt after effort; later, with the onset of heart failure, those of venous engorgement were added. Cerebral embolism is not an infrequent occurrence during the clinical course of mitral stenosis. Embolic symptoms are more often observed in infective endocarditis. Embolism may occur although an active infective process cannot be discovered, and infective endocarditis may be diagnosed in the absence of symptoms which we recognize as embolic in origin.

The symptoms may be a guide, but it is upon the signs that we must rely in diagnosing this disease. In all but nine of the fifty-five cases signs of venous engorgement were present at the time of the first physical examination. The degree of venous stasis varied from fullness of the veins of the neck with crepitations at the bases of the lungs and doubtful enlargement of the liver, to oedema of the extremities and general anasarca. It was the rule to see signs of heart failure gradually increase until death. In some the dropsy was more renal than cardiac in its distribution. In these the face was bloated, the breathing Cheyne-Stokes in character, and the cyanosis slight. Often the picture was that of cardiac failure with chronic parenchymatous nephritis added. In a few the venous engorgement was slight with marked signs of toxaemia, delirium, coma, muscular twitching not unlike chronic nephritis, with urea retention.

Of the nine cases without signs of cardiac failure two were patients who developed infective endocarditis while under observation, one died unexpectedly of acute heart failure, one a doubtful case, two died suddenly of cerebral haemorrhage, and three were discharged from hospital and died from some unknown cause. It is probable that the early cases will develop signs of cardiac failure as the disease progresses, and it is not at all unlikely that had the course of the disease in three not been interrupted by cerebral haemorrhage and acute heart failure they soon would have presented signs of venous engorgement. It was the rule, then, for these patients to have signs of heart failure at the first examination.

Enlargement of Heart. In all but two the heart was enlarged at the first examination. One of these died three months after the onset of symptoms with increasing heart failure and signs of aortic regurgitation and mitral stenosis. The other had symptoms for six months at least and died after discharge from hospital from some unknown cause. In 19 the heart was much enlarged—that is, three fingerbreadths or more to the left of the nipple line. In 17 there was moderate enlargement—two fingerbreadths to the left of the nipple line; and with the remaining 17 the left border was definitely to the left of the nipple line, but not more than one fingerbreadth.

I have given the left border of the heart as the index of cardiac enlargement. Enlargement of the right ventricle is difficult to determine by palpation or percussion. In hearts with mitral stenosis or aortic regurgitation I have found, on weighing separately the ventricles, that general increase in weight is the rule, although hypertrophy may predominate in one or the other ventricle.[1] It is safe, then, to consider the whole heart enlarged when the left border is felt definitely one fingerbreadth or more to the left of the nipple line.

The most common type of valvular disease in these cases was aortic regurgitation. In thirty-three there were signs of aortic regurgitation only, in fourteen aortic regurgitation and mitral stenosis, in two there was aortic regurgitation and doubtful mitral stenosis, in two aortic stenosis, and in four signs of mitral stenosis alone were recorded. It is difficult to estimate the duration of this disease from the clinical signs of valvular disease alone. Mitral stenosis can develop rapidly, and aortic regurgitation may have existed for years. It does not take long for the infecting agent to damage an aortic valve sufficiently to cause regurgitation, and vegetations may in a short time obstruct the aortic or mitral orifices. It takes years for valvular stenosis to develop when the process is one of sclerosis; vegetations may obstruct a valvular orifice within a few months. Fibrous contraction leading to an aortic reflux is a slow process; weeks are sufficient to produce aortic insufficiency when the infecting agent leads to ulceration.

Hypertrophy develops slowly; dilatation may occur in a few hours. It is often difficult, sometimes impossible, to assess the degree of hypertrophy and dilatation, when the two are associated. It is probable that a heart two fingerbreadths or more to the left of the nipple line, and with little or no stasis, weighs 15 oz. or more. Such a heart may be dilated; it certainly is hypertrophied. Clinically there were in the majority of these patients signs of chronic heart disease. Enlargement of the heart in men under 40 years of age is usually associated with valvular disease. We have therefore strong clinical evidence that most of these patients had chronic valvular disease.

The exercise tolerance was poor in all; this is to be expected, since all but nine had venous engorgement. The average minimum and maximum pulse range at rest was 88 to 110. An exercise test was given in ten; this consisted of a brisk walk up and down twenty steps twice. The average pulse rate at rest in these was 135, immediately after the exercise 181, and 137 at the end of two minutes.

Fever was present in all but one. The average range of temperature was not high. A daily rise to 100 for several weeks or longer was the rule; less frequently to 101° or 102°. In a few the temperature was remittent, rising each day to 104°. In a large number afebrile periods of one to four weeks were recorded. One ran a subnormal course throughout the whole period of his stay in hospital. It was common to see a normal temperature for a long period interrupted by an occasional twenty-four hour rise to 100° or 101°. It was often observed that with increasing heart failure the patient became afebrile, or a subnormal temperature developed; rigors were recorded in a few; sweating was more profuse when the temperature range was high.

It was the rule for these patients to have a toxic appearance. The complexion was usually sallow; the face having often a muddy or café-au-lait colour; in some the pallor was sufficient to suggest a primary anaemia. Occasionally there was a ruddy complexion, giving a healthy look to the patient.

Blood counts were done in thirty-six cases. The average number of red blood cells in these was 4,407,000, the haemoglobin 70 per cent., and the leucocytes 1,080. The lowest blood count recorded was 2,000,000, with 20 per cent. haemoglobin and 16,000 leucocytes. The highest count was 5,790,000, with 87 per cent. haemoglobin. The highest white cell count was 22,000. The average number of polymorphonuclear leucocytes in twenty four was 64, and of lymphocytes 33. With an average colour index of 0.8: the blood picture was that of a chlorotic type of anaemia of moderate degree.

The appearance of these patients often suggested a greater degree of anaemia than the actual blood examination revealed. The colour of the patient and the blood picture are important signs of an active infection of a subacute or chronic type.

The Spleen was enlarged and easily palpable in 48; in 5 no mention was made of its size; in 2 it could not be felt. In some it was hard and felt three or more fingerbreadths below the costal margin; in others it was soft and not so easily palpable. Hyperaesthesia in the left hypochondrium sometimes rendered difficult palpation of this organ. Enlargement of the spleen in chronic valvular disease with heart failure is often ascribed to venous engorgement. In these patients it was palpable in some when signs of venous engorgement were absent, and in many with only a moderate degree of venous stasis. Without attempting to maintain or disprove this explanation, it is a fact that the spleen was known to be enlarged in 48 cases, and in my experience it is uncommon to find this organ increased in size in chronic valvular disease with venous engorgement when the diagnosis of subacute infective endocarditis has not been made. Infarction is another cause given for enlargement of the spleen in heart disease. It is true that infarcts were found at autopsy in many of these cases, but in not a few they were absent. Venous engorgement and infarction are not the only causes of enlargement of the spleen. It is common knowledge that the spleen enlarges during the course of many infectious diseases, as in typhoid and malaria. I prefer to consider splenic enlargement in this disease as often a sign of an active infective process.

Clubbed finger-tips was one of the most striking clinical features of the disease in these patients. In cardiac affections it has long been associated with congenital valvular disease, and it is often observed in chronic disease of the lungs, particularly in association with bronchiectasis. Many explanations have been given for this sign, but the cause is not known. It is usually ascribed to a toxaemia due to deficient aeration of the blood supplying the fingers. In 25 no mention was made of clubbed finger-tips. These were cases under observation at Colchester, at a time when our attention had not been drawn to the importance of this sign. All the remaining cases and 25 others not included in this series presented this sign. In some the degree of clubbing was slight; in others most marked, giving a striking appearance to the fingers. Whatever may be the cause the frequent occurrence of finger clubbing gives us a most important sign in the diagnosis of subacute infective endocarditis.

Petechiae were observed in 40; no mention was made in 6; in one it was doubtful whether any were present; and in 8 none were seen while in hospital. These small dark red spots were most commonly situated in the skin of the neck, upper part of the chest, and conjunctivae of the lower eyelids; they may, however, occur on the back, abdomen, or extremities. They are small haemorrhages with a yellowish pin-point centre, and are probably the result of an embolus obstructing a small arteriole. They often occurred in crops lasting a few days, and then gradually faded away. They are of a dull red colour at first and later become brown; they are not palpable, do not disappear on pressure, and are thus easily distinguished from small naevi.

Osler's nodes—small tender and painful spots of nodular erythema on the hands and feet, disappearing within a week—were observed in 7 cases. These, too, are embolic in origin; the pain and tenderness which is characteristic of them may be due to the small amount of subcutaneous tissue and highly developed tactile sensation of these parts.

Emboli obstructing larger vessels were noted in 7. The central artery of the retina in one caused temporary loss of vision; another was admitted to the wards with an embolus blocking the posterior tibial; in a third there was an obstruction in the lower third of the brachial; a mycotic aneurysm of the radial, with a large pulsating tumour of several months' duration, was observed in a fourth. The frequent occurrence of petechiae in these cases makes them a most important sign of an active progressive infection. When petechiae are observed in association with gross valvular disease, pallor, enlarged spleen, clubbing of the finger-tips, the diagnosis of infective endocarditis may be made with certainty.

The urine in 34 was albuminous—in many a trace; in others with much venous engorgement a larger quantity was found. It was the rule to find red blood cells and granular casts in the urine when albumin was present; in a few there was macroscopic blood. The urinary reports in 13 showed no abnormalities; in 8 no analysis of the urine was recorded.

Diagnosis and Pathological Findings.

A bacteriological examination of the blood was made in 24 cases. Micro-organisms were grown in 11, or less than half. Streptococci were found in 8; streptococci and staphylococci in one; staphylococci alone in one; and a

Gram-positive diplococcus in one. In every instance the diagnosis of infective endocarditis was made without the aid of the bacteriological report. It was based upon signs of gross valvular disease—aortic regurgitation or mitral stenosis associated with pallor, enlargement of the spleen, petechiae, and in many clubbing of the finger-tips. There may have been no fever at the time of the examination, petechiae may not have been found, and the bacteriological examination of the blood was often negative. The diagnosis was correct, as the *post-mortem* findings proved in 22 cases.

Of the 55 cases, 44 are known to have died with an average duration of symptoms of fourteen months; no information could be obtained from 8 after discharge from hospital; three of these had no signs of venous stasis and one was a doubtful case. The cause of death in 26 was gradually increasing heart failure, acute heart failure in 5, the sudden onset of auricular fibrillation and death in a few hours in one; 3 died following a hemiplegia, one from pulmonary embolism, and one from a streptococcus pneumonia.

The pathological changes revealed at autopsy were typical in every instance of subacute infective endocarditis. There were recent vegetations, and these were usually engrafted on an old valvular lesion with extension in many with mitral disease on to the posterior wall of the left auricle, and on to the septal wall of the left ventricle in those with aortic disease. Sometimes myocardial degeneration was easily recognized. The spleen was enlarged in all, with old or recent infarcts in many. In others they were absent, and the organ was congested and swollen as in typhoid fever. Nephritis was always noted when sections of the kidney were made; usually of the parenchymatous type, but in all the glomeruli were more or less replaced by fibrous tissue. Infarcts were found in the kidneys of many. The other pathological changes were those found after death from cardiac failure.

Conclusions.

Subacute infective endocarditis is not a rare disease. It is seen in 8 per cent. of patients with signs of gross valvular disease attending a special heart clinic.

The signs are easy to recognize. In the diagnosis chief reliance should be placed on the following signs: Gross valvular disease, pallor, enlarged spleen, and clubbing of the finger-tips.

Aortic regurgitation is the type of valvular disease usually seen in this disease; it is rare to find the mitral valve alone involved.

The course of the disease from the onset of symptoms is usually less than fourteen months; death may occur within two months of the onset of symptoms.

A bacteriological examination of the blood is useful in confirming the diagnosis. Without such an examination the diagnosis may be made with certainty.

The disease is always fatal.

REFERENCES.

[illegible] *Lancet*, September [illegible] *Heart*, [illegible]

ON THE ACTION OF TARTRATE OF ANTIMONY IN INTRAVENOUS INJECTIONS:

[illegible]

BY

J. B. CHRISTOPHERSON, C.B.E., M.D., F.R.C.P., [illegible]

[illegible]

[illegible]

[illegible] compound such as antimony, potassium (or sodium) tartrate remains in solution in the blood until it is dealt with by the kidneys, liver, bowels, and skin for the purpose of storing or of eliminating it.

It does not seem to be necessary, therefore, on the face of it, in order to explain the action of antimony tartrate in bilharzia disease, to introduce the complicated picture of antibodies and indirect action on the parasite. For living bilharzia ova are certainly porous and permeable, pervious and foraminous, whether they be imbedded in the tissues or free in urine. The miracidium living inside the chitinous shell is aware of what is taking place in the atmosphere around the shell.

In the specimen glass, and we may assume, I think, in the bladder also, the concentrated urine would be as deadly to the miracidium without the protection of the shell as it is to other forms of animal life. The miracidium inside the shell, it is true, may, and often does, turn right round in its shell in the undiluted urine (the preliminary step to hatching),* but it does not often hatch. But if bilharzia urine be diluted ten or eleven times with water, and the temperature maintained at about 130° F. (which is not hotter than water exposed to the sun in Egypt), hatching takes place in four or five minutes.

The miracidium inside the shell, in other words, is in touch with the world outside the shell, and is ready to respond to favourable local conditions; this communication can only be explained by supposing the shell to be permeable and porous.

There are several other facts which prove the permeability of the bilharzia ovum. In hunting for helminths or ova in faeces at Khartoum Civil Hospital we are in the habit of using an ounce of 40 per cent. formalin to the specimen. This acts as a deodorant and facilitates the examination in various ways. Now we (Mr. Newlove and myself) found that this formalin sterilized the bilharzia ova when present, but that it left ankylostoma ova unharmed. This fact suggests that the ovum of bilharzia is permeable and allows the formalin to penetrate it and kill the miracidium inside; it also indicates that all ova are not permeable, and as an example of an impermeable shell we have the ankylostoma; there are biological reasons for permeability or otherwise, but we are only concerned in the fact at present.

There is, therefore, no *a priori* reason why the bilharzia shell should be *im*permeable—in fact, certain biological facts can only be explained on the supposition that it is permeable. By direct experiment *in vitro* we are able to show that bilharzia ova are permeable to antimony tartrate which kills the miracidium within the shell. Mr. Newlove and I found at Khartoum that, if $\frac{1}{10}$ c.cm. of urine laden with ova was diluted with 6 c.cm. of tap water at 130° F., ova hatched out in four or five minutes, and most of the ova in the specimen were hatched out within one hour. If one grain of antimony tartrate were added, before the hatching, only about half the ova would hatch, a good many were found dead, half in and half out of the shell, or, in other words, they appeared to have survived the hatching process only a short time as they were seen lying dead by the side of the evacuated shell, like corpse and coffin. The more resisting miracidia which survived and which were swimming about, did not swim nearly so long as miracidia hatched in plain water. The addition of about 2 grains of antimony tartrate to the 6 c.cm. just about stopped the hatching process altogether.

Now if to a solution of about 6 c.cm. wherein were hatched miracidia swimming about, 1 grain of antimony tartrate be added the movements of the miracidia were markedly changed. Normally they dart about with a purposive movement, the sharp more pointed end forwards, revolving all the time on their own axis. This character of the movement no doubt assists in the process of penetrating the snail, though it is not the engine of penetration. On the addition of the antimony the miracidia slow down, they wriggle, they writhe, they have, seemingly, convulsions, and, assuming a thicker and shorter form, they die. Some appear to escape, but the period of activity is considerably diminished by the antimony in every case.

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* [illegible] outside the bladder, without further dilution of the urine.

In making these observations with bilharzia the variation in resisting power of the different individual ova or embryos or miracidia was striking. Some ova hatched very much sooner than others under normal conditions, and some miracidia appeared to be more active than others, and some appeared to have a longer life, this quite apart from any accidental external circumstance such as becoming entangled in a wisp of mucus.

Therefore, judging from direct experiments *in vitro* with antimony tartrate, and from clinical results, one arrives at the conclusion that antimony tartrate has a profound and direct specific effect on bilharzia in all its stages. It kills the parent worm *in situ* in the portal tributaries.* It pentrates the ova as they lie deposited in the tissue wall and kills the enclosed embryo. It has also the power of killing the free miracidium.

As no experiments have been made *in vitro* on the action of the antimony tartrate on the adult worms the matter cannot be considered settled. I have not had the opportunity of making them myself, but it would not be difficult to do the tests, obtaining the worms from animals experimentally infected.

We (Mr. Newlove and J. B. C.) concluded (speaking under correction and from clinical evidence only regarding the parent worms) that:

1. The parent worms are the most readily affected by antimony.
2. The ova next.
3. The miracidia are the most resisting of the three to antimony tartrate.†

There are, therefore, ample grounds for believing that the action of the antimony tartrate introduced into the veins is a direct one on the ova, and probably on the adult worms also.

Continuing the doctrine of "permeability" and "direct action" further, it would appear likely that it also applied to the action of antimony tartrate on certain protozoal diseases; for instance, we know that it has a specific action on the Leishman-Donovan body in all its clinical manifestations,‡ and that it has a decided curative effect in trypanosomiasis, though that disease is more resisting to antimony tartrate than either leishmaniasis or bilharziasis. I am inclined to think that the enclosing membrane of the Leishman-Donovan body is also "permeable" (more permeable and less resisting than the enclosing membrane of trypanosome). If, in taking a specimen of splenic blood from a kala azar patient for the purpose of diagnosis, there be water in the syringe the bodies will not be found; they are hygroscopic They take up water and disintegrate. The logical way of explaining this fact is, I think, that the shell or limiting membrane of the body is "permeable."

Permeability of the confining membrane may also be the explanation of the fact that in kala-azar it is extremely difficult to find the bodies in the peripheral blood. It may be that it is so delicate and sensitive to external conditions owing to the porosity of the "shell" that when it arrives in the peripheral blood exchange takes place between inside and outside "shell," and the body disintegrates. This is conjecture, but it is a fact which requires explanation that occasionally, though not often, the Leishman-Donovan body is found in the peripheral circulation.§ "Permeability" may also explain the difficulty in finding the body in tissues *post mortem*; so responsive is it inside its "shell" to external influences that it disintegrates and disappears as soon as the patient dies.

The four typical periodical rises of temperature in a twenty-four-hour kala-azar chart may possibly be associated with the periodical destruction in the peripheral blood stream of the Leishman-Donovan bodies as they escape from the tissues where they have their habitat (liver, spleen, bone marrow, etc.).

There is a clinical fact also both in kala-azar and in trypanosomiasis which suggests direct action, and the breaking-up of the Leishman-Donovan bodies and trypanosomes with the introduction of the cell contents thereby liberated into the blood stream. If antimony tartrate is given to a patient with kala-azar or sleeping sickness the initial effect of the first dose or two is great aggravation of constitutional symptoms, shown by a sudden rise of temperature, etc. This is possibly due to the direct action of the drug entering and breaking up the organism, thereby liberating the toxins, etc.

Advancing this argument of "permeability" a step further, we find that parasites of "so many and so varied a nature" (Low) respond to antimony tartrate. It might be thought: It is a specific for bilharzia; why not, therefore, for other flukes and parasites, such as filaria, guinea-worm, and intestinal worms? it is a specific for leishmaniasis and trypanosomiasis, therefore why not for the plasmodium of malaria and the amoeba of dysentery? The answer to this may be found in the issue as to the direct action of drugs on the organism, and the question whether or no the organism is "protected" by a covering or membrane which is "permeable" to the antimony.

The following is a short statement made by Mr. N. H. Johnson of the Tropical Diseases Clinical Laboratory, from observations made independently by him on ova obtained from patients attending the Ministry of Pensions Clinic for treatment:

> In the course of my experience during the past six months, examining the specimens of urine of bilharzia patients under treatment, I have discovered that antimony tartrate not only kills the miracidium but completely disorganizes the ova, which become shrivelled, blackened, and granular; I have repeatedly tried to hatch the treated ova, but without success. I have found that by adding 1 grain of antimony tartrate to 20 c.cm. of diluted urine at 37° C., with abundant ova, after twelve hours' incubation the ova appeared to be alive, but only a sluggish movement was noticeable. On adding 2 grains of antimony tartrate to 20 c.cm. of diluted urine at 37° C., on twelve hours' incubation the ova were completely sterilized, blackened, and granular, and I found it absolutely impossible to hatch these out. Not only do the ova appear to be blackened, but the surrounding débris and crystals are blackened; this, however, does not affect the blood corpuscles. Each of the above experiments has, of course, been worked with controls. In hatching out the untreated ova the miracidium revolves inside the shell prior to hatching until it finds a weak part—generally the centre of the lateral part of the shell—which it ruptures and escapes.—N. H. J.

In conclusion, I have to thank Dr. Broughton-Alcock, who has kindly given me the necessary facilities for carrying out observations at the Laboratory of the Tropical Diseases Clinic, Ministry of Pensions, London.

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[*] In the only case verified by *post mortem* examination, made on a man who before was heavily infected with bilharzia and who died of influenza and pneumonia a short time after his injections had been completed (gr. 33), the man was apparently cured of his bilharzia, for no parent worms were found in the portal vein.—*Journ. of Trop. Med. and Hyg.*, April 1st, 1919 (Archibald and James)

[†] The miracidium needs more formidable protecting paraphernalia to enable it to survive the varied conditions of life it will experience in the Egyptian puddle where it should be hatched.

[‡] Oriental sore, naso oral leishmaniasis, kala-azar.

[§] The spleen is, practically speaking, a large blood swamp; openly connected with the arteries and veins, it is impossible to think that the Leishman-Donovan body does not get very frequently into the general circulation, and it needs explanation why it is so seldom found there.—J. B. C.

ANTIMONY IN LEPROSY.

BY

F. G. CAWSTON, M.D.CANTAB.,

DURBAN.

IN view of the remarkable improvement that was shown in some leper patients whilst undergoing a series of intramuscular injections with Oppenheimer's colloidal preparation of antimony (oscol stibium) in March of this year, I decided to give the treatment a further trial.

A report of the treatment appeared in the BRITISH MEDICAL JOURNAL for July 17th, 1920, page 76, where it was stated that the course was brought to an untimely end because the Union Government was unprepared for these leper patients to remain under observation in Natal. Six months after treatment was discontinued a letter was received from Madras to say that one of the lepers, David, was enjoying the best of health, carrying on his ordinary occupation in India, and was complaining of no symptoms requiring medical attention.

Two more lepers were admitted to the dépôt hospital of the Indian Immigration Board on August 23rd.

Sital stated that he had suffered from the condition for four years, during which time he had lived at Weenen, in Natal. The fingers were stiff and the extremities covered with a blood-stained discharge. All the fingers and both thumbs were discharging, and he had lost the nail of one finger of the right and two fingers of the left hand. All the toes were discharging, and only the small stump of one of the toes remained on the right foot. The face was free from signs of leprosy.

Oscol stibium 2.5 c.cm. was injected into the right deltoid muscle on August 23rd, 4 c.cm. on the 24th, and 5 c.cm. on the 25th and 26th. As there was some diarrhoea on August 27th and 28th, the injections were discontinued until August 30th, when 4 c.cm. were given without ill effect.

On August 31st the patient was feeling very well, and all the ulcers were dry. No further treatment has been given. On September 20th the extremities were still free from discharge, and all the stiffness had gone from the patient's hands, which he is able to use freely.

I asked Dr. J. Mackay, who has had an extensive experience of leprosy, to see this case, and he was agreeably surprised to see how effective the treatment had been. In his opinion there was no doubt whatever that the departmental medical officers had diagnosed the condition correctly as advanced leprosy. The case has also been under observation by Dr. Kerr Cross and Dr. G. L. Bonnar, the Indian medical officers of Durban.

On October 18th a swab was taken from the nasal secretion, as no discharge was available, and submitted to Dr. W. A. Murray, the Government pathologist at Durban, who reported the entire absence of *Bacillus leprae*.

Naukaklia was admitted to the Indian Immigration Hospital on August 19th in a very advanced stage of the disease. She was very frail, and not expected to live long. The hair was badly infested with nits. She was very emaciated, and her fingers and hands badly ulcerated. She had lost one digit of the right thumb, two digits of the right index finger, and the top digit of the middle finger of the left hand. The toes were not affected. The whole of the back of the right hand was covered with an extensive discharging scab, possibly the result of a burn. The discharge on several of the fingers was bloodstained. In several places bare bone was showing on the extremity of the fingers.

Oscol stibium 2.5 c.cm. was injected intramuscularly on August 23rd, 3.5 c.cm. on August 24th, and 4 c.cm. on August 25th. This caused diarrhoea for two or three days, and the injections were discontinued.

On August 29th the ulcers were nearly all dry, and on September 2nd, when I asked Dr. Kerr Cross to see the case, the ulcer on the back of the right hand was covered with a fairly clean scab showing evidences of rapid healing. On September 6th, though bare bone was still protruding through the [illegible] on the extremities, all the ulcers were dry, and the scab on the right hand had come away, leaving a healthy dry skin.

On September 20th the extremity of one finger showed slight discharge and another ulcer on the hand looked unhealthy, so oscol stibium 2 c.cm. was injected intramuscularly. All the other ulcers were remaining dry, the condition of the scalp was much better and all trace of diarrhoea had gone, though the woman was remarkably frail, somewhat hysterical, and took little food.

On September 23rd, as one little finger tip was again moist with discharge, oscol stibium 3 c.cm. was injected intramuscularly. Since then no further injections have been given, for all the ulcers have remained dry. The patient is still very weak, and not expected to live much longer; but all signs of active leprosy [illegible] have disappeared.

In commenting on these two leper patients Dr. G. L. Bonnar, the acting medical officer, Durban Indian Circle, states:

"[illegible] active [illegible] of the disease, with [illegible] on the fingers and toes. [illegible] has been given [illegible] of the [illegible] of leprosy and the [illegible] [illegible]."

TWO CASES OF DOUBLE GLIOMA RETINAE.

BY

A. E. MOODIE, M.D., F.R.C.S.Ed.

[illegible]

The following two cases of double glioma retinae were admitted to the [illegible] Eye Hospital, [illegible] [illegible] Both [illegible] [illegible].

CASE I.

S. R., aged [illegible], was admitted on March [illegible] [illegible]

Condition on Admission.—The child was well nourished. There was a concomitant convergent strabismus of the right eye. Both anterior chambers were shallow. The right pupil was dilated and inactive. The left was smaller than the right, and reacted sluggishly to light. In both eyes a whitish tumour was visible by oblique illumination, and blood vessels could be seen on the surface. The tension in the right eye was about + 1, and in the left normal.

Operation.—Under general anaesthesia the right eye was removed on March 24th, 1920, and the left eye on the following day. In both cases the optic nerve was cut as far back as possible. Recovery was uneventful, and on September 17th, 1920, the child was still quite well.

CASE II.

Henry H., aged 3 months, was admitted on April 16th, 1920. The mother had noticed "both eyes glassy" for five days before she brought the child to hospital. There were six other children in the family alive and well. The fourth-born, however, had died at the age of 4½ years from "meningitis with fits."

Condition on Admission.—Both anterior chambers were shallow. The pupils were dilated and inactive. By oblique illumination a large whitish vascular tumour mass could be seen through the pupil in each eye. Tension *plus* in both eyes. The child's general condition was not very good, and he was fretful.

Operation.—Under general anaesthesia the eyes were removed successfully on April 17th and 18th.

On May 25th there was still a slight discharge from the sockets. The child was fairly well, his general condition being better than on admission. In September there was still no sign of any recurrence.

PATHOLOGICAL REPORTS.

S. R. A typical glioma retinae, with well-developed rosettes. The blood vessels are better developed than in the other case, and necrosis is much less in evidence. It seems a decidedly less rapidly growing type of tumour than the other.

Henry H. Both eyes show a similar condition. The tumour is glioma retinae, but showing a good deal of necrotic change, and in general a sarcomatous type of growth, with a perithelial arrangement of the special cells. The characteristic rosettes are present. On the whole, the tumour suggests rapid growth and malignancy.

These two tumours are of interest as examples of a comparatively uncommon condition—namely, glioma retinae involving both eyes simultaneously. Collins and Lawford found both eyes affected in 12 out of 60 cases of glioma, and Marshall in 12 out of 32.[1] In cases of this kind the involvement of the second eye occurs more commonly months or even years after the first, according to Parsons.[1] In both these cases not only were both eyes affected, but the disease was almost equally well developed in both eyes at the same time.

In regard to prognosis, early diagnosis is of great importance as leading to timely surgical treatment. There seems to be general agreement that if the affected eye be removed before perforation by the growth, the prognosis is fair, but that in the absence of operation or in the presence of recurrence the outlook is practically hopeless. Immediate enucleation of the affected eye is therefore essential.

In the cases described diagnosis was a comparatively simple matter. The appearance of the tumours and the shallowness of the anterior chambers were characteristic. The increased tension supported the diagnosis of tumour, and the ages of the patients were in favour of the tumour being glioma, which is an affection of early childhood.

There was no sign of extraocular extension of the growth, and six months after operation the children were still quite well.

My thanks are due to Dr. Bowman McNabb for permission to publish an account of the cases, and to Professor Dean and Dr. Dible of Manchester University for the pathological reports.

REFERENCE.

[1] Herbert Parsons, *Pathology of the Eye*, London, 1905.

The late Dr. Paul Redard, director of the [illegible] Home Dispensary at Paris, and author of valuable works on orthopaedics, has bequeathed a sum to the Académie de Médecine for founding a prize of 5,000 francs to be awarded every five years for the best work on orthopaedic surgery that has appeared in the meantime. The competition is open to foreign medical men. Communications should be sent to the Secretary of the Académie de Médecine.

Mr. Henry Kimpton announces for early publication new editions of Dr. [illegible] *[illegible]* and Dr. H. [illegible] *[illegible]*.

THE TREATMENT OF ASCITES BY DRAINAGE.

BY

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THE two following cases may be of some interest in showing that an unexpected result may sometimes follow a measure of treatment undertaken as a forlorn hope.

CASE I.—*Hepatic Cirrhosis: Drainage: Recovery.*

A middle-aged estanciero, a "free liver," entered the British Hospital in September, 1917, with great distension of abdomen and anasarca of the lower extremities; the heart sounds were distant and feeble and the pulse 130; there was double basic congestion and dyspnoea with cyanosis; the urine was scanty and full of albumin and the hepatic dullness was almost obliterated. There was an ominous sign of the past—diffuse rupial scars.

To relieve urgent distress paracentesis was immediately performed, and six litres of ascitic fluid drawn off; on deep inspiration the liver could then be palpated beneath the costal margin; it felt as hard as the edge of a table but was not bossed. A mixture of potassium citrate, sodium bicarbonate, and ammonium citrate was given every four hours, along with pill "Baly," thrice a day, compound jalap powder ʒj at night, and magnesium sulphate ℥j each morning. An exclusive milk diet was prescribed.

Some relief was experienced for a few days, but the urine continued subnormal in quantity (20 to 30 oz. daily); by the tenth day he had filled up again, and general symptoms had reappeared. Tapping was repeated and 7 litres of similar liquid evacuated. A week later things were as bad as before, and as he appeared to be rapidly failing I tapped him with our largest size trocar, and, when some 6 litres of fluid had escaped, I passed a medium size soft rubber (Jacques) catheter, with the round end cut off, through the cannula into the abdomen; the cannula was coaxed out without dislodging the tube, and the latter was secured to the small skin wound by a silkworm-gut suture, a long tube was attached, and drained into a bottle at the side of the bed. A free flow (4 litres) ensued for three days. It ceased on the fourth evening. On the sixth morning the sister reported a marked increase in the output of urine (80 oz. in twenty-four hours). The tube was retained until the twelfth day, but nothing more exuded. The medical treatment was continued all the time; the daily excretion of urine varied from 70 to 90 oz.

Much to our surprise, this gentleman had a rapid convalescence—the pulmonary congestion quickly disappeared, the heart sounds became appreciable, the pulse slowed down gradually to 80, and only a faint trace of albumin remained when he left hospital three weeks later—in a violent hurry to get back to supervise the shearing.

Two months later he returned nominally to report himself, but in reality to place himself in the hands of a tailor for a complete new outfit. He was looking extraordinarily well, with quite a smart figure and debonair manner. I saw him again, a year afterwards, in good condition, before he retired.

CASE II. *Cardiac Hepatic Block: Incompetence: Ascites: Drainage. Temporary Recovery.*

S. M., aged 50, an Italian, had been treated in hospital six times during the past three years for broken down compensation, irregular action of the heart, orthopnoea, and waterlogged legs and scrotum; the condition was relieved each time by morphine injections, digitalis, purgation, milk diet, and rest of a kind.

In October, 1917, he presented himself with enormous distension of the belly and slight oedema of lower extremities, without any apparent serious cardiac distress, though the heart was, as usual, irregular. He was tapped on the day of admission and 8 litres of ascitic fluid removed. Seven days later he insisted on returning to work (founder). Three weeks afterwards 6 litres were removed, and he disappeared three days later. Ten days afterwards he came again in the same state. As it was futile to attempt to impose reason on such an impossible fellow, I determined this time to do something that would anchor him in bed for some weeks—I tapped him with a large instrument, as in the previous case, and inserted a similar peritoneal drain. The flow ceased on the sixth day, and again it was noted that there was a sudden coincident increase in the daily quantity of urine (to 60 oz.). On the following day when I entered the ward I saw him sitting on the side of his bed; he kept on demanding the withdrawal of the tube, but I refused. After I retired he dressed himself and went out to the garden, and repeated this until the twelfth day, when the sister removed the tube (no liquid had passed since the above note on the sixth day). He left hospital the same afternoon.

Two months later he met one of our male nurses and told him to "tell Il dottore that I am hard at work and enjoy my vino the same as ever." A short time after the poor fellow paid us his last visit for myocardial liquidation, *without a murmur*, and without a trace of ascites.

In both cases it is remarkable that the peritoneal exudation ceased a few days after free drainage was established, and that this cessation was followed by a sudden marked increase in the excretion of urine, which suggests that drainage, by promoting re-establishment of circulation, admits of a temporary discharge of blocked organs from physiological bankruptcy, and that the relief of tension afforded by continued drainage facilitates the diuretic action of the medicines and diet employed.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TETANUS WITH GENERAL SPASM CURED WITH SERUM.

THIS case is reported because instances of general spasm due to tetanus are not very commonly cured by serum, and because the cure was probably made possible by the toxin being absorbed in a diluted form from the surface of an ulcer, so that at no time was the concentration of toxin within the nervous system great.

A woman aged 42, healthy, with one child, had been troubled with varicose veins in the left leg for a long period; some six months before coming under observation she knocked her leg and a varicose ulcer developed. This ulcer was treated by a friend supposed to possess "medical knowledge" by the daily application to the ulcerated surface of "fresh green leaves," of what plant I have been unable to ascertain; this treatment was continued until about three weeks before I first saw her, when she was put on some simple home-made ointment. Two days before seeking my advice she noticed some stiffness about the jaw, which gradually increased in severity and was accompanied by pain in the back of the neck.

I first saw her on June 17th, in the evening, when she had well-marked trismus, but no general spasms, and a temperature of only 99° F.; as the mouth contained many septic stumps I was in doubt as to the cause of the trismus. She had general muscular spasms during the night, and on June 18th had well-marked stiffness of the back of the neck, with a temperature of 101° F.

Dr. Bentlif saw her with me in consultation, and we agreed to the diagnosis of acute tetanus. She was immediately admitted to the Jersey General Dispensary; I excised the ulcer of the leg with a margin of healthy tissue, swabbing the raw surface with 1 in 20 carbolic acid, and at 10 p.m., whilst the patient was coming round from the anaesthetic, morphine gr. ¼ was injected. Spasms were so frequent that it was necessary to give another ¼ gr. of morphine at 1.30 a.m. No serum could be obtained on June 18th, but on June 19th, at 10 a.m., the spinal theca was tapped, and, after running off a corresponding quantity of cerebro-spinal fluid, 1,500 units of antitetanic serum were injected; the patient remained fairly quiet till 11 p.m., when morphine gr. ¼ was given.

Daily injections of 1,500 units antitetanic serum were given until June 25th, the first three being intrathecal and the rest intramuscular; the patient was meanwhile kept under the influence of morphine. The spasms gradually decreased in frequency and severity until, on June 24th, none occurred; the patient got her first sleep on June 20th, and her first good night on June 26th. On June 27th she was able to open her mouth sufficiently to admit the spout of a feeder, and for the first time to swallow with ease.

A marked serum rash appeared on June 27th, and continued till about June 30th.

On July 6th the wound caused by excision of the ulcer was skin-grafted, and the patient was discharged cured on July 19th.

In this case the neutralization of the toxin by the antitoxin was well shown by the marked mitigation of the spasms which followed the injection. The case illustrates also the danger which may attend the use of popular old-fashioned remedies.

Jersey. J. W. EVANS, F.R.C.S.

OBSTRUCTED MUCOUS SECRETION.

IN the course of tuberculosis dispensary work one sees a number of children illustrating the vicious effects of defective and disorderly mucous secretion. A typical case would be in the first ten years of life, more or less a mouth-breather, generally anaemic, somewhat underweight, with some cervical or submaxillary glandular enlargement, a varying amount of retraction of the chest, superficial thoracic veins overfull, and almost always a tumid or tympanitic abdomen. There is a history of restless nights, often with delirium, and of cough which is relieved by vomiting; appetite is fickle or absent at breakfast-time, and there is almost always mention of colicky pains in the epigastrium. The child's general condition improves as the day advances, and the appetite is frequently ravenous late in the day. School attendance aggravates the signs and symptoms, and exclusion is generally followed by speedy improvement. Deafness with tinnitus and conjunctivitis are frequent accompaniments. The child often suffers from headache, which is a very real one when a child complains of it. In such a case with such a history one concludes that the signs and symptoms are those of toxaemia caused by a change in the physical and chemical conditions of the mucous secretions. All the conditions are suitable for multiple infections in great variety and producing various clinical manifestations. Many of the numerous cases sent to the dispensary labelled as tuberculous peritonitis (commonly called "consumptive bowels") are of this character and origin. Much worry is occasionally caused by premature labelling, but by seeing all such cases the tuberculous can be separated. The von Pirquet test and careful examination of the weight (marked loss is more common and less quickly made up in the tuberculous) can generally be depended upon to help in the exclusion of tuberculosis. The respiratory passages must suffer in course of time from the mixed infection however constituted; and the chronic catarrh will not refuse admission to the tubercle bacillus in favourable circumstances. The returns for 1920 may be expected to show a number of cases of "rapid consumption" in patients whose nasopharyngeal obstruction had given good opportunity to the influenza infection to settle down and diminish the patients' powers of resistance. Many of these children exhibit chronic eye infection, evidently of similar causation; and chronic because the initial trouble had not been recognized and treated. As to treatment, removal of the obstruction and prevention thereby of the retention and subsequent infection of the mucous secretions must be the counsel of perfection, and the earlier done the better. Open air schools will help much in the prophylaxis and should be universal.

Newport (Mon.). J. LEWIS THOMAS.

Reports of Societies.

ACUTE RHEUMATISM IN CHILDREN.

AT the meeting of the Medical Society of London on November 22nd a study of an outbreak of acute rheumatism in children under 12 years of age was brought forward by Dr. F. J. POYNTON jointly with Dr. D. H. PATERSON and Dr. J. C. SPENCE.

The object of the communication was to direct attention to the gravity of acute rheumatism in childhood by recording the results of a severe outbreak which occurred in the twelve months extending from July, 1919, to June, 1920, at the Hospital for Sick Children, Great Ormond Street. It was thought that such a record might be the forerunner of a much more extensive research on national lines in the future.

All the rheumatic cases admitted to the wards of the hospital during the twelve months were included in the series. They numbered 172—104 females and 68 males. The age incidence for the first attacks rose sharply from the [illegible] to the seventh year and then fell to the twelfth. An hereditary factor was present in 30 per cent. The seasonal incidence, calculated from the earliest symptoms of illness, showed the maximum was reached in December, 1919, the minimum in March, 1920. November and December, 1919, and April, 1920, were bad months, and reference to the official meteorological reports showed that November was exceedingly cold with frequent snow and hail, and December was rainy, whereas March, 1920, was unusually mild. An exacerbation occurred in April, which month was throughout wet and unsettled.

The [illegible] results of the outbreak were put forward in two [illegible] on leaving the hospital [illegible] of the cases had been made [illegible] 1920. [illegible] on leaving hospital [illegible] 17 [illegible] 10 [illegible] [illegible] of the heart had been damaged [illegible].

The [illegible] aspect of this outbreak was interesting. In the [illegible] there were 100 medical beds which were practically [illegible] hospital [illegible] days. The cost per bed per week was [illegible]. If the 172 cases of rheumatism were [illegible] would have monopolized a bed in hospital for [illegible] days—that is, between twenty-eight and twenty-nine years. All the hundred beds would have been occupied for fifteen weeks. The mere cost in money was £4,589. These cases occupied a bed on an average for sixty days. It was obvious how much the work of the institution as a hospital for acute cases was hampered, and the need for an auxiliary hospital in the country was urgent.

Out of the 172 cases 84 were first attacks, the rest recurrent. The chief manifestations in these first attacks were—in 33 chorea only, in 9 arthritis only, and in 5 heart disease only. The remaining 37 showed combinations of these manifestations. From this it was evident that chorea was the most frequent solitary lesion in rheumatism.

In an analysis of the entire series of 172 cases it was found that chorea occurred in 104 cases. The rheumatic origin of chorea was clearly shown from the following figures:

Sixty-seven had chorea and other rheumatic manifestations, 37 were examples of chorea only, but, of these, 6 had a family history of rheumatism and 11 suffered from tonsillitis so frequently that enucleation had to be done. On the other hand, 12 cases in the 172 had been admitted for active rheumatic heart disease and arthritis who in previous years had suffered from chorea only. How little association existed between chorea and fright was conclusively demonstrated by the air raids. From July, 1913, to June, 1914, there were 77 cases of chorea in 1,147 admissions (that is, about 6.5 per cent.); from January to December, 1917 (a year of severe air raids), 63 cases of chorea in 1,036 admissions (that is, under 6 per cent.); from July, 1919, to June, 1920, 104 cases of chorea in 1,292 admissions (that is, over 8 per cent.). The age incidence of chorea in this series coincided precisely with the curves for the whole series of rheumatic cases.

It was suggested by the authors that the relative frequency of rheumatism in the female was possibly exaggerated by the fact that in girls the most obvious manifestation (chorea) was three times as frequent as in boys. Possibly the less convincing manifestations in boys might be more often overlooked.

Complications.

Heart disease occurred in 114 cases, of whom 19 had general carditis, 63 mitral disease, 14 aortic and mitral disease, 15 transient dilatation, and 3 persistent rapid heart action. It was impossible to doubt that rheumatism was the actual cause of the heart disease. Arthritis and arthritic and muscular pains occurred in 111 cases. Acute tonsillitis immediately preceded an attack in 22 cases; 38 had enlarged and unhealthy tonsils; in 17 more the tonsils had been enucleated at varying periods before the attacks. It was clear that enucleation of the tonsils, valuable enough in suitable cases, was not a panacea for the disease, seeing that 17 children (one of whom had died) had acute rheumatism in spite of previous operation. There was no evidence of the intestinal origin of the disease. Nodules, as the older clinicians had insisted, were grave warnings. There were 33 cases: 12 died, 15 had become complete invalids, 4 had compensated heart lesions, and 2 were free from heart disease. There were 10 examples of erythema, 7 of purpura, and 6 of epistaxis. Rheumatism was more fatal in boys in the proportion of about nine boys to five girls. Of 12 cases fatal in the first attack 10 were boys. In this outbreak some of the most virulent cases showed no fever, in spite of general carditis.

The authors urged a more organized attempt to control rheumatic heart disease, for the most hopeful point connected with heart disease was its infective origin and the consequent belief that it ought to be—in part at least—preventable.

In the discussion which followed, the President, Sir W. HALE WHITE, said that he had always reckoned that there was an average of eight cases of heart disease among forty-five adults occupying hospital beds, and that of the eight, six were rheumatic. Years ago there were fatal cases of pyrexia in fairly large numbers; he had not seen these lately, and they appeared to be growing less frequent. One possible reason why enucleation of the tonsil did not always do good was that the enucleation was only partial. The rarity of these cases of acute rheumatism in children in private as compared with hospital practice would form an interesting subject for inquiry.

Dr. A. F. VOELCKER thought that the experience of the authors in having in this small group two cases of nodules which were not accompanied either by endocarditis or pericarditis was a little unusual. In the whole of his hospital experience he could only remember seeing two such cases. Before a condition could be said to be not rheumatic time for careful observation must be allowed, because the rheumatic picture often unfolded very slowly in the course of years; and that was one of the reasons why people had failed to recognize the supreme importance of rheumatism as a causal factor in chorea. He himself believed that all chorea in children was a rheumatic manifestation. He agreed that the authorities had been remiss in not recognizing the gravity of rheumatism. If appeals had been made to the public on the lines of appeals on the subject of venereal diseases and tuberculosis, something more practical might have been done to arrest the development of those cardiac troubles which played so large a part in maiming our young population.

Dr. **Frederick Langmead** said that in mapping out the rheumatic incidence for the whole of London, cases had been found in greatest abundance along the courses of rivers, not only the Thames and the Wandle and the Lea, but even buried rivers like the Fleet and the Tyburn. That had been worked out in an interesting fashion by Dr. Shrubsall of the London County Council. The speaker asked whether, in the cases brought forward that evening, any had occurred one after the other in a particular house or family, as he had found in one or two instances. The speaker agreed that not enough stress was laid upon this question from the economic and sociological standpoint. In the London County Council schools for the physically defective one-third were cases of crippled heart; moreover, practically all the children who died within the first five years after leaving these cripple schools were heart cases. If rheumatism continued to be forgotten as it had been in the past, and tuberculosis loomed so large, there was some danger that open-air schools might result in more harm being done to the rheumatic children than good to the tuberculous children.

Surgeon Rear Admiral **P. W. Bassett Smith** said that in the Royal Naval School at Greenwich there were a fair number of cases of throat affections, but the rheumatic cases were very few in number; this might be because the boys were so well fed and looked after. Dr. **Reginald Jewesbury** asked whether any steps had been taken to ascertain how far the housing conditions of these patients were responsible.

Dr. **Poynton**, in reply, said that the question why so much less bad rheumatism was to be seen among the better classes still awaited an answer. The time must come when the country would have to face the problem; a great deal of heart disease ought to be prevented. The slowness of the unfolding of the rheumatic picture was a very important thing to be borne in mind. It took years before the whole development was before them. He was not quite certain that all chorea was a rheumatic manifestation. There was a certain amount of evidence to show that congenital syphilis might cause chorea. With regard to the question of occurrence in families, in this series, so far as he was aware, there were not more than four examples of brother and sister, or of two brothers, in a family being affected. Inquiry had been made of the parents in every case as to conditions in the house, but this was insufficient—there must be personal investigation.

Electrocardiography.

Dr. **G. E. S. Ward** read a communication in which he showed electrocardiographic tracings to illustrate some disorders of the myocardium. He explained the principle and construction of the electrocardiograph, which made it possible to obtain a photographic record of the oscillations of a quartz fibre which electrically corresponded to the pulsations of the heart. He said that the electrocardiograph must not supplant ordinary clinical methods of observation, but as a supplementary method it had its value. Dr. Ward showed tracings of the normal heart and of various disordered conditions, including paroxysmal tachycardia, auricular fibrillation and flutter, and heart-block in various degrees. Tracings were exhibited which showed a progressive lengthening of the auriculo-ventricular interval, the ventricle responding to alternate auricular impulses, then to every third, or fourth, or sixth auricular impulse, and finally, in the case of complete block, the ventricles setting up an independent rhythm.

PSYCHOLOGY OF ANAESTHESIA.

At a meeting, on November 5th, of the Section of Anaesthetics of the Royal Society of Medicine, with Dr. **Shirley**, President, in the chair, Dr. **W. Dudley Buxton** read a paper on the psychology of anaesthesia. Psychology, said the author, included the investigation of phenomena which could not in any sense be regarded as confined to the activity of the conscious mind. He wished to draw attention to the quasi-mental phenomena which might be observed during narcosis; older views about the mentality during anaesthesia were inaccurate and needed modification. Abolition of consciousness did not necessarily predicate the smothering of all emanations from the higher brain centres, although such emanations differed in kind and in degree with different depths of narcosis. Some degree of subconsciousness was retained and under appropriate stimuli or auto-stimulation the patient might bring about effects which would influence his personal welfare.

The tests of consciousness commonly applied were inexact and only reliable so far as they evinced abrogation of certain reflexes. The "awareness" of lower centres persisted when that of the higher, which was consciousness, was abolished. Explanation was needed of the phenomena arising during narcosis of certain types of subject. Some soldiers, neurasthenics, alcoholics, and babies projected their conscious nerve dyscrasia into the period of anaesthesia. There appeared to be a freeing of the phylogenic instincts which lay in the subconscious mind, and were habitually repressed. The study of dreams which occurred in association with anaesthetics seemed to support the view that there was a liminal consciousness beyond that which passed away early in narcosis. These dreams might be deeply impressed and either remembered or recalled. A persistent impression was left on the unconscious mind, and was capable of being revived under similar conditions to those which had imposed it. Dreams repeated in identical details at wide intervals of time indicated that one was dealing with the subconscious mind, not merely with ordinary consciousness.

Dr. **Buxton** said that the bearing on practice of these considerations was that complete abolition of consciousness must be secured before operation began, so as to produce as little effect as possible on the subconscious mind. Preliminary injections of morphine, scopolamine, and atropine were of great assistance.

Dr. **M. Culpin**, Mr. **W. A. L. Flemming**, Mr. **W. Cecil Hughes**, Mr. **Bellamy Gardner**, and the **President** having discussed the paper, Dr. **Buxton** replied. He pointed out that ocular phenomena were not always reliable tests of depth of narcosis, and that ideas dominant at the moment of induction might persist in influencing the patient's mind; of this he cited instances.

THEORIES OF HEARING.

At a meeting of the Sheffield Medico-Chirurgical Society, held on November 4th, Mr. **G. Wilkinson** read a paper entitled "Modern theories of hearing." After a brief review of the structure and mechanism of the middle and internal ear, he gave a demonstration (illustrated by experiments) of the principles of resonance, and showed how analysis of compound with simple tones was effected by a series of resonators. Helmholtz's application of resonance to explain the analysis of sound by the cochlea was described. In support of Helmholtz's view that of the transverse fibres of the basilar membrane each had its own proper period of vibration, progressively increasing from the base to the apex of the cochlea, were the facts:

(1) That these fibres increased progressively in length from base to apex. (2) That (as pointed out by Professor A. Gray) the external ligament probably regulated the tension of the transverse fibres, and that this ligament progressively decreased in bulk from base to apex. It was therefore probable that the tension of the transverse fibres progressively decreased. (3) The "load" on the transverse fibres, that is, the mass of the perilymph and endolymph intervening between each string and the oval and round windows, progressively increased.

It might be difficult to accept the view that these factors were sufficient to give the basilar membrane the amount of differentiation required for a series of resonators extending to 9 octaves, but at all events they would give sufficient differentiation to destroy entirely the value of the basilar membrane as a simple recorder of the movements of the stapes as postulated by the theories of

Wrightson and Rutherford, or as acting as a simple yielding membrane without resilience, as pictured by Ewald, Meyer, and ter Kuile. For such a purpose a simpler structure would answer better.

With regard to Wrightson's theory, why was a large and important nerve like the auditory, with its 4,000 or more branches in the cochlea, at all necessary for the performance of so simple a function? Was it to be believed that each of these 4,000 nerve twigs was carrying identically the same message to the brain at the same time? There seemed to the lecturer to be a fundamental misconception in all theories of analysis of sound by the brain (such as Wrightson's, Rutherford's, Meyer's, Lipps's). The essential act in sound analysis was not the resolution of pressure curves into their harmonic components, but the instantaneous measurement of small intervals of time. The disintegration of one of Wrightson's sound pictures necessitated the immediate recognition by the hearing centre of differences in the phase periods of his curves amounting to 100,000th part of a second. The measurement of time was essentially a mechanical operation. All our methods of measuring time depended on instruments giving harmonic vibrations.

The theories of Ewald and ter Kuile were referred to; they did not seem to offer a satisfactory explanation of the resolution of compound into simple tones. Up to the present no satisfactory working model of the cochlea had been made. Helmholtz's theory undoubtedly gave a fuller and more comprehensive explanation of the facts of hearing than any other; the difficulty in accepting it lay in certain anatomical details of the structure of the cochlea. Nevertheless, if Helmholtz's theory were rejected, it was the lecturer's opinion that up to the present no alternative explanation had been offered the inherent difficulties of which were not even greater. To speak of the central analysis of sound was only to push the explanation a step further back into the regions of the unknown.

SCOPOLAMINE MORPHINE IN CHILDBIRTH.

At a meeting of the Brighton and Sussex Medico-Chirurgical Society, held last month, Dr. ALEXANDER [illegible] read a paper on scopolamine morphine narcosis in childbirth, based on an experience of eleven years and one hundred cases. He had obtained excellent results by following out strictly the details as originally laid down by Gauss. Upon the successful testing and estimation of the memory test [illegible] the success of the method; for this the personality of the patient must be gauged. The results ought to be produced with the smallest possible quantity of scopolamine, no two women being quite alike in their response to the drug. With careful dosage the ideal state of amnesia could be obtained and the "memory islands" of Gauss avoided. The author had never given more than five [illegible] injections of scopolamine, and had usually found three [illegible] sufficient. Not more than one injection of morphine [illegible] given. At the end of the second stage [illegible] of labour it was his custom to give a whiff of chloroform. [illegible]

[illegible]

REVIEWS.

TAYLOR'S "MEDICAL JURISPRUDENCE."

IT is generally acknowledged that the task of editing the successful work of another is peculiarly difficult, for although the structure is there the editor is faced with the imposed duty of maintaining the standard of excellence handed down to him. The seventh edition of *Taylor's Principles and Practice of Medical Jurisprudence*[1] affords ample proof that the late Dr. F. J. SMITH achieved nothing but success in his task. The two volumes are indeed not without flaw, but they are so complete, and contain so much that is useful and informing, that we doubt whether any similar production can successfully compete for the premier position they have so long held.

Medical jurisprudence is as much a special branch of medical science as, for instance, ophthalmology or obstetrics, and requires from its exponents as complete and rigid a training as these or other specialties. In medical schools the more elementary needs are met by the institution of special lectures, supplemented by the reading of textbooks. But we can hardly imagine that the volumes under review are likely to come into the hands of the medical student in general. They are designed for the expert, and in this term we include the lawyer, for whose use, as the preface to the fifth edition expressly states, they were also intended. That the student would benefit by reading them goes without saying; but the crowded state of his curriculum scarcely allows of time for the study of a book so full. This aim and purpose of the author is made apparent by the phraseology employed; in some places, indeed, this is so technical that those uninstructed in law might well find difficulty in understanding exactly what is meant. What may be regarded as an extreme example is found on page 89, vol. i, where the following sentence occurs: "Negligence has no Act of Parliament constituting it a statutory offence; there is no parliamentary definition of the tort, for it is part of the common law of the land."

But it is precisely this peculiar method of treatment that gives the book its special value: it is a work for experts, legal or medical, and, while of value to both, loses nothing by attempting to balance the opinion of each. Medical practitioners are at times prone to attribute crime to some mental defect. The lawyer may mistake a lunatic for a rogue. In the conflict of opinion that arises out of the divergent views of the two professions it is probable that both parties have some degree of reason on their side, although in any individual case one side must be right and the other wrong. It must, therefore, be of mutual advantage to have a neutral exposition of the contentious matter where each party can hear the reasons that determine any particular belief. Whether the term "neutral" can with propriety be applied to the writings of medical men in such a connexion may be open to argument, but we believe this textbook comes very near to conforming with that description.

No attempt will be made here to discuss in detail the form or method adopted in the two volumes, because this book is so well known and has so long enjoyed an extensive popularity, that it would be superfluous to do so. Such changes as have been made are in the direction of bringing the subject matter up to date by the addition of recent cases. Naturally, the late Dr. F. J. Smith has woven much of his individuality into the text. He has left us this heritage of much wisdom and sound sense.

PELLAGRA.

The book on *Pellagra*,[2] by Dr. H. F. HARRIS of Atlanta, is the latest on this important subject, and ought to be read [illegible] by all [illegible]. It contains an enormous mass of detail, and has a bibliography covering [illegible] pages. The first chapter is devoted to historical details; [illegible] 127 pages are allotted; the third chapter deals with pathological anatomy, the fourth with symptomatology, the fifth with diagnosis, the sixth with prognosis; the seventh with prophylaxis; the eighth with treatment; and the ninth with pellagra in relation to life insurance.

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[1] *Taylor's Principles and Practice of Medical Jurisprudence.* [illegible] M.A., M.D. [illegible]

[2] [illegible] New York: [illegible] 1919. [illegible] plates. [illegible] net.)

In an appendix particulars are given of Austrian and Italian laws on bad maize. The pendulum has swung so far that at present the popular view is that pellagra is a deficiency disease, due to the absence of something in the food; this harmonizes quite well with the theory that the disease may be due to an exclusive diet of maize. Dr. Harris is very severe on Sambon's simulium theory; though the reviewer agrees that there is no evidence to support Sambon's views, yet it is not correct to say that that observer had never seen pellagra before, or had no practical acquaintance with it. He had seen it and studied it years before in Italy.

The chapter on causation brings out very clearly the amount of work that has been done on this disease, and the diverse theories that from time to time have been propounded to explain it. The book is an excellent compilation, and brings into quite a reasonable compass all previous work on the subject which is worthy of preservation. Dr. Harris's own views, also, are very valuable, and everyone who studies pellagra must thank him for providing them with enough pabulum to keep them occupied for the next six months or more. The study of the immense mass of material in the book cannot fail to help towards the final elucidation of this puzzling problem.

FEEBLE-MINDEDNESS IN CHILDREN OF SCHOOL AGE.

UNDER this title Dr. C. PAGET LAPAGE has republished in second edition his useful and compact treatise which originally appeared in 1910.[3] Owing to the passing of the Mental Deficiency Act in 1913, and consequent extension of the field of work amongst mental defectives, much new material awaited introduction, but war exigencies unavoidably retarded the author's revision of the book. The present issue embodies much valuable information as to the administrative changes resulting from the Act, and in a new chapter a comprehensive summary of its principal provisions is given, with a list of the agencies, official and voluntary, concerned in carrying these provisions into effect. While considerable progress has been made, it is noted that war conditions have of necessity adversely influenced the establishment by public authorities of adequate accommodation in the way of institutions and colonies for the large number of defectives found to require permanent care, and this need will become even more accentuated when the statutory duties of "ascertainment" come to be more efficiently performed. Dr. Lapage also gives instances of difficulties which have arisen in the interpretation of the Act—for example, as to what constitutes *neglect* so as to bring a defective within its purview. With these exceptions, the general arrangement of the work remains much as in the original issue, but in the chapter on diagnosis we note some interesting additional paragraphs on deafness in relation to feeble-mindedness, as to which Dr. Lapage's experience as physician to the Royal Schools for the Deaf at Old Trafford renders him an exceptional authority. The value of the book is again enhanced by the contribution by Miss Dendy, M.A.—now a Commissioner of the Board of Control—of a chapter on the training and management of feeble-minded children, based on her former practical experience as honorary secretary at the Sandlebridge Colony.

SURGICAL WORKS.

Fractures, Compound Fractures, Dislocations, and Their Treatment, by JOHN A. C. MACEWEN,[4] is a book of moderate size, well illustrated by many excellent plates from photographs. There are numerous figures of splints, showing their application to various fractures, and a section on amputations and artificial limbs. In describing the individual fractures, the author endeavours to guide the reader in the selection of methods of treatment when there is a diversity of opinion. Under the heading of compound fractures no mention is made of the Carrel-Dakin method of treatment, or the method of delayed primary suture, both used so successfully during the recent war. Suspension of the limb from a pole above the bed is mentioned under the treatment of fractured femur, but the Balkan frame is not illustrated by a diagram, although an illustration is devoted to Liston's long straight splint applied with extension. It is rather surprising to read that the latter method is often employed for extracapsular fracture of the neck of the femur. Again, the statement that successful reduction of congenital dislocation of the hip is frequently obtained by extension and abduction, with massage or, occasionally, tenotomy of the adductors, does not coincide with the experience of every surgeon in the treatment of these cases, and many will not agree with the author that open operation with excision of the hip should be performed when the above mentioned treatment has failed.

In *Plastic Surgery*[5] Dr. J. S. DAVIS has produced an excellent description of the principles and methods of operating in this branch of surgery; the author states which methods in individual instances have given the best results in his hands, and at the end of each chapter is a full bibliographical index on that particular subject. The book is profusely illustrated and the various operations are explained with the aid of numerous diagrams. Every branch of plastic and reconstructive surgery is fully dealt with, and due credit is given to the work of English and French surgeons. Transplantation of skin, fat, bone, cartilage, etc., is described at length, as also the use of pedunculated flaps. In the reconstructive surgery of the jaws and palate the author rightly insists on the necessity of the co operation of a skilled dental surgeon. He also lays stress on the value of keeping graphic records, by photographs or plaster casts, of the various steps in cases requiring a long series of plastic operations.

VISCERAL NEUROLOGY.

IN his book, entitled *Symptoms of Visceral Disease*[6] Professor POTTENGER has drawn for the general medical reader a chart to the main streams and the backwaters of visceral neurology. The profession in this country has had the privilege of education on this subject for many years at the hands particularly of Mackenzie and of Head. Both these authors will be found freely quoted by Pottenger, as was, indeed, inevitable. Gaskell is another British author to whose work it is a pleasure to see homage paid in this book. Gaskell's *Involuntary Nervous System* is, one suspects, known only by its title to the majority of clinicians. The book under review is divided into three sections. The first deals with the relation between the vegetative nervous system and the symptoms of visceral disease, and in it the segmentation of the body, the viscerogenic reflexes, and various sympathetic syndromes are discussed. The second part consists of an account of the various viscera, and the situations of the pains referred from them when diseased. In the third part the more academic side of the sympathetic system is reviewed.

It will be recognized that no corner of the field is left unobserved, and a glance at the handsome illustrations and clear diagrams in colour create a favourable impression. And yet this is hardly a good book and is certainly not a readable book. One cannot help all the time comparing it with certain others, older, more incomplete it is true, yet possessing a certain imaginative fire which this totally misses. Professor Pottenger must be an enthusiast, and yet he has quite failed to transfer any of this enthusiasm to the written page. The absence of case records and of interesting illustrative examples contribute to the general dullness. An exception may be made for the section on diseases of the chest, where the author calls attention to various trophic changes in the thoracic walls connected with diseases of the lungs and pleura. Here again a few well selected clinical records would have driven the lesson home more certainly and perhaps have helped to convince the sceptical.

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[3] *Feeble mindedness in Children of School Age.* By C. Paget Lapage, M.D., M.R.C.P. Second edition. Manchester: University Press; London: Longmans, Green and Co. 1920. (Cr. 8vo, pp. xv + 309, 14 plates. 10s. 6d. net.)

[4] *Fractures, Compound Fractures, Dislocations, and Their Treatment.* With a Section on Amputations and Artificial Limbs. By John A. C. Macewen, M.B., C.M., B.Sc. Glasgow: Maclehose, Jackson and Co. 1919. (Cr. 8vo, pp. xii + 285; 43 full page plates, 61 figures. 12s. 6d. net.)

[5] *Plastic Surgery: Its Principles and Practice.* By John Staige Davis, Ph.B., M.D., F.A.C.S., Instructor in Clinical Surgery, Johns Hopkins University. London: Henry Kimpton. 1919. (Med. 8vo, pp. xv + 770; 1637 figures. 42s. net.)

[6] *Symptoms of Visceral Disease.* By F. M. Pottenger, A.M., M.D., LL.D., F.A.C.P., Professor of Diseases of the Chest, University of Southern California, U.S.A. London: Henry Kimpton. 1919. (Med. 8vo, pp. 328; 86 figures, 9 coloured plates. 21s. net.)

One closes the book finally with regret that its writer has just failed to kindle that divine spark without which the most learned work remains uninspiring.

NOTES ON BOOKS.

WE have received a *Synoptic Chart of Cardiac Examination*,[7] by Dr. JOHN D. COMRIE, which consists of a diagrammatic representation of the human chest on a large card, and by an ingenious arrangement on pulling certain tapes the names of various diseases appear at an opening, with at the same time their physical signs at the appropriate positions on the diagram. The idea is very completely worked out and a full range of chest conditions is given. Accompanying the chart is a pamphlet on the physical examination of the heart, with a brief description of the more recently introduced methods of examination. In conjunction with and not as a substitute for his clinical work in hospital this chart should be valuable to the student working for his final examinations.

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In the early years of this century, even before the war, there was a remarkable poetic efflorescence. The emotions stirred by the war, the sacrifices it demanded, and the hope it inspired of a better future, moved new writers to find expression in verse, and gave a fresh direction and earnestness to the thoughts of others who had already felt the impulse. Mr. KEITH MONSARRAT, we judge, belongs to the latter category. The poem which gives its name to his volume, *The Red Hills and Other Verses*,[8] is a finely imaginative expression of the dream of a better world after the war, but the author's inspiration is in his reverence for Nature, his love for her in her varied moods, from the uplift of the hills to the happy security of the orchard. In a piece entitled "The Children" the author gives in melodious verse his philosophy of life from its beginnings, through the placid certainty of the simpler creatures, to man's aspirations, and his alternate doubts and certainties.

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[7] *Synoptic Chart of Cardiac Examination.* By John D. Comrie, M.A., B.Sc., M.D., F.R.C.P.E., Assistant Physician, Edinburgh Royal Infirmary. London: John Bale, Sons, and Danielsson, Ltd. 1920. 4s. net.

[8] *The Red Hills and Other Verses.* By K. W. Monsarrat. London: Erskine Macdonald, Limited. 1920. Pp. 48.

BALANCE IN NUTRITION.

THE HUXLEY LECTURE BY PROFESSOR F. G. HOPKINS.

THE Huxley lecture on recent advances in science in their relation to practical medicine was delivered by Professor F. GOWLAND HOPKINS, F.R.S., of Cambridge, at Charing Cross Hospital, on November 24th. Sir FREDERICK MOTT presided, and, before introducing the lecturer, said that he wished Huxley were alive to-day to controvert in the way that he alone could do some of the things which were now being said in belittlement of the evolution theory.

Professor HOPKINS said that the tragic years of war had made the life and times of Huxley seem disproportionately remote, but in the natural course of events the Huxley lecturers of the future, unlike those of the past, must be men who had not enjoyed, as he himself had not, the advantage of personal association with the man in whose honour the lecture was founded. For mid-Victorian science Huxley's gifts provided both shield and buckler, and it was unfortunate that in Huxley's particular position as the champion of scientific aims he had had no quite adequate successor. All that was now needed to put our race in the van of scientific progress was some national awakening to the fact that the investigator no less than the administrator was necessary to the public weal.

Professor Hopkins went on to say that he intended in the lecture to present the subject of nutrition from a somewhat special standpoint. Recent acquirements of knowledge were changing the angle from which the needs of the body must be viewed. While he did not undervalue the results of accurate calorimetry as applied to man, he considered that the data were insufficient. The war, which made the study of alimentation urgent, proved that we possessed still far too little knowledge of the energy requirements of troops in the field. Such advice as could be given was also lacking in precision for another reason namely, that either we had too little knowledge of or too little faith in chemical considerations as applied to the science of nutrition. Only by the full consideration of chemical details were adequate criteria made available for dietetics. Energy contents could not be the sole criterion in the case of any diet. An animal might receive, digest, absorb, and in a sense fully metabolize a diet consisting of all the recognized basal foodstuffs, in sufficient or more than sufficient quantity to provide energy, and yet its nutrition might be so abnormal that neither growth nor health could be maintained.

He then entered upon a discussion of isodynamic equivalence: it was Ruebner who developed the doctrine that the energy exchanges of living matter gave a higher and more significant criterion of human life than could be provided by any mere estimation of material changes. In his endeavour to arrive at some criterion of life other than the material, Ruebner sublimated the conception of energy, and the lecturer noted that from the more philosophical point of view this was supported by Bergson. The standpoint of energetics, wherefrom the chemical materials on which life was based appeared to be relatively of small importance, was still dominant in some of the highest quarters. The basis of the doctrine was that one foodstuff could replace another without disturbance to the nutrition so long as the energy supply was maintained. This involved a *suggestio falsi.* No one of the fundamental foodstuffs could replace another. A minimum of each basal foodstuff was essential to the body. If the term "law" could be used in biological science at all, it might be said that in the dynamics of nutrition the law of the minimum overrode the law of isodynamic equivalence. It was even true that a certain minimum of carbohydrates was required to secure full utilization of fat, and the converse also seemed to hold good—that a certain minimum of fat was necessary for the proper utilization of carbohydrates. The law of isodynamic equivalence, so far from having that absolute character which would give it a theoretical importance, might very well also fail as a guide in practice.

The complex molecule of protein consisted of some twenty structural units assembled in what might be called the molecular pattern of the protein. They all belonged to one chemical genus, since all were residues of amino-acids, but each represented a separate species, since each had elements of molecular structure which differentiated it from all the rest. In the molecular patterns of diverse proteins any individual unit might recur, in one case seldom, and in another many times. In digestion the pattern of the protein consumed was destroyed; the processes in the alimentary tract liberated the constituent units, and these for the most part, if not entirely, were free and individual when by way of the blood they reached the tissues. The body could dispense with certain parts of its food protein, usually with the amino-acids of simple structure; some it dispensed with less easily, and others, usually the more complex in structure, it found wholly indispensable.

Nutrition might wholly fail even when the supply of protein, no less than that of fats, carbohydrates, and minerals, was perfect. In that case a vitamine deficiency would be looked for. The subject of vitamines was no longer in any strict sense new, but its practical importance still needed appraisement. There was as yet no other definition of the vitamine as a nutrient than that which was based on its indispensability, its very low effective concentration, and ignorance of its nature. This was not a case of the known masquerading as the unknown, for the technique employed in exploring vitamines had by now attained considerable accuracy. At least three vitamines were known, and it was quite possible that others existed, and that other deficiency diseases might be traced to their absence. In view of the evidence, the endeavours which were being made to bring scurvy into the category of intoxications could only be due to an obsession that some positive element, some intruder, so to speak, must always dominate etiology. No doubt the term "negative cause" was abhorrent in formal logic, but the objection to a term was a small matter. There were some, however, whose objection went beyond the term, and who thought that the production of phenomena like the symptoms of a disease could only be due to some positive factor. There were those who appeared to think it logical to attribute a condition to some cause of excess, but illogical to attribute it to some cause of deficiency. He maintained that the reason for scurvy was the absence of the unstable antiscorbutic vitamine, and that it was a sufficient reason. Deficiency might be a real element in etiology.

Before closing, Professor Hopkins referred again to the possibility that an ill-balanced supply might be the reason for failure in health even when the actual supply was sufficient, and he dealt with the evidence forthcoming in cases of pellagra in support of this view. The recognition of specificity in proteins was of more than academic importance. If the application of all these considerations to practical medicine bore only upon the production of actual disease they would be important enough, but not so important as he believed they really were. A deficiency which in its extreme form produced a disease that could be labelled would almost certainly, when less extreme, produce some failure in health or development. From a better grasp of these principles we might be led to make the failure of health and development in children a little more referable to nurture instead of to Nature, to environment instead of to heredity, and therefore more capable of direct remedy.

On the proposition of Sir JAMES GALLOWAY, seconded by Sir HERBERT WATERHOUSE, a cordial vote of thanks was passed to Professor Hopkins.

POST-GRADUATE TEACHING IN LONDON.

THE annual meeting of the amalgamated Fellowship of Medicine and Post-Graduate Medical Association was held at the house of the Royal Society of Medicine on November 25th. The President, Sir GEORGE MAKINS, was in the chair.

The annual report, read by Mr. HERBERT PATERSON, one of the honorary secretaries, stated that since the beginning of the year 365 persons had availed themselves of the various courses, and that the majority took tickets for two or three months—some for five or six. Of the total, 153 came from the British Isles, 77 from the Dominions, and 29 from India; 12 officers of the Medical Service R.N., 10 of the Indian Medical Service, and 11 of the Colonial Services had attended. Of the foreign members 38 came from the United States of America, 5 from Switzerland, and 4 each from Norway and Holland; various other countries, including Spain, Serbia, and Japan, were represented. The number in 1919, owing to the exceptional conditions of that year, was very much larger, but the total for this year was, in the circumstances, considered to be encouraging, indicating very clearly that there was a demand. During the year five additional hospitals had offered facilities for post-graduate study. Dr. Eric Pritchard had given three courses on infant welfare at the St. Marylebone General Dispensary, and Mr. J. M. Hepburn a course of demonstrations in ophthalmology at Moorfields; a series of special "gynaecological talks" had been given by Mr. Victor Bonney at the Middlesex Hospital on Saturday mornings, and special lectures had been given at the Cancer Hospital. It was proposed to arrange at these and other hospitals similar short courses, lasting two or three weeks, in various branches of medicine and surgery, and it was hoped to have at least one such course in progress at any given time. Two special courses at the National Hospital for the Paralysed and Epileptic had been thrown open to members of the Fellowship; courses were given also at the National Hospital for Diseases of the Heart, St. Mark's Hospital, and the North-East London Post-Graduate College. The report was adopted, together with a cordial vote of thanks to the Royal Society of Medicine for its generosity in placing an office at disposal.

A discussion ensued, during the course of which suggestions were made for the organization of teaching in special hospitals. Dr. BLACKER, Dean of University College Hospital Medical School, said that in place of looking to the teaching hospitals, steps should be taken to organize teaching in special hospitals. There was a movement on foot, shortly to be considered by the staffs of the special hospitals, for post-graduate courses in obstetrics and gynaecology; it would be possible for these hospitals and for other special hospitals to reserve appointments as residents and clinical assistants for post-graduates. Dr. EISENDRATH, Secretary of the Chicago University Medical School, gave an account of the arrangements which are being made there. The university had received large capital gifts from the Carnegie and Rockefeller trustees, and part of the money would be devoted to establishing a first-rate post-graduate school. It was proposed to reserve two hospitals for this purpose, and to have three kinds of courses: (1) A course lasting three years in some speciality, a successful candidate receiving a degree; (2) a shorter course of instruction in a speciality, the candidate receiving a certificate; and (3) so-called "brush-up" or revision courses lasting short periods—from a few days to a few months. Probably 75 per cent. of those who joined the school would take these short courses. It was proposed that the school should have a central meeting place, where there would be an office for supplying information. Sir STCLAIR THOMSON insisted upon the need for organizing courses at special hospitals; taking otology as an example, he said that the course should begin with instruction in the anatomy of the part, it should pass on to the pathology and diagnosis of the diseases by which it was affected; and would conclude with practical instruction in manipulations. Dr. HURST suggested that such courses in certain subjects might be arranged at teaching hospitals. The CHAIRMAN observed that it was necessary to have a post-graduate centre in London; it should be obtained as soon as possible. Negotiations to acquire a hospital to serve as such a centre had so far not come to anything.

Sir ARBUTHNOT LANE, treasurer, presented the annual financial statement, which showed that after meeting the cost of administration and of the publication of the weekly *Bulletin* there remained a sum of £600 out of which to make provision for the remuneration of teachers; it was resolved to leave to the Council the allocation of this money among the various hospitals. During a brief discussion the inadequacy of the sum was recognized, and it was pointed out that the Chicago school had found it necessary to obtain an endowment. Assuming that there was no prospect of raising an endowment fund here it was asked whether it might not be feasible to obtain an annual subsidy from the Treasury, such as is, under certain conditions, paid to undergraduate schools.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received from October 19th to November 27th, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards a presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

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THE late Sir Frank Mappin has by his will bequeathed £5,000 each to the Royal Infirmary and the Royal Hospital, Sheffield, and £2,000 each to the Jessop Hospital for Women and the Sheffield Children's Hospital.

British Medical Journal.

SATURDAY, DECEMBER 4TH, 1920.

THE PUBLIC PRESS AND THE PUBLIC HEALTH.

DURING the last few years the lay press has shown a remarkable and very welcome interest in matters concerning the public health; the expression of this interest has been of much educative value, and has been all to the good. The history of medicine in England during the last sixty years or more tends to prove that it has advanced in large measure at the pace that public opinion has sanctioned; through no channel is it so possible to create and encourage a right opinion on the various advances in medicine and the direction which such advances should take as through the lay press. Recently, however, the columns of some of our leading lay contemporaries have been opened to the expression of opinions and the enunciation of criticisms which we are compelled to conclude have been biassed by considerations having as their basis political predilections rather than a sincere desire for the advancement of public health and social welfare.

The position that has thus arisen would not directly concern the medical profession as a whole were it not for the fact that an important principle is at stake, a principle that may reasonably be said to be one of the fundamental axioms of citizenship. It is in accordance with the tradition of politics that politicians should be criticized in the public press. They take sides and are open to attack; but when permanent members of the Civil Service are thus criticized the case is different, and the matter is made worse when the accusations are founded not on fact but on error, arguments so based being used with, it would appear, a political intent.

The assertions that have recently appeared with regard to, for instance, sanatorium treatment, the appointment by the Ministry of Health of referees, the size of insurance practices, and hospitals, are misleading, and in some cases are so wide of the truth that they can only be termed ill-informed and irresponsible. It has been stated, for example, that by March 31st, 1920, the Ministry had approved 9,624 beds in sanatoriums, etc., whereas we are informed that the number of beds in approved sanatoriums, etc., on that date was 15,701. The results of open air or sanatorium treatment of phthisis have admittedly been disappointing. That experience, however, has not been peculiar to this country; nowhere have the first hopes been realized. The optimist will say that the treatment has seldom had a fair trial, that it has been used for advanced cases to which it is not applicable, that, in early cases, a few months' open-air treatment is insufficient, and that a much more elaborate organization, including sanatoriums at the one end and industrial homes at the other, is needed. It is, however, only fair to remember that the tuberculosis schemes of many local authorities were only in the initial stages when the war broke out and stopped all substantial progress. The exact value of sanatorium treatment and the conditions under which it will yield the best results can only be determined by experiment on a large scale.

Again the attention of the public has been arrested by a statement which conveyed the impression that as a general rule an insurance doctor was expected to treat 3,000 insurance patients in a year. But what are the facts? Of the 12,000 insurance practitioners, only 254 have 3,000 or more persons on their insurance list, and 7,204 have less than 900. After the end of this year no one practitioner will be allowed to have more than 3,000 on his list. There seems to have been a desire to induce the public to think that if a doctor had 3,000 insured persons on his list, he had to treat each of those 3,000 persons as patients during the year; this, of course, is not the case; the records indicate that about 60 per cent. of persons entitled to treatment apply for it in any year. A great deal is made of the introduction of so-called army methods through the appointment of referees, who, it is assumed, will interfere with the work of insurance doctors. It is, however, to be noted that the appointment of independent whole-time medical referees was demanded by the doctors engaged in this work, and was adopted as the policy of the British Medical Association in 1913. They are appointed to assist practitioners in the organization of their work so as to secure to the insured persons adequate treatment. The proposal was approved by Parliament in 1914, but owing to the war the appointments were not made at that time. We must protest also against recent statements made in some of our contemporaries, tending to suggest that the public cannot feel confident that the secrets they entrust to Government departments are safe. It is implied that the integrity of the medical officers of such departments is not above suspicion. Any such suggestion can be made only by those who do not know the facts or by those who wish deliberately to secure their ends by unfair means. One assertion by the medical correspondent of the *Times* seems particularly uncalled for. He says that there is nothing to prevent one of the medical referees turning over official records of a private and confidential nature to his wife to be scrutinized. The implied insinuation is entirely unwarranted.

We may leave Dr. Addison to dispose of the charge made specifically against him of being anxious to put the voluntary hospitals on the rates. It seems a little improbable, even though his Ministry is accused of being one of the worst of Government spendthrifts. The position is difficult, for the hospitals must be continued, and Dr. Addison will have the goodwill of the profession and the public in taking steps to prevent so serious a blow to the interests of the community as would be inflicted by the closing of the large general hospitals. As we have said before, it is, we think, to be regretted that the hospital legislation was introduced in a single clause of an omnibus bill. No doubt the matter became urgent during the summer, but there is a good deal in the contention of a considerable body of members of Parliament that the position ought to be fully examined by a strong committee, which could investigate it from the point of view of the individual patient, the community, and medical education. Such a committee would have the advantage of the considered views of the Medical Consultative Council of the Ministry. Dr. Addison has not accepted the suggestion to its full extent, but on Tuesday promised to appoint a small independent committee to inquire into the financial position of the voluntary hospitals throughout the country and to make recommendations to him. Pending the report of the committee he withdrew that part of Clause 11 which authorized counties and county boroughs to contribute to voluntary hospitals. The provisions with regard to Poor Law infirmaries he maintained.

It may be remarked that the relations of the medical profession and the Government have been steadily improving during the past few years, owing to the frank acceptance by Government departments of the necessity of consulting the medical profession on matters in which medicine is deeply concerned. Among the principles and methods of the Ministry of Health which have recently been the subject of attack are some which were in fact adopted by the Ministry at the special desire of the medical profession and in consultation with its representatives.

THE TREATMENT OF ANTHRAX WITH NORMAL OX SERUM.

In an interesting monograph,[1] recently issued from the National Institute of Hygiene of the Argentine Republic, J. Penna, J. Bonorino Cuenca, and R. Kraus describe the steps that led to the employment of normal ox serum in the treatment of anthrax in the human subject and the remarkable results obtained. The large quantity of serum from an immunized animal that is needed in the treatment of anthrax served to draw attention to the need of a better method, and the absence of demonstrable antibodies in this therapeutic serum led to an investigation of the value of serum from normal animals for protecting against anthrax.

In the first part of the monograph is described in detail the experimental evidence which led to the conclusion that serum of a normal ox compares favourably with that of the immunized animal for protecting a rabbit of 600 to 800 grams against a lethal dose of living anthrax bacilli. This protective property also obtains in the case of serum of the normal horse, mule, and sheep. The protective power of normal ox serum varies in different animals; but as the authors could always find some specimens of normal ox serum as strong in protective power as the serum of the immunized animal they proceeded to apply carefully tested normal ox serum for the treatment of anthrax in the human subject. Before use the normal ox serum was heated twice for half an hour to 56° C. for the purpose of eliminating any toxicity it might possess. Ox serum so heated did not produce in man any bad reaction, even when injected intravenously. The usual dose given was 30 to 50 c.cm., which in bad cases is injected intravenously, but in milder cases may be given subcutaneously or intramuscularly. In some mild cases it may not be necessary to give as much. The dose is repeated in from twenty-four to forty-eight hours if necessary. In applying this new treatment to human cases of anthrax they began with great caution, and first of all treated moderately severe cases with the serum of an immunized ox. This proving successful, they next tried serum of the normal ox, and found it to succeed equally well. Having thus obtained confirmation of the protective value of normal ox serum for treating the disease in the human subject, they proceeded to apply the method on a wide scale.

After injection of the normal ox serum, whatever the route employed, the reaction of Sclavo is observed. This consists of a rise of temperature which returns to normal in twenty-four to forty-eight hours and at the same time the inflammation and oedema at the site of the malignant pustule diminishes. In some cases the local oedema persists or the temperature remains up until another injection of the normal ox serum is given.

Full particulars are stated of the clinical features of 200 cases of anthrax treated at the Muniz Hospital with normal ox serum. In all of the cases the anthrax bacillus was demonstrated in the local lesion by film preparations and in the majority it was obtained by culture as well. In sixteen of these cases a positive blood culture was obtained. The situation of the malignant pustule in these 200 cases was as follows: Face and head 73, neck 56, thorax 11, arms 29, hand 25, leg 4, abdomen 2. In addition to these 200, 180 further cases of anthrax have been treated with normal ox serum, making in all 380. The mortality was 6.2 per cent. Sixteen of the cases treated were instances of intestinal anthrax which are always fatal, and these the serum failed to cure. It is noteworthy that six of the cases of anthrax septicaemia recovered on treatment with the normal ox serum. The authors are puzzled to account for the fact that all the intestinal anthrax cases died as usual, while some of the septicaemic cases recovered with the serum treatment; they incline to the view that the intestinal cases are metastatic in origin and only occur in the worst form of infection. In addition to the cases referred to, 418 cases of anthrax were treated in five other hospitals with normal ox serum, with a mortality of 4.3 per cent.

The exact appraisement of these results is difficult, owing to the extent to which anthrax mortality fluctuates. Thus between 1905 and 1914 the mortality in the Muniz Hospital varied between a minimum of 2.7 and a maximum of 25.0 per cent. Sclavo treated 164 cases with his well known immune serum, with a mortality of 6.09 per cent. That the normal ox serum has remarkable protective properties against anthrax, both experimentally and therapeutically, seems evident, and the treatment is being tried in the Argentine on a wide scale with encouraging results. The extraordinary thing is that the protective power of serum from normal animals, such as the ox, against anthrax should not have been discovered before. The mode of action of the serum is at present obscure, but light on this matter will doubtless be forthcoming before long with the problem in the hands of such a distinguished pioneer in serology as R. Kraus.

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NOMENCLATURE OF DISEASES.

In a letter printed in our issue of November 27th (p. 843) Dr. Guillermo Arbulú made some suggestions with regard to the nomenclature of diseases, and he forwarded a memorandum presented by himself and Dr. H. Jaworski, as delegates from Peru, to the Commission Internationale chargée de la Revision des Nomenclatures Nosologiques, which met in Paris last October. This paper contains further illustrations of the suggested changes for unifying the nomenclature of diseases, and it may be well to refer briefly to this subject. As pointed out in Dr. Arbulú's letter, the termination "itis" should be retained for inflammatory affections, but in addition diseases due to bacterial infection (the word "bacillary" was used in the letter, but the memorandum, and of course the context, shows that bacterial was meant) should have the affix "osis"—for example, cholerosis, tetanosis, epidemic cerebro-spinal meningosis; while other parasitic (protozoan and metazoan) infections should take the termination "iasis," familiar in trypanosomiasis and trichiniasis. In this way an attempt is made to secure uniformity on an etiological basis, and instead of names capriciously dictated by chance or custom for infective diseases, such as syphilis, erysipelas, and gonorrhoea, there would be substituted titles on a consistent basis, such as syphilosis, erysipelosis, and gonococcosis. It is further hoped that such an arrangement would stimulate medical men to accuracy in diagnosis, and that statistical results would benefit from the greater prominence given to the factor of infection. As thus stated, the suggested modifications certainly seem attractive, but very little reflection shows that their adoption—and it appears that the international commission accepted the proposed terminology as alternative to that at present in use—will not be unattended by difficulties. The termination "osis" is in common use without any such etiological significance—for example, in necrosis, neurosis, gliosis, dermatosis, chlorosis, and scoliosis; and restriction of the termination to bacterial diseases would be so troublesome as to outweigh the advantages. The affix "iasis," which it is proposed should indicate parasitic diseases, is well established in psoriasis, leontiasis, and some other diseases of a different nature. In some instances a title inappropriate under this scheme might be changed without much difficulty; thus, pediculosis might give way to phthiriasis, and hydatidosis, a term seldom used, might be transformed into hydatidiasis; but some protozoan infections, such as spirillosis and spirochaetosis, have taken root, and would be less easily converted into spirilliasis and spirochaetiasis. Drs. Arbulú and Jaworski, indeed, proposed the termination "osis" for the following protozoan infections: Syphilosis, *fièvre récurrentosique*, and *fièvre paludosique*, the latter, it should be added, being altered in Dr. Arbulú's letter to paludiasis. The adoption of this scheme would entail two names, differing only in their termination it is true, for many clinical conditions: thus, to quote from the memorandum, inflammation of the kidney not proved to be bacterial—for example, that due to alcohol—would still be called nephritis, whereas that undoubtedly caused by the gonococcus would take the title nephrosis; similarly, this nomenclature would contain endocarditis and endocardosis, phlebitis and phlebosis, appendicitis and appendicosis, pleurisy and pleurosis. On behalf of the scheme it might indeed be urged that a very similar use of two terms is often seen now. For example, at first inflammation of the pleura is called simple pleurisy; later, after the causal factor has been determined, it may be spoken of as tuberculous or pneumococcic pleurisy, as the case may be. But the points raised above show the reason for much careful consideration before finally agreeing to an alteration which, though logical and consistent at first sight, would entail considerable disturbance and difficulties.

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[1] *El Tratamiento del Carbunclo Humano Con el Suero Normal de Bovino.* J. Penna, J. Bonorino Cuenca, R. Kraus. Buenos Aires. 1920.

THE HOME AMBULANCE SERVICE.

THE Home Service Ambulance Committee of the Joint Council of the British Red Cross Society and the Order of St. John completed a year's work at the end of October. The ambulances in each county are under the general direction of the County Director; the number at work is 231, and the number of cases carried during the year was 31,255. The intention is to have an ambulance station at every fifteen miles and it seems probable that this aim will shortly be attained. In setting on foot on a large scale an entirely new organization for the transport of the sick, as has been the task of the Committee, it was inevitable that results should vary with variations in the efficiency and thoroughness of the local administration. A great demand was made on all county directors and their staffs in devising the best means for developing the ambulance services on lines which would most fully meet the needs of each county. The demand was willingly met in all cases, but, as was to be expected, since the whole scheme was an experiment, the degree of success has varied considerably. The returns show that the extent to which the ambulances have been used has not been a matter so much of density of population or lack of existing means of transport, as of the labour, enthusiasm, and initiative displayed by individual organizers. Where a strong local committee exists, where special efforts have been made to make known the existence of the ambulances, and in particular in counties where an officer has been specially appointed to direct the ambulance service, a large number of patients have been carried, even in rural areas, and financial difficulties have been easily overcome. Many of the ambulances first issued were found too heavy for the work, and lighter ambulances, which are now being supplied, will not only be more suitable for country roads, but less expensive to maintain. The Committee is purchasing Ford chassis, and the work of constructing ambulance bodies for them is carried on in its own workshops. The difficulty of erecting on a short chassis an ambulance body which will provide ample room for the patient without undue overhang, has been surmounted; patients report that the new cars run most smoothly. In some areas the ambulances have been used to carry school children to clinics for periodical examinations, and also to remove children from hospitals after operations for tonsils and adenoids. The executive officers are in consultation with the Ministry of Health and the Education Committee of the London County Council, and it is anticipated that the use of the ambulances for these purposes will be considerably extended. The ambulances are also used, both in the country and in London, to carry pensioner patients for hospital treatment, and the Ministry of Pensions has now invited the Committee to undertake the same work in Wales.

NATIONAL RELIEF FUND HOSPITAL GRANT.

THE Executive Committee of the National Relief Fund has appointed a special committee to advise it as to the distribution of the English and Welsh share of the grant voted towards the reduction of the war deficits of the voluntary hospitals of the United Kingdom. The total grant is £700,000, and the amount applicable to England and Wales is £560,000. The Distribution Committee consists of Sir George Murray (chairman), Sir Napier Burnett, K.B.E., M.D., the Rev. G. B. Cronshaw, Treasurer Radcliffe Infirmary, Oxford, Miss Mary Macarthur, Sir Arthur Robinson, K.C.B., Secretary of the Ministry of Health, and Viscount Sandhurst. Since the amount available will not be sufficient to allow of all deficits being paid off in full, the Committee of the Fund has decided that assistance must in general be limited to hospitals having a resident medical staff and at least fifty beds. In special cases, however, the Distribution Committee has a discretion to recommend grants to hospitals with less than fifty beds. No grant will be made in cases where the deficit for the five years ending December 31st, 1919, is less than £500; and cottage hospitals, convalescent homes, and sanatoriums are definitely excluded. Application forms have now been issued to all hospitals eligible for assistance.

DR. BARNES OF CARLISLE.

DR. HENRY BARNES, who was President of the British Medical Association when it held its annual meeting in Carlisle in 1896, has recently been appointed president of the Cumberland Infirmary, and the members of the honorary medical staff took advantage of the occasion to present him with a silver inkstand as a mark of their esteem and regard. The presentation was made by Dr. Lediard, senior surgeon, who said that he had been associated with Dr. Barnes as a colleague for forty years. Dr. Barnes's own association with the Infirmary covered forty seven years, for he was appointed physician in July, 1873. He held the appointment with distinguished success for thirty years, and soon after his retirement he was elected chairman of the Committee of Management, a position he held until 1910. During his term of office it was decided to extend the buildings, and the new wards of the Edward wing were opened in 1912. The extension also included nurses' new quarters, and, in recognition of Dr. Barnes's services, that part of the new building was called the Barnes Wing. Dr. Barnes, in acknowledging the presentation, recalled that the foundation stone of the Infirmary was laid in October, 1830; owing to various difficulties, however, it was not open to patients until 1842. His uncle, Dr. Barnes, was the real founder of the Infirmary, and its first physician. The first surgeon to the Infirmary was Mr. Page, and one of his successors was Mr. Herbert Page, afterwards surgeon to St. Mary's Hospital. In conclusion, Dr. Barnes said that the financial outlook for the Infirmary was serious; but Dr. Lediard had previously said that Dr. Barnes himself was a magnetic collector of funds, and a sound business director as well as a genial colleague.

THE EFFECT OF CERTAIN DIETARY DEFICIENCIES ON THE ADRENALS.

In a paper communicated by Mr. W. B. Hardy, F.R.S., to the Royal Society on November 11th Mr. C. H. Kellaway gave an account of an investigation carried out in order to throw further light on the important observations recently made by Colonel McCarrison concerning the increase in size and in content of adrenalin of the suprarenals of pigeons fed on polished rice. Colonel McCarrison's observations on this subject were first published in this country in this Journal on February 15th, 1919. A fuller account appeared subsequently in the *Indian Journal of Medical Research.* Mr. Kellaway confirms McCarrison's observations. The changes described by McCarrison in the adrenal glands were found constantly by Kellaway in pigeons when the diet consisted of polished rice alone, or when an adequate ration of protein (casein rendered free from fat and from accessory factors by repeated extraction with alcohol and ether) or fat was added to the dietary, and were associated with the appearance of polyneuritis. The daily administration of a sufficient amount of "marmite" to the diet of polished rice prevented these changes from occurring. An attempt was made to explain the enlargement of the adrenals as being due partly to congestion and oedema of the gland tissues, and partly to the storage in the cortex of the gland of lipoids set free by the breaking down of body tissues, which occurs in birds fed on diets deficient in the water-soluble B factor. The investigation of the cholesterol content of the adrenals of normal and polyneuritic birds did not support this theory of lipoid storage. The increased residual content of adrenalin was attributed to diminished output of adrenalin, as a result of the greatly lowered metabolism in birds fed on deficiency dietaries. The histological appearances of the glands suggested obstruction of the venous outflow from the medulla by cortical hypertrophy as an additional cause. Oedema in birds fed on deficient diets was of infrequent occurrence, and could not be produced by the daily administration of large doses of adrenalin. Kellaway is of opinion that it is not causally related to increased output of adrenalin. He points out that this view is in harmony with the more recently expressed views of McCarrison.

THE ENDOCRINE GLANDS AND DENTAL DISEASE.

The literature on the influence of the ductless glands on metabolism is enormous, and to this must be added the considerable discussions on the interaction of the endocrine glands and on the conception of pluriglandular insufficiency. It must be admitted that on these seductive problems hypothesis has often outstripped solid knowledge. The effect of calcium salts on metabolism has also aroused much attention, and the part played by the endocrine glands, especially the parathyroids, in the calcium content of the blood has been investigated. Tetany has been thought to depend on excessive loss of calcium from the body, so called calcium diabetes, due to absence or deficiency of parathyroid secretion, and there is no doubt that the administration of calcium rapidly relieves the symptoms of tetany. In 1918 Howland and Marriott proved that the calcium content of the blood is greatly reduced in tetany, but, though admitting that there are many points of resemblance between the tetany of parathyroidectomized dogs and the human disease, they concluded that there is not sufficient evidence to show that infantile tetany depends on an organic change or even on a functional disorder of the parathyroids. The uncertain state of physiological knowledge as to the relation between the endocrine glands and calcium metabolism must necessarily be kept in mind in practical medicine, but it should not exert undue influence, for it must be admitted that the empirical success of drugs has in the past usually preceded the scientific rationale of their action. These considerations apply to a suggestive paper on "The effect of endocrine derangement on the teeth" by Mr. F. W. Broderick,[1] in which, from a review of current physiology and from some observations on the alkalinity and calcium content of the saliva, the hypothesis is put forward that the disposing cause of dental caries is a deficiency of calcium, or, as it is called, calcium hunger, due to an upset of the normal balance between the endocrine glands. A deficiency of calcium in the blood, he believes, diminishes the alkalinity of the saliva and the calcium content to which the alkalinity is in great part due. By giving extracts of the adrenal and pituitary glands combined with either thyroid or parathyroid extract Mr. Broderick was able to increase the alkalinity and calcium content of the saliva. If the views, first, that the exciting, as opposed to the dsipsoing, cause of dental caries is acid fermentation of carbohydrates, and secondly, that lactic acid will combine more readily with a salivary salt than with the calcium of the enamel of the teeth, be accepted, the bearing of the alterations thus produced in the saliva by the administration of endocrine extracts is obvious. Arrested caries, on the other hand, is regarded as the outcome of hypercalcification, such as may be induced by treatment. The antagonism between pyorrhoea and dental caries is correlated with their association with opposite conditions of calcium—excess of calcium in pyorrhoea, deficiency in caries. In support of his contention that the glands of internal secretion, by their effect on the calcium content, influence the incidence of dental disease Mr. Broderick brings forward a number of clinical arguments; and, while he modestly admits that his conclusions may not carry complete conviction, it must be agreed that he has courageously begun an attack on a difficult problem, on which much more light and research are required before a final decision can be accepted.

At the request of the General Medical Council we publish this week in the Supplement, at page 155, a list of retired medical officers of the Royal Navy or Army Medical Service who have not responded to the inquiries of the Registrar made by him under Section 14 of the Medical Act, 1858.

The Royal College of Surgeons of England has decided to hold an additional final examination for the Fellowship. This extra examination, which will begin on February 11th, 1921, has been arranged because, owing to the absence of so many surgeons during the war, the number of candidates eligible to enter for the examination is very large.

On St. Andrew's Day, November 30th, the retiring President of the Royal Society, Sir Joseph Thomson, O.M., presented this year's medals. The Copley Medal is awarded to Dr. Horace T. Brown for his work on the chemistry of carbohydrates, the assimilation of atmospheric carbon dioxide by leaves, and on gaseous diffusion through small apertures. The Royal Medals are awarded —one to Dr. William Beatson, for his contributions to biological science, and the other to Professor G. H. Hardy for his researches in pure mathematics. Professor R. H. Biffen receives the Darwin Medal for his work on scientific principles applied to the breeding of plants, Lord Rayleigh the Rumford Medal, Professor O. W. Richardson the Hughes Medal, and Mr. C. T. Heycock the Davy Medal. Sir David Prain, I.M.S.(ret.), has been re-elected Treasurer, and among the members of the new Council are Sir Walter Fletcher, Sir William Leishman, and Dr. Sidney Martin. The anniversary dinner was held on the same evening, when the new President, Professor C. S. Sherrington, M.D., took the chair, and Dr. Horace Brown replied to the toast of the medallists.

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[1] F. W. Broderick: *Brit. Dent. Journ.*, 1920, 955-975.

Medical Notes in Parliament.

The Ministry of Health Bill.

INCIPIENT MENTAL DISORDER HOMES.

Clause 10 of the Ministry of Health Bill was considered in Grand Committee on November 24th, when the provision with regard to the period during which a person suffering from incipient mental disorder might be received without certificate in a home or institution "for a period not exceeding six months or such longer period not exceeding in all twelve months as may be approved by the Minister and whether for payment or not" was amended by the omission of the words after "six months." Dr. Addison said that the time during which a person might be in one of these places as a patient was thus limited to six months. His view was that within that period the question of incipiency would be determined.

A long discussion took place on an amendment by Earl Winterton to leave out the words "whether for payment or not." Before he could agree to this provision he wanted to be assured by the Minister of Health that it was absolutely necessary to encourage these homes for the mentally afflicted to be run at a profit. The whole idea was repugnant to him, particularly where ex-soldiers were concerned. In their case he thought the State should be prepared to act.

Dr. Addison pointed out that the words in the clause were not "for profit," but "for payment." That was an important distinction, though he did not say that it would prevent profit being made on such homes. The Ministry of Pensions made payments for cases of this class in certain institutions, and hospitals now charged patients who could afford to pay. In such cases payments were for services rendered. The aim, particularly in regard to the ex-service men, was to obtain a more extensive development of out-patient clinics and more facilities for them at the voluntary hospitals. It might be possible for the experts attached to mental hospitals to attend out-patients at these places and to develop treatment under the general hospital scheme at institutions which were not labelled "lunacy" at [illegible] obtaining at the same time skilled advice from the members of the staff. He had received a petition signed by 100 members of Parliament suggesting that provision should be made for this class of patient.

Dr. Nathan Raw concurred in the opinion that mental disease should be treated in the same way as any form of physical disease. It would not be possible to treat all cases of incipient mental disorder without profit. The only alternative was for the State or the proper authority to deal with all these cases, but in the present temper of the House that was out of the question.

Dr. Farquharson said that the risk of interference with liberty could be met simply by requiring that a report must be submitted in writing to the Minister of Health before a person, suffering from incipient mental disorder of recent origin, voluntarily resident in a house or home, was certified a lunatic.

Dr. Fremantle thought that the proper course was for these cases of incipient mental disorder to go to general hospitals. [illegible] was that lunatic asylums should no longer be asylums where people were shut up for the protection of [illegible] and the public, which was the basis of the lunacy laws, but that they should be mental hospitals with a view to general treatment, improvement and recovery with as little delay as possible. The Mental Asylums Committee of the London County Council felt that if provision could not be got in any other way, the London County Council as the authority dealing with the whole area of London, could make provision for [illegible] hospitals. The county [illegible] would be able to take in voluntary boarders, [illegible] of introducing up-to-date treatment [illegible].

Dr. Murray felt strongly that it was desirable to avoid the [illegible] these people. That was why [illegible] treated at general hospitals, and he pointed out that under Clause 11 of the bill the local [illegible] of contributing to these [illegible]. He had no fundamental objection to these [illegible] properly inspected and [illegible].

[illegible]

[illegible]

[illegible]

[illegible] If the proposals in Clause 11, enabling an authority to take over a Poor Law infirmary, were carried, they would be able, with this clause previously inserted in the bill, to set aside a ward for the treatment of this class of patient. The Lunacy (Scotland) Act, 1866, contained in Section 13 provision on the lines of this clause. A considerable number of these cases had been sent to Scotland from England for this form of treatment.

Dr. Fremantle moved a new section to provide that this class of patient might be received in existing asylums, but on appeal from Dr. Addison, withdrew it.

An amendment by Dr. Raw, that a patient should give forty-eight hours' notice of desire to leave, was accepted by the Minister. Dr. Raw pointed out that in cases with homicidal or suicidal tendency it was very desirable there should be time for communication with friends or relatives. The word "discharged" was afterwards, at the instance of Dr. Addison, deleted in favour of the word "leave" so as further to free the clause from any lunacy suggestion. It should be added that the clause provides for the personal delivery of notice to the superintendent of the home, or alternatively of sending it by post to the Minister.

Dr. Raw moved an amendment that after the words "consent in writing" (in reference to admission to a home), the words should be inserted "or in case of mental incapacity by consent in writing of his nearest relative."

Dr. Addison said that this was an important point, and he should vote for the amendment. The advantage on one side was that it would enable a large number to be treated who would otherwise be shut out. The disadvantage on the other side was that it might open the door to a person getting somebody put in for improper reasons. There would, however, be the safeguard that if they were in they could walk out at any time. On a division, 14 members voted for the amendment and 20 against.

At the instance of Dr. Fremantle the word "recommendation" was substituted for that of "certificate" in reference to the letter of a medical man required before a person could be admitted. A further amendment moved by Dr. Fremantle—that only one recommendation and not two, as was proposed in the clause, should be required—was accepted by the Committee.

Dr. Addison afterwards accepted the following additions, moved by Mr. Betterton, to subsection (2):

> No institution, home, or house shall be approved by the Minister unless the superintendent, or other person, by whatever name called, having charge thereof undertakes to reside in the house;
>
> In the case where the institution, home, or house approved by the Minister is under the control of two or more persons, and if any of such persons dies leaving the other surviving, and one of the survivors gives a written undertaking to reside on the premises, the condition imposed in the previous subsection shall be deemed to have been complied with;
>
> No material alteration or addition shall be made to any institution, home, or house approved by the Minister for the purposes prescribed in this section without the previous consent in writing of the Minister;
>
> In the event of a breach of any of the conditions in this section contained, the approval by the Minister of any institution, home, or house may be withdrawn without prejudice to the liability of any person to be proceeded against for an offence under any Act.

Mr. Thomson moved as an addition to Subsection 3, that no members of the Lunacy Board of Commissioners, or any official of the said board, should be appointed as an inspector of the homes. His object, he said, was to ensure distinctly separate administration.

Colonel Wilson, for the Government, said that it was proposed by the Ministry that the inspection of these institutions should be carried out by medical officers on the staff of the Ministry, but it was obvious that the hands of the Minister must be left free. In certain special cases it might be necessary to utilize the experience of the Board of Control, and the Minister should be left free to do so.

The amendment was withdrawn.

Dr. Raw, as an addition to Subsection 3, proposed that it should be lawful for the council of any county or county borough, on such terms and conditions as might be approved by the Minister, to contribute to the expense of providing and maintaining any institution approved by the Minister for the purpose of the section.

Dr. Addison said that in normal times he would have supported the amendment, but he was afraid that under the present circumstances it would have a short life. If the Committee could be persuaded on Clause 11 to allow local authorities to take over Poor Law institutions, that would be the appropriate place for the treatment of these cases. Then no question would arise, as they were already rate-supported institutions, and would be open for the treatment of this class of cases as for any other. After further discussion the amendment was, by leave, withdrawn.

The Committee afterwards divided on the adoption of the clause as amended; this was carried by 17 votes to 10.

VOLUNTARY HOSPITALS.

Earl Winterton then moved the postponement of Clause 11. He did not believe that the voluntary hospital position was hopeless at the present time. The proposal, if it were carried out, would push the voluntary hospital system, which nobody denied was in a critical state, over the precipice to destruction. He therefore said, "Give the voluntary hospitals a chance to put their house in order, appoint a committee or a commission of inquiry into the whole position, and if that reported the position as hopeless and helpless, let the Government take their courage in both hands and bring forward a bill to take over the hospitals *en bloc*."

Mr. Ormsby-Gore, in seconding, said that a Committee should be set up to consider the whole question of the Poor Law hospitals and of the institutional health services of the country. As part and parcel of the hospital question should be included that of grants for clinical education, which were at present grossly inadequate. The Committee should consider the relation of the insurance system to the hospitals and the question of the payments now made by the State for preventing disease. Further, it would not be justifiable to proceed with the clause unless Parliament was prepared to tackle the nursing homes.

STATEMENT BY DR. ADDISON: COMMITTEE ON FINANCE.

Dr. Addison undertook to make a statement at the next meeting of the Committee. When the Committee reassembled, on November 30th, he said that the question of the voluntary hospitals was quite distinct from that of the Poor Law hospitals, and the clause would still stand so far as the reference to the Poor Law hospitals was concerned.

Every member of the Committee, to whatever party he belonged, would entirely agree with the tribute which was paid on the last occasion to the voluntary hospitals. It was impossible to overestimate the services which they had rendered, in some cases for centuries. He himself had been a member of the teaching staff of a hospital which went back to the Wars of the Roses. Was the position of the voluntary hospitals hopeless? He trusted that it was not. These institutions had been responsible for furthering the scientific progress of medicine to an extent which did not hold good of any other set of institutions in the country. It would be folly to do anything to cripple the initiative and enterprise which had been associated with them, and which was linked up so closely with the progress of medical science. Some figures had been placed before the Committee for the year 1918 showing that the discrepancy between the income and expenditure of the hospitals was not so great as had been imagined, though it had to be remembered that some of that income was in respect of services rendered in connexion with the war. But for the five years previous to 1918, whilst in the case of the provincial hospitals the ordinary income was £1,300,000 below the ordinary expenditure, and in the case of the London hospitals nearly £900,000 below, the accounts were practically squared if legacies during the same period could be reckoned as ordinary income. More recently, of course, the cost of management and of supplies had greatly increased, and in many districts contributions had not by any means kept pace. It was clear also that to take hospitals in the mass might give a misleading impression, because the conditions differed greatly in different cases, and any relative prosperity that there might be was not equally distributed. During the early summer he had conferred with the representatives of different London hospitals and others, and as a result of those conferences it was eventually arranged that a large sum of money from the National Relief Fund and a further large sum from the King Edward Fund should be available. He also made the suggestion that hospitals should, as far as possible, work together, and he was sure that a great deal could be done by improved organization in this respect, and by better methods of collecting contributions; also, to some extent—though it would be a mistake to exaggerate what could be obtained from this source—material assistance might be forthcoming in the shape of contributions from patients, who were generally willing to pay.

Therefore, it was only with the greatest possible reluctance that the provision was inserted in Clause 11 to empower county councils to make contributions out of the rates in aid of the hospitals. The question had been asked whether this would not dry up the sources of voluntary contributions. But in the case of maternity and child welfare and other services voluntary associations were still flourishing despite rate aid, and in some respects were flourishing more than ever. Of course, everything depended upon the way in which these matters were arranged, but it had been found, particularly in infant welfare work, that by careful management voluntary contributions need not cease to flow. Everyone felt the enormous importance of making no false step in a matter which affected the voluntary hospitals, and it was fair to say that by their own efforts [Dr. Addison appeared to mean the Ministry's effort] a material contribution had been made to the assistance of the hospitals during the last few months.

Nevertheless, at a meeting at which several members of both Houses of Parliament were present, it was urged upon him that an endeavour should be made to sustain the voluntary system if at all possible, and it was finally suggested by Colonel Mildmay that a committee of inquiry should be set up in this matter, and that it should be an independent committee in the sense that no doctor nor anyone concerned in hospital management, whose thoughts would naturally recur to their own institutions, should have a place on it, and that the chairman also should be a very impartial person. This committee was to report to the Minister. He had resolved, therefore, to appoint a small and independent committee of this kind to consider the financial position of the voluntary hospitals and to report as early as possible. Such a committee, if it was to report within a relatively short time, must not take too wide a range of inquiry; it must also be small, independent, and capable of dealing with the financial question in a definite way. The position of the voluntary hospitals was such that it was impossible to stand aside with no considered effort or scheme. He accordingly proposed to appoint such a committee forthwith. Its reference would be "to inquire into and report upon the financial position of the voluntary hospitals throughout the country and to make recommendations." As the suggestion was originally made, he might only have got a report, and what he wanted was constructive recommendations. The effect of accepting the suggestion pressed upon him—and he was only too glad to accept any suggestion which would bring the hospitals upon a solid basis—was that this particular proposal in Clause 11 would be deleted so far as the reference to voluntary hospitals was concerned. The ground would then be cleared for this Committee. He was sure that the goodwill and assistance of the British Hospitals Association and of the hospital authorities generally throughout the country would be forthcoming. In reply to questions from members, he said that he thought the membership of the committee should be restricted to five; it should be a strong, impartial, and independent body, and he did not suggest that any one identified with hospital management should be on it. Asked whether Ireland would be included in the reference, he said that the inquiry would, he believed, be limited to Great Britain.

Dr. Addison then went on to speak of the remaining part of the clause—that relating to Poor Law hospitals. He wished to emphasize the fact that this part remained in the bill. There were altogether 94,000 beds in Poor Law hospitals, which was twice as many as in voluntary hospitals, and out of that 94,000 the empty beds, taking an average from different periods of the year, numbered 30,000. If these beds were to be made available and an endless multiplicity of authorities was to be avoided, so that the needs of a district could be dealt with in a large way, the units of government must not be the 635 Poor Law authorities in the country, but nothing less than the council of a county or county borough. It was quite impossible for the Ministry of Health to stand by and see this waste of accommodation whilst there were multitudes of people who were suffering from lack of it. Therefore, he hoped that, while dropping the proposals affecting the voluntary hospitals, the proposals for making available in some effective fashion the beds in the Poor Law hospitals would receive the support of the Committee.

In the discussion which followed, Mr. Ormsby-Gore strongly criticized the amended proposal as unsatisfactory, and urged that for the emergency guardians should be empowered by the county councils to set apart beds for the treatment of the necessitous poor. Earl Winterton, though not so greatly opposed to the amended scheme of the Minister, thought it would be better to await a prompt report by the Committee of Inquiry on the whole question. Sir Ryland Adkins, speaking as the vice-chairman of the County Councils Association, said he believed that the county councils were prepared to act on the lines laid down where the problem was most pressing. Several Labour members spoke against the project, deeming it inadequate and favouring either rate or State supported hospitals on a broad scale. Dr. Farquharson vigorously supported the plan. He referred to a thoroughly equipped, up-to-date Poor Law hospital near Newcastle, which was standing empty and could be admirably utilized in this way.

In the end, Dr. Addison's amendment to subsection (*a*) was carried by 23 votes to 7. Two or three Labour members and some others abstained from the division. The first portion of the clause now reads:

> (1) The council of a county shall, on such terms and conditions as may be approved by the Minister, have power
>
> (*a*) to acquire by agreement with any Poor Law authority, any Poor Law hospital or infirmary belonging to that authority within their area, and maintain it as a hospital.

Pensions Administration: Committee of Inquiry.—The following constitute the Committee appointed to inquire into the system and methods of administration of the Ministry of Pensions, with special reference to the working of the regional and local committee systems and the arrangements for the issue of pensions:

Major Tryon, M.P., Parliamentary Secretary to the Ministry, chairman; Miss E. Kelly, Member of the Portsmouth Local War Pensions Committee; Captain H. H. C. Baird, D.S.O., editor of *The Service Man*; Major R. Barker, M.P.; Mr. G. W. Chrystal, Permanent Secretary to the Ministry of Pensions; Mr. A. T. Davies, M.P.; Lieut.-Colonel J. P. Nisbet Hamilton Grant, chairman of Perth County Local War Pensions Committee; Sir H. P. Harris, M.P.; Major V. L. Henderson, M.P.; Mr. E. H. Hodgson, Assistant Secretary and Director of Establishments, Ministry of Pensions; Mr. C. F. Adair Hore, Senior Assistant Secretary Ministry of Pensions; Mr. Walter Peel, Representative of the Association of Local War Pension Committees; Sir Samuel B. Provis, late Permanent Secretary to the Local Government Board; Mr. R. E. Westaway, Regional Director of Ulster, and Mr. Robert Young, M.P.

The first meeting of the Committee was held at Cromwell House on November 25th. It was decided, in view of the wide scope of the inquiry, to divide it into five sections, each of which will be dealt with by a subcommittee who will report to the main Committee, namely: (*a*) Local war pensions committees and regions; (*b*) awards and special grants committee; (*c*) treatment and medical boards; (*d*) pension issue office; (*e*) officers. Before taking evidence the members of the Committee will visit the branches of the Ministry and will examine the regional machinery. Major C. G. C. Hamilton, M.P., is unable to join the Committee, and Major C. E. Breese, M.P., and Major C. F. Entwistle, M.P., have been added.

Lunacy Certificates.—Dr. Addison on November 24th, assured Mr. Tyson Wilson, that any information forwarded to him as to the alleged tampering with documents upon which persons were committed to asylums would be immediately inquired into.

England and Wales.

LEEDS UNIVERSITY APPEAL.

A PUBLIC meeting was held on November 25th at the Leeds Town Hall, under the presidency of the Lord Mayor, to inaugurate the appeal for funds for the University of Leeds. The university is asking the public of Yorkshire, and others interested in the progress of higher education in the county, for £500,000, and the Vice Chancellor (Sir Michael Sadler) was able to announce to the meeting that towards this fund gifts amounting to £112,800 had already been received or promised. Amongst those who spoke in support of the appeal were representatives of local authorities, who contribute largely to the revenue of the university, and a number of prominent professional and business men. The number of students in the university is now nearly three times as large as before the war. Most of the departments are overcrowded, and the annual expenditure of the university has enormously increased, as a necessary consequence of the new conditions created by the war. New laboratories are required in nearly all the university's departments of pure and applied science and for the school of medicine, and new buildings are needed for the department of agriculture, the school of dentistry, the university library, the students' union and gymnasium, and as halls of residence for men and for women students.

TUBERCULOSIS IN LANCASHIRE.

The activity of county councils in dealing with tuberculosis in their respective areas is by no means uniform. From the report for the year 1919 of the central tuberculosis officer for Lancashire it would appear that in that area at any rate there is no slackening of effort. Divided into five large dispensary areas and two sub-areas, the county is well supplied with medical and lay workers. Five senior consultant tuberculosis officers, with eight assistant officers and thirty health visitors, maintain a close watch over such cases of the disease as are brought to their notice, applying all the known means of relief appropriate to each case. But in Lancashire, as elsewhere, a very considerable number of cases are never notified at all, while others apply for treatment only when the disease is too far advanced for recovery. The need for control before the appearance of bacilli in the sputum is illustrated by the figures given in the report, the statistical tables in which are in all respects worthy of careful study. Those dealing with mortality show a marked change for the better, due, no doubt, in part to improved social conditions since the war, but also to better understanding of the hygienic precautions in the household, the result of persistent teaching on the part of trained visitors, and to the work of the after-care committees.

HOME NURSING IN LONDON.

The executive committee of the Central Council for District Nursing in London has issued a memorandum with regard to the home nursing in London of certain classes of patients who differ on the one hand from the usual patients of district nursing organizations established for the nursing of the sick poor in their homes, and on the other from the usual classes of patients who are able to pay full fees. Schemes for nursing these special groups of patients have been formulated in the provinces, but not in London. The first class of patients concerned comprises those who live in flats or other places without additional accommodation for private nurses even if there is ability to pay full fees. For these patients it is suggested that a nurses' co-operative association is needed. The suggested scale of fees is [illegible] a day or [illegible] a week for a daily visit, and [illegible] a day, or [illegible] a week for two daily visits. The earnings of each nurse, [illegible] from four to six patients a week, would be distributed on a co-operative basis. The second group of patients for whom special provision is thought to be necessary is found among those of the professional classes who are unable to afford the ordinary fees of private nurses. The third class consists of trades people and others not hitherto included in the work of the district nurses, but urgently needing nursing assistance. For the second and third groups of classes a [illegible] scale of fees are suggested. Efforts to meet these three classes of case seem so far in London to have been sporadic and unorganized, and this attempt to make provision for them will be regarded with satisfaction by medical men.

Scotland.

FINLAYSON MEMORIAL LECTURE.

MAJOR-GENERAL SIR WILLIAM LEISHMAN, F.R.S., delivered, on November 16th, the Finlayson Memorial Lecture in the hall of the Royal Faculty of Physicians and Surgeons, Glasgow. Dr. A. Freeland Fergus, the president, in introducing the lecturer, said that he was a son of the late Professor Leishman of Glasgow, whose memory they all held in affectionate regard. Sir William Leishman took as his subject "Enteric fevers in the British Expeditionary Force, 1914–1918." From the time he became professor of pathology at the Royal Army Medical College, this subject and the general problem of the protection of our army against enteric fever in peace and war had formed a very large part of his work. As the result of laboratory researches by himself and his colleagues, they eventually reached the goal towards which they had worked—namely, clear statistical proof of the protective effect of vaccine; possessing that they were able to convince their chiefs and the Army Council that antityphoid inoculation was a safe and useful procedure, and permission was obtained for its general employment in the army, though on a voluntary footing. Two years before the war they had made arrangements for the maintenance of a reserve of vaccine large enough for the first needs of an expeditionary force, and had worked out in detail a scheme for a great expansion of its manufacture. The effects of inoculation upon a soldier's physical capacity were determined by experimental observations carried out at Aldershot two years before the war, and thus in August, 1914, they could give definite replies to the questions raised by staff officers anxious for the smooth working of their mobilization schemes. The lack of compulsory powers in regard to inoculation heavily handicapped the Medical Department. Nevertheless, they were able to inoculate from 25 to 30 per cent. of the original Expeditionary Force before they crossed the Channel, and it was not long before the inoculation of the troops in France rose to figures fluctuating between 90 and 98 per cent. The lecturer showed statistical charts illustrating the deterring effect of inoculation upon the incidence and death rate of enteric fever. Side by side with this went on the splendid work of their colleagues in the Sanitary Branch, which carried out with brilliant success general measures relating to drinking water, food protection, and many other details. Professor Muir, in thanking Sir William Leishman for his lecture, remarked that the measures taken to deal with enteric fever during the war had not only achieved the practical result of saving lives and preventing disablement, but had also yielded accurate and valuable knowledge on this important subject.

THE SCOTTISH CONSULTATIVE COUNCIL.

We mentioned a few weeks ago that a report of the Scottish Consultative Council on Medical and Allied Services, appointed by the Scottish Board of Health, had been completed. We are now informed by the Board that the report, which is an interim report, is being printed as a parliamentary paper, and will be published in the course of a few days.

India.

MATERNITY AND CHILD WELFARE.

LADY CHELMSFORD, who from the beginning of her husband's term of office as Viceroy has taken a deep interest in maternity and child welfare, had the satisfaction before leaving Simla of opening a maternity and child welfare centre, which has been established by the Simla municipality and is to bear her name. The All India Maternity and Infant Welfare League, formed by Lady Chelmsford, established a training school at Delhi, and the lady health visitor to the Simla institution was trained at Delhi. She will have under her trained Indian dais to assist in the work of the centre and pupils will be trained there. In declaring the centre open Lady Chelmsford said that the League had an endowment of six lakhs; most of this had been contributed by the Indian princes, and it was important to secure the support of the general public so that other municipal bodies in India might be induced to follow the example of the Simla Committee. Infant mortality is very high in India. A resolution of the Central Provinces Administration on the annual report of the Sanitary Department states that in 1918 the infant mortality was 299 per 1,000 births, as against 227 in 1917. The remedy, it is recognized, must be the education of the people in the elements of hygiene and the awakening of the conscience of municipal authorities. Under the new system of government, when public health will be transferred to the charge of the people's representatives, it will rest with them to overcome the prevailing apathy among the public and in local bodies.

THE LEPER PROBLEM.

Lady Chelmsford has also spoken very forcibly on the need for Indians themselves to take an interest in the victims of leprosy. The Mission to Lepers, which has done so much, has hitherto been financed by subscriptions from other parts of the Empire. Organized attempts to interest the wealthy classes of India in the work have only recently been made; substantial sums have been provided by Indian sympathizers, but far more money is required to meet the immediate needs of the sufferers. There are 250,000 lepers in India. Less than 10,000 are accommodated in the leper asylums in the country, and the Indian press is emphasizing the fact that people of every class and every race resident in India are liable to be attacked by leprosy.

THE BOYCOTT.

At a meeting of the Lucknow Medical Association a resolution was passed protesting against the reports of the Esher and Lovett Committee and declaring that the authorities showed disregard of the interests of the Indian medical profession. Holding these views the meeting advised the Indian medical profession not to meet in consultation members of the Indian Medical Service in private practice. Similar resolutions were adopted by the Allahabad Medical Association at a meeting held on October 29th.

PLAGUE.

Reports for September appear to show a tendency to an increase in the number of cases of plague, the number of deaths from plague during September being approximately 10,086, against 5,842 in August, and 4,834, 6,945, and 3,527 in the corresponding month of 1919, 1918 and 1917 respectively.

ASSISTANT SURGEONS' CONFERENCE.

The fifteenth session of the All India Subassistant Surgeons' Conference will be held in Delhi on December 17th, 18th and 19th, 1920. With this year's conference medical, surgical, sanitary, indigenous drugs, and infant welfare exhibitions will be held, and the Viceroy will perform the opening ceremony.

Correspondence.

MALIGNANT MALARIA CONTRACTED IN BRITAIN.

SIR,—With reference to the interesting case reported by Professor E. E. Glynn and Dr. J. C. Matthews in the JOURNAL of November 27th, I write to express a hope that efforts will be made to ascertain whether the patient had ever had any form of subcutaneous, intramuscular, or intravenous injection (such as one of morphine) from a week to a month before her illness commenced—that is, during September. The point is essential as regards the cause of the malaria infection, because a number of cases of malignant malaria occurred in Britain during the war as the result of such injections (I am not free to give details). I wonder also if the dentist who removed some of the patient's teeth on September 14th had just previously dealt with any old case of malaria. Infection by direct blood-to-blood communication is, I consider, proved by the war experiences referred to.—I am, etc.,

London, Nov. 29th. RONALD ROSS.

THE HOSPITAL PROBLEM.

SIR,—In view of the fact that two separate bodies in the House of Commons have asked the Prime Minister to hold an immediate inquiry into the whole subject of our voluntary hospitals, would it not be possible to call together a meeting of representatives of the medical staffs of our county hospitals? At such a conference it might be discussed whether it was desirable or possible to continue these hospitals on a voluntary basis, or whether it would be better to hand them over to the State or to the ratepayers to control them. A circular letter to the secretary of the staff of each hospital, inquiring whether the staff would be prepared to send a physician and a surgeon to a meeting in London would quickly prove whether such a meeting were deemed advisable. I feel very strongly that such a representative body as the British Medical Association could and should initiate this movement.—I am, etc.,

Oxford, Nov. 24th. W. COLLIER.

⁂ The Association is taking steps to call such a conference, probably on Thursday, December 16th, 1920.

INTRAVENOUS PEPTONE THERAPY IN EPILEPSY.

SIR,—In regard to Dr. Auld's letter in your issue of November 27th, I would like to point out that in his article of April 24th last the word "epilepsy" does not occur. The sentence in question reads:

> An antigen similar in nature, therefore, to that which provokes asthma in one individual may cause explosive attacks in the stomach or liver or central nervous system or circulatory system, etc., in others.

If, however, epilepsy be implied in the above words, it must be acknowledged that he was the first to suggest, though indirectly, the treatment of that disease by injection of a "peptone" solution. For myself, I did not attach any definite meaning to them, and was led to try this mode of treatment in quite another way—as I stated in my article.

But, after all, questions of priority are not of any moment or interest, and, if this were all, I would not have written to you about the matter. I find it difficult to accept the theories which have been put forward to account for the action of a "peptone" solution—that it should cure some diseases by increasing the coagulability of the blood, others by inducing a violent reaction in the apparatus which regulates the colloidal balance in the blood, and yet others by inducing a tolerance to the anaphylactic poison which is identical with a poison produced in the body by peptone. Such theories appear to me to be somewhat crude applications of our very scanty experimental knowledge of the actions of a "peptone" solution in the blood, or merely exercises in belief. It is surely better to admit our ignorance of the ways in which it acts in disease.

Dr. Auld suggests that the discrepancy in the results I found may be due, in part at least, to "defective linkage," and that better ones might have been obtained by four-day doses. I have, however, tried this, and found that the results were not any better than those produced by a weekly dose.

I am therefore of opinion that the matter is, and will for a long time be, purely empirical. It will only be by cautiously trying variations that we may hope to find the field of usefulness of this treatment and its limitations. It was in the hope that this might be carried out by others who have large numbers of epileptics in their care that I published the results obtained in a small number of cases.—I am, etc.,

Clifton, Bristol, Nov. 29th. F. H. EDGEWORTH.

FUTURE POSITION OF *À LA SUITE* OFFICERS IN TERRITORIAL HOSPITALS.

SIR,—My attention has been called to a letter from Mr. Albert Lucas in your issue of November 20th on the future position of *à la suite* officers in Territorial hospitals. The matter has been considered by the Territorial Subcommittee of the Naval and Military Committee of the British Medical Association, which is of opinion that the *à la suite* system should be abolished, and that appointments to the General Hospital list should only be made from those officers who have done military training. The question of expansion of the Army Medical Service in time of emergency, including expansion of the general hospital list, is now under consideration by the subcommittee, and note will be made of the suggestions contained in Mr. Lucas's letter.—I am, etc.,

CHARLES BUTTAR,
Chairman of the Territorial Subcommittee.
London, W., Nov. 27th.

LIBERTY AND ECONOMY.

SIR,—When the Association is considering the proposals submitted to it for the reorganization of its work, there are two matters which should receive pre-eminent attention:

1. The *preserving of the liberties of medicine* handed down to us from a glorious past, and essential to the maintenance of those qualities which have made English medicine supreme.

2. The *national necessity for due financial economy.* The nation will rightly expect that the statesmen of medicine will not forget in this their grave responsibilities.—I am, etc.,

Exeter, Nov. 26th. W. GORDON.

TUBERCULOUS MILK.

SIR,—I am much obliged to Dr. Cobbett for coming forward on the side of the experimental investigators. I do not think, however, that he has succeeded in proving his statement that there is plenty of evidence to establish immunization in tuberculosis as a fact. What do the experiments described by the Drs. Griffith amount to? Twelve presumably healthy calves were given subcutaneously a dose of "50 mg. of young bovine bacilli," and after a lapse of ninety days had all expired. Twelve other calves that had been treated with smaller graduated doses over a period of three months were then given the same dose of 50 mg. At the expiration of ninety days two of the number had succumbed. The remaining ten were not given the option of living or dying, but were killed outright. All of them when examined were found to contain tuberculous lesions in their internal organs, described as regards nine of them [illegible] the most part slight and unprogressive," and in the [illegible] lesions were advanced than these. I cannot see that this proves anything more but that a certain tolerance to large doses of tuberculous poison can be secured by an ascending scale of dosage over a certain period, similar to that obtained by administering arsenic or some other poisons in a similar way. What the nature of this toleration is is very difficult to say. Some few months ago I was referred by Dr. Eastes to [illegible] textbook on bacteriology containing an up-to-date summary of immunization in tuberculosis. I have not, unfortunately, got the book by me, but I think I am right in saying that it is stated there that the experiments undertaken to secure immunization in calves proved very unsatisfactory, and that it was found that tubercle bacilli once introduced into a calf tended to effect a lodgement there and were very difficult to eradicate. The Drs. Griffith's experiments would seem to confirm this. It also states there that von Behring claims to have secured a certain amount of immunization in guinea-pigs for a short period with [illegible] injections, but these results have not been confirmed by other investigators. It also states, I think, that attempts to immunize guinea-pigs [illegible] [illegible] the alimentary [illegible] proved unsuccessful, as the [illegible] [illegible]. I therefore think it can be fairly said that the experimental evidence is very conflicting, to say the least—that is, up to the date of these experiments. [illegible] [illegible] against tuberculosis [illegible] or otherwise the mortality would be 100 per cent.

I would suggest, as the result of *post-mortem* examinations, that the protection is, if not entirely, at any rate mainly [illegible] a defensive barrier in the lymphatic glands and pulmonary tissues having for its object either the restriction of the focus of disease or its [illegible]. If the defensive barrier should give way [illegible], and if by any chance even a very small [illegible] should discharge itself into the circulation, what happens? An acute miliary tuberculosis with rapidly fatal results. This would seem to show that outside the area of the defensive barrier there is very little protection against tuberculosis elsewhere in the body. What I would regard as good experimental evidence would be the following: Vaccinate a dozen or more persons against small-pox, and then let them loose in a district where small-pox is prevalent. This, of course, has been done, and it has been shown that, if not absolutely protected they have secured a very large measure of protection, sufficient to reduce fatal results to almost *nil.* Why not vaccinate children against bovine tuberculosis, not with bacterial products, but a vaccine from an affected calf? It should be no more difficult to prepare than vaccinia from the same animal.

But I know, of course, that Dr. Cobbett makes no such claim for immunity in tuberculosis as can be secured against small-pox; for at the end of his letter he says, "the immunity is not of a high order," "is uncertain, being liable to fail," "is relatively transient," and

> I can only conceive of an immunity which shall have an important influence upon human tuberculosis as caused, not by abortive infections which become cured outright, unless these indeed are frequently repeated, but by chronic lesions which remain for long periods not altogether inactive.

In fact, whatever immunization, if any, is possible, may for all practical purposes be considered a negligible quantity. This, if admitted, of course has a very important practical bearing on the treatment of this disease.—I am, etc.,

EDGAR R. IVATTS, M.R.C.S., L.R.C.P.,
Late Assistent Tuberculosis Officer, Stoke-on-Trent;
Resident Officer, Stanfield Sanatorium.
Aylesbury, Nov. 11th.

SIR,—Some of your correspondents have wandered away from one of the main questions—does tuberculous milk account for the majority of cases of tuberculosis in children? I adduced that those who drink less milk have more tuberculosis than those who drink more; that in countries like Japan, where the use of cow's milk in infancy is unknown, primary intestinal tuberculosis is more common (30 per cent. of deaths) than among Europeans and Americans (25 per cent.), and that many children who drank tuberculous milk never got tuberculosis. These are stern facts which go against the milk infection theory. To these must be added Professor Adami's experiments on calves which were fed with tuberculous milk for five months, at the end of which time it was found they were free from the disease.[1]

Does pathology admit a difference between infection and disease? If infection does not produce tuberculosis, why trouble about infection at all? We do not take notice of streptococci, diphtheria, and other germs found in healthy throats. If the presence of a micro-organism is no indication of disease, there must be other factors which make for disease.

Though so much has been written about immunity, we neither know its mechanism nor how and where it is produced. If there is a connexion between immunization and the wide spread of tuberculosis, why should England show a death rate of 116 per 100,000 in 1915 and France 179; Scotland 111, while its neighbour Ireland shows a death rate of 1[illegible]? As Sir Robert Philip says, "The fascinating theory of communal immunization on natural lines fails badly when tested by hard facts."[2] Besides, biochemistry suggests that immunity reactions may be chemical and physiological rather than bacterial.

Mere infection may be artificially produced in animals by injecting large quantities of bacilli, but this is a different thing from showing that it occurs in human beings under natural surroundings. Even in animals the intraperitoneal and intravenous injections prove fatal from general toxaemia rather than from bacterial infection. Drs. Haldane and [illegible] have observed that while phthisical tin miners and grit stone workers never go to a hospital, but stay at home and expectorate sputum loaded with tubercle bacilli, their wives and children never seem to be affected with the disease,[3] showing that even a close contact with advanced infection does not necessarily produce tuberculosis in others.

Though great commotion and alarm were created about typhoid carriers, Dr. Hamer, in his latest council report, quietly throws overboard both "typhoid Mary" and the "Folkestone carrier" by saying that "in neither of these classical instances was the case proven." He also says that in spite of typhoid prevailing in considerable excess in 1898 to 1900 and the consequent appearing of many hundreds of carriers of typhoid bacilli newly on the scene, the succeeding years shows a steady decline, and adds that facts of this nature are "wholly irreconcilable with the bacillus carrier thesis."[4] So also will the story of the spread of tuberculosis by carriers be found unproven on careful investigation.

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[1] Adami and [illegible]: Report on Observations upon the Cattle at O[illegible].

[2] Sir Robert Philip: *Present Day Outlook on Tuberculosis.*

[3] [illegible]: *Pulmonary Tuberculosis.*

Not till England comes to see, as America has done, that "tubercle bacillus is no longer tuberculosis"[5] can any progress be made in solving the problems of tuberculosis. The theory that "stamp out bacteria and you will stamp out disease" is becoming more and more untenable at the present day. A proper natural diet is everything to the infant under a year old. Nature has intended that cow's milk should go to rear a calf and not a human child endowed with all the high faculties of mind, reason, intelligence, consciousness, personality. Here lies the beginning of the tragedy of the tuberculous child. Improve the social and economic and moral conditions of the people, so that the country may rear strong and healthy mothers who would feed their children with their own milk, then tuberculosis among children will become as rare as in so-called savage countries where they are breast-fed and live more or less natural lives.—I am, etc.,

Mendip Hills Sanatorium, Nov. 21st. C. MUTHU.

SIR,—In your issue of November 6th you kindly published a letter from me on the subject of tuberculous milk. In that letter I stated:

> "It must be remembered that the average dairy farmer reads his trade journal; that his trade journal is naturally written to please him; that Koch's statements concerning bovine tuberculosis are still reiterated in those journals; and that all assertions which tend to minimize the gravity of infection with bovine tuberculosis are seized with avidity."

I now send you a copy of the *Dairy World* for November 16th; on page 249 you will find the following words: "The danger from tuberculosis, if it exists at all, has been grossly exaggerated." On page 250 a column is devoted to the views of those who hold that "although tuberculous milk may cause infection it is probable that its infective virulence is over-estimated," and, again, a letter is quoted from the BRITISH MEDICAL JOURNAL, in which the following statements are made:

> "With such facts before us, which could be multiplied, how is it possible to believe that tuberculosis in children is caused by drinking cow's milk? In fact, the tendency of modern thought is to challenge the whole germ theory of tuberculosis and to shift the angle of vision from specific to social causes of the disease."

Once again I ask that a sufficiently important body representing the medical profession shall tell those of us who are working in the dairy world whether it is worth our while to try and eliminate bovine tubercle bacilli from our milk or not.—I am, etc.,

R. STENHOUSE WILLIAMS.

Research Institute in Dairying,
University College, Reading.
Nov. 24th.

FUTURE OF HOSPITALS.

SIR,—The Edinburgh meeting of the Medical Guild (reported in your issue of November 20th, p. 799) was of opinion that hospital authorities should "devise a scheme whereby patients should contribute to their own maintenance according to their circumstances." The question at once arises whether this is not abandonment of the fundamental principle on which the voluntary hospitals are based. Provision of maintenance and medical assistance for those helpless through illness by the combination of charitable funds from the well-to-do and service by the medical profession has been the ostensible object of the hospitals. Is it the case that the two factors of monetary and medical provision are no longer to be co-ordinate?

Where the monetary provision has had to be undertaken by any public authority the British Medical Association, with very obvious support from the profession generally, has affirmed that the surrender of the claim to charitable maintenance should be accompanied by the surrender of the claim to charitable medical service. Is it quite clear that the suggested scheme does not contravene canons of social and medical organization so fundamental that it would be dangerous and undesirable even as a makeshift in the problem of the voluntary hospitals?—I am, etc.,

Dundee, Nov. 22nd. ELEMENTAL.

BLACKWATER FEVER.

SIR,—I note with interest that both Drs. Goodall and Harford agree in the malarial nature of this affection, with chill as a predisposing factor. In my book on *Blackwater Fever* (J. Bale, Sons, and Danielsson) these points were pointed out, and the disease has been regarded by me as bilious malignant tertian ague. In all these cases congestion of the liver is present; and the liver, being unable to deal with the sudden large amount of haemoglobin and débris from the destruction of red corpuscles, the kidneys have to give passage to the haemoglobin. It is the sudden loss of liquid blood and destroyed corpuscles which causes the great weakness of the heart. The heart must have fluid to act on, and be nourished by red blood corpuscles. The sudden enlargement of the spleen (often to the umbilicus) is Nature's attempt to do the necessary replenishment.—I am, etc.,

Harringay, Nov. 21st. A. G. NEWELL, M.D., D.P.H.

VENEREAL DISEASE PROPHYLAXIS.

SIR,—In view of the evasive and illogical attitude taken by the Ministry of Health in its first annual report, and in its refusal to assist the policy of the Society for the Prevention of Venereal Disease as evidenced by the Minister of Health's reply to our deputation, we feel that it is our duty to lay a plain statement of the facts before the public, who we hope will demand an inquiry by an impartial and competent body as to the strict truth of such statements.

We definitely affirm and are prepared to bring conclusive evidence as to:

1. The efficacy of immediate self-disinfection in the male as a prevention against venereal infection and the possibility of almost eradicating these diseases by this means.
2. The biassed nature of the composition and report of Lord Astor's Interdepartmental Committee, the high authority of which the Minister of Health strongly emphasized in his speech at the deputation.
3. The gross inaccuracy of the statistics supplied by the War Office.
4. The failure of the Government, the War Office, the Admiralty, and the Ministry of Health, to organize public education on this subject or carry out any thorough scheme for testing the efficiency of immediate self-disinfection as a preventive of venereal disease either during the war or since the armistice.
5. The increase in venereal disease since the armistice, and its necessary effect on innocent women and children, by increasing sterility, miscarriages, and the production of diseased children.
6. The very large amount of popular support for a campaign of education in the principles and practice of the prevention of infection by venereal disease by means of immediate self-disinfection that is given by organized labour, the medical profession, and practically all those who have had personal experience in the prevention of venereal disease by such methods.
7. The great financial burden that venereal disease is to the nation.

We also wish to call attention to the very large number of young persons of both sexes but especially young men who persist in voluntary exposure to risk, and to the fact emphasized by the late Sir William Osler and many others that infection may be conveyed to the innocent by a cup, glass, bath, towel, razor, and many things in common use.

As we are receiving no financial help from the Government, we are entirely dependent on the support of the public, to whom we appeal for financial assistance to carry on our educational campaign. Donations will be received by the Honorary Secretary.—We are, etc.,

WILLOUGHBY DE BROKE,
President.
BRYAN DONKIN,
Vice-Chairman Executive Committee.
WM. ARBUTHNOT LANE,
JAMES CRICHTON BROWNE,
Treasurers.

ELLEN ASKWITH,
JANE LORIMER HAWTHORNE,
R. A. LYSTER,
FREDERICK MOTT,
ERIC PRITCHARD,
G. ARCHDALL REID,
C. W. SALEEBY,
J. H. SEQUEIRA,
H. WANSEY BAYLY,
Hon. Secretary.

Society for the Prevention of Venereal Disease,
143, Harley Street, W.1, Nov. 27th.

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[4] Report of County Medical Officer of Health for 1919.

[5] Dr. Allen Krause: *American Review of Tuberculosis*, March, 1920.

HONOURS.

ORDER OF THE BRITISH EMPIRE.

THE following appointments to the Order of the British Empire are announced for services in connexion with the war:

O.B.E. (Civil).—Dr. George C. Hancock, medical supervisor of army contracts at home. Dr. Alfred C. Jordan, for work in connexion with radiology at Queen Alexandra's Hospital. Dr. John S. Low, medical supervisor of army meat contracts in South America. Mr. Wm. M. Mollison, F.R.C.S., for voluntary services at St. Dunstan's. Dr. James Pearse, inspector of various factories manufacturing foodstuffs in the United Kingdom for the consumption of the troops.

O.B.E. (Civil).—Dr. Robert T. Bakewell, anaesthetist to St. John and St. Elizabeth Hospital.

LEGION OF HONOUR.

The President of the French Republic has conferred the Cross of Chevalier of the Legion of Honour upon Mr. R. Atkinson Stoney, F.R.C.S.I., of Dublin, "In recognition of his services with the French army, as Médecin Major, 2ème Classe, in the late war."

Obituary.

ST. BARTHOLOMEW'S men in the middle eighties will learn with regret of the death of Mr. SYLVESTER DAVID WILLARD, M.R.C.S., L.R.C.P., on November 28th at his house in Queen Street, Mayfair, after about ten days' illness with bronchopneumonia supervening on increasingly frequent asthmatic attacks, from which he suffered since the age of one year. His father was a medical man in Albany, New York, where Willard was born in March, 1865, and, though educated at St. Bartholomew's and formerly all his medical life in practice in London, remained an American citizen. After qualification he worked for a year in America, and then returned to London and held several resident appointments, especially at the Cancer Hospital. Starting practice in Victoria Street, he became connected with the Equitable Insurance Company, U.S.A., and later, when he moved to Hertford Street and Queen Street, W., was medical officer, United States Consulate-General, London. He lived with his mother, a well-marked personality whom he much resembled physically and mentally, until her death a year ago at the advanced age of 86. Dr. R. H. King, a close friend for thirty-seven years, writes: "He was a man of distinct personality and of wide sympathies, so that he had a varied acquaintance in all parts of the world. His numerous patients and friends knew that he was interested in their individuality, and always eager to help in difficulties, medical or otherwise. It was this combination of the man of the world and the careful painstaking physician that ensured the confidence of his patients."

DR. A. DESBOROUGH CLARK, of Hove, died recently, after an illness of six days, from pneumonia following a cold contracted whilst visiting patients. He was 53 years of age, and, after receiving his medical education at St. Bartholomew's Hospital, took the Scottish triple qualification in 1894. He was medical officer to the Metropolitan Police convalescent home and a member of the Brighton Medico-Chirurgical Society. He took great interest in the work of the British Medical Association and was a member of the Executive Committee of the Brighton Division. He had been in partnership with Dr. A. H. Dodd for twenty-five years and was highly respected and esteemed by all his colleagues in the town. He had been churchwarden to the Hove Parish Church, and the Vicar of Hove, in conducting a memorial service, voiced most eloquently the feeling of all when he spoke of the high and unselfish character of their late colleague.

WE regret to record that Sir EDGCOMBE VENNING, F.R.C.S., late of the 1st Life Guards, died at Falmouth on November 17th, aged 85. He was born on April 20th, 1835, the son of J. M. Venning, Esq., educated at St. George's Hospital, and took the M.R.C.S. diploma in 1857, the L.R.C.P.Lond. in 1862, and the F.R.C.S. in 1867. After filling the posts of house surgeon and surgical registrar at St. George's he took a commission as assistant surgeon in the 1st Life Guards on April 14th, 1863, and stayed in that regiment for fifteen years. Subsequently he engaged in private practice in the west end of London. He was knighted at the close of 1905, his knighthood being among the honours conferred by King Edward VII in connexion with the recent resignation of Mr. Balfour's Ministry. Sir Edgcombe Venning was medical attendant to Mr. Balfour on various occasions when he was Prime Minister.

BY the death of Miss MARY GUY a well known personality has passed away from the social and medical life of Edinburgh. For twenty-six years Miss Guy has held a unique position in connexion with the antituberculosis movement. She had been lady superintendent of the Royal Victoria Hospital since its foundation in 1894, and had played an important part in its progressive development. She was the daughter of Dr. William Guy, of Norwich, and sister of Mr. William Guy, F.R.C.S., Dean of the Dental Hospital and School, Edinburgh. After receiving her training at the Royal Infirmary, Edinburgh, she became assistant superintendent there. While holding that post she was invited in 1894 by the committee of the Royal Victoria Hospital to direct the nursing in that institution—the first sanatorium in Scotland for the treatment of tuberculosis. Miss Guy was an acknowledged authority on everything pertaining to the care of tuberculous patients. At the outbreak of war, when the Royal Victoria Hospital came under Red Cross administration, Miss Guy continued in chief charge. For her services she was awarded the Royal Red Cross of the First Class.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following have been appointed examiners for medical degrees in 1921 and 1922:

Organic Chemistry: Mr. F. D. Chattaway. Human Anatomy: Mr. F. G. Parsons. Human Physiology; Dr. J. G. Priestley. Materia Medica and Pharmacology: Dr. W. E. Dixon. Pathology: Professor G. Dreyer. Forensic Medicine and Public Health: Dr. B. H. Spilsbury. Medicine: Dr. E. F. Buzzard. Surgery: Mr. J. Howell Evans. Obstetrics; Dr. A. Donald.

UNIVERSITY OF CAMBRIDGE.

AT the congregation to be held on Wednesday, December 8th, the following Grace, having received the sanction of the Council, will be offered to the Senate: "That the statute for women students proposed in Report A of the Syndicate on the Relation of Women Students to the University be approved." If this Grace is rejected the recommendations contained in Report B of the Syndicate will be brought forward at a later congregation (see BRITISH MEDICAL JOURNAL, August 21st, 1920, p. 284).

At a congregation held on November 26th the degree of Doctor of Medicine was conferred upon G. L. Attwater and G. Hoffmann.

The Services.

DEPUTY INSPECTOR GENERAL EDWARD J. SHAROOD, R.N.ret., has been awarded a Greenwich Hospital pension of £50 a year, with effect from October 15th, in the vacancy created by the death of Deputy Inspector General James Long Sweetnam.

DEATHS IN SERVICES.

LIEUT.-COLONEL THOMAS HOWARD FOULKES, Madras Medical Service, Administrative Medical Officer of the Kohat Brigade, was shot dead in his bungalow at Kohat, on the North West Frontier of India, on November 15th. His wife was badly wounded at the same time, and was carried off by the murderers, but subsequently released. He was born at Coonoor, in the Nilgiri Hills, Southern India, on April 2nd, 1870. He was educated at St. Bartholomew's Hospital, took the M.R.C.S. and L.R.C.P.Lond. in 1892, and entered the I.M.S. on July 29th, 1895, becoming lieutenant colonel after twenty years' service. He took the F.R.C.S. in 1905, and the M.R.C.P.Lond. in 1912. After six years in military employment, he took civil employ in the province of Madras as a district medical and sanitary officer in 1899. In July, 1908, he was appointed in that capacity to Vizagapatam, where he was also superintendent of the medical school and lunatic asylum. In June, 1912, he was appointed Durbar Surgeon of Mysore State, and during the war reverted again to the army. He he had served in Burma, in small campaigns, in 1894-96, on the north-west frontier in the Tirah campaign of 1897-98, in the Bara Valley operations (medal with clasp), and in China in 1900 (medal), as well as in the recent war. He received the C.I.E. on January 23rd last, and the Star of Nepal a few days before his death.

A casualty list published on November 15th gave the name of Captain Charles Marsh Gozney, M.C., R.A.M.C.(T.F.), as previously reported missing, believed killed, now reported as killed in action. He was educated at Leeds, where he graduated M.B. and Ch.B. in 1914. He took a commission as lieutenant in the 1st West Riding (Leeds) Casualty Clearing Station on January 1st, 1915, and was promoted to captain on July 1st, 1915. He had served with the 1/12th battalion of the London Regiment in France and received the Military Cross on August 16th, 1917. The report does not mention the place or date of death.

Medical News.

DR. WILLIAM GIBSON, of Campbeltown, Argyllshire, has retired at the age of 97. He graduated M.D. at the University of Edinburgh in 1874, and he has been a member of the British Medical Association for more than fifty years.

THE memorial in Sir Patrick Dun's Hospital, Dublin, to past students who fell in the war will be unveiled on Wednesday, December 8th, 1920, at 5 o'clock p.m. The Lord Chancellor of Ireland, Major-General Sir William Hickie, K.C.B., Lieut.-Colonel Sir Walter Buchanan, M.D., K.C.I.E., and the Chaplains to the Hospital will take part in the ceremony. All old Dun's men and their friends are cordially invited. The memorial consists of a large brass tablet bearing thirty names of past students who served in the war and were killed or died on service prior to the date of armistice; also the endowment of a memorial bed. The memorial has been subscribed for entirely by their comrades who also served in the war and were past or present students of the hospital—417 altogether. The honorary sècretary of the memorial fund is Dr. Henry C. Drury.

DR. KATHARINE R. DRINKWATER, wife of Dr. H. Drinkwater of Wrexham, has been placed on the Commission of the Peace for the County of Denbigh.

UNDER the direction of Dr. M. Calot a course of practical instruction in orthopaedics will be given, as in previous years, at the clinic at 69, Quai d'Orsay, Paris, from January 17th to 24th, 1921. The course, which will be held in the afternoons, will deal with congenital and acquired deformities, and with the treatment of surgical tuberculosis, and of fractures. The fee is 140 francs.

THE fund for increasing the clinical facilities for the medical education of women at the Royal Free Hospital, inaugurated at the luncheon given by 100 representative women to 100 representative men last October, now amounts to £27,000. A generous gift of £1,000 has recently been received from Sir Dorabji Tata of Bombay. Owing to various alterations at the hospital, it will be possible shortly to put into force the policy of providing beds for patients who can afford to pay for their maintenance; it is hoped to open twenty-three such beds about the middle of January. Contributions to the appeal fund should be sent to Sir Francis Layland-Barrett, Bt., M.P., Royal Free Hospital, W.C.1.

DR. C. S. SHERRINGTON, president-elect of the Royal Society, delivered the Huxley lecture of the Birmingham University on November 26th. The subject of the lecture, "The Gateways of Sense," was chosen partly because it was a biological question which Thomas Huxley had illuminated in various of his writings, and one in which he was particularly interested. Beginning with the sense of touch Professor Sherrington passed in review the senses of smell, sight, hearing, pain, heat, and cold. The fact that there was no electrical sense might probably, he thought, account for the relatively late arrival of a knowledge of electricity. While there were certain animals with electrical organs for discharging electric shocks to destroy their prey, there was no hint of an electrical sense, though did man possess it it would be a great advantage to him in many directions.

MR. MARTIN HARPER has devised a method by which he hopes to eliminate eyestrain in connexion with the cinema. He replaces the open spaces in the revolving shutter in front of the projector by minutely perforated blades. Not only is the flickering, which is believed to cause eyestrain, greatly diminished, but the pictures are improved, the lights and shades being brought out with greater emphasis, and a finer stereoscopic effect secured.

IT was stated in the SUPPLEMENT of May 29th, 1920, that the National Council for Combating Venereal Diseases had been invited to dispatch Commissions, under the aegis of the Colonial Office, to the Crown Colonies and Protectorates. Two Commissions, one to go East and one West, have started, and are already at work. A third Commission, of which Mr. Kenneth Walker, F.R.C.S., is the Medical Commissioner, is about to visit the Mediterranean area to investigate the conditions regarding venereal disease at the more important ports. It will leave London on December 10th for a period of four or more weeks.

THE annual meeting of the Birmingham and District General Medical Practitioners' Union was held at the office of the Panel Committee on November 11th. The President (Dr. J. F. Craig) referred to the various activities of such institutions as school clinics, treatment centres for tuberculosis and venereal diseases, infant welfare centres and prematernity clinics, at all of which work was now done that used to fall to the lot of the general practitioner. It was impossible, he said, to view this gradual extension of officialism without grave misgivings, and it was only by every practitioner doing his best in the way of looking after his patients that the peril of a whole-time medical service could be resisted. He referred to the general apathy of the profession, and deplored the fact that so many were still not members of the British Medical Association. At a later stage Dr. James Neal spoke on the danger which confronted the general practitioner. Dr. Jordan, in an interesting address, gave an exposition of various difficulties encountered in obstetric practice.

IN consequence of allegations brought to the notice of the Ministry of Pensions by a deputation claiming to speak on behalf of ex-service men in Manchester, the Minister requested the Board of Control to institute an inquiry into the conditions at the County Asylum, Prestwich, Manchester. Sir Marriott Cooke and Mr. A. H. Trevor, Commissioners to the Board of Control, conducted the investigation. They were accompanied by Dr. Cunyngham Brown, Deputy Director-General of Medical Services, Ministry of Pensions. Their report is to the effect that all the allegations are unfounded, but that it is very desirable that facilities should be given to representatives of the three joint associations of ex-service men to visit the asylum periodically and see the service patients.

A RAMSGATE medical practitioner was acquitted, at the Kent Assizes, on November 27th, of a charge of defrauding the Kent Insurance Committee of sums amounting to £22 by making false returns for attendance on panel patients. The case for the defence was that the confusion of insurance accounts was due to loss of memory after a motor accident.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended* ***for the current issue should be received by the first post on*** *Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C. 2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C. 2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), ***Articulate, Westrand, London***; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

ASEPTIC CATHETERS.

"ST. B." inquires as to the best means of sterilizing gum-elastic bougies and catheters, and for the name of a good catheter lubricant.

*** A satisfactory method of sterilizing gum-elastic bougies and catheters is by means of formalin vapour. Various forms of apparatus may be obtained for this purpose. The most convenient receptacle is an air-tight metal box fitted with two or three trays for holding various sizes of sounds and catheters; formalin vapour is generated from small tablets of formaldehyde placed in the box. The instruments are absolutely sterile after six to twelve hours. Although the older forms of gum-elastic catheters were destroyed by boiling, those made by the best French firms may be boiled. Care must be exercised that they are not allowed to cool while in contact with other instruments, or with the sides of the sterilizer, for in such a case the varnish, softened by the heat, will lose its smoothness. A convenient lubricant is prepared by Burroughs, Wellcome and Co., ready for use in tubes, under the name of lubafax.

Absence of Tubercle Bacilli from Dried Milk.

“[illegible] asks whether tests for the presence of tubercle bacilli have been made on dried milk.

*** Some information on the subject is contained in a report by Professor Sheridan Delépine to the Local Government Board upon the effects on the bacterial contents of certain condensing and drying processes used in the preservation of milk. The report was published in 1914. Experiments showed that the hot cylinder process of drying milk materially decreased the risk of conveyance of disease by tuberculous milk. Although the tubercle bacilli were not invariably killed, it was clear that their virulence was very much diminished. A later part of the report (p. 122 et seq.) contains a reference to results of bacteriological examinations on samples of commercial dried milk from various sources. The tubercle bacillus was particularly tested for, but out of the number of these commercially dried milks investigated tubercle bacilli were not found in any case.

Hyperhidrosis.

Dr. Spencer Churchill (Ryde) writes: In reply to the inquiry of “Beaten” in the British Medical Journal of November 27th, as to treatment for hyperhidrosis of the palms of the hands, I would suggest the use of *x* rays. I suffered from this distressing condition and considered it likely to be a bar to my success as a doctor. In 1911 I read a paper written by Dr. Pirie on a treatment devised and used by him, in which he kills the sweat glands by exposure to *x* rays. I consulted Dr. Pirie, and was given by him a course of his treatment. The result is a complete success. My palms are now always dry. The only drawback to this method is the slight disfigurement of telangiectases.

“Laertides” writes: Hyperhidrosis on palms of hands or in axillae (where it is more common) can be rapidly, permanently, and safely cured by means of *x* rays. Treatment should only be attempted by experts, as too weak doses have no effect and overdosage may result in telangiectases. I have [illegible] professional violinist who was cured thirteen years ago and remains perfectly well still. In her case the hyperhidrosis [illegible] that she had almost abandoned her work through inability to finger the strings.

Income Tax.

“[illegible] has retired and come to live in the United Kingdom, and desires information on questions the gist of which can be gathered from the following answers.

*** As he has not come to this country for a “temporary purpose,” he is liable to income tax as from the date of coming, whether or not he is actually in the country for six months in this financial year, but that does not mean that he must account for tax on earnings prior to coming. The point with regard to income due at the date of landing but not paid until after is somewhat difficult, but, on the whole, we are of the opinion that it is not liable to income tax in this country. We take the ground that the only “possession” assessable here is the right to pension; the right to the arrears of salary is not, in our view, a “possession” yielding an income [illegible] tax. If the 4 per cent. deduction is compulsory, [illegible] not liable to tax on that part of the pension so withheld. As to life assurance, the ordinary allowance can be claimed if it is with a company trading in this country, or [illegible] from the pension if it is paid [illegible]

“[illegible]

[illegible] matter cannot be settled by agreement. The disadvantage of that course, however, is that in the case of a formal appeal the date and time of meeting is fixed by the Commissioners and the appellant must attend or allow the appeal to go by default.

“C. F. M.” asks for a note setting out the tax now payable on an income of £500 from investments and £500 from earnings.

	£	s.	d.
*** Total income	£1,000	0	0
Deduct one-tenth of earned income (£500)	50	0	0
Amount of *assessable* income	950	0	0
Deduct allowance for self	135	0	0
Income chargeable to tax	815	0	0
Of which £225 is chargeable at 3s.	33	15	0
And the balance (£590) is chargeable at 6s. ...	177	0	0
Total tax payable	210	15	0

If the person in question is married the allowance is £225 instead of £135, and the total tax £27 less; that total might, of course, be affected also by allowances for children, life assurance premiums, etc.

LETTERS, NOTES, ETC.

Dispensing.

“A Country Medico” writes: I have long been of opinion that no doctor should dispense and no chemist should prescribe; but there should be safeguards. I would therefore suggest (1) a doctor who keeps a dispenser should be allowed to dispense; (2) if a chemist does it he should not be allowed to repeat a prescription without the doctor's initials, or, perhaps better, the patient should not be allowed to handle the prescription at all; (3) in dispensing practices the fees would have to be raised—I know of two instances in which doctors have lost very heavily by giving up dispensing; (4) chemists should be compelled to use the best drugs, which is not the case in rural districts now.

Fees for Coroners' Inquests.

A City coroner's jury recently added to their verdict a rider to the effect that an alteration in the law was needed so as to provide for the payment of the statutory fee for the making of autopsies and the giving of evidence “to all medical practitioners, including those connected with medical institutions who at present are unpaid.”

The Unmarried Mother and her Child.

Mrs. H. A. L. Fisher (Chairman of the Executive Committee) writes: In view of recent discussion and correspondence, and in order to prevent any possible misunderstanding, the Executive Committee of the National Council for the Unmarried Mother and her Child wishes to state that the objects of the council are the better care of the unmarried mother and her child, also the maintenance of a high standard of morality, and consequently the diminution of unmarried motherhood.

The late Dr. Leonard Guthrie.

Mr. H. W. Burleigh (Secretary and General Superintendent, Hospital for Epilepsy and Paralysis, Maida Vale, W.) writes: Recently you were good enough to publish a letter asking for a photograph of the late Dr. Leonard Guthrie. I am glad to say that two copies have been obtained—one a recent full-length snapshot, but unfortunately taken in strong sunlight, and the second a photograph taken many years ago. Both of these have been enlarged, and any of your readers may obtain copies from me, the price being 12s. 6d. each.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 40, 41, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 38, 39, and 40.

The following appointments of certifying factory surgeons are vacant: Festiniog (Merioneth), Keith (Banff).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, [illegible] not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
THE DIAGNOSIS OF ACUTE ABDOMINAL CRISES.*

BY

ARTHUR H. BURGESS, F.R.C.S., M.B., CH.B., M.Sc.,
HONORARY SURGEON, MANCHESTER ROYAL INFIRMARY.

IN these two lectures I propose to discuss the diagnosis of acute abdominal crises in a general sense, and to consider first of all, individually, the various symptoms and signs met with in such crises, attributing to each its relative value as a factor in diagnosis, and as an indication for treatment; and secondly, these same symptoms arranged in groups, such as are observed clinically in the different types of abdominal crises.

First, then, let us consider the diagnostic value of such symptoms as may be present in an acute abdominal crisis.

GENERAL SYMPTOMS.

The general symptoms include:

1. Various degrees of shock or collapse.
2. Alterations in the frequency and character of the pulse.
3. Changes in the temperature.
4. Alterations in the type of respiration—"thoracic" type.
5. Other symptoms, such as a dry and furred condition of the tongue, hiccough, strangury, and tenesmus.

Speaking generally, one may say that, although these general symptoms are useful in directing attention to the possibility of a crisis having occurred, yet they give no clue to its nature, nor are they alone of much value as indications for treatment. They may occur alike in serious and comparatively trivial abdominal lesions, as evidenced, on the one hand, by the profound degrees of shock which may accompany a simple contusion of the abdominal wall, or be present during an attack of colic; while, on the other hand, cases of perforation of a viscus are sometimes seen with practically no rise of temperature or pulse, and with very little, if any, shock. In fact, so unlikely is it that any material assistance will be obtained from a consideration of the temperature or pulse that I feel strongly that fewer cases would pass unrecognized in their early stages were it to become the universal rule never to take the temperature nor count the pulse in a suspected abdominal crisis; they are only too likely to mislead. The *persistence* of shock and of the other general symptoms is of far greater diagnostic importance than is their initial degree.

LOCAL SYMPTOMS.

It is, then, mainly upon the local symptoms and signs—those referable to the abdomen itself—that we have to rely in deciding questions of diagnosis and treatment in any acute abdominal crisis. These include:

1. Abdominal pain.
2. Cutaneous hyperalgesia ("viscero-sensory" reflex).
3. Tenderness, local and general.
4. Nausea, vomiting.
5. Muscular rigidity ("viscero-motor" reflex).
6. Abdominal distension.
7. Presence of free gas in the peritoneal cavity.
8. Presence of free fluid in the peritoneal cavity.
9. Local abdominal or pelvic swelling.
10. Certain changes ascertainable upon rectal examination.

1. *Abdominal Pain.*

It is now well recognized that the viscera are themselves quite insensitive to touch or pain, and it has been shown by Mackenzie and many others that pain resulting from a lesion of a viscus is felt not in that viscus itself, but is referred to the peripheral distribution of the spinal nerves arising from those segments of the spinal cord with which that viscus is connected through its sympathetic nerve supply. Since the abdominal wall is supplied by the lower six dorsal nerves and the abdominal viscera are connected via the sympathetic with these same nerves, it follows that pain arising from a morbid state of an abdominal viscus is referred to the peripheral distribution of the lower six dorsal nerves—that is, to the mid-line of the anterior abdominal wall. It must, however, be remembered that these nerves have both posterior and lateral branches, so that in some cases pain is referred to the back or around the side of the chest and abdomen as well as, or even instead of, to the middle line anteriorly.

So far as the alimentary canal is concerned, reflex pain from the stomach is referred to the peripheral distribution of the fifth to eighth dorsal nerves—that is, between the xiphoid cartilage and the umbilicus; that from the duodenum close above the umbilicus; that from the small intestine and appendix (eighth to eleventh dorsal) to the "umbilical" area (the umbilicus corresponding to the tenth dorsal); and that from the large intestine to the mid-hypogastric line. From the liver, gall bladder, and bile ducts (seventh to ninth dorsal) pain is referred to the lower part of the epigastrium and also sometimes to the lower angle of the scapula (eighth dorsal). From the close association between the liver and diaphragm, supplied by the phrenic nerve, we find reflex pain transmitted along the superficial cervical nerves arising from the spinal cord at the same level as the phrenic (third and fourth cervical), resulting in pain felt over the outer and anterior aspects of the shoulder—the characteristic "shoulder tip" pain in gall stones, much less frequently observed clinically than the stress laid upon it in textbooks would lead one to anticipate.

All pain, then, felt in the early stages of an acute abdominal crisis is of this *reflex* character, and is not, therefore, localized to the situation of the viscus primarily at fault. Later pain, however, that due to irritation of the parietal peritoneum, is always felt at the site of irritation, and has, consequently, considerable localizing value. It is well known that there is a rich nerve-plexus in the connective tissue underlying the parietal peritoneum, and as this is in connexion with the cerebro-spinal system, unlike the visceral peritoneum which is supplied entirely by the sympathetic, accurate localization is possible. Let us consider the subjective pain felt during an attack of acute appendicitis. Its most characteristic feature is that it commences not over the region of the appendix at all, but is referred to the area of the umbilicus—in fact any acute abdominal attack in which the initial pain is felt in the right iliac fossa is extremely unlikely to be appendicitis. The later transference of pain to the right iliac fossa indicates extension of the irritation to the parietal peritoneum. The closer the appendix is situated to the parietal peritoneum of the right iliac fossa the earlier will the latter be irritated, and the sooner will pain be there localized. It must, however, be remembered that the appendix is sometimes placed deeply among the coils of small intestine or among the pelvic viscera, so that there may be no pain localized to the right iliac fossa at any stage, the initial "umbilical" area pain becoming steadily generalized. Absence of local pain may be, therefore, either a favourable sign, indicating that the infection is so slight as never to irritate the parietal peritoneum (and the appendicular origin of many of these cases is overlooked), or an unfavourable sign, indicating an appendix deeply placed among the viscera and therefore likely to cause diffuse peritonitis. When well-marked local pain appears in the right iliac fossa soon after the initial "umbilical" area pain one may confidently expect to find the appendix not far removed from the parietal peritoneum. These statements refer to first attacks only, for if as the result of previous attacks adhesions attach the appendix to the parietal peritoneum, the latter may become irritated almost from the very first and the pain be correspondingly early localized.

2. *Cutaneous Hyperalgesia.*

In the normal state impulses are constantly passing both in an afferent direction from the viscera to the spinal cord and efferently from the cord to the skin and muscles of the abdominal wall without our being aware of their existence. If a viscus becomes diseased the afferent impulses will naturally be of a more irritant nature, and the segment or segments of the cord receiving those impulses will be in a state of hyper-excitability. If a cutaneous nerve connected with one of these hyperexcitable segments receive a stimulus—such as a light pinch, which normally would have been quite insufficient to evoke any sense of pain, and which applied elsewhere

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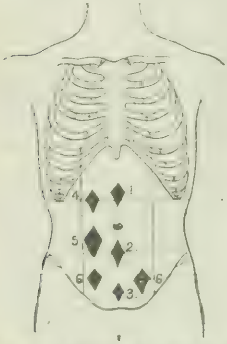
* Abstract of two post-graduate lectures delivered at the Manchester Royal Infirmary.

to the body would fail to do so—it is very probable that pain will be felt; that is, the area of skin pinched is said to be "hyperalgesic." Theoretically the whole cutaneous distribution of the hyperexcitable segment might be expected to be hyperalgesic, but in practice it is found that certain areas are especially susceptible. These have been well worked out by Mr. David Ligat, and are described in detail in his Hunterian Lecture;[1] by his kind permission I reproduce his diagram showing the "functional" areas where hyperalgesia is elicited in disease of the various viscera. His method of exciting the reflex response is to grasp the skin and subcutaneous tissue firmly between finger and thumb and draw them away from the deeper layers of the abdominal wall. "If an abnormal reflex is produced, it is at once recognized—the patient winces; he may even cry out if a sharp response is elicited." This method has the great advantage over other methods of applying the stimulus that no pressure is made upon the abdominal wall—rather the reverse—and hence there is no possibility of confusion with hyperalgesia of deeper structures—for example, the muscles and subperitoneal tissues. These hyperalgesic areas, while serving to indicate the organ at fault, yet are quite unaffected by the position of that organ in the abdominal cavity—for example, the "appendix" area of hyperalgesia is the same whether the viscus be, as usual, in the right iliac fossa or in one of the less frequent positions, such as the pelvis or the hepatic flexure, or even on the left side, since, wherever situated, it still remains connected with the same spinal segments. The presence of these hyperalgesic areas, I believe, is of very great value in determining the viscus primarily responsible, but no reliance whatever must be placed upon their absence as excluding disease of such viscus, and should the diagnosis of such disease seem probable upon other grounds, the absence of such hyperalgesia must be [illegible]. [illegible]



[illegible] his Hunterian Lecture, published in [illegible]

3. Tenderness.

[illegible] deep tenderness, which must be carefully differentiated from superficial cutaneous hyperalgesia, [illegible] The nerves themselves are quite [illegible] by pressure [illegible] any part of the abdominal wall. [illegible] may be due to either (1) cutaneous hyperalgesia [illegible] or (2) [illegible] general peritoneal irritation [illegible] capable of [illegible] being concerned; it is not due to direct pressure upon the diseased viscus itself. Thus the pain elicited by deep pressure over "McBurney's" point in acute appendicitis, *and localized by the patient to the point pressed upon*, arises, not from direct pressure upon an inflamed appendix, but from pressure stimulation of the subserous nerve plexus rendered unduly irritable by extension to it of irritation from such appendix, no reflex being involved. Were it otherwise—that is, were the pain due to pressure stimulation of the inflamed appendix itself—then the stimuli, on reaching the spinal cord via the sympathetic, would be referred to the "umbilical" area, as already mentioned, and not to McBurney's point. I believe this is what actually does happen occasionally in cases met with in the very earliest stages of acute appendicitis, before the irritation has had time to extend to the subserous plexus, where, although the patient complains of pain when pressed over McBurney's point, yet, if carefully questioned, he will locate that pain to the region of the umbilicus.

Local tenderness is especially met with in the inflammatory group of abdominal crises—appendicitis, cholecystitis, salpingitis, and pancreatitis. The site of maximum tenderness is not alone sufficient to differentiate between these various conditions, since as already explained it merely indicates the site where the subserous nerve plexus is most acutely irritated by extension from the inflamed viscus. Thus local tenderness in the right iliac fossa may be due to the appendix, the right Fallopian tube, a low-lying gall bladder, or escaped contents from a perforation of the duodenum. In the differentiation between these valuable help may be derived from the detection of any of the hyperalgesic areas.

General abdominal tenderness, unless associated with muscular rigidity of the involuntary type, shortly to be described, is of no special importance. When so associated it usually indicates peritonitis.

At the risk of repetition I would emphasize the importance of a clear appreciation of the difference between the three signs already considered—pain (subjective), cutaneous hyperalgesia, and local deep tenderness, and would point out that in appendicitis they are manifested each in a different area—the subjective pain has reference to the "umbilical" area, the cutaneous hyperalgesia to the "appendix" area (see Ligat's diagram), and the local tenderness usually to McBurney's point.

4. *Vomiting.*

Like the pain, the vomiting which sets in at or soon after the onset of an acute abdominal crisis is a purely reflex phenomenon, and not, therefore, of any diagnostic value. Such reflex vomiting, however, usually subsides within twenty-four hours and does not tend to recur. A *recurrence* of vomiting after having definitely ceased for some time is always a grave sign, and usually indicates the onset of peritonitis. *Persistence* of vomiting from the onset is also of serious import, and should raise a strong suspicion of intestinal obstruction.

5. *Muscular Rigidity.*

Stimuli received from a diseased viscus by the spinal cord may irritate the motor cells of the same segments, and so cause a reflex contraction of the abdominal muscles supplied by those segments—the "viscero-motor" reflex of Mackenzie—rendering the abdominal wall in that area rigid. This is Nature's effort at protection, and is in every way analogous to the muscular spasm around a joint in a state of acute synovitis, fulfilling the same purpose—in fact, the peritoneum is the great visceral joint. The exact site and extent of the rigidity will depend upon the nerve connexions of the viscus primarily at fault with the spinal cord segments, but as it is always much more difficult to accurately map out areas of rigidity than areas of hyperalgesia, the viscero-sensory reflexes will be found to be of greater service than the viscero-motor in determining the primary seat of disease. Though the viscero-motor reflex may exist quite apart from peritoneal irritation, yet in the vast majority of acute abdominal crises peritoneal irritation is the exciting factor. Normally the peritoneum is moistened by a small amount of serous fluid, to the presence of which it has become accustomed; any material alteration of the chemical constitution of this fluid will serve as an irritant and start a viscero-motor reflex. Mere increase in the amount of the fluid is not sufficient to do so—for example, the absence of abdominal rigidity in simple ascites. Naturally, we may expect that the greater the chemical alteration the greater the consequent muscular contraction, and this we find to be the case. Thus the contraction is best marked where acid fluids are suddenly shot into the peritoneal cavity, as in rupture of gastric or duodenal ulcer. On one occasion I had the opportunity of examining the abdomen within two minutes of a perforation of a duodenal ulcer, and found the muscles intensely rigid even in that short time. Next in order come the contents of the intestine, then bile; urine, even though slightly acid, seems to be still less of an irritant. There is, however, one fluid that may be suddenly poured out even in large quantity into the peritoneum and yet prove so little of an irritant that it fails to start a viscero-motor reflex, and that fluid is blood. Almost identical in chemical composition with the normal peritoneal fluid, it does not act as an irritant. Hence we may find an entire absence of muscular rigidity overlying an extravasation of blood into the abdominal cavity, at any rate in its earlier stages. Later, as the blood clots, slight irritation may be set up, and some slight rigidity be detected. This absence of a viscero-motor reflex over an underlying intraperitoneal haemorrhage is an extremely important fact to bear in mind, and unless regard be paid to it it is easy for a large effusion of blood into the peritoneal cavity to be entirely overlooked.

Differentiation of Involuntary from Voluntary Muscular Rigidity.—A patient expecting pain from an examination of the abdomen, or an intentional malingerer, will often voluntarily contract the abdominal muscles and so simulate a viscero-motor reflex. Since voluntary muscular contraction is of no value in diagnosis, and depends upon the temperament of the individual patient, it is of the highest importance to distinguish it from the true involuntary rigidity of a viscero-motor reflex. The chief points of difference are: (1) gentle palpation for several minutes with the flat of a warm hand, with regular steady pressure, will cause voluntary rigidity to disappear or diminish; (2) distraction of the patient's attention by questioning him as to his symptoms, or directing his notice to some other part of his body, will cause voluntary rigidity to relax; (3) in voluntary contraction there is always a momentary relaxation of the muscles between the end of one expiration and the commencement of the succeeding inspiration, sometimes extending a little way into inspiration. *True involuntary muscular rigidity never relaxes, however gentle the examination, however one distracts the patient's attention, nor is any relaxation met with at any phase whatsoever of the respiratory movements.*

Defective Mobility.—Muscular rigidity may also be observed clinically as defective mobility during respiration, and it is always useful to commence an examination of the abdomen by asking the patient to take a few full breaths, carefully noting any defective movement of any part of the abdominal wall. It will usually be found that any area which does not move on respiration will, on palpation, present the features of involuntary muscular rigidity; the converse is not, however, always true, and I have seen cases where respiratory movement seemed perfect nevertheless show definite evidence of involuntary rigidity on palpation. Moreover, by simple inspection one cannot distinguish with the same facility as by palpation between voluntary and involuntary rigidity.

Involuntary muscular rigidity lasts as long as the peritoneal irritation causing it lasts, or until the muscles are previously exhausted, or the reflex arc sufficiently "dulled." Even morphine, which abolishes so many of the early reflex phenomena of an acute abdominal crisis, usually, and fortunately, fails to entirely abolish this. As to its clinical significance, I believe involuntary muscular rigidity to be an absolutely diagnostic sign of a serious underlying lesion, usually with some chemical irritation of the peritoneum, and therefore as the strongest single indication for surgical treatment that we possess; nor have I ever operated in the presence of this sign without finding such definite lesion present. Unfortunately the converse is not true, and serious changes may be going on within the abdominal cavity without any overlying muscular contraction. This is especially seen in cases of intra-abdominal haemorrhage, blood serum being, as just pointed out, insufficiently abnormal to the peritoneum to start a viscero-motor reflex.

6. *Distension of the Abdomen—Meteorism.*

That is, gas in the intestines as distinguished from free gas in the peritoneal cavity. This sign may be observed whenever the bowel is paralysed from any cause, but is especially seen in the groups of intestinal obstruction and peritonitis. A slight local meteorism is not necessarily of any serious import, but a *steadily progressive distension* of the bowels should raise a very strong suspicion of intestinal obstruction or spreading peritonitis.

7. *Free Gas in the Peritoneal Cavity.*

Free gas necessarily rises to the highest part of the abdominal cavity, and as the patient will usually be in the dorsal posture the gas will rise between the liver and the anterior abdominal wall and diaphragm, so leading to loss or diminution of the normal liver dullness. On the left side the splenic dullness will be similarly affected, but since the normal splenic dullness is a very inconstant quantity, its loss is thereby so discounted as to be useless for diagnosis. As a *positive* sign this loss of liver dullness is of great importance, provided there is no general distension of the bowels such as might force up the transverse colon between the liver and the diaphragm. As a *negative* sign it is valueless, and the presence of the normal liver dullness in no way excludes a perforation of the alimentary canal, since even in the presence of a perforation so insignificant an amount of gas may have escaped as not to materially affect the liver dullness. Especially valuable is the determination of the loss of liver dullness in a patient in whom, an hour or so before, its presence had been particularly noted.

8. *Free Fluid in the Peritoneal Cavity.*

Free fluid, shown clinically by the signs of "shifting dullness in the flanks," is not frequently observed in abdominal crises. It may, however, be seen (1) in large internal haemorrhages—for example, rupture of ectopic gestation; (2) after rupture of an organ containing much fluid—for example, distended bladder; and (3) after rupture of large cysts—for example, ovarian or hydatid. The most marked instance I have seen was in a case of perforated gastric ulcer, with large perforation of the lesser curvature; the patient, during a long journey from the country to the Manchester Royal Infirmary, had been supplied constantly with soda-water by sympathetic relatives to assuage a violent thirst.

9. *The Presence of a Definite Abdominal or Pelvic Swelling.*

This is of great diagnostic value, and is most frequently noted in the inflammatory group of abdominal crises—appendicitis, cholecystitis, and pelvic inflammations. Even when present its detection may be very difficult on account of overlying muscular rigidity, and a caution must be given not to use any forcible pressure in examining for it, as otherwise an appendicular abscess may readily be ruptured. A definite swelling may also be felt in some cases of intestinal obstruction, notoriously in intussusception, where its situation and shape are characteristic, and also in obstruction from malignant growths, from faecal masses, and occasionally from foreign bodies. In one case I was able to feel a large gall stone and in another a large hairball, both causing acute obstruction.

10. *Rectal Examination.*

This often throws light upon the diagnosis of an acute abdominal crisis, especially in the inflammatory and obstructive types. Inflamed appendices can sometimes be felt per rectum and appendicular abscesses recognized when the abdominal examination is quite negative. In obstruction from intussusception the invagination may be felt, malignant growths of the rectum causing obstruction can be detected; and, even when too highly situated in the colon for this, the peculiar "ballooning" of the bowel below them raises a strong suspicion of their presence, though this sign may occur also in peritonitis.

Having dealt with the individual symptoms and signs observed in acute abdominal crises, let us turn to a consideration of their arrangement in groups such as we meet with clinically. But, *before deciding in any given case presenting the symptoms of an acute abdominal crisis that the lesion is referable to the abdomen at all,* there are two fallacies in particular which it is important should be borne in mind. These are: (*a*) The "crises" met with in tabes dorsalis—"gastric," "intestinal," and "renal." It should be a cardinal rule to test the knee-jerks in every abdominal case. On the other hand, it must be realized that tabes does not preclude the co-existence of a true abdominal crisis, and, further, that the visceral analgesia which occurs in some tabetics and prevents the manifestation of pain, cutaneous hyperalgesia, tenderness, and rigidity, may render the recognition of such crisis a very difficult matter indeed. (*b*) The possibility of confusion between acute abdominal crises and acute intrathoracic diseases, especially acute basal pneumonia, acute diaphragmatic pleurisy, and acute pericarditis. This difficulty is sometimes a very real one, and surgeons of experience have not infrequently opened the abdomen only to find the peritoneal cavity normal and the lesion an intrathoracic one. Whenever acute *lobar* pneumonia follows within twenty-four or forty-eight hours of an "early appendicectomy," one cannot help but suspect that the pneumonia was the real cause of the abdominal symptoms and that the operation was unnecessary; when pneumonia is due to an operation, it is of the *lobular* or bronchopneumonic type. The lower six dorsal nerves before entering the anterior abdominal wall supply the posterior and lateral aspects of the lower half of the chest wall. In disease of the chest viscera, and especially in basal pneumonia and pleurisy, pain may be referred to the peripheral distribution of these nerves—that is, to some part of the mid-line of the anterior abdominal wall—just as it is in a true abdominal crisis. Confusion is particularly liable to arise in the case of young children, since they cannot assist us with a description of their symptoms, and since in them the physical signs of a pneumonia are sometimes delayed for twenty-four or even forty-eight hours. Thus, for instance, *in the early stages of an acute pneumonia in a child we may meet with any or all of the following:*

1. Acute pain referred to the mid-line of the anterior abdominal wall.
2. Tenderness on palpation of the abdomen.
3. Defective mobility of the abdominal wall on respiration.
4. Rigidity of the abdominal muscles.
5. Abdominal distension (from associated constipation).
6. Nausea, vomiting, and hiccough may all be present, as well as signs of severe collapse.

If, in addition, no physical signs have yet appeared in the lungs it must be admitted that the simulation of an acute abdominal crisis is a very exact one. The points to consider in making a differential diagnosis are: (*a*) The frequency of respiration is out of all proportion to the abdominal symptoms or to the pulse; the respirations may be 40 or 50 with a pulse of only 100. As a working rule, a pulse-respiration ratio of less than 3 to 1 favours an intrathoracic cause, of more than 3 to 1 an intra-abdominal cause. (*b*) The average temperature of an intrathoracic lesion is higher than an intra-abdominal one, so that a high temperature combined with a low pulse-respiration ratio strongly suggests an intrathoracic cause, as does the occurrence of a rigor or of herpes labialis. (*c*) The abdominal tenderness is more superficial, and deep pressure with the flat of the hand is not only tolerated but may give relief in an intrathoracic lesion. (*d*) Although intrathoracic inflammation may be associated with marked rigidity of the abdominal muscles, yet this partakes of the "voluntary" rather than the true "involuntary" type. In all the cases I have seen it has been possible to detect a momentary relaxation at the end of each expiration, such as does not occur with an intraperitoneal lesion. (*e*) The detection of the "hyperalgesic" areas referred to previously would suggest the abdominal viscera primarily at fault; these would be absent in intrathoracic disease, but, as already explained, are by no means necessarily present in intra-abdominal disease. (*f*) A rectal examination may reveal marked tenderness suggestive of a peritoneal cause. If a careful consideration of these points still leaves one undecided, then I believe an exploratory laparotomy should be at once undertaken, as being the lesser of two evils—dangerous delay and unnecessary operation.

Groups of Crises.

Having, then, excluded these possible fallacies and having decided that we are dealing with a true abdominal crisis, we have next to consider the possible causes of this condition. It is not my purpose now to inflict upon you a list of all the various causes of acute abdominal crises—their number is extremely large, and no one who did not possess the confidence born of youthful inexperience would attempt to devise any scheme by which they could all be recognized before either operation or *post mortem*. For my own guidance I am accustomed mentally to classify them into five groups, and although some of the rarer conditions do not fall exactly under any of such heads, yet I have found it a very convenient scheme to have in mind at the bedside. These groups are:

1. The colics.
2. The perforations.
3. The haemorrhages.
4. The inflammations.
5. The obstructions.

This order represents roughly their average suddenness of onset. We must remember that the *early symptoms in them all may be identical*, since they depend upon the same cause—a shock to the solar plexus, evidenced clinically by pain referred to the mid-line of the abdominal wall, vomiting, and shock. These symptoms have long been described collectively by Sir Frederick Treves under the term "peritonism," and are of no value in differential diagnosis, since they may be present whatever the nature or wherever the situation of the lesion, provided only that it be of sufficient intensity to stimulate the solar plexus, directly or indirectly. Moreover, *this initial stage of shock is usually a transient one*, and is followed by a period of reaction—a dangerous calm before a mighty renewal of the storm—during which all the general symptoms may completely disappear, and it may be extremely difficult to convince oneself, let alone the practitioner or patient, that a really serious lesion is actually in existence within the abdomen. This "dangerous period" has long been recognized in connexion with acute appendicitis, but, as pointed out by that super-teacher of clinical surgery Mr. Rutherford Morison,[2] its occurrence in other forms of abdominal emergencies is not so widely known. Morison describes three stages of an abdominal emergency—the "triple syndrome":

1. The stage of shock.
2. The stage of reaction.
3. The stage peculiar to each lesion.

If, as too often is the case, the onset of the stage of reaction be assisted and intensified by the indiscriminate exhibition of morphine, it may prove a very pitfall of diagnosis. I well remember seeing in consultation a lady who had been seized with a violent epigastric pain and who when seen half an hour afterwards by her medical attendant was in a state of profound collapse, nevertheless, after injection of one quarter grain of morphine, make such a complete temporary recovery that she was sitting up when I saw her four hours later, laughingly protesting that there was nothing whatever the matter with her; the only sign unmasked by the morphine was rigidity of the recti of the "involuntary" type; immediate operation revealed a perforation high up on the lesser curvature of the stomach with considerable extravasation of gastric contents.

Group 1. *The Colics.*

This group is characterized by (*a*) the extremely sudden onset of the pain, (*b*) its sudden cessation, (*c*) its tendency to recurrence. The pain is, moreover, referred to certain characteristic regions. In *biliary* colic it is felt in the epigastrium, radiating backwards to the angle of the right scapula, and occasionally, when the endings of the phrenic nerve are stimulated, to the tip of the right shoulder. In *renal* colic it is felt to commence in the loin and to shoot downwards towards the groin, inner aspect of the thigh, and the testicle; often definite tenderness of the testicle, which receives its nerve supply from the same spinal segments as the kidney, can be elicited, although there is no tenderness of the overlying scrotal skin, supplied from the sacral segments. Exceedingly important is the association of the pain with some increased frequency of micturition, whilst the occasional coexistence of blood in the urine is diagnostic. In intestinal colic pain is felt all over the abdomen, especially in *lead* colic, where the pulse, during the pain, is usually retarded, vomiting and constipation are associated, and a blue line *in*, *not on*, the gums may be detected. Tenderness of the abdomen may be present, but in many cases, especially of intestinal colic, the pain is very definitely relieved by pressure, such as never obtains in peritonitis. Muscular rigidity may occur, especially in biliary and renal colic, but I have never seen it present the unyielding character of true involuntary rigidity. Restlessness, although it gives no relief, is a marked feature of colic, but never occurs in a perforation.

GROUP 2.—*The Perforations.*

As a group this is characterized by (*a*) the very sudden onset of the pain, which is usually described as excruciating; (*b*) the severity of the initial shock, which may, however, soon pass off; (*c*) the marked development of true involuntary muscular rigidity from the very first; (*d*) there may be signs of free gas in the peritoneum. Of these (*c*) is the most important and demands immediate laparotomy. Some clue to the viscus perforated may be obtained from the area of most marked cutaneous hyperalgesia and from the previous history of the case—for example, of "indigestion," appendicitis, or typhoid, but time should not be wasted in this connexion, as the site of perforation can be discovered with certainty only at the operation.

GROUP 3.—*The Haemorrhages.*

Haemorrhage taking place into one of the mucous cavities of the abdominal viscera, if of such intensity as to constitute a "crisis," will probably soon show itself by escaping from one of the natural orifices and so be detected—for example, haemorrhage from the stomach, bowels, and uterus. It is haemorrhage occurring into the peritoneal cavity itself that is so likely to be overlooked and for the reason already stated—namely, that blood is not sufficiently irritating chemically to act as a stimulus to the peritoneum and thus start a viscero-muscular reflex, so that there is an entire absence of muscular rigidity. We have, in fact, to rely for diagnosis upon the supervention of the general signs of loss of blood, and if the blood is escaping but slowly, these may be late in appearing. Whenever, therefore, we meet with a history of sudden acute abdominal pain, with or without the other signs of "peritonism," and find a perfectly soft, supple, and undistended abdomen, we ought, although we can at once exclude the other groups of abdominal crises, to bear in mind the possibility of haemorrhage taking place into the peritoneal cavity. If in the course of a few hours we note a steadily rising pulse, with increasing pallor of the mucous membranes and of the fingernails, and restlessness, and the abdomen still remains quite soft, we may with confidence diagnose intraperitoneal haemorrhage. Apart from trauma the only frequent cause of this condition is rupture of an ectopic gestation, and this is often confused with rupture of a gastric ulcer—in fact, as my practice does not intentionally include gynaecology, all the cases I have been asked to see had been originally so diagnosed. Such an error will, however, never be made if attention be paid to the state of the abdominal muscles—in ruptured ectopic gestation involuntary muscular rigidity is entirely absent, in rupture of a gastic ulcer it is well marked. Moreover, a case of ruptured ectopic pregnancy will usually be found very restless, tossing herself about in a manner never seen in rupture of gastric ulcer, where all efforts are directed towards keeping the abdomen as still as possible. Again, nothing increases the frequency of the pulse so continuously as haemorrhage, and though in the initial shock of a gastric perforation there may be a rapid pulse yet this usually soon subsides, and rises again only as peritonitis develops.

GROUP 4.—*The Inflammations.*

The main characteristics of this group are: (*a*) The *onset* is less sudden than in the three groups already considered, and general symptoms of malaise may have preceded the crisis by a few days. The pain never reaches its greatest intensity in the first few moments, as in colic, perforation, and some forms of obstruction, but steadily rises to its maximum within a period which may be as long as several hours. Thus, a patient who, feeling perfectly well one minute, is in violent agony the next, is suffering from some other type of crisis than an abdominal inflammation, and a recollection of this point would have prevented many errors in the diagnosis of acute appendicitis from other crises; (*b*) this is the only group in which the *temperature* may be raised in the early stages, but the absence of any rise of temperature should not be allowed in any way to exclude, and should certainly never be waited for to complete, the diagnosis in a doubtful case; (*c*) there is detected early on some *definite local tenderness* (compare very carefully corresponding points on the two sides of the abdomen), from which as a centre the tenderness tends to spread: the tenderness may, as in pelvic appendicitis and salpingitis, be first found per rectum; (*d*) muscular rigidity of the involuntary type, absent at first, appears only when the parietal peritoneum is affected, and extends concurrently with the peritoneal irritation; (*e*) a *swelling* may be definitely palpable in the region of the appendix, the gall bladder, or to one or other side of the uterus in appendicitis, cholecystitis and salpingitis respectively, the three most frequent causes of acute inflammatory crises. This swelling, especially in appendicitis, is not, as is so often thought, the swollen inflamed viscus itself, but is due to the plastic adhesion of the omentum (so aptly termed the "abdominal policeman" by Mr. Rutherford Morison), intestine or other viscera to the viscus primarily inflamed. The *diagnosis between acute appendicitis and acute cholecystitis* is, in the very acute cases, possible only by attention to (1) their different areas of cutaneous hyperalgesia; (2) the site of the most marked local tenderness and muscular rigidity—a guide by no means infallible, since tenderness and swelling in the right iliac fossa may be due to a gall bladder situated unusually low, while the same under the right costal margin may result from an appendix which has failed to undergo its proper descent, and has remained in the vicinity of the hepatic flexure; (3) some assistance may be obtained from the previous medical history (either of gall stones or previous attacks of appendicitis) and from the greater frequency of appendicitis in the male sex and prior to middle life.

Another frequent confusion I have noted between these two conditions has occurred at a later stage when a well-marked swelling is present, and the question is between an appendicular abscess and an empyema of the gall bladder. With a low liver (Riedel's lobe) a distended gall bladder may be at or even below McBurney's point, and, conversely, with a congenitally high appendix an appendicular abscess may be felt well above it. The diagnosis can, however, usually be made by noting: (1) a distended gall bladder is rarely so fixed by adhesions that it fails to move downwards with inspiration; an appendicular abscess is unaffected by respiratory movements; (2) a distended gall bladder has a rounded edge below, an appendicular abscess has its rounded edge above; (3) there is an area of resonance between an appendicular swelling and the liver, but not so in the case of the gall bladder.

Acute appendicitis and acute salpingitis of the right side constitute another frequent source of diagnostic confusion. The points to be considered in their differentiation are (1) the characteristic order of onset of the symptoms in acute appendicitis, so well described by the late J. B. Murphy, is much less a feature of salpingitis; (2) the initial pain is referred to below the umbilicus in salpingitis; (3) the cutaneous hyperalgesia of salpingitis is most marked at a site well below that of appendicitis; (4) the previous history of vaginal discharge, pelvic troubles, etc., may assist.

GROUP 5.—*The Obstructions.*

It is in this group particularly that improvement in the results of surgical treatment is so urgently required. In the other groups—the perforations, haemorrhages, and inflammations—the results of operative treatment have been markedly improved in recent years, and, although advancements in surgical technique and after-treatment have undoubtedly played a considerable part, yet to the earlier recognition of their existence must the chief credit be awarded, permitting as it does the application of appropriate surgical treatment at an earlier stage than hitherto. Cases of intestinal obstruction, however, unless from some obvious external hernia, are still apt either to pass unrecognized or to be temporized with until the development of the textbook symptom of *faecal vomiting* has declared itself. When, at the great Day of Judgement, we are all called upon to answer for the consequences, immediate and remote, of our actions, a truly terrible indictment awaits him who first described, in a surgical textbook, faecal vomiting as a sign of intestinal obstruction: far rather ought it to be regarded as evidence of rapidly approaching death; nor should it ever be waited for to complete the diagnosis in a doubtful case. It usually indicates such a profound degree of toxaemia that, unless the cause of the obstruction be an external hernia or some equally readily ascertainable intra-abdominal lesion, the patient is unable to withstand the additional shock of the operation and dies "poisoned." Were as careful attention paid to the early diagnosis of intestinal obstruction as is now expended upon that of the other, perhaps more dramatic, groups of abdominal catastrophes, the present truly appalling mortality of this condition would, I am convinced, be very speedily and very materially reduced.

The chief features characterizing this group are (1) *the persistence of the vomiting*, the early reflex vomiting passing without interruption into that of obstruction; (2) *the cessation of passage of flatus*—if in a case of suspected obstruction flatus fails to pass within a period of twenty-four hours in spite of repeated enemata the diagnosis of intestinal obstruction is established with practical certainty; (3) *progressive abdominal distension*, a most important sign, and always calling for surgical intervention. To wait until distension is general is to render the operation much more difficult, to make inevitable the escape of coils of bowel during its performance—a procedure calculated more than any other to increase the intensity of the shock—besides paralysing the bowels from overstretching and increasing the toxaemia. The absence of any involuntary muscular rigidity and of early localized tenderness are negative points of some value. I have found *auscultation* of the abdomen of great assistance, and with a little practice the sounds produced by the passage of fluid contents along dilated coils and through narrowed portions of gut may be readily recognized. Sometimes there are other signs to help us in special types of obstruction. Thus in intussusception we have the passage of blood and mucus from the rectum (even before this has occurred a finger passed per anum may be covered with blood on withdrawal), and the presence of a tumour of characteristic shape felt somewhere along the course of the colon, or per rectum; this tumour is most in evidence as the peristaltic wave passes along it, and may therefore be palpable only in a spasm of pain, when the voluntary contraction of the abdominal muscles during the child's cries tends to obscure it. However, as already mentioned, there is always, in voluntary rigidity, a momentary relaxation at the end of expiration, and this will allow of the tumour being felt.

Many cases of chronic intestinal obstruction end acutely and may be mistaken for primary acute obstruction; such can, however, usually be recognized by the presence of two features never found unless obstruction has been in existence for some considerable time: (1) The outlines of individual dilated coils may be seen beneath the abdominal wall, giving a "hill and vale" appearance, and (2) peristaltic waves may be observed passing along coils of distended bowel. In the normal state neither peristaltic waves nor the outlines of individual coils of bowel are ever visible through the abdominal walls, though rarely these phenomena may be seen beneath the thinned out covering of large ventral herniae, in cases of wide divarication of the recti muscles, and also in extreme degrees of emaciation. Even in these instances, however, the coils observed are of normal size and not distended, and are not really exceptions to the rule that whenever we can see clearly the outlines of coils of *distended* intestine, together with a peristaltic wave passing along them, we can safely diagnose chronic obstruction, and the presence of these two features in a case whose symptoms otherwise suggest acute obstruction should lead to a recognition of its primarily chronic nature.

Time will not permit me to consider cases presenting the features of more than one of these five groups [illegible] [illegible] [illegible] that of inflammation with [illegible] [illegible] types of acute crises which do not exactly fall into any of these groups, but perhaps I may be allowed to mention two not very uncommon [illegible] of special interest [illegible] pancreatitis and torsion of an ovarian pedicle. [illegible] though it should strictly be classified with the inflammatory group, [illegible] sudden and severe [illegible] and is usually mistaken for either [illegible] [illegible] high up in the abdomen. The severity of the symptoms is such as to call for immediate operation, but the actual diagnosis is not often made prior to laparotomy, when the blood-stained odourless effusion and the presence of minute areas of "fat-necrosis" in the omentum and mesentery at once direct attention to the pancreas. *Torsion of the pedicle of an ovarian tumour* is readily diagnosed if the existence of the tumour is previously known, sudden abdominal pain associated with sudden increase in size of the tumour being quite characteristic; where previously unsuspected the tumour can, as a rule, be felt either through the abdominal wall or per vaginam, at any rate in the early stages, and if of the right side is not uncommonly, in my experience, mistaken for appendicular abscess; but the size of the tumour is too large for an appendicular abscess to have attained in the given time. Later, when peritonitis of the plastic type has set in, the tumour is masked by the overlying muscular rigidity, but as this rigidity relaxes under anaesthesia it is always possible to recognize the condition prior to making the actual abdominal incision.

In conclusion, surgical technique has now reached such a high level of efficiency that further improvement therein cannot be relied upon to better the statistical results of the surgical treatment of acute abdominal crises—such can be obtained only by earlier diagnosis on the part of the general practitioner permitting the application of such treatment at an earlier stage. The time that has elapsed between the onset of the attack and the opening of the abdomen is the real deciding factor in the ultimate issue of the case—far more so than the skill of the individual surgeon. Do not expend too much time in making an exact and elaborate diagnosis: content yourself with recognizing that a grave lesion has occurred which is far more likely to recover if surgically treated. I believe I speak for all surgeons when I say that we infinitely prefer to meet in consultation the practitioner whose diagnosis, *made in the early hours* of the attack, is limited to "something gone seriously wrong in the belly," than he who, *forty-eight hours later*, can give us a cut-and-dried and possibly perfectly correct description of what an operation will reveal.

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A Clinical Lecture

ON

THE STUDY OF HEART DISEASE.[*]

BY

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I TRUST that your time to-day will not be wasted in listening to the remarks that I am going to make upon such a general subject as the one I have chosen. It can hardly be called a lecture, for it is only an expression of some of the ideas that have passed through my mind during the years I have studied this subject, but I hope, nevertheless, that I may stimulate your interest.

Heart disease is to me the least special of diseases because the cardio-vascular system is essentially a mechanical apparatus for distributing blood throughout the body, and when it is damaged the circulation in important organs suffers, thus injuring in turn their functions and producing symptoms which are not strictly cardiac, but yet take a part in the patient's illness, and often an important one. These symptoms may be hepatic or pulmonary, or renal, or alimentary, or nervous, or a combination of them. Thus a wide knowledge of general medicine becomes essential in order to understand, and treat with confidence, such patients. If we focus all our attention on the heart we shall overlook valuable indications of heart disease, and though alive to the changes in the heart itself, be unable to grasp the exact condition of the patient.

It is not to be supposed that the heart must not be carefully studied, but even in doing this we are liable to fall into the error of restricting this part of the investigation to one part—the valves, for example—instead of considering the organ as a whole. We can see this tendency if we glance at the evolution of the skilled study of heart affections. With the introduction of the stethoscope there necessarily followed a period in which the greatest attention was given to elucidating the various sounds, thrills, murmurs, and friction signs. Looking back we can recognize that much time and skill were devoted to nice distinctions, which, though excellent training in accuracy, were academic rather than practical, and one feels that sometimes larger issues were lost sight of in minor details. It is certainly possible to overdo the study of valvular affections, and by dwelling too much on the mechanical effects of valvular lesions, to lose sight of disease of the myocardium, and even more to arrive at a wrong interpretation of the very valvular conditions that we studied so rigidly. This I will illustrate from the combined lesion of aortic and mitral regurgitation. It is often said that in such cases the mitral regurgitation is due to a *relative* incompetence of the mitral value produced by the effects of the aortic disease on the left ventricle. When, however, we follow many of these cases from their commencement, we find that in rheumatic cases the mitral valve is frequently damaged *first* by endocarditis, and the aortic valve *later* by the same process. Thus there are two separate lesions, and the mitral one is not dependent upon the aortic.

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[*] Delivered at the West London Post-Graduate School, December [illegible]

You may perhaps consider this to be an excellent example of an academic distinction, but it is not so, for you will find in a long series of these combined lesions that they are results of a severe type of cardiac rheumatism and illustrate a tendency to a spread of the infection. And you will not be surprised to hear that a considerable number of these cases die at an early age of a progressive or malignant endocarditis. Many look upon this final result as due to a secondary infection, but I regard it as a local intensification of the original and lurking rheumatic infection.

Now if we can be led astray over valvular affections by concentrating our attention too closely on the mechanical aspect of heart disease, it is easily understood how far wrong we may go when we are dealing with the human complex, a patient. For example, obsessed by a murmur, we may exclude a child from all activities, when with ordinary care such a child can lead a full life; thus we create invalidism and cause needless alarm.

This error, among others, has led to a swing of the pendulum, and many of you are well acquainted with the writings and teaching of Sir James Mackenzie, who brought us new facts and thoughts on the myocardium, and was the forerunner of extensive studies with the polygraph and electrocardiograph. I think he underrated the knowledge we in London possessed of the myocardium, but the man with a blazing torch naturally looks in the direction of its light, and of his fine work we have no doubt. This new period has taught us a vast deal about disturbances of the heart rhythm, and with it we must always associate the name and work of Dr. Thomas Lewis in this country. The result—and a very valuable one—is that we are now far more balanced in our views upon the part taken by the various cardiac structures in heart disease.

I believe, nevertheless, that we shall soon enter upon another period in the history of heart affections, with the realization of the immense importance of *infection* in cardiac disease.

This will bring with it a greater breadth of vision; for no one can study the results of infection in one organ without at the same time considering its effect upon other organs. And two aspects of heart disease will be always before our minds—the first the state of the heart and patient during the active phase of infection, the second the same considerations when the infection has ceased its activity and left its scars. The first stage may be illustrated by a child with recurrent chorea and the early signs of mitral endocarditis, the second by this same child when a woman of 35 years in an adult hospital, mortally ill with advanced mitral stenosis.

Is Rheumatic Heart Disease Infective?

The realization of this conception of heart disease, however, cannot be complete until there is general agreement upon a burning problem in medicine, the importance of which I am anxious to impress upon you to-day. The problem is this: Is rheumatic heart disease infective? Here I feel that I must proceed with caution, and assure you that I do not intend to enter upon a lengthy digression upon the pathology of rheumatism. I do, however, want to point out that this question is not a matter of my views or someone else's views, but one of vital interest to medicine and the public. Twenty years ago Dr. Paine and I, discussing this problem, were convinced that sooner or later it would have to be faced, and we believed that it would be brought to the front, not over the cause of acute rheumatism, but over the causes of malignant endocarditis. We felt that the study of acute rheumatism required so much investigation of the most exacting kind that few would have the time and opportunity to undertake it, but that the study of malignant endocarditis was comparatively a simple matter. No one with any experience can fail to see and isolate the infective agent in the valves of a fungating endocarditis, and the fatality of the disease gives many opportunities for verification. It is interesting to find our forecast of twenty years ago has come true.

The problem has now come to the front, and the failure to agree upon its solution stands across the path of progress. It has been brought into prominence not over the question of acute rheumatism, but over a condition named, unfortunately in my opinion, "subacute bacterial endocarditis."

These three statements will put the position clearly before you:

1. Malignant endocarditis is undoubtedly infective in nature.
2. The most frequent antecedent of malignant endocarditis is rheumatism.
3. Rheumatic patients suffer very frequently from endocarditis.

Is, then, rheumatic endocarditis bacterial and cardiac rheumatism infective?

If it is infective, then I think no fact concerning the cardio-vascular system since Harvey discovered the circulation is of more importance to sufferers from heart disease. It introduces a new system of study of heart affections with its basis the study of heart disease in the young, for it is then that infective processes are most frequent and in their earliest phases. Upon this basis the evolution of heart disease in the adult will be gradually built.

These studies in childhood will be undertaken at a time when we have hopes of prevention rather than palliation. There will be search for a serological or other test for the presence of active rheumatism in the system, a discovery for which there is great need. There is promise of the possibility of finding some antidote to the toxins that injure the heart; and finally we shall be driven by it to recognize that an essential step in the treatment of heart disease is its prevention, which, if not complete, at any rate may do much to minimize recurrences of active disease. Our ideal will be to regard chronic valvular disease as a surgeon does a strangulated hernia, and with such an ideal even imperfectly realized there will be advance.

You may have noticed that in speaking of "subacute bacterial endocarditis" I said that I thought the term unfortunate. I think, at the present time, it is unfortunate, because it implies a non-bacterial endocarditis, for otherwise some such term as subacute progressive endocarditis would surely have been chosen. Now, is there a non-bacterial endocarditis? And, if so, what form of endocarditis is it, and what is its cause? What non-bacterial agent produces the inflammation, necrosis, and scarring that we meet with in all forms of endocarditis that I personally am acquainted with?

Upon the answer to these questions there is little clear information, but I must not overlook a statement made by a distinguished physician at Cambridge at the discussion on subacute bacterial endocarditis. It was to this effect:

> Whatever the essential nature of rheumatic fever—and as to this we are still much in the dark—it is generally agreed that the vegetations of the associated endocarditis are, as judged by our present methods of investigation, bacteria-free, as also is the patient's blood stream.

Now I have been told, when discussing rheumatic endocarditis, that I have been hammering at an open door, and that no one doubts that it is infective, or that rheumatism is the *cause* of the heart disease.

Yet, is that door open if it is "generally agreed" that the heart disease is "associated with" rheumatism, and that the endocarditis—and therefore presumably the myocarditis and pericarditis—are bacteria-free? If any meaning is to be attached to words, I should say that the door is still tightly closed. At that meeting I put forward this counter-statement:

> The heart disease in rheumatism is *caused by* and not *associated with* the disease, and the endocarditis in its early stages is *not* bacteria-free.

Thus you see that in a discussion on a malignant form of endocarditis this essential question in the study of heart disease has come into prominence: Is the most common form of heart disease infective?

This question cannot now be ignored unless medical research in this country, in spite of all the brave words we have heard about it, is dying. I am convinced that the younger investigators will not let it drop, but will decide the point in the near future and earn the gratitude of all who believe in our position as a scientific nation, and of all who are lovers of children. Openings for fruitful research are not so many that such an obvious and vitally important question as this will be allowed to remain unsolved.

Leaving now the point in dispute, I am going to ask you for the rest of the lecture to accept rheumatic endocarditis as infective and as caused by acute rheumatism. The latter you may be more inclined to accept when I point out that in a recent analysis of 172 cases of acute rheumatism under 12 years of age, by Drs. Paterson, Spence, and myself, in 114 there was evidence of heart disease. This surely favours cause rather than association, for it was the most frequent of all the manifestations.

I do not ask you to accept the strepto-diplococcus as the cause of rheumatism, because that is not necessary for my purpose. I only ask you to accept the carditis as infective, and seeing how constant a disease acute rheumatism is, as due to one and not divers infections.

With rheumatic heart disease infective, you will realize how great a part infections take in these illnesses. We have, among others, scarlet fever, septic infections, diphtheria, pneumococcal infections, tuberculous, syphilitic, gonococcal, influenzal, meningococcal, and typhoidal infections, all implicated. When these infections attack the heart they produce there, as elsewhere, lesions which vary with the nature of the infection and the resistance of the tissues. These fall into three chief types: Local lesions may be produced in the valves and elsewhere with connective tissue changes, leucocytic infiltration and necrosis, and when recovery occurs the necrotic tissue is replaced by scar tissue. If the endocarditis heals, it is a simple endocarditis, and if it does not, a malignant endocarditis. Or the process, as in mitral stenosis, may be less acute but more obstinate, with the result that there is a slowly advancing scar formation. Or thirdly, it may be fulminating, the toxins destroying the vitality of the heart before local lesions of any moment have time to develop.

With few exceptions, of which acquired syphilis is the most notable, these infections are more frequent in childhood, and thus it comes about that in the adult we are more often dealing with the scars of former infections and with heart disease in an incurable stage.

Heart Disease in the Young the First Step in the Study of Heart Affections.

If, then, instead of basing our study of heart affections upon the conditions in the adult, we commenced with children, and if our books on the subject devoted their early chapters to a broad review of heart affections in the young, we should approach heart disease from a very different aspect to the present one, and I am convinced there would soon be a decided advance in our knowledge.

You may object that much heart disease of the degenerative type is not met with in the young but in the adult and elderly. This is true, and is one of the important points in favour of this method of study, for, from a deeper knowledge of heart affections in early life, we should learn much as to the antecedents of these degenerative lesions, and as the years pass there would accumulate valuable evidence upon the possible part that disorders of the heart in child-hood have in determining lesions later in life.

Consider for one moment the so-called soldier's heart, effort syndrome, or D.A.H., whichever term you prefer. You find this condition arising in boyhood, and you can get a shrewd idea of the kind of individual who is likely to develop such a condition in later life.

> A high-strung schoolboy, who excels both in work and games, rather by virtue of his intense nerve energy than from a robust constitution, breaks down after some severe exertion at a time when possibly he is anxious to keep ahead in his form. Possibly he has had an influenzal attack or sore throat, or in these days has not been too generously fed. What happens? His heart becomes tumultuous, and he himself nervous and agitated, and his digestion faulty. He may have a fainting attack or be unable to exert himself without dyspnoea and complains of pain over his heart. His heart may or may not be dilated, but it is certainly unstable and irregular, and his nervous condition equally unreliable. Such a condition, the counterpart of what we see in the adult, is slow in getting well, liable to relapses and a cause of much anxiety.

We can learn and teach most of the fundamental principles from the study of heart disease in children. Take, for example, rheumatism. We can study valvular lesions, dilatation, and pericarditis. It is in children that we can realize how faulty a conception of heart disease we must get if we look upon endocarditis, myocarditis, and pericarditis, as separate entities. Mitral regurgitation, for example, as you know, is generally admitted as the least harmful valvular lesion, but we find there are cases in childhood which run a most disastrous course, because the myocardium has been simultaneously damaged. Again, pericarditis is looked upon, rightly enough, as a dangerous lesion. Yet in children again you will find cases in robust patients which run a quite favourable course, when a severe myocarditis with no pericarditis in a frail child will lead to a rapidly fatal end. Our study of these cases forces us to realize that we must not judge of cardiac lesions by their anatomical names, but by their results to the patients. If you wish to learn the true meaning of a virulent cardiac infection, you will see this in the young. What more striking examples of acute asystole of infective origin can be found than a deadly rheumatic carditis, or equally virulent diphtheria or influenzal poisoning? The clinical picture of acute asystole, with its livid pallor, gasping respiration, vomiting, restlessness, running pulse, slight oedema, and rapid hepatic enlargement, is one of the cardinal studies in heart disease. Again, we can observe the origin of multiple valvular lesions and trace the gradual ascendancy of the predominant one, be it aortic or mitral. We see also cases of primary cardiac rheumatism—a very important group—in which the whole weight of the infection falls on the heart, all other rheumatic symptoms being absent, or so fleeting as to elude observation. From these we learn how latent are the symptoms of early heart disease, and when you have once followed these cases, you can readily understand how adults with "subacute bacterial endocarditis" may continue at work for weeks and months until laid low by some sudden complication such as an embolus or acute renal complications. Then again there can be no doubt that we learn much from studying the very commencement of heart affections. For example, we find that though rheumatism is more frequent in girls, it is more fatal in boys, and we learn that the fatal group is one usually associated with tonsillitis, arthritis, and carditis. In girls, however, the type is more chronic and relapsing, and we reach in them to the origin of that most serious valvular lesion, mitral stenosis, and we find it is often associated with repeated attacks of chorea.

This association of repeated attacks of chorea and mitral stenosis affords us an excellent example of what may be gained by studying the heart disease as a part of the general infection of the body. One of the most important points, as you know, in the history of mitral stenosis is the advance of the scarring process and consequent progressive narrowing of the mitral opening. If the process stops with the opening still of a fair size, life will be prolonged, but if the contraction steadily advances, the time must come when the heart begins to fail from the strangulation of the blood stream at the mitral valve. It is most difficult to estimate whether the process in the valve is advancing, because it is so slow in its progress, but we learn a great deal as to the probabilities by shifting our attention to other rheumatic lesions, and in particular to chorea, because that is such an obvious symptom and so closely associated. If we study chorea, we shall very soon see how obstinate it is in some children, how insidious, how apt to recur, and from it we get a clear idea of the dogged obstinacy of the rheumatic infection. If rheumatism can haunt the brain as it does, we can readily understand how quietly and insidiously it can progress in the mitral valve. Whenever, then, a patient with mitral stenosis shows signs of active rheumatism elsewhere, be it in the brain or joints or muscles, we must suspect an advance of the lesion in the valve, or a sapping of the strength of the myocardium. It is because I have convinced myself of this persistent character of the rheumatic infection in the young that I believe in the adult malignant endocarditis as being frequently of rheumatic origin, the local virulence in the valves intensifying with failure in the patient's general health.

There are in children a considerable number of cases in which rheumatism does not appear to injure the valves, but causes a dilatation from damage to the myocardium, and I believe that much may be learnt about "weak" hearts in adults by tracing the history of the child's heart, which has been thus damaged through the early years of adult life. We know that in children such cases are very obstinate, and liable to break down under stress, and that these children are often highly nervous—a factor of deep meaning in the history of cardiac affections.

We have also opportunities in children of studying the adult type of heart failure, for we see mitral cases with oedema, ascites, orthopnoea, pulmonary oedema, albuminuria, and hepatic enlargement. We also see anginal attacks and embolism.

There is, I think, no doubt that disturbances of rhythm take a much smaller part at this age than later in life, and this fact itself affords us hope that we may learn much from a comparative study of these points at various ages, particularly as in recent years considerable additions to our knowledge of these arrhythmias in the young have been made by various investigators.

If for a moment we transfer our attention to the adult, and if we have thoroughly mastered the pathology of infective heart disease in the young, we can see more clearly the explanation of many of the symptoms in the adult, and we are in a much better position to estimate the importance of occupation and other factors in the final defeat of a damaged heart. I am convinced also that if more attention is given to early heart disease we shall soon see organized efforts in this country for the protection of adolescents with damaged hearts, and the gradual disappearance of those sad cases in which, from ignorance or lack of assistance and opportunity, young people thus handicapped are thrown into employments which mean for them certain death within a short space of time. To quote one case:

> I had a boy under my care, badly damaged with aortic and mitral endocarditis, who, at the age of 14, had a terrible attack of pericarditis, from which recovery seemed almost impossible. He, however, did recover, and after many months got about again. He was a sensible boy, with good parents, and they got him work as a clerk. He is now 19, and has done steady work as a useful citizen, coming to report at the hospital every three months. I have not a shadow of doubt that if he had been put into a position requiring physical strain he would have been dead in six months or less. All the skilled nursing and care and money expended on him in hospitals would have been wasted, and the country would have received no return for his existence.

Is there any event in the history of heart disease more remarkable than the development of rheumatic nodules in children? Is there any better example of the truth that the student of heart disease must not keep his eyes glued to the heart? In themselves they are painless and of no practical importance, and yet they are signs of great danger. I give you some figures from the recent analysis I have already mentioned:

> In 172 cases of active rheumatism in children under 12 years, 33 developed these nodules; 12 of them died; 16 became permanent cardiac invalids; and all but 2 had severe organic disease.

What a valuable warning these lesions are to us to be not pessimistic, but very cautious in our prognosis in such cases!

I come now to my last and most important point. When we are studying heart disease in childhood we are dealing with it at a stage which holds out much greater hope than later in life. If we can do good then, it may well be permanent good. Failing this, if we can prevent advance of the infective processes, we know that with increasing years the infective phase becomes less frequent. In the case of rheumatism the incidence is most frequent between the seventh and ninth years, and then it begins to decline, though still far too rife through late childhood and adolescence.

I have no hesitation in saying, from the evidence of incontrovertible pathological facts, that in the adult much of our treatment must, in the nature of things, be entirely palliative. All the skill and science devoted to the perfection of cardiac tonics will never make them more than heart splints; and no drug, short of one that will replace scar by healthy tissue, will ever do more than support the heart.

It is to prevention that we are bound to turn—a task of much difficulty in the case of rheumatism, but with great possibilities which have not been thoroughly explored. There are isolated writings of great value, such as those of Sir Arthur Newsholme on the nature and relation of the disease, of Dr. Shrubsall pointing out the relation of the incidence to river courses in the London area, of Dr. F. Langmead on the throat and rheumatism in children of the school age, of Dr. C. Coombs on fatal heart disease in Bristol. These give us suggestive indications, but as yet no serious organized attempt has been made in this country to study the distribution of rheumatism in the young throughout the land, viewing the disease as an infection.

On one point there seems agreement: that the disease as we see it in our hospitals is infrequent in the well-to-do, and this points to careful systematic inquiry into housing and clothing and school influences. Of school influences we are learning more each year from the medical officers to the London County Council schools. I was once told by a doctor that wearing clogs in the wet season diminished the incidence of rheumatism in the schools where they were worn. Do not suppose that upon this evidence I am about to advocate that the Government provide free clogs for all scholars. I only mention it because it illustrates lines of inquiry which are practical, and which must end in our learning more facts about the natural history of the disease. The need for special arrangements for cases of early heart disease to have a long period of rest have been repeatedly spoken of, and in course of time I believe these arrangements will be forthcoming.

Why is chorea so frequent during school life in London? In one year we admitted 104 cases out of 172 of acute rheumatism! Would not a prolonged meteorological study of the disease help in warning us when to expect an outbreak of acute rheumatism if we had the organization needful? Do we know enough about the influence of dust and crowding as a factor in the causation of acute tonsillitis and rheumatism?

Is the general public sufficiently alive to the danger of this disease? Had the same energy been expended on acute rheumatism as has been on tuberculosis and venereal affections, I believe the study of heart disease would have already made substantial progress. We should not hear so often as we do wonder expressed at children suffering from rheumatism, or the belief that heart disease was an affection of adults, and that chorea was caused by fright. You may not be aware that there was less chorea at Great Ormond Street during the worst year of the air raids than in 1914, 1918, 1919, or 1920!

In conclusion, I have endeavoured to-day to put before you my belief that we shall soon enter upon a new stage in the history of heart disease, one of prevention based on its study in children.

I am not so blind as not to recognize that at the present time, borne down as we are by the aftermath of a great war, our first duty is to make life possible for the strong and healthy, for, with thousands of unemployed, no attempts of ours to prevent a disease can balance the evils produced by unemployment. One hopes that the rally will come, the country steady itself, and the vast burdens on the active and vigorous be gradually lightened, and then will come this country's time to make a determined effort to grapple with the problem of organic heart disease. Meanwhile we should have time to think out the organization in a spirit of moderation and plain sense, but not of fanaticism. If there is not light in this direction I am at a loss to see where to look in the present state of our knowledge of the treatment of heart disease.

THE Food Controller has appointed an Inter-Departmental Committee to consider the provisions of the Bread Acts and the Bread Order relating to the sale of bread by weight. The members of the Committee include Dr. A. C. Farquharson, M.P., and Dr. J. M. Hammill.

THE EFFECT OF PREGNANCY UPON THE SIZE AND WEIGHT OF SOME OF THE ORGANS OF THE BODY.

BY

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THE following observations have been made on the female albino rat. The animals were healthy, closely related, and bred in this laboratory. Young females of as near a size and weight as possible were selected from several litters and paired against one another, each experimental animal and its control being sisters from the same litter. Nine pairs were observed. The control animals were segregated, and the others placed with a healthy male. Towards the close of each pregnancy the pregnant animal and its control were killed by bleeding under an anaesthetic. The length of each animal from tip of nose to anus was measured, and the weight of the animal less its uterine contents recorded. The organs subsequently enumerated were dissected out and also weighed.

Individual differences between the lengths and weights of the paired animals occurred but were never excessive, and the remarkable similarity between the animals is brought out by the averages, which are identical in the pregnant and control animals. Thus the average length of each group was 165 mm., and the average weight 129 grams, the latter being the net weight after deduction of the weight of the uterus and its contents in the pregnant animal.

The occurrence of pregnancy has made no difference in the size and weight of the animal apart from the weight added by the uterine contents; in other words, the occurrence of pregnancy has not affected the growth of the animal either as regards size or weight. The rats, it may be noted, were well fed on a liberal allowance of bread and fresh milk and were kept in clean, well ventilated cages, allowing plenty of room for exercise. Each animal was healthy and in good condition when killed.

The heart, kidneys, liver, spleen, thymus, suprarenals, thyroids and pituitary were carefully dissected out, freed from adherent tissue, and weighed on a good balance. The average figures for the control and pregnant animals are recorded in the following table. In the fourth column the percentage increase or decrease in weight of the organ of the pregnant animal as compared with that of the non-pregnant control is given.

Organ	Average Control.	Average Pregnant.	Percentage Change.
Heart	[illegible]	[illegible]	1.7
Kidneys	1.135 ..	1.131 ..	0.3
Liver	[illegible]	5.998 ..	[illegible]7.5
Spleen	[illegible]	[illegible]	−3.2
Thymus	[illegible]	0.083 ..	−51.7
Suprarenals	[illegible]	0.037 ..	+12.0
Thyroids	0.018	0.0162 .	−10.0
Pituitary	[illegible]	0.0062 ..	−24.0

The Heart.—Little change [illegible] in this organ as the result of pregnancy. In [illegible] the heart of the pregnant animal [illegible] than that of [illegible] the [illegible]. The average [illegible] is that the weight of the [illegible] animal is 1.7 per cent. [illegible] than that of the control animals. [illegible] as to be practically [illegible]. It certainly does not warrant the statement that the heart [illegible] in pregnancy.

The Kidneys.—[illegible] the kidneys of the [illegible] and pregnant [illegible] the latter averaging a little [illegible] than those of the control rats. In a [illegible] it was found that the [illegible] both kidneys is [illegible] per cent. It does not appear that the kidneys are affected by the condition of pregnancy.

The Liver.—The size of the liver is notably increased by pregnancy. [illegible] larger in the pregnant animal than in its control, and the average figures give an increase in weight of [illegible]7.5 per cent. [illegible] but the animals were all killed [illegible] and as much blood drained from the organs as possible. The livers of the pregnant animals were undoubtedly larger than those of the control animals, and there is hypertrophy of this organ during pregnancy. This is to be expected from the increased metabolism that takes place in this condition, and the figures show that the liver is the organ chiefly concerned in the increased metabolic activity.

The Spleen.—Great variations of size and weight occur in the spleen of apparently normal rats. The average weight in the pregnant animals is a little lower, 3.2 per cent., than that of the control rats. It cannot be said that pregnancy produces any striking change in the spleen. According to Jackson,[4] the spleen tends to be correlated with the liver and to vary in size directly with that organ. My experience does not confirm this statement, and there is certainly no such correlation between the spleen and liver in pregnancy.

The Thymus.—The change which this organ undergoes during pregnancy is a striking one. In all cases involution is hastened by pregnancy, and the thymus shows an average loss of 51.7 per cent. in the pregnant animals. The histological appearances are those of the involuted organ, and present a striking contrast to those of the thymus of the non-pregnant animal of the same age.

The Suprarenals.—These organs do not show much alteration, but are in most of the pregnant animals slightly heavier than in the controls. The average increase in size is 12 per cent., but this figure is helped by extra large suprarenals in two of the pregnant animals. There is, however, a distinct increase in the weight of the suprarenals in pregnancy. The same increase was noted by the author[3] in another series of animals, and it was found that during pregnancy there is a slight increase in the adrenalin content of the suprarenals.

The Thyroids.—Contrary to the generally accepted view, it is found that the thyroids of the pregnant animals are smaller and lighter than those of the control animals. In only one case were the thyroids of the pregnant rat heavier than those of its control. The average figures show that in the pregnant animals the thyroids are 10 per cent. lighter than those of the non-pregnant controls. Histologically the thyroids of both sets of animals were found to be of the actively secreting type, and no distinction could be made between them.

It is frequently stated that the human thyroid enlarges during pregnancy, and the same statement is sometimes made in textbooks of physiology.[5] Actual measurements in the human female cannot be undertaken, and where the enlargement is obvious one may well doubt whether the individual is really normal. It may not be safe to argue from the rat to man, but in the former it is evident that the occurrence of pregnancy does not lead to enlargement of the thyroids, but rather to a slight diminution in their size.

The Pituitary Body.—In every case the pituitary body of the pregnant rat is smaller than that of its control. In the series of rats examined there is an average loss of 24 per cent. by weight of the pituitary body of the pregnant animal. The change appears to be in the glandular lobe, which shows a great diminution of the granular eosinophil cells characteristic of the normal pituitary.

According to Erdheim and Stumme,[1] the human pituitary is enlarged during pregnancy, large neutrophil cells replacing the eosinophil. In the rat's pituitary the condition is rather one of a smaller gland in which the eosinophil granules are lacking.

CONCLUSIONS.

In the healthy albino rat the occurrence of pregnancy has little effect upon the length and weight of the body, excluding the increase of weight due to the uterus and its contents. The heart, kidneys, and spleen are little affected; there is certainly no enlargement of the heart in pregnancy.

The liver is greatly enlarged.

The thymus undergoes rapid involution and is much diminished in size.

The suprarenals are slightly hypertrophied.

The thyroids are diminished in size in pregnancy, and there is a notable diminution in the weight of the pituitary body, attended by histological changes in its glandular lobe.

The expenses incurred in these investigations have been defrayed by a grant from the Carnegie Trust.

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[illegible] Handbook of [illegible] on Modern [illegible]. London, Henry Kimpton, 1920, p. [illegible]

According to the annual report of Dr. G. B. Dixon, tuberculosis officer for Birmingham, the notifications received during 1919 were 3,116, and the mortality rate was 1.38; both these figures are the lowest on record. With regard to the results of treatment, it is noted that of the 3,146 pulmonary cases notified during 1913, when a number of chronic and severe cases were registered for the first time, 44 per cent. have died, and the number still alive is 46 per cent., of whom 90 per cent. are doing full time work.

THE RISKS AFTER OPERATION FOR TONSILS AND ADENOIDS IN OUTDOOR CLINICS.*

BY

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THE removal of tonsils and adenoids in children is, if we exclude dental extractions, the commonest surgical operation done under general anaesthesia; its benefits in thousands of cases each year are considerable and lasting, and its risks, if a very few ordinary precautions are observed, are inconsiderable. With the present congestion of hospital beds, many children who require this treatment would be denied it were not the practice of operating in the out-patient department maintained. The precautions taken at the Bristol Royal Infirmary, from which clinic I have obtained my figures, are as follows: The cases are carefully selected. No sickly child, no child from an "epidemic" district, no child living outside Bristol itself, is dealt with in the out-patient department. The parents are given printed instructions for use before and after operation. The essential preparation is that the child's stomach be empty; it is therefore ordered a fluid breakfast three hours before the operation. It is brought to the Infirmary in the middle of the morning, and the operation is performed by the assistant surgeon or under his immediate supervision. Gas or ethyl chloride is used; all instruments are sterilized by boiling. The child is inspected at 2 p.m. to make certain it is fit to be taken home. The parents are instructed that it must be well wrapped up, that it must not walk a step, and that it must be kept indoors for four days. Formalin lozenges are given, and the child is seen again on the fifth and twelfth days.

Everything, therefore, lies with the parents, who, in practically every case, are anxious to do all they can for the welfare of their offspring. The preparation for operation is simple, and almost always carried out, but in the after-treatment they are often really handicapped; and it is the after-treatment that tells. For the first forty-eight hours raw gaping wounds in the child's fauces invite the attack of bacteria. After that a barrier of granulation tissue exists which will repel all ordinary infection. Mr. Tilley,[1] who likes to keep patients at home for a week after operation, gives as the chief risk of the operation septic infection, which, he says, "is difficult to avoid in hospital practice, where patients often return to their homes within a few hours of the operation"; he records two cases of acute septic poisoning, one fatal, where the home conditions were insanitary.

With the permission of Dr. P. Watson-Williams I have analysed the results of all the cases dealt with at the Bristol Royal Infirmary out-patient clinic during 1919. For the purposes of comparison I have analysed also the last 100 consecutive cases dealt with as in-patients. In both cases only children between the ages of 3 and 15 are included. The in-patients comprise all those admitted because they did not appear robust, and a few cases in which submucous septal resection was done as well. Those cases in which, for example, an antral empyema was opened at the time of the operation have been omitted as being outside the class of minor operations. Otherwise the conditions are similar. The same surgeons operated, and many of the operations on in-patients were actually performed in the out-patient theatre. The only differences were in the in-patient series: (1) the anaesthetic was usually given by the honorary anaesthetist; (2) ether was sometimes given; (3) the children were kept in hospital for two or three days afterwards.

Table showing Number of Cases and Morbidity.

	100 In patients, March, 1918, to June, 1920.	239 Out-patients, 1919.	
Definite morbidity —	1	7	2.9 %
Serious morbidity ...	0	3	1.3 %
Mortality	0	1	0.4 %
Total morbidity ...	1	11	4.6 %

Such occurrences as severe haemorrhage or collapse have not been included, as possibly they would be more emphasized in the notes of out-patients than those of in-patients. A few histories are appended to indicate the standards used:

Case 3,799 (in-patient).—Following the operation this child had acute suppurative otitis media; the left ear perforated, but healed subsequently; in-patient fifteen days. (Definite morbidity.)

Case 50,144 (out-patient).—This child had double acute otitis media, starting a few days after the operation. The left ear subsided but the right perforated and had not healed when last seen several months later. (Definite morbidity.)

Case 50,782 (out-patient).—The operation was performed on May 30th, 1919. On June 7th the child was admitted with acute mastoid infection; an immediate operation was performed, but meningitis was already marked, and death occurred on June 16th. (Our first fatality directly traced.)

Case 51,298 (out-patient).—The operation was performed on October 10th, 1919; acute mastoid infection occurred shortly afterwards, and Schwartze's operation was done on October 17th. The child was an in-patient four weeks and attended the out-patient department for other ten weeks. The hearing is permanently impaired. (Serious morbidity.)

Case 51,301 (out-patient).—The operation was performed on November 7th, 1919. On November 11th acute suppurative otitis media occurred; myringotomy was performed; bronchopneumonia followed, and pleural empyema required operation a fortnight later. The child went to the convalescent home three months after the first operation. (Serious morbidity.)

The figures in these tables speak for themselves; though the number of cases is small, nevertheless they afford an important index. The morbidity among children operated on in the out-patient department is over four times as great as among the in-patients. Although the point has been recognized for years, I should like to ask whether sufficient weight is given to it, and what, if any, variation in present practice is desirable.

REFERENCE.

[1] Tilley: *Diseases of Nose and Throat*, 1919, p. 323.

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* A paper read before the Bristol Division of the British Medical Association.

THE DIAGNOSIS OF HYDATID DISEASE OF THE LUNG.

BY

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ALTHOUGH hydatid disease is, apparently, not so common in English clinical practice as it is in Australia, the following brief notes of my experiences of its manifestations in the lung may be of use to English readers.

Between 4 and 70 years is the age limit of my records. There is a noticeable reduction in the number over 50 years of age. Men suffer more than women, and those who dwell in the country more than those who dwell in towns. Australia, New Zealand, the Argentine, and the north-western shores of Europe are the countries most extensively infected. The date of infection has an important bearing on the diagnosis, but those who have once lived in an infected locality may, in doubtful lung affections, be suspect, as the disease may exist for years without symptoms. Constitutional disturbance is unusual, but when it occurs it is not characteristic. Urticaria and maculate rashes are complications, and they may recur year after year.

Blood changes are those common to other parasitic diseases, and consist of an eosinophilia and basophilia. Such changes, however, are not constant, and variations occur from hour to hour. The only well-established fact is that if eosinophilia exists before, it rapidly disappears after operation, and may reappear later to a still greater degree. As a matter of fact, I have rarely found the presence of eosinophilia of material assistance in the diagnosis of obscure cases, notwithstanding statements to the contrary. This problem is complicated because in New Zealand eosinophilia is a very common phenomenon.

There is a conflict of opinion in the literature available as to the value of the precipitin and complement fixation tests. Observations in Sydney, New South Wales, suggest that the results are unreliable, while those in New Zealand confirm this view, but observers in Buenos Aires claim them to be useful helps in diagnosis. Here in Christchurch, New Zealand, no records on the point exist.

As for local changes, in its early stages a "healthy" cyst in the lung causes no irritation or pressure symptoms; indeed, it may quietly attain a large size without any warning to the patient or causing any displacement of the viscera. Symptoms due to mass effects are exceptional, but occur at times. Changes in and around the cyst generally cause the first symptoms, and may indicate (1) rupture into a bronchus, (2) haemorrhage into the lung, (3) pleurisy, (4) pneumonia, or (5) pneumothorax. Rupture into a bronchus may occur without any warning, or follow one or more attacks of haemorrhage or pneumonia.

The patient's story is characteristic. There is a sudden rush of salt-tasting watery fluid with a sense of intense suffocation. The fluid expectorated may be blood-stained or fragments of cyst wall or daughter cysts may be present in the excessive quantity of the fluid material discharged, or débris may suffocate the patient by the plugging of the glottis or other part of the respiratory tract.

The appearance of the fluid is characteristic; it does not coagulate on standing, while microscopically fragments of laminated cyst-wall or hooklets may be found, but in sterile cysts with macerated cyst-wall characteristic elements may be absent. Pus cells are usually absent at first. The first rush may be a pint or more in quantity, while cyst débris and fluid may be expectorated for weeks.

Lendon expresses the opinion that débris in the sputum may persist for long periods, even years, but I cannot agree with this, as I have found that though hooklets appear to resist maceration for a considerable time, the rapidity with which the cyst wall loses its characteristic appearance does not make this likely. I would suggest that the débris, if persisting long, is derived from a more recently ruptured cyst. The history after rupture appears to depend entirely on the degree of completeness of the drainage and on the presence or absence of infection of the resulting cavity.

Many cases recover without complications, others develop all the symptoms of a septic cavity. I believe it is impossible for a ruptured cyst to re-form. Cysts in the neighbourhood appear to grow more quickly after the rupture of an adjacent cyst, possibly as the result of relief of pressure, and there is always the possibility of the existence of other fully developed cysts.

Haemorrhages may occur without other premonitory signs or symptoms and may be either profuse or scanty. Unless physical signs which contra-indicate tuberculous disease are present, there is nothing to distinguish such haemorrhage from that caused by the latter disease. A cyst situated at the apex may exactly simulate phthisis. The extent of the lesion, the history of perfect health prior to the bleeding, and the small degree of disturbance caused by a large area of disease often give a clue to the cause of the trouble. Extensive tuberculous disease is more often than not bilateral. Pneumonia is at times a complication. I find notes of this complication recorded in the histories of quite half the reported cases in the literature. It takes the form of recurrent attacks during quite a long period of years. Haemorrhages and pleurisy often occur also. It is evident from the records that the attacks so closely simulate acute pneumonia that they may be mistaken for the latter disease. I have examined a large number of temperature charts of such cases, and they all present the same typical characteristics. There is no crisis, the duration is variable, and there is a tendency for irregular rises after the initial fall of temperature. The early attacks most closely simulate pneumonia, while later attacks are less characteristic and the temperature is less irregular.

Though apparently the patient may have recovered and be well, the signs in the chest, as revealed by the radioscope, do not clear up or give the impression of a gradual advance to a climax till the whole of the lung has become dense and quite impermeable to the *x* rays.

Pleurisy with effusion, often purulent, may accompany the pneumonia. It is due to inflammation, and not to the mechanical effect of the cyst, while the displacement of the heart may be greater than can be accounted for by the amount of the fluid. This displacement is probably due to the fluid pressing on a still uncollapsed lung. The fluid is of inflammatory type. I can trace no relationship between the size of the cyst and the resulting consolidation. What may be called the final stage, reached by some cases when the cyst does not rupture, presents a clinical picture which is, I think, quite characteristic. This picture consists of a practically solid lung, with possibly a little effusion, an irregular pyrexia of varying intensity, sometimes extremely slight, and a healthy lung on the opposite side. If pleural pain and cough occur and harmonize with the diagnosis of a cyst in an otherwise healthy lung, the case is simplified. The patient is not, as a rule, ill, although he has a pain and cough.

If examined soon after the appearance of the symptoms there is usually a rub to be heard, possibly of unusual extent. There is a sharply defined area of dullness, tailing off into and surrounded by healthy lung. As the cyst is globular in form, it may extend to the anterior and posterior walls of the chest. The breath sounds are diminished in intensity over the area of dullness, but there are no signs of fluid unless the cyst is of great size, in which case, especially if situated at the base of the lung, it is frequently mistaken for a pleural effusion. If, however, the absence of heart displacement is noted, this mistake is not likely to occur. The surrounding lung is seldom healthy, and adventitious sounds may be heard on auscultation.

The radioscope demonstrates these cysts at a glance, while the chest wall is usually bulging and often tender to the touch. Pleural effusion rarely accompanies this condition, but is common in cases complicated by pneumonia.

I have never heard of a definite case of pneumothorax occurring as a complication of hydatid cyst, but I have seen a few cases which were not caused by obvious tuberculous disease, and which may possibly have been due to this cause. Cough may exist long before there is any suspicion of hydatid disease, and may be attributed to nasal, pharyngeal, or laryngeal catarrh, as the chest appears to be quite healthy. Expectoration prior to rupture is the exception, but occasionally a considerable amount of muco-purulent sputum is present. It is remarkable how scanty is the expectoration in pneumonic cases, but some emphysema due to cough may result.

Even a small cyst, ½ in. to ¾ in. in diameter, is impervious to *x* rays, and has a curious mottled appearance. In otherwise healthy lungs definite cysts are easily seen, but they always appear to be of considerable size, two or more inches in diameter, even though they are actually of very small size. If the lung is consolidated or otherwise diseased the cyst may, when large, be entirely obscured. A lenticular outline is, however, very characteristic; in fact, *x* ray reports are always very helpful, either as a means of leading to a positive diagnosis, or of enabling the observer to exclude the condition.

In attempting a diagnosis, puncture is, as a rule, too dangerous a procedure to be warranted as a routine method. If, however, it is possible by *x* rays or other means to make reasonably sure of the presence of a cyst, or to be satisfied that a pneumonic area cannot contain a large one (that is to say, of sufficient size to contain a dangerous quantity of fluid), then I think puncture is justified. If a case is left untreated, the cyst invariably enlarges, the pneumonia spreads, and the site of the required puncture becomes more and more obscure. I can find no relationship between the size of the cyst and the extent of the consolidation, and it is quite conceivable that a small cyst may cause disproportionate damage.

There are two sources of fallacy in the diagnosis:

1. A degenerate cyst with contents too viscid to enter a needle.
2. A cyst so packed with daughter cysts as to yield only a few drops of fluid. But even these few drops may contain enough material to identify the disease.

Cases.

The following clinical records may be useful:

1. J. H. W., aged 48, farmer, admitted January 24th, 1919. Four years ago operated upon for appendicitis. Otherwise health good except for violent cough at times. Since an attack of influenza in 1918 had not been well. Chief complaint had cough and vomiting during paroxysms, no sputum. Much loss of flesh, and was too weak to do his work. Sweated very much at nights; urine contained a slight trace of albumin and a very few pus cells. Many teeth carious. Physical examination revealed much loss of subcutaneous fat; muscles show clearly beneath the skin. Heart sound normal, apex not extending to the nipple line. On the right side some slight dullness in the interlobar line lower than is usual in tuberculous disease. A few distant crepitations heard. Complains of pain when right side is percussed in the line of axilla over seventh and eighth

ribs the liver dullness seems to extend upwards into the axilla and the resistance to the fingers is increased. No definite change in the breath sounds beyond some lessening over the dull area. *X*-ray evidence showed a large cyst, about 4 to 5 inches in diameter, present in the axillary line, just above the diaphragm on the right side. A beautifully clear outline was shown and there was no possible doubt as to the nature of the disease. No blood cell changes. There was a shadow at the root of the lung of small size. The radiologist reported that this was due to inflammatory thickening around a bronchus. Operation revealed a degenerated cyst full of odourless pus and cyst débris. The patient has since developed phthisis.

2. F. F., aged 38, sailor, admitted May, 1914, with pleural effusion. He had a history of left-sided pneumonia and pleurisy for the last eighteen months. Complained of cough and increasing weakness. After aspiration there remained some dullness below third rib in front. The pleural fluid contained polynuclear cells. He was discharged at the end of three weeks relieved. Readmitted May, 1915. He had lost flesh, and had an irritating cough, relieved by lying on the left side. Movement on left side restricted. The heart was displaced to the right, 3 in. from mid-sternal line. There was fluid in the left pleura. There was evidence of consolidation of the lung in front, from the clavicle to the nipple line. Crepitations could be heard at the base of the left lung. The right lung was clear. The radiologist reported that the right lung was healthy throughout. The heart was displaced to right; the left lung was dense all over, lessening a little at apex and base and most dense in lower lobe. Later he reported a rounded deeper shadow, the maximum depth being in the position of the left nipple. June 2nd, lung still clear. Later in June it was found that the fluid in the pleura was purulent. A rib was resected and the pleura opened and a large quantity of hydatid material was discovered. When first admitted his temperature fluctuated between 101.8° and normal; later it remained normal till just before the operation, but was never so high as on admission. From time to time the sputum was blood-stained during a period of eighteen months or more. He had a positive Wassermann reaction, and the general opinion of the staff was that the lung was syphilitic. No eosinophilia was found in repeated examinations, and in spite of a normal temperature the physical signs did not improve. At the time he first came under my care I made a diagnosis of cyst, but I was unable to induce a surgeon to make a thorough exploration of his chest. It was only the subsequent occurrence of an empyema that led to an operation.

3. J. L., labourer, aged 42, admitted October 22nd, 1918, complaining of pain in lower right anterior chest, worse on taking a deep breath; he sought advice on this account. Temperature normal, lungs slightly emphysematous, heart normal as to position and sounds; general health always good—he was at work up to the day of admission. Cough very little. On examination no pleuritic rub was found. There was a circumscribed area of dullness in the lower right chest, with a slightly more resonant area between the lung and liver dullness in the anterior axillary line margin and extending upwards about four inches. The transition from dullness to resonance was sharp. Breath sounds over dull area weak, no adventitious sounds heard, and no bronchial breathing. *X* rays showed a clearly defined cyst occupying a large part of the lung, the radiologist estimating this as half the lung. No eosinophilia. Refused operation, as he did not consider it necessary; he is not inconvenienced at all.

Conclusions.

It will be apparent that hydatid cyst may simulate many lung diseases, and to discuss differential diagnosis in detail would be to discuss the character of almost every known disease of the thorax. Moreover, it is clear that a cyst so rarely gives rise to pressure symptoms that the diagnosis must depend on the history and *x*-ray evidence.

VOLVULUS OF THE SMALL INTESTINE FOLLOWING ILEO-COLOSTOMY.

BY

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WORCESTER.

THE following case seems worthy of record, owing to the comparative rarity of the condition, and the successful result of operation.

Mrs. G., aged 62, had for three years suffered from progressive loss of weight, increasing constipation, and frequent attacks of severe indigestion and abdominal pain. When first seen, in the autumn of 1919, she was leading a semi-invalid life, and looked very thin and ill. There were no definite signs of abdominal disease, but operation was advised in view of the possibility of cancer.

First Operation: Ileo-colostomy.

Laparotomy on December 7th, 1919, revealed no growth, but there was marked visceroptosis, and the colon was thin and atrophic. Ileo colostomy was performed by lateral anastomosis of the closed and divided lower end of the ileum to the pelvic colon. The patient made a good recovery from the operation; the bowels acted freely, pain and indigestion were relieved, and in the spring of this year she was walking up to eight miles a day. A post-operative hernia was controlled efficiently by a Salt's corset-belt.

Second Operation (for Volvulus).

She remained in improved health till June 26th, 1920; on this day she was seized with sudden acute abdominal pain, which gradually became worse. When seen next day, the abdomen was slightly distended and tender, but not rigid; the tongue dry and furred, and the pulse feeble and irregular. She had passed some flatus, but no faeces. She was evidently suffering from obstruction, but her general condition was so bad that palliative measures were tried first. No result followed a large turpentine enema, and on the third day from the onset vomiting set in. Operation was then undertaken as a last resort, though her condition was desperate. Under open ether anaesthesia (given by my partner Dr. W. E. Moore Ede), preceded by morphine and atropine, two pints of saline were given intravenously, and the abdomen opened by a median incision below the umbilicus. A twisted mass of intestine, black and gangrenous, the size of a fetal head, was found in the pelvis. The peritoneal cavity contained a quantity of turbid fluid with a strong faecal odour.

The mass proved to be a volvulus of the lower end of the ileum caused by a short cord-like adhesion between two folds of mesentery. As the gut involved was already gangrenous, the intestine above and below was divided between clamps, and a wedge of mesentery resected, the whole specimen being thus removed without attempting to untwist the volvulus. Even so the gangrenous portion burst in the necessary handling and distributed its contents in the wound. The length of gut removed was two feet, and the volvulus had two complete revolutions on its axis. The cut ends of intestine were united by an end-to-end anastomosis, two layers of catgut sutures being used; the peritoneum was cleansed by dry swabbing, and the wound closed by through-and-through silkworm sutures.

Recovery.

The patient made an excellent recovery, shock being combated by the intravenous saline given before the operation, and by frequent rectal saline injections during the twenty-four hours after. In the second week some troublesome diarrhoea, with undigested food in the faeces, was arrested by the use of a mixture containing hydrochloric acid and malt extract. The wound suppurated slightly, but not so much as might have been expected after the gross soiling of the wound at the operation. There was never any sign of peritoneal infection.

The patient was up in a month, and able to walk two miles in six weeks from the date of operation. Since then her progress has been steady; she looks and feels well, is gaining weight, and the bowels act regularly without pain.

Strangulation of a coil of intestine, which, following an ileo-colostomy, has slipped through the gap between the mesentery of the ileum and that of the pelvic colon, is a well recognized accident; and all authorities therefore recommend that the gap be closed by a suture to prevent the occurrence of this form of internal hernia. This had been done at the first operation in the case now recorded, but when the acute obstruction occurred, it was thought that the suture had possibly given way.

Operation, however, showed that the gap remained closed, and that the condition was due to a volvulus. The adhesion giving rise to the volvulus was no doubt a sequel of the first operation—ileo-colostomy.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TRANSPOSITION OF VISCERA IN TWO MEMBERS OF ONE FAMILY.

TRANSPOSITION of viscera is a condition not often met with, and two cases of transposed viscera occurring in members of one family must be so rare that I think the following notes are worthy of publication.

When I was carrying out a medical inspection at a school in Somerset in November, 1919, a girl, aged 12, was presented for routine examination. Upon inspection of her chest, the cardiac impulse was visible just inside the right nipple line; percussion and auscultation showed that the heart was transposed. The abdomen was then examined, and it was found that the stomach, liver, and spleen were transposed also. The mother of the girl, who was present at the examination, then informed me that the girl's brother, aged 10, "had his heart on the wrong side." I examined this boy the next day, and found that in his case, too, the heart, stomach, liver, and spleen were transposed. Both children appeared to be quite healthy.

I also examined the father, mother, and a remaining child, a girl of 15, but in their cases there was no transposition of viscera.

The diagnosis in each case was confirmed by x-ray photographs taken by Dr. Norman Haig of Yeovil. I wish to express my thanks also to Dr. Savage, County Medical Officer of Health and Chief School Medical Officer, for permission to publish these cases.

S. L. BRIMBLECOMBE,
School Medical Inspector, Somerset County Council.

PREGNANCY AFTER LIGATURE OF FALLOPIAN TUBES.

IN the JOURNAL of August 14th, 1920, p. 244, Mr. A. Crook of Norwich writes of a case of pregnancy occurring after ligature of Fallopian tubes. There are quite a number of cases on record in which this occurred. I think these records may be found in most of the year-books of gynaecology and obstetrics.

Some years ago I operated on a woman for prolapsus uteri, performing amputation of the cervix, anterior colporrhaphy, extensive colpoperineorrhaphy, and suspension of the uterus, and ligatured both Fallopian tubes with silk. Eighteen months afterwards she appeared in my consultation room four months pregnant. I had told her she need not be afraid of becoming pregnant again. She took no precautions, whereas for nine years previously she had taken precautions with success. Ultimately a child weighing 14 lb. was born; the mother was torn to the uttermost and prolapse occurred worse than ever. I had to operate again; there was no sign of the silk, no evidence of stricture of the tubes, which both looked quite normal.

The reparative power of a mutilated tube is extraordinary, and now, when sterilization is demanded, I adopt only one method—namely, complete removal of the tubes and the greater portion of the uterine ostium. By doing so one is, in the first place, certain of sterilization, and, secondly, that there are at least no receptacles for infection.

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THE SUPERIORITY OF SODIUM ANTIMONY TARTRATE TO EMETINE IN BILHARZIA.

DR. S. J. D. [illegible]'s letter in the JOURNAL for October 23rd, asking about the use of emetine in bilharziasis, induces me to record the following case. In it all recognized forms of treatment, including emetine, had been tried, and a cure (complete as far as one is able to say) was eventually effected by the intravenous injections of sodium antimony tartrate.

The patient was infected some fifteen years ago in South Africa, and the disease gave rise to the usual symptoms [illegible] frequency of micturition, pains in the back and [illegible] and other urinary anti[illegible] vesical irrigation. [illegible]

[illegible]

[illegible] October 14th.

Although the time that has elapsed is insufficient to enable it to be said that the cure is permanent, the notes provide some definite evidence of the value of antimony as compared with emetine in this particular case.

In conclusion, I may state, being myself the patient referred to, that I should recommend treatment by antimony tartrate or sodium antimony tartrate intravenously to any fellow-sufferer from bilharzia, rather than emetine, confident that the latter is not likely to produce the same local and general improvement in health which I have experienced.

Regarding the dangers of the antimony tartrate injection, whilst it is undoubtedly necessary for the doctor who undertakes the injection to work with due regard to the fact that the injections are made into the blood stream, personally I experienced no inconvenience during the course of treatment, but in point of fact, owing to the exigencies of my profession, I carried on with my work as usual.

London, W.C.1. A. H. HARKNESS, M.R.C.S., L.R.C.P.

DISAPPEARANCE OF THE RADIAL PULSES DURING DEEP INSPIRATION.

THE following observation was made fortuitously during the routine examination of a patient, J. E. H., a male, aged 45, of broad thick-set type with square shoulders and a high barrel-shaped chest. With the observer's finger on the pulse the patient was asked to take a deep inspiration. At the height of inspiration the pulse wave disappeared momentarily from the wrist, to return on expiration. When a deep breath was taken and held at its height the pulse remained absent until the breath was let go. The pulse waves in the radial, brachial, and axillary arteries of both sides were affected; and the phenomenon occurred both in the standing and lying positions. The pulse in the carotids was unaffected, and the heart beat was unchanged save for slight respiratory arrhythmia. The cause was anatomical, and lay in compression of the subclavian artery between the first rib and clavicle at the height of inspiration. Owing to the conformation of the chest the space between these structures was greatly limited. A physical peculiarity of this kind may be a common occurrence. I have never observed it before, nor do I remember ever having heard it mentioned or seen it recorded.

Harrogate. W. EDGECOMBE, M.D., M.R.C.P., F.R.C.S.

Reports of Societies.

MALIGNANT DISEASE OF THE COLON.

A DISCUSSION on the surgical treatment of malignant disease of the colon, which Sir Berkeley Moynihan afterwards described as the most informing surgical discussion he had ever attended, took place at the Medical Society of London on December 6th, with the President, Sir WILLIAM HALE WHITE, in the chair.

Sir BERKELEY MOYNIHAN, in opening, said that the marginal symptoms of carcinoma of the colon were (1) pain, which was sometimes scarcely more than discomfort; (2) intestinal irregularity, taking generally the form of diarrhoea if the growth was in the right colon, and constipation if it was in the left, the reverse conditions being excessively rare; (3) change in the faeces, the presence of blood being important as distinguishing a carcinoma from diverticulitis; (4) anaemia, the type known as pernicious anaemia, and treated as such by the physician, being often traceable to growths either in stomach or colon, especially ascending colon; (5) palpable tumour, or, more often, the feeling of the heaped-up masses of faecal matter behind the growth. X-ray examination by means of the bismuth meal had proved misleading; a good deal of help was forthcoming, however, from barium enemata. The characteristics of a carcinoma of the rectum were the irregularity in outline as seen in the x-ray picture, the constancy in position, and the unalterability under manipulation or after the administration of antispasmodics. So far as pathological anatomy was concerned, growths in the colon were slow, long restricted to the intestinal wall, showed great reluctance to affect and great lethargy in affecting the glands, and only rarely gave rise to general dissemination. As to surgical treatment, the whole matter might be summed up by saying that the surgical anatomy of the lymphatic system governed the surgery in carcinoma of the colon. A radical operation involved the removal of the growth widely, and the removal of all primary glands and as many secondary glands as were accessible. He believed that gangrene following upon wide excisions of the colon was due to bad technique and not to any deprivation of the vascular supplies. As for the anastomosis to reconstitute the alimentary canal, he did not fancy the end-to-side apposition, and it was ten years since he had performed it. End-to-end apposition was a good method in appropriate circumstances, and difficulties arising from the different calibre of the intestinal ends could be overcome. Side-to-side apposition had the great advantage of involving the apposition of surfaces which had a complete peritoneal investment, and this was his method of preference. Some were frightened by the experimental work which showed that in the animal there was a hold-up for days at the suture line. Clinical evidence showed that this did not occur in man.

Sir W. **Arbuthnot Lane** said that clinically cancer of the large bowel was not usually recognized until symptoms occurred which indicated a varying degree of obstruction. The treatment must vary with the locality and extent of the growth, the condition of the intestine at the time of operation, especially as regards accumulated contents, the vitality of the individual, the invasion of adjacent viscera or abdominal wall, the presence of secondary growths, the degree of intra-abdominal tension, the amount of fat present in the tissues, and the age and sex of the patient. One point of great importance was the rarity with which peritoneal adhesions formed subsequent to operation. A careful study of the causation and mechanics of stasis would indicate that colectomy, under favourable conditions, was the ideal procedure. He referred to its many advantages. One of these was that when a large quantity of material had been collected in the colon behind the obstruction the removal of this in its entirety freed the system from the deleterious effects of the poison it produced as well as from the mechanical difficulty. But the varying conditions which the large bowel presented made its treatment of the greatest interest to the surgeon. Perhaps nothing was so surprising as the remarkable benefit that would often follow in a case of irremovable cancer by an operation for the complete diversion of the faecal stream from it. Unless there was evidence of secondary growth in important organs, there was practically no limit to the field of operation. No operation need be considered too radical. On only one occasion had he excised the large bowel in its entirety; the patient lived some time, and died from secondary growths in the liver, not observed at the operation. If the growth was in the splenic flexure, unless the condition of the patient was such as to render resection easy and safe, he again counselled colectomy as the best procedure; if the cancer was in the vicinity of the last kink, and the condition of the growth and of the bowel was favourable to resection, that was probably the safest course; otherwise colectomy was again to be recommended.

Mr. **Garnett Wright** emphasized the importance of early diagnosis in these cases. He rarely saw a case of carcinoma of the colon unless it was in the stage of complete obstruction, when the treatment, of course, was complicated. Radiographic examination did not afford much help unless the case was fairly advanced; sigmoidoscopic examination was useful for growths low down in the colon; the other recourse was to exploratory laparotomy, which he recommended when there were suspicious symptoms. A two or three stage operation was much safer than any immediate resection, even though obstruction was not very marked.

Mr. **Lockhart-Mummery** said that cancer of the colon was one of the least malignant forms of cancer in the alimentary tract, the slowest to spread to surrounding structures, and the one in which there was least danger of recurrence after removal. If it was to be successfully treated it was important that the surgeon should get the case at an early stage, before obstruction had occurred, if possible, and before there was palpable tumour. The most valuable diagnostic agent was the sigmoidoscope, and another important method, often neglected, was bimanual examination under an anaesthetic. He would not hesitate to advise exploratory laparotomy when there were suspicious symptoms and no confirmation was forthcoming by other methods. He insisted on the importance of not excluding tumour in the colon as a result of *x*-ray examination; the negative evidence of *x* rays was useless. The ideal method of operation was resection of the growth with immediate anastomosis, and the growth should be removed widely, with as much as possible of the lymphatic area in the neighbourhood. The bowel left behind should be long enough to permit of proper anastomosis, and the blood supply to the distant parts of the bowel must not be interfered with. He had always performed end-to-end anastomosis of recent years; the cutting of the bowel on the slope enabled one to get into proper junction the ends of the intestine when these were of different calibre. As for the three-stage operation, while this was not ideal in theory, it would be a mistake to condemn it in practice. The choice in many cases was not between immediate resection and the three stage method, but between the three-stage method and doing nothing at all.

Mr. **Grey Turner**, who brought with him some excellent pathological specimens, said that the present results of operation, so far as immediate mortality was concerned, were extremely good, and even the remote results were encouraging. It was very necessary, in the first place, to be aware of the baneful effects of obstruction. Out of his 112 cases 47 were operated on first for obstruction. If there was actual obstruction, a temporary drainage operation must first be done. In actual removal of the growth the importance of a thoroughly free exposure under the guidance of the eye must be insisted on. Nothing had added more to the ease with which operations were now carried out than the recognition of the principle of thorough mobilization of the intestine before any attempt to resect. The speaker discussed each of these points. He favoured the end-to-end rather than the lateral anastomosis. The latter was safe as a rule, but occasionally there were pouches which gave way.

Among his 112 cases, which included all sorts of emergency cases with different types of obstruction, there were 34 deaths. Of the 78 recoveries, the after-history of 67 was known; 26 died with some recurrent disease within five years of the operation, and 41 were alive or had died without recurrence up to a period of eleven years.

The thing to concentrate on was early diagnosis. A great many cases came to him far too late.

Mr. H. W. **Carson** gave particulars of 111 cases which he had investigated, from which it appeared that growths in the right colon were much less liable than growths elsewhere to cause obstruction. The incidence of obstruction in these 111 cases was 53 per cent. A radical cure was only possible in 35 per cent. He believed that many lives would be prolonged if more exploratory laparotomies were done.

Dr. F. **Hernaman-Johnson** thought that the method of peritoneal inflation by oxygen and radiography of the contents might make possible the detection of differences of density without an opaque meal. He also referred to the ameliorative value of *x*-ray treatment in inoperable carcinoma.

Mr. **Jocelyn Swan** had found a barium enema much more advantageous than the bismuth meal. Of methods of anastomosis, he thought the side-to-side method safest, and he saw no difficulty in performing it although it involved overlapping the bowel. Undoubtedly caecostomy ought to be done in all cases where obstruction was present. He would advise caecostomy in chronic obstruction at least three weeks before attempting radical operation.

Sir **Berkeley Moynihan**, in reply, said he looked forward to a time when such discussions would be held in gatherings of general practitioners which surgeons would attend, rather than in gatherings of surgeons which general practitioners attended. Unless some propaganda could be instituted among general practitioners, and even among the public, early diagnosis would not be possible. With regard to methods of examination, he had tried and discarded the method of inflating the peritoneal cavity with oxygen. As to the degree of surgical interference, the conditions that apparently made an operation impracticable, or nearly so, should not govern them too closely. Over and over again he had opened an abdomen and felt that the conditions were all but hopeless; nevertheless, by steady persistence in loosening and so on, the tumour came out satisfactorily, and he was able to do a wide resection. There were very few growths in the colon that could not be removed, unless secondaries were present. They had got to the stage when the mere technique of the operation was almost as safe as it could be. So far as methods of doing anastomosis were concerned, he felt that there was more than one method, and that the fault, if any, lay in a wrong application of the method and not in the method itself. If a side-to-side anastomosis were done and a dangling end were left, it was a bad piece of work, as it was also in the case of an end-to-end anastomosis when the cut ends were deprived of vascular supply. Personally, he felt much safer when he did a side-to-side anastomosis than he did in the case of an end-to-end one, and, after all, in surgery a surgeon's feelings must sometimes be considered!

PROGRESS IN OBSTETRICS.

At a meeting, held on November 12th, of the Section of Obstetrics and Gynaecology of the Royal Academy of Medicine in Ireland, the President, Dr. **Hastings Tweedy**, delivered his inaugural address for the session on "Recent progress in obstetrics." Progress in obstetrics, he said, had advanced at a more rapid rate than in its kindred art, gynaecology. In 1904, when he became Master of the Rotunda Hospital, the principles of asepsis were as well understood as to-day; yet, by a series of changes, he was able to make the practice of asepsis more perfect, and to lower the septic mortality by 50 per cent., and the morbidity from 10 per cent. to 4 per cent. The discovery that haemorrhage might be poured into the abdomen rather than into the uterus, and the further observation that it might arise as a symptom of toxaemia, were findings of the first importance. Accidental haemorrhage when treated by the Dublin method was now no longer a serious menace. Out of 18,000 bed patients he had recorded 72 such haemorrhages with two deaths. These would have been saved by Caesarean section had his knowledge then been so complete as now. Evidence in favour of the vaginal plug was conclusive, yet few realized its mode of action, or had acquainted themselves with its proper application. In cases of ruptured uterus statistics showed that better results were obtained by plugging the rent with iodoform gauze.

The Dublin treatment of eclampsia had reduced the mortality to below 5 per cent. In his last series of 51 convulsive eclamptics there was but one death (from cerebral haemorrhage). Such success was only possible when treatment was carried out as a routine procedure in every case. There was no longer room for the suggestion that each case of eclampsia should be treated on its merits; so long as this occurred mortality must remain high. The starvation treatment had proved even more effective in the prevention than in the cure of eclampsia.

[illegible] a patient on the verge of convulsions, yet [illegible] starvation her severe symptoms [illegible]. He then permitted a pound of grapes to be eaten, [illegible], necessitating a rapid emptying of the uterus.

All Dublin obstetricians were agreed as to the harmfulness of food. Starvation, if adopted in time, would also cure the other toxaemias, hyperemesis, pregnancy vomiting, ptyalism and probably acute yellow atrophy.

The treatment of contracted pelvis had gained by the introduction of pubiotomy and lower segment Caesarean section as practised by Professor Munro Kerr. Those who could accurately measure the internal diameter now found that even diminution of half an inch in the conjugate of a flattened pelvis had its own indication for treatment.

For the first [illegible] forceps or version [illegible] Caesarean section. Classical Caesarean [illegible] much too frequently [illegible].

Since the speaker had presided over the Section fourteen years ago a great change for the better had occurred in private practice. Three influences had combined to bring this about: (1) The popularity of the nursing home, (2) the introduction of [illegible], and (3) the use of pituitary extract. Patients had a more uneventful convalescence in the home than in a private house, where basins, beds, etc., were rarely aseptic, help was insufficient and not always wise, the couch was unsuitable, light was indifferent, and surgical instruments were hard to preserve aseptically. It had further become possible to determine the date of labour with a certain amount of accuracy. Many women carried their infants over time, an obvious disadvantage; we could now in 50 per cent. of cases determine a full-term labour by a dose of castor oil given in the early morning, followed in an hour's time by 10 grains of quinine, and again followed in two hours' time by ¼ c.cm. of pituitrin. The use of forceps was a troublesome, anxious, and far from safe operation in a private house. On the other hand, there was no objection against its use when the surroundings were aseptic, the light good, help ample, and all the other conditions favourable.

Sir **William Smyly** believed that accidental haemorrhage was akin to eclampsia. He was convinced of the efficacy of starvation in toxaemic cases.

Dr. **Fitzgibbon** endorsed most of what Dr. Tweedy had said, but objected to his fixed method of treating the various degrees of contracted pelvis. He was still in favour of classical Caesarean section, and considered that lower segment section was advisable only in cases such as those of toxaemia, where one must take subsequent pregnancies into account.

Dr. **Madill** said that successful as was the Dublin method of treating the toxaemias, since they were still ignorant of the source and nature of the poison, their treatment could not be described as ideal. He regretted the absence from Dublin of a well-endowed obstetrical pathological laboratory which could compete in research on equal terms with Continental investigators.

Dr. **Spencer Sheill** was not in complete agreement with Dr. Tweedy regarding the relative advantages of a nursing home. He had tried the castor-oil and quinine method, but had never succeeded in inducing labour.

HOUR-GLASS STOMACH.

A joint meeting of the Manchester Medical Society with the members of the Liverpool Medical Institution was held at the Manchester University on November 17th, the President of the Society, Professor **R. B. Wild**, being in the chair.

Mr. **Thelwall Thomas** dealt with a consecutive series of fifty cases of hour-glass deformity of the stomach operated upon within thirteen years. Of these, forty six occurred in women, and four in men; the symptoms—chiefly pain and vomiting—extended over an average period of nine years. Haematemesis was rare, and only severe in one case; without radiographic examination diagnosis was impossible. Despite the very long history of symptoms suggesting ulceration, malignant disease had not supervened in a single case. It was impossible to foresee the type of operation that would prove necessary in any given case; the decision must be made after thorough examination of the stomach, front and back. It was important to use all available methods to combat shock in these emaciated semi-starved patients. Resort had been had to gastroplasty, gastro-gastrostomy, all the known varieties of gastro-enterostomy, and even to gastro-duodenostomy, as well as partial gastrectomy; no condition in the abdomen could call for such a diversity of operative procedures. In the present series there were seven deaths, including three from bronchopneumonia. All the remaining cases except three had been traced, and the reports had been highly satisfactory; in six only had there been slight residual complaints. The results had been good, irrespective of the type of operation, so long as the way through for food had been efficiently provided.

Dr. **Hill Abram** read a note on excess of normal cerebrospinal fluid, stating his view of what should be called excessive, and relating some cases. He suggested that excessive fluid might be (1) an expression of an infection of the choroid plexus in actual meningitis, or (2) due to toxaemic conditions in infective diseases.

Mr. [illegible], in a communication entitled "Is cholecystectomy the normal operation in cholecystitis?" discussed the physiology and comparative anatomy of the gall bladder, and maintained that the view that it was designed to act as a reservoir for bile was still the only one tenable; he pointed out, however, that owing to human dietetic habits the functional value of the organ in man was negligible. All infections of the biliary channels tended to persist in the gall bladder, owing to its anatomical structure as a narrow-necked diverticulum; recurrent symptoms after cholecystostomy were in most instances caused by such a persistence of infection. In cholecystectomy there was a smaller operative risk than in cholecystostomy, and whether the cholecystitis were acute or chronic removal of the gall bladder should be considered the normal procedure.

Mr. Thurstan Holland read a paper on the hour-glass stomach from the *x* ray point of view. This was based on 151 cases. His analysis showed the condition—when due to simple ulcer—to be common in women, rare in males. The chief points were this frequency in females, the difficulty of clinical diagnosis, and the relationship to malignant disease. In discussing the latter point it was considered that all the evidence obtained from an analysis of the cases, the *x*-ray findings, the operations performed—73 in number—and the after-history, went to show that the gastric ulcer was not commonly a predisposing cause of gastric carcinoma.

PURPURA.

At a meeting of the Liverpool Medical Institution, held on November 25th, with Dr. J. E. Gemmell, President, in the chair, Dr. Stallybrass read a paper on the significance of purpuric eruptions. He considered that without further pathological advances the present unsatisfactory classification of purpura could not be improved upon. The work of Ledingham and Bedson, Weil, and others, on the part played by the diminution or destruction of blood platelets in the production of "idiopathic purpura," was reviewed. The occurrence of haemorrhages into the skin and elsewhere in a variety of infective conditions was discussed and recent work on the causation of petechiae in cerebro-spinal fever and in typhus—such as the finding of meningococci and of rickettsia bodies in the endothelial cells of the arterioles—was described. In most other diseases the causation of the haemorrhages was not yet clear. He then compared cerebro-spinal fever, plague, and small pox, pointing out that in each of these there was an ascending series of cases, from the mildest to the most severe type of infection, the latter in all three diseases presenting similar symptoms—namely, absence of focal symptoms, the occurrence of purpuric eruptions, and in cerebro-spinal fever and plague, and probably also in small-pox, of a relatively high degree of bacteriaemia. He concluded that in infective diseases purpura usually pointed to a high degree of bacteriaemia; that the occurrence of groups of haemorrhagic cases when haemorrhage was not a normal symptom of the malady indicated exalted virulence of the organism; and that when increased infectivity was present in cases exhibiting purpura, it was the result of bacteriaemia or of other accidental circumstances, and not of any inherent change in the properties of the micro organism—that was to say, so far as purpuric cases were concerned, increased virulence was not necessarily associated with increased infectivity of the individual micro-organism.

Mr. R. E. Kelly read a note on a case of so-called cardiospasm.

The patient was a man of 55 years of age. He had difficulty in swallowing and regurgitation of food for the past seventeen years. X rays showed a typical dilatation of the lower 8 inches of the oesophagus with the narrowing at the diaphragmatic opening. It was in such a position, however, that the ordinary bougies would not engage the opening, so recourse was made to Plummer's method, whereby a silk thread was used as a guide. The patient swallowed yards and yards of thread, until it traversed the whole length of the alimentary canal. With this as a guide, olive headed bougies through which holes had been perforated were threaded on to the silk, and by graduated sizes the stricture was enlarged sufficiently to take a rubber dilating bag. This was distended with water until the patient had an opening big enough to swallow ordinary diet. Only one series of dilatations were employed, and the patient had had no recurrence of the symptoms in six months.

Mr. Kelly then briefly discussed the pathology of this rare but interesting condition.

Professor Glynn and Dr. Matthews reported the case of indigenous malignant malaria described by them in the British Medical Journal of November 27th, p. 811.

SERVICE PATIENTS IN ASYLUMS.

At a meeting of the Medico-Psychological Association of Great Britain and Ireland, held on November 25th, under the presidency of Dr. W. F. Menzies, a paper on the "Future of service patients in asylums" was read by Dr. W. Robinson. He gave an account of the unfortunate class of case whose mental alienation—stated and considered to be due to war service—had necessitated certification and prolonged detention in mental hospitals. The public only imperfectly appreciated the true factors in the causation of the mental alienation, the varieties of the psychosis, or the prognosis. From his experience in France he believed that a large proportion of the soldiers who manifested psychic disturbances were potential psychopaths before the war. Once in the army such people caused trouble. Patients suffering from insanity were invalided to England, to turn up at some hospital abroad with a recurrent attack. Cases of general paralysis were frequently encountered. In 1917–18, when more men for fighting were urgently needed, many who, up till then, had been performing simple duties, were drafted to fighting units; often the mental state was not considered, and the abnormal stress of training, perhaps of fighting too, yielded a further harvest of mental cases. Dr. Robinson gave an analysis of 140 cases under detention in a certain asylum.

Of 30 cases not exposed to actual shell fire, there was hereditary instability in 12 cases, mental instability in 23; 2 had previously been insane, 4 had been in civil prisons, in 10 the mental trouble had occurred at adolescence, alcoholic excess was present in 16, and 11 had syphilis. Among those who had had foreign service at the front there was hereditary instability in 24 and mental instability in 50.

The author divided the varieties of psychoses in these patients under the heads amentia and dementia. By the former term he meant the mental condition of patients with deficient neuronic development, and by dementia the condition of patients suffering from permanent psychic disability based upon neuronic degeneration; 75 of the cases were aments, 65 were dements. In the great majority of these cases the prognosis as to recovery he regarded as very bad.

In view of the suggested changes in legislation for the treatment of incipient cases and the probable discontent of relatives he thought the following points ought to be emphasized:

A large percentage of service patients had been sent to asylums only after prolonged treatment in military hospitals; these were not patients curable by suggestion, psycho-therapeutic conversations, hypnotism, or psycho-analysis. As a class the war-service patients had replaced the pre-war class of chronic asylum patients. Many of these patients would probably have been asylum patients sooner or later if there had been no war.

PSYCHIC SECRETION.

At a meeting of the Royal Medico-Chirurgical Society of Glasgow, held in the Faculty Hall on November 19th, Professor E. P. Cathcart lectured upon psychic secretion: its relation to digestion. He began by referring to the causes of hunger and appetite, and showed that they were not synonymous terms. Psychic secretion, or the secretion produced by mental impressions, was correctly named, as it was mainly dependent upon memory. Observations which had been made upon human subjects had virtually substantiated Pavlov's findings in dogs. The so-called continuous secretion of gastric juice gave a fluid which chemically was different from appetite juice, which possessed a higher degree of acidity. Referring to what, clinically, is called hyperacidity, Dr. Cathcart considered that this was probably a misnomer, as human gastric juice might contain 0.5 per cent. of HCl without causing discomfort. An amount equivalent to 22 c.cm. of commercial HCl was secreted daily, and the quantity of pepsin secreted in twenty-four hours, 525 mg., would digest 1.5 kilos of coagulated egg albumen in three hours.

Professor Cathcart next discussed the effect of various factors on appetite juice—the appearance of the food, its smell, its taste and the influence of chewing, the sound of food cooking, the thought of food and its palatability or unpalatability. The effects of prejudice and emotion upon secretion were next considered, and the lecturer told of a soldier who, in course of anti-gas training, had to pass through a chamber of strong poison gas, and who was very much worried about it. In the test he inhaled some of the gas, and died four hours and ten minutes after his [illegible] The meal was found in the stomach exactly [illegible] without the slightest sign of digestion having taken place. In conclusion, Professor Cathcart referred to the difference between conditioned and unconditioned reflexes—the latter dependent upon some stimulus such as the sight of food, the former a reflex built up through time. As an example of the conditioned reflex, the lecturer described how, by lightly brushing a small area on a dog's shoulder at the same time as meat powder was given, after a time the mere brushing of that particular part of the shoulder was sufficient to cause a secretion of juice. The part played by environment was considered and its importance emphasized.

Reviews.

THE ETIOLOGY OF TUBERCULOSIS.

Professor Calmette, in his book on bacillary infection and tuberculosis in man and in animals,[1] has set a new standard of medical writing, and given us a work which will be of immense value to the clinician, scientist, and sociologist. Humble-minded readers may at first be overawed by the author's vast and precise knowledge of his subject, and may even shrink from embarking on the task of reading so learned a book. But Calmette's genius lies in some measure in his simplicity of expression and the plainness of his meaning. The manner in which he treats his theme is a pattern to be copied. The use he makes of comparative pathology and comparative medicine is new and wholly admirable. To follow him through these studies is to be made to think of a walk with Harvey through Richmond Park. The volume is divided into four parts. The first part, following a short historical introduction, deals with the biology of the tubercle bacillus and its behaviour as an infecting agent. Calmette's own researches and his knowledge of the work of others enable him to speak with authority on debated topics. The morphology, cultural characteristics, and chemical constitution of the bacillus are fully described. Chapter V is particularly interesting; it deals with the toxins of the bacillus, setting out in detail the chemical and biological properties of the various poisons which it yields. In this chapter the many tuberculins which have been offered to the public are reviewed and their therapeutic values critically appraised. The author's verdict is that the advantages claimed for them by their inventors are by no means always scientifically established. It appears that all other products owe their activities to the endotoxins and exotoxins contained in Koch's original tuberculin, and that scarcely any of them can advantageously replace Koch's preparation.

The formation and evolution of the actual tubercle is considered, and the conclusion is that in every case the tubercle is a lymphatic production. The fixed cells of the different organs in which it may develop play no active part in its histogenesis. The author constantly reiterates that tuberculosis is essentially a disease spread by lymphatic channels and harboured in lymphoid tissues.

Tuberculous bacillaemia is, he tells us, a common occurrence, especially in children, but frequently passes unrecognized. This form may be benign and abortive, and is likely to be mistaken for a protracted gastro-enteritis or for influenza. Enlargement of the spleen may suggest a diagnosis of typhoid fever. But convalescence is not straightforward, localized signs of tuberculosis are apt presently to supervene, and recovery, if it occurs, takes the form of a chronic latent tuberculosis. This bacillaemia itself is not primarily a true blood stream infection, but usually arises from some pre-existing focus in a gland. One most important fact has been established: that lymphatic glands, which are apparently healthy, may cause, when inoculated into susceptible animals, [illegible] contain living and virulent tubercle bacilli. The bacillus enters the system in the majority of instances by means of the polynuclear leucocyte, which engulfs the bacillus but cannot digest it because of its resistant fatty envelope. The infected leucocyte travels to a distance, succumbs to the toxins of the parasite, and becomes ultimately the prey of a large mononuclear cell of some endothelial lining: for it is one of the essential functions of these endothelial mononuclear cells to absorb and digest degenerate or dead cells. A little later the endothelial cell in turn succumbs to the poisons formed by the original bacillus and its offspring. Thus the "giant cell" arises, the first stage of the tuberculous lesion. At this stage the disease may remain dormant for many years. Such a process of transportation of the bacillus and its capacity for latency renders it useless, even if it were possible, to attempt afterwards to discover the exact portal of entry. Calmette regards the alimentary canal as the commonest entrance, although he admits the lung as an alternative but much less important route. The author states the clinical and experimental grounds for his conclusions. Indeed, one of the charms of this book is that if we do not like the author's conclusions, all the facts are laid before us so that we may form better, or at least different, ones. Infection through the conjunctiva is a pathway which Calmette believes to be not uncommon. Of pulmonary infection by inhalation he speaks with no uncertain voice. Experimentally, infection can be procured by inhalation, but it is only effected with difficulty if dry dust laden with bacilli is used. It is easier with liquid droplets, but the form of lesion set up is massive caseation, not discrete tubercles of the lung.

There is an almost universal belief at the present day that pulmonary tuberculosis is caused by inspiration of bacilli. Calmette maintains that the frequency of this mode of entry is greatly exaggerated, and that the mouth and digestive tract are the usual portals by which the bacilli make their way to the lymphatic system and ultimately to the lungs. The lungs, he points out, are the greatest network of blood capillaries and lymphatics in the body. No matter how the bacilli have entered the lymphatic or blood stream, it is in this pulmonary network that they are likely to be first brought to anchor; this, he thinks, accounts for the frequency with which pulmonary manifestations may be the first sign of localization. He holds that the majority of cases of tuberculosis, from earliest childhood to advanced old age, are due to intestinal infections which have left no sign in the glands at the portal of entry. Tubercle bacilli may pass through healthy digestive mucosa and leave no trace of their passage. Clinicians, says Calmette, are loath to accept this truth because of Cohnheim's so-called "law," the signature in the glands nearest the port of entry. Cohnheim's law is only true of massive infections.

Calmette points to the mass of experimental and clinical evidence showing that in all susceptible animals, including man, tuberculosis, particularly if it develops slowly, is the outcome of an infection which is originally lymphatic. Later it extends to the blood stream, but it has started from bacilli absorbed by the digestive tract, principally the buccal, pharyngeal, and intestinal mucosa. This is true, according to Calmette, of every variety of localization in glands, lungs, or elsewhere. Veterinary surgeons, he says, have long ago accepted this view. Why are physicians so obstinate? Why do they expect man to differ from animals in his behaviour towards the tuberculous contagion? Merely because they meet chiefly with pulmonary manifestations in practice. Nevertheless Calmette is careful to point out that "intestinal" infection is not synonymous with "alimentary" infection. The bacillus is not necessarily introduced into the digestive tract by means of contaminated food; the milk of tuberculous cows has a relatively feeble power of infecting man. Fresh bacilli from some human source find the readiest portal of entry in the digestive tract. The young are almost universally susceptible to tuberculous infection. Autopsies show that one third of all infants dying under 2 years old are infected, and Landouzy's figures are quoted as being more remarkable still, for he concluded that 27.8 per cent. of all deaths in the first year of life and 26.8 per cent. in the second year are due to tuberculosis. In infants tuberculosis practically never exists without infection of the tracheo-bronchial glands, but this is not a primary pulmonary infection, it is the initial localization of a lymphatic absorption or accidental inoculation. Calmette regards a direct instillation of bacilli from a phthisical mother into her baby's eye as one method of infantile infection. The mother wipes away her baby's tears with a handkerchief moist with tuberculous sputum. Experiment in animals proves that conjunctival instillation is followed by successive enlargement of the cervical and then the tracheo-bronchial glands, and that secondarily to the latter one or more pulmonary lesions may be discovered. In early infancy resistance is low, massive infections are common, and recovery is rare. After the age of four resistance increases, and a capacity is developed for limiting the extension of tubercles by the formation of fibrous tissue. Therewith the disease tends to run an adult course. Calmette considers that children who are feebly infected may develop a sort of immunity which protects them against reinfection. Infantile tuberculosis is most commonly localized in the bronchial glands, lungs, spleen, liver, mesenteric glands, intestine, meninges and brain, kidneys, and cervical glands. It is not until later childhood that the skin, bones, and joints are attacked. The pathological anatomy in adults and old people differs from that in children, or in negroes brought to Europe, partly because in later life the cases are due to superinfection rather than primary infection, and partly because the lymphatic gland system changes after the third year, so that it offers a less favourable soil for the growth of the tubercle bacillus.

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[1] [illegible] *[illegible] bacillaire et [illegible] chez l'homme et chez les animaux.* [illegible] Paris: [illegible] [illegible] francs.

The evolution of the various localizations of the disease is described in clear simple terms and rendered graphic by many exquisite coloured illustrations. These chapters form the completest description of the clinical manifestations and the morbid anatomy of tuberculosis that could be desired. A wholly new idea is given of the frequency and importance of tuberculous bacillaemia. Thanks to improved methods (by culture and by animal inoculation) of recognizing the presence of tubercle bacilli in the blood stream, it is evident that a bacillaemia, more or less intermittent and more or less intense, is commoner than we were wont to realize. Yet this bacillaemia does not necessarily imply an increase in local lesions; the bacilli circulating in the blood may behave as inoffensive foreign bodies and may be eliminated by the normal excretory channels. Their presence in the blood gives little information of prognostic value.

A critical examination of the influence of heredity leads the author to the conclusion that there is no positive evidence that an infant can be procreated tuberculous by its father. Transplacental infection from the mother is possible in the human fetus after the third month, but it is probably very rare and of almost negligible importance. In fact, infants born of phthisical mothers may escape infection to the extent of 97 per cent. if removed to favourable conditions in the country. The grave danger is familial infection after birth, especially when the mother is phthisical. Even though children of tuberculous parents may have diminished resistance to the infection, they can certainly be protected by avoiding the opportunities of contagion. This the author regards as an important fact to be impressed upon the public at large.

The second part of the book is devoted to the study of experimental tuberculosis, of bacillary infection in domestic and wild animals, of the part played by the ingestion of the milk and flesh of tuberculous cows in human contamination, and, lastly, of the so-called paratuberculous bacilli in nature. The diagnostic use of tuberculin in cattle is fully described. An interesting section deals with the "doping" of tuberculous animals by dishonest owners who endeavour to defeat veterinary tests by giving repeated injections of tuberculin, designed to produce an artificial tolerance. Vallée has found a means of outdoing the "doper" and procuring reactions even in the most carefully "prepared" subjects.

On the question of the specific duality of human and bovine tuberculosis Calmette delivers what we venture to believe is final judgement. There is only one species of mammalian bacillus (*Bacillus tuberculosus mammiferum*). Adaptation of this bacillus to the organism of man or of cattle has produced a differentiation, which is by no means absolute, into two types with certain distinguishing characteristics. Generally speaking, the bovine type is less virulent to man than the human type. But although the bovine type is extremely rare in the chronic adult pulmonary tuberculosis of man, it is relatively common in glandular or acute infections in children. At the same time Calmette remarks that tuberculosis is very common in countries where bovine tuberculosis does not exist, and where children are never brought up on cow's milk.

In the third part of the book the processes of defence and methods of diagnosis are considered. Our knowledge of the cell reactions to tuberculous infection is still very imperfect in spite of the progress that has been made. Of the enzymes, *lipase* seems definitely to play some defensive part in digesting the resistant fatty envelope of the bacillus. Attempts to make use of this knowledge and increase the lipolytic ferments in the blood have not been encouraging. *Coagulins*, by favouring the formation of tubercles, possibly aid in the defensive processes. *Lysins* appear to sensitize the organism towards reinfection, as well as towards tuberculin and other bacillary toxins. The phenomena of agglutination have been carefully investigated, with hopes that have so far not been realized. Experiments have shown that there is no parallelism between the agglutinating power of the serum and immunity. *Precipitin* reactions cannot be relied upon for the diagnosis of infection. *Complement fixation* furnishes no useful prognostic or diagnostic indications. Wright's researches on the *opsonins* are discussed at some length; Calmette's verdict is that the phagocytic index is useless in prognosis, and of very slight value in diagnosis. The *cytology* of sero-fibrinous exudates and effusions, on the contrary, gives valuable diagnostic and, to some extent, prognostic information. Lymphocytosis is practically constant in the early stages of a tuberculous serous effusion, and in many cases serves to establish a diagnosis. Besides these reactions, the blood changes are described, and also the various ways by which tubercle bacilli are eliminated in the excretions.

Chapters dealing with the physiological action of tuberculins and their diagnostic application are followed by a discussion of the constitution, behaviour, and functions of tuberculous "antibodies." Calmette concludes that their elaboration indicates a progressive form of the disease, and their presence has a real value in diagnosis. They are more abundant in advanced than in early stages, so that their estimation from time to time is of prognostic significance. Cachexia and approaching death are heralded by their disappearance, coinciding with aggravation of clinical signs. It is undecided whether "antibodies" are essential factors in defence; they seem rather the indicators of cellular reactions. Certainly they do not neutralize tuberculin artificially injected. There is no relation between the antibodies in the serum and a reaction to tuberculin. The fourth and last part of the book is devoted to "immunity," whether natural or artificial. In it is summarized in masterly fashion every fragment of knowledge that can contribute to a crusade against tuberculosis. The final chapter sets forth the scientific fundamentals for the prevention of tuberculosis in communities at large. It remains for statesmen and sociologists to acquaint themselves with these fundamentals.

Professor Calmette has given us a book of such intrinsic merit that his world-wide reputation would be unnecessary to secure for it attention. Nor will the tragic circumstances of its completion at Lille during the years of German occupation lend to it so enduring a place in the annals of medicine as will the knowledge it enshrines.

RADIOGRAPHY IN ANATOMY.

AN atlas showing the systemic arteries radiographed after being injected with material opaque to the x rays has been compiled by Mr. H. C. ORRIN.[2] It is designed for the use of students of anatomy, and it shows the arteries precisely as they exist in the human body. A full-term fetus was used as the subject, and the main feature of the book is the reproduction of the different parts—upper and lower extremities, head and neck, thorax, heart, and so on—whilst at the end are a series of very beautiful stereoscopic radiographs. The author takes each part separately, marks each vessel with its name, and adds a complete description of each artery and its various branches. No mention is made of the method employed in making the injections or of the material used, but the results are very beautiful; the most minute branches and terminations and the various anastomoses are vividly portrayed. The author in his preface describes the work as original, and this no doubt to a certain extent it is, but it should be remembered that both on the Continent and in this country similar radiographs had been published as early as in 1897. An injected brain was shown to the Röntgen Society by

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[2] *The X-Ray Atlas of the Systemic Arteries of the Body.* By H. C. Orrin, O.B.E., F.R.C.S.Ed. London: Baillière, Tindall, and Cox. 1920. (Demy 4to, pp. 100; 21 plates. 12s. 6d. net.)

Dr. Hedley in November, 1897; Mr. Glew published a radiograph of an injected infant in the *Archives of the Röntgen Ray* in August, 1899; whilst Mr. Fryatt of Melbourne, in the same journal in 1904, started a series showing the arteries in an adult and in a fetus by means of radiographs which do not lose anything by comparison with those in the book just published. There is no doubt that for teaching purposes, and for the study of anatomy, and as a reference book, Mr. Orrin's atlas will be valuable. It is well got up, the letterpress is clear and sufficient, and evidently no pains have been spared to make the numerous illustrations the best possible.

Professor H. VAQUEZ and Dr. E. BORDET have made a prolonged and thorough *x*-ray examination of the appearances shown by the aortic arch and the vessels at the base of the heart, and have published the results in an interesting volume.[3] As the authors state, the illustrations are the main feature of their book, whilst the text chiefly serves to explain what these show. These illustrations are not from radiographs but from screen tracings, as it is considered that neither by ordinary radiography nor by telo radiography is a picture obtainable which is as exact in its measurements as that made by an orthodiagraph screen drawing. The first portion deals with the methods of examination in the various positions, stress being laid upon the importance of the exact angulation for the various semi-lateral positions; if comparisons are to be made these observations should always be made at exactly the same positions. There follows a very complete description of the normal aorta, with a detailed description of the exact orthodiagraphic technique. Then follow chapters on the aorta in advanced life, in aortitis, and in aneurysm; in the latter the appearances are contrasted with other morbid conditions which might lead to difficulties in diagnosis. The next chapter considers the branches arising from the aortic arch and aneurysms affecting them, the differential diagnosis in this case being from tumours arising in the neck and extending downwards to the mediastinum. Concluding chapters deal with the shadows cast by the pulmonary artery and the vena cava. There are in all 247 figures, and it is obvious, both from these and from the text, that the book is the result of a most methodical research carried on for a long period of time, and from observations made upon a very large number of cases. It should prove of value to all radiographers as an aid to the correct interpretation of the radiographic appearances in many cases which present considerable difficulties, and in which the accurate reading of the shadows seen is by no means an easy matter.

MIND AND WORK.

At a time when everyone is more or less perplexed by the industrial situation, the publication of *Mind and Work*,[4] by Professor C. S. MYERS, is particularly opportune. The book is concerned with the application of psychological methods to the problems of industry, and no one who reads it can fail to be convinced that the present methods of dealing with these vital questions are, in the main, haphazard, primitive, and wasteful of human energies. It is impossible for any thoughtful person to study this little volume, with its wealth of facts and its atmosphere of scientific detachment, without feeling that he has perhaps allowed himself to form opinions based upon insufficient data, and that many of his views may be prejudices rather than reasoned conclusions.

The first chapter is devoted to "movement study," which is discussed from three aspects. The planning of the factory or business, including the arrangement of tools and machines, the division of work amongst skilled and unskilled employees, and the learning of the best movements in work—"motion study." The author furnishes results of considerable significance which have been obtained in industrial undertakings when they have been systematically organized under the above headings. The improvement observed has [illegible] not only in the direction of increased output and reduction in the cost of production, but also in respect to larger wages, lessened fatigue, and increased contentment amongst the workers. The second chapter is concerned with the study of fatigue. The various theories are reviewed, the experimental methods of investigation indicated and described, and the advantageous effects of rest periods and reduced hours demonstrated. Consideration is next given to "selection study." Vocational psychology and personality tests undoubtedly furnish a field of great usefulness in the future, and their application to large bodies of recruits in the American army has abundantly demonstrated their practical utility and given an impetus to their wider use in civil life. As Professor Myers points out, vocational guidance for boys and girls on leaving school will do much to prevent the unsatisfactory careers and wasted lives consequent upon the adoption of pursuits for which they are unfitted and which offer no scope for special abilities.

The chapter dealing with the vexed question of restriction of output, a subject which is just now so prominently in the public mind, will be read with much interest. It is shown that output may be restricted by the employer or by the employee; and that either of them may restrict it deliberately or more or less unconsciously. The psychological factors which determine this attitude are excellently summarized, and it is clearly shown how serious is the economic wastage which results from a lack of harmony between the worker and employer, and from bad organization and out-of-date equipment. A chapter is devoted to systems of payment. This contains an impartial survey of the respective merits and limitations of the methods of payment by day rates, results, bonuses, profit sharing, and co-partnership. In this instance also the author indicates clearly how the attitude of the worker towards these various schemes is determined by fears and suspicions which his past experience has inevitably created. The book concludes with a general survey of the present state of industrial unrest, and the author suggests the directions in which readjustment would seem to be necessary if a satisfactory solution of the industrial problem is to be reached.

Throughout this book Professor Myers stresses the necessity for the co-operation of the worker himself in the future development of industrial psychology, and he is fully alive to the fact that the introduction of the psychologist into the factory has not always been a success. The trade unions and workers have been suspicious of this innovation. They have felt that it was an instrument introduced solely in the interests of the employer, and in many cases, especially in America, where industrial psychology has attained its greatest development, this suspicion would seem to have been justified. Such a reproach could not be levelled at the writer of this volume, as he develops conclusions which would certainly meet with considerable opposition on the part of the "extremist" employer. Those who place the welfare of the community as a whole above sectional interests will, however, probably find themselves in general agreement with the scientifically developed views expressed in this book.

A survey of this volume makes it evident that the application of psychological methods to industrial problems is a development from which much may be expected in the future. The function of industrial psychology is not the dictation of policy, but it supplies the most adequate methods of obtaining facts upon which alone a sound and unbiassed policy can be based. The industrial situation is too important to rely on "hit or miss" methods, and a scientific approach is urgently needed. We can cordially recommend this book, and feel that it has a wide sphere of usefulness.

DISEASES OF CHILDREN.

Since the last edition of his *Lectures on Diseases of Children*, published in 1915, Dr. ROBERT HUTCHISON[5] has revised the whole work, rewriting the lectures on infant feeding, congenital syphilis, and tuberculosis, and adding a chapter on fever of obscure origin. The lecture on congenital pyloric stenosis contains many interesting points: in the discussion of the much debated pathogeny the view that continued spasm causes the hypertrophy is supported in opposition to the hypothesis of a congenital anomaly, on the grounds that the symptoms do not come on immediately after birth, and that the condition can be absolutely cured by medical treatment; though Dr. Hutchison still believes that no case is so severe that it may not recover under medical treatment, improvement is often so slow and surgical treatment has recently become so successful that if ten or twelve days of medical measures fail to bring about definite improvement, he advises Rammstedt's operation of splitting the pylorus down to the submucous coat. Written in a conversational style, these lectures contain the wise advice born of much experience; this is notably the case in the account of coeliac disease, which, originally described by Gee, was rediscovered as acholia by Cheadle, and also by Herter as intestinal infantilism. Writing on the treatment of chorea, Dr. Hutchison says that he has long given up any very active or heroic measures, and quotes Sir Thomas Barlow's remark that he would like to write a paper on "the diseases produced in the treatment of chorea." On the vexed question whether splenic anaemia of infancy is a secondary anaemia or a specific disease *sui generis* Dr. Hutchison takes the latter view, and insists that it is quite distinct from the chronic splenic anaemia of adults. The essentially practical character of the lectures is well shown by the numerous photographs illustrating mental deficiency, especially mongolism, and by the case histories in the new chapter on fever of obscure origin. Dr. Hutchison may safely be congratulated on the promise of continued success of these lectures.

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[3] *Radiologie du Cœur et des Vaisseaux de la Base.* [illegible] Paris: [illegible] 1920. [illegible]

[4] *Mind and Work.* By Charles S. Myers, M.A., M.D., Sc.D., F.R.S. London: University of London Press. 1920. [illegible]

[5] *Lectures on Diseases of Children.* By Robert Hutchison, M.D., F.R.C.P. Fourth edition. London: Edward Arnold. 1920. (Demy 8vo, pp. [illegible]; [illegible] figures, [illegible] diagrams. [illegible]s. net.)

NOTES ON BOOKS.

THE compilers of *The Dunlop Book*[6] state that they have compressed into it those things a motorist wants to know. And truly the information contained in its pages is most complete, even to directions for turning over its thin paper leaves. The book is divided into seven sections, of which the sixth is a well-arranged key index and the seventh a list of repairers on the loose-leaf system, so that it may be kept up to date. Each section is tabbed, and the alphabetical arrangement in the Concise Guide, Roadside Sketches, and Hotel sections makes reference easy. The first section is a concise guide to towns and localities in the British Isles, prefaced by lines from E. V. Lucas's *Cloud and Silver*. The letterpress, descriptive of points of interest in connexion with each town or village, is interspersed with charming pen drawings and with street plans of the larger towns. The second section consists of about 400 roadside sketches of ancient landmarks and historical structures. The series of excellent maps in section three are introduced by a quotation on roads from Sir A. Quiller Couch. The maps, drawn on a scale of twelve miles to the inch, are useful in giving a general view of the country when planning routes, but are not intended to take the place of the two miles to the inch map so necessary for actual touring. Contour lines and graded colouring are used for distinguishing at a glance the hilly country. The fourth section is extraordinarily varied in its contents. Architecture, fishing, the camera, ancient camps in Britain, and golf are dealt with; and there are notes for American and French visitors, addresses of embassies, legations, and consulates-general. The section concludes with a variety of useful general information for motorists. The fifth section consists of a list of hotels with their appointments to motoring bodies, telephone numbers and telegraphic addresses, and their garage accommodation. The book is excellently bound in leather with a flap and button to close it, is a very handsome production, and, notwithstanding its size, well worthy of a place in the luggage of the touring motorist.

Professor MUNRO KERR and Dr. JAMES HENDRY have published a second edition of the *Notes on Midwifery*,[7] which were previously issued by the former for private circulation among his students. Printed on one side of the page only, and bound in a soft cover, they are presumably intended to serve as the groundwork of a textbook and a class notebook combined; and as they are adequately illustrated by line drawings they are calculated to fulfil this end very satisfactorily. The teaching is eminently practical throughout. From their very nature these notes must be supplemented by fuller teaching by lecture or larger textbook, but they provide a useful summary of the whole subject, and will be appreciated by students reading for examinations, and by teachers who wish to glance over the headings and outlines of any particular subject. Within these limits the volume will be found most serviceable.

The eleventh edition of *White and Martin's Genito-urinary Surgery*,[8] by E. MARTIN, B. A. THOMAS, and S. W. MOORHEAD, has been so rapidly exhausted that it has been found necessary to produce a twelfth edition. A review of the eleventh edition appeared in this JOURNAL a year ago. Very little change has been made in the new edition. A few illustrations have been introduced and minor alterations and additions made to the text. Only one new section—on the subject of the prophylaxis of venereal disease—has been introduced. We are glad to note that what has always been a very marked defect of previous editions has been remedied—we refer to the index. Nothing is more annoying to the reader than to find that an index is incomplete and inaccurate, and the old index to White and Martin's textbook had a remarkable number of inaccuracies. The editors have been wise in resisting any temptation to increase the size of the work; it is already so well known that it is unnecessary to say anything further as to its merits as a textbook.

In *Food Supplies in Peace and War*,[9] Sir HENRY REW briefly discusses the problems of feeding that now confront the United Kingdom and the world. For some decades before 1914 food may be said to have been both cheap and stable in price. Our compulsory rationing during the war was accomplished, as Sir Henry says, "without serious difficulty owing largely to the good sense and public spirit displayed by the people generally." What of the future? Given settled social and political conditions, food production in Europe may be expected to be restored to its pre-war level in the course of two or three years. In Great Britain the increased production of food has been the object of much legislation since 1917. The effects of this legislation cannot yet be seen or prophesied; farmers are guaranteed minimum prices for wheat and oats, farm workers receive at least a minimum wage, the raising of farm rents is restricted, proper standards of cultivation may be enforced—there is power to evict the occupier and carry on the farm under Government control—and the compulsory acquisition of land for small holdings and farm colonies is legalized. Sir Henry Rew clearly hopes that all may work out for the best and render the agricultural life more prosperous and more attractive.

APPLIANCES AND PREPARATIONS.

Electrical Aids for the Deaf.

SOME electrical aids for the deaf have been introduced by Mr. W. H. Pettifor, a telephone engineer, of 11, Victoria Street, Westminster. One appliance, called the "ossiphone," is designed for cases of obstructional deafness in which conduction of sound through bone is necessary. The set comprises transmitter, pocket battery, and receiver, connected by a flexible conductor. The transmitter may lie on the table in front of the speaker; it contains a sensitive aperiodic microphone, and when the sound waves strike on the diaphragm a current corresponding with them sets up vibrations in the diaphragm of the receiver. The receiver is of about the size and shape of a watch, and has a knob, which can be lightly pressed against the teeth or any part of the skull, preferably just behind the ear, whereupon vibrations are conveyed to the auditory nerves by bone conduction. Other electrical aids make provision on a like principle for various kinds and degrees of deafness by modifications of the construction of the transmitter and of the diameter and thickness of the receiver diaphragm. A testing set is fitted with a number of standardized microphones and receivers, so that the combination with which the voice is most articulate may be ascertained, and the power of the instrument is decided by minutely regulating the distance between the poles of an electro-magnet and the diaphragm of the receiver. With this test instrument a prescription can be written for any one of ninety combinations which is found to give the most suitable pitch, wave form, and sound volume in the individual case, and the instrument is built up accordingly. We have tested these instruments, and, so far as a person of normal hearing can judge, they bear out what is claimed for them.

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[6] *The Dunlop Book: The Motorist's Guide, Counsellor, and Friend.* Compiled by Ed. J. Burrow, Ed. R. Cross, and A. J. Wilson. Second edition. Published for The Dunlop Rubber Company, Ltd., by A. J. Wilson and Co., Ltd., 154, Clerkenwell Road, E.C. (Demy 4to, pp. 735; illustrated. £1 1s. net.)

[7] *Notes on Midwifery.* By J. M. Munro Kerr, M.D., and James Hendry, M.A., B.Sc., M.B. Second edition. Glasgow: Maclehose, Jackson, and Co. (Double cr. 8vo, pp. 156; illustrated. 10s 6d. net.)

[8] *White and Martin's Genito-urinary Surgery and Venereal Diseases.* By E. Martin, A.M., M.D., F.A.C.S., B. A. Thomas, A.M., M.D., F.A.C.S., and S. W. Moorhead, M.D. Twelfth edition, revised. Philadelphia and London: J. B. Lippincott Co. 1920. (Med. 8vo, pp. 943; 21 plates, 424 figures. 35s. net.)

[9] *Food Supplies in Peace and War.* By Sir R. Henry Rew, K.C.B. London: Longmans, Green and Co. 1920. (Cr. 8vo, pp. vii + 183. 6s. 6d. net.)

MEDICAL CERTIFICATES AND UNEMPLOYMENT BENEFIT.

BY A MEMBER OF A COURT OF REFEREES.

THE Unemployment Insurance Act, 1920, which came into force on November 8th, has the effect of enlarging very considerably the number of persons who may claim unemployment benefit. Although the medical profession is more nearly concerned with national health insurance, doctors are in a position to assist very materially in the determination of claims made by those who are out of work.

The statutory conditions for the receipt of unemployment benefit by an insured contributor are set out in Section 7 (i) of the Act. He must show *inter alia* "that he is capable of and available for work, but unable to obtain suitable employment." By Section 8 (5) of the Act he is "disqualified for receiving unemployment benefit while he is in receipt of any sickness or disablement benefit or disablement allowance under the National Health Insurance Acts, 1911 to 1920. . . ." It follows that to succeed in his claim an applicant must in all cases show that he is capable of work; but that if he is in receipt of sickness benefit there is a presumption of incapacity.

Claims for benefit are determined, in the first instance, by the insurance officer, who has to decide whether the statutory conditions are fulfilled. If the insurance officer refuses a new claim, or comes to the conclusion that a person receiving the benefit should have his allowance stopped, the claimant may appeal to a court of referees. This court consists of an employer's representative, a workman's representative, and a chairman appointed by the Minister of Labour. From the court of referees an appeal lies to the umpire.

A large number of these appeals raise questions with which medical practitioners have no concern. Thus an applicant may have been dismissed for misconduct, or he may have left his employment voluntarily for no good reason, but very many cases necessitate the production of a medical certificate. For example, a man may throw up a job or refuse to take it because he is physically unfitted for it. Again, he may have been dismissed because of keeping bad time owing to ill health. While his condition may not be such as to justify his receiving sickness benefit, if he can show that he is capable of doing light work which he cannot obtain he may be entitled to unemployment benefit.

In furnishing certificates to such applicants the medical practitioner can render very material service to those who have to decide claims for out-of-work benefit. But to be of real value the certificate should cover the following points and provide answers to the following questions:

1. Is the applicant capable of work *of any kind*? If not, he should be receiving sickness benefit; and whether he is or not he cannot claim out-of-work benefit.

2. What work has the applicant been doing? It is very necessary to state, in the body of the certificate, the nature of the work which the applicant alleges he has been endeavouring to do, in order that the court of referees may be assured that the practitioner has had the materials before him upon which to form a judgement.

3. What work the applicant can do, for example, whether indoor or outdoor, heavy or sedentary. Information on this point is [illegible], because many men who can do [illegible] would [illegible] do light work, it is not every one who can do heavy work.

4. When did the applicant become incapable of working, and for how long did his incapacity last? This is important, because if a man were to be off work incapacitated, say, for three weeks and were then to resign, he would not be entitled to benefit during the three weeks, but could claim as from the end of that period.

It is realized that the practitioner who is asked to give a certificate is often in a position of considerable difficulty. Applicants constantly appear before courts of referees who, although they have left their work or refused a job for reasons of health, have never, in fact, seen a doctor. In such a case it is usual to require the production of a certificate, and the doctor seeing the man for the first time may have to form an opinion as to what his physical condition was at some period more or less remote.

In such cases there appears to be only one course for the practitioner, and that is to state his opinion as to the kind of work which the applicant is capable of doing having regard to his general condition.

It has been decreed that an appeal lies to the umpire from courts of referees. The decisions of the umpire are recorded by the Ministry of Labour. The following notes of a few of these decisions are of value as showing how much importance is attached to the medical certificate.

An applicant who was last employed as a labourer in engineering works stated that he had been compelled to give up his former occupation as an iron moulder as he had contracted phthisis, and that he had to leave his last employment owing to the smoke affecting his health. He produced a medical certificate that he was suffering from tuberculosis and was unable to work, and stated that his doctor had ordered him to find lighter employment out of doors. He had only worked for three months during the past year. In these circumstances a claim for benefit was disallowed on the ground that, as the applicant's state of health prevented him from working for more than three months out of the previous twelve months, he was incapable of work.

In another case an applicant left his work as a wagon painter on January 30th, because he was ill. He produced a medical certificate to the effect that he had been suffering from bronchitis since February 11th, and had been absent from work until February 22nd. It was held that the applicant must be regarded as being incapable of work until medical evidence showing that he was capable of work was produced.

Where an applicant who had been doing heavy work produced a certificate to the effect that he had been suffering from bronchitis and attending here (that is, at the doctor's dispensary) for the last four weeks, it was held that the claim should be disallowed until further evidence was adduced that he was capable of work.

In one case where an applicant produced a certificate stating that she was "not fit to do continuously heavy work," it was shown that she could have had full time employment at suitable work, and it was held that in these circumstances she was not entitled to benefit.

THE POETRY OF THE MICROCOSM.

IT is curious to reflect that, though there have been many medical poets and not a few medical poems, of which Garth's *Dispensary* might be cited as a prime example, so few poets or poems, whether medical or not, have dealt with the human body. The *Purple Island* of Phineas Fletcher is, perhaps, the exception that proves the rule. This curious work was first published in 1633, but written much earlier, as is proved by its allusions to the Elizabethan Earl of Essex.

"The name of the poem," says an old critic, "conjures up images of poetical and romantic beauty, such as we may suppose a youthful admirer and follower of Spenser to have drawn. A perusal of the work, however, dispels this illusion. The *Purple Island* of Fletcher is no sunny spot 'amid the melancholy main,' but is an elaborate and anatomical description of the body and mind of man. He begins with the veins, arteries, bones, and muscles of the human frame, picturing them as hills, dales, streams, and rivers, and describing with great minuteness their different meanderings, elevations, and appearances. It is admitted that the poet was well skilled in anatomy, and the first part of his work is a sort of lecture fitted for the dissecting room. Having in five cantos exhausted his physical phenomena, Fletcher proceeds to describe the complex nature and operations of the mind. Intellect is the prince of the Isle of Man, and he is furnished with eight counsellors—Fancy, Memory, the Common Sense, and five external senses. The Human Fortress, thus garrisoned, is assailed by the Vices, and a fierce contest ensues for the possession of the human soul. At length an angel interposes, and insures victory to the Virtues, the angel being King James I, on whom the poet condescended to heap this fulsome adulation."

Fletcher's long protracted allegory was based upon the notion of the mystic philosophers that the human body is a miniature edition (microcosm) of the universe (macrocosm). The idea that the microcosm is a kind of abridgement of all that is admirable in the macrocosm is found in the writings of Paracelsus and the medical astrologers contemporary with Fletcher, and it has been further elaborated by the illuminati of the type of Jacob Boehm, Robert Fludd (*Utriusque Cosmi Historia*, 1617, and *De Supernaturali Microcosmi Historia*, 1619), Van Helmont, who places the soul in the stomach and the spleen (the "Duumvirate"), and the more recent Claude de Saint Martin, who died in 1803, and in 1782 published the gist of his "spiritualistic jargon" in his work *Rapports entre Dieu, l'Homme, et l'Univers*. The *Leviathan* of Hobbes runs parallel with these writers' works, the state therein being represented as a kind of microcosm, analogous to the human body, and the Hobbesian idea recurs in Mr. Morley Roberts's recent *Warfare in the Human Body*, where the human economy is likened to that of the nation or state. Such analogies are perilous, and may lead to much false reasoning by political doctrinaires of communistic tendency. The poet, however, may insist on analogy where the politician or the pathologist may not, and it is, therefore, the more remarkable that he has through the centuries paid so little attention to the microcosm and its implications. After the *Purple Island* we search in vain for allusions to the brain and human frame in the older anthologies of classic English poetry. The late seventeenth and early eighteenth century poets found their inspiration elsewhere than in the anatomical field, and it is not till we come to the time of John Wesley that we find him singing—on the verge of bathos:

> Ah! lovely appearance of death.
>   What sight upon earth is so fair!
> Not all the gay pageants that breathe
>   Can with a dead body compare!
> With solemn delight I survey
>   The corpse when the spirit has fled,
> In love with the beautiful clay
>   And longing to lie in its stead.

Thus the hymnologist and religious reformer. Far more nobly, but with similar inspiration, Lord Byron sang in the "Giaour":

> He who hath bent him o'er the dead
> Ere the first day of death is fled,
> The first dark day of nothingness,
> The last of danger and distress
> (Before Decay's effacing fingers
> Have swept the lines where beauty lingers),
> And mark'd the mild angelic air,
> The rapture of repose that's there,
> The fix'd yet tender traits that streak
> The languor of the placid cheek,
> And—but for that sad shrouded eye,
> That fires not, wins not, weeps not, now,
> And but for that chill, changeless brow,
> Where cold Obstruction's apathy
> Appals the gazing mourner's heart,
> As if to him he could impart
> The doom he dreads, yet dwells upon;
> Yes, but for these, and these alone,
> Some moments, ay, one treacherous hour,
> He still might doubt the tyrant's power;
> So fair, so calm, so softly seal'd,
> The first, last look by death reveal'd!

"I trust that few of my readers," adds Byron in a note, "have ever had an opportunity of witnessing what is here attempted in description, but those who have will probably retain a painful remembrance of that singular beauty which pervades, with few exceptions, the features of the dead a few hours, and but for a few hours, after 'the spirit is not there.'" And he adds the following observation, which might have been made by a medical jurist: "It is to be remarked in cases of violent death by gunshot wounds, the expression is always that of languor, whatever the natural energy of the sufferer's character: but in death from a stab the countenance preserves its traits of feeling or ferocity, and the mind its bias, to the last."

The poet in his famous passage compares modern Greece to the newly dead over which the watcher bends, and the whole of these thirty-five lines, "so beautiful, so original, and so utterly beyond the reach of anyone whose poetical genius was not very decided, and very rich . . . were sufficient," as Sir Egerton Brydges pointed out, "to secure celebrity to this poem."

We have somewhere seen a volume of verse by a medical man with the subtitle "Carmina Cadaveris," but we suspect that these songs were of the comic order usual in hospital gazettes. They have not won their author fame. The cadaver, indeed, in any condition save that in which Wesley and Byron viewed it, is an unpleasant subject for poetry, and this both painters and poets have seemed to recognize, for it is not again a subject for art till it reappears either as the "anatomy" or half-fleshed skeleton of the old "dances of death"—of which Holbein was the chief exponent—or as the clean and symmetrical skeleton. Hamlet's famous address to Yorick's skull is the classic instance of what we may call the poetry of the ossuary. Throughout the scene with the grave-diggers Shakespeare makes his hero dwell on the voicelessness of the skull. Its eyelessness is not touched on, and it has been left to the moderns to advert to the skull's expressive look:

> The windows and the doors of light and breath
>   Long since with such gross curtains draped, O skull
> Have put on caverned grandeur after death—
>   A lofty look, resigned and beautiful!
> A lofty look, inscrutably sublime,
>   A melancholy of high deathless grace.
> In this, methinks, that man half conquers Time
>   And wellnigh baffles the dark grave's disgrace.

In 1832, according to a letter received in August, 1919, by the authorities at the Museum of the Royal College of Surgeons of England from Mrs. B. R. Reddell, of Dodgeville, Wisconsin, a MS. poem was said to have been found near a perfect human skeleton in the College Museum. William Clift was then Curator, and he is said to have sent it to the *Morning Chronicle*, where its publication

> "excited so much attention that every effort was made to discover the author, and a responsible party went so far as to offer a reward of fifty guineas for information that would discover its origin. The author preserved his incognito and, we believe, has never been discovered."

According to Mrs. Reddell's letter, he turns out to have been Captain Samuel Curnow, of St. Ives, Cornwall, her great-grandfather. Captain Curnow had gone to London in connexion with events in his family following on the St. Ives election, where his friend Winthrop Mackworth Praed had unsuccessfully contested the seat. Clift makes no mention of the finding of the poem in his elaborately detailed Museum Diary for the year 1832, and this is curious, for he was fond of *jeux d'esprit* of the kind, and he now and then records extra-collegiate events. Thus, in this year, he stoically records the death of his son in a cab accident! Nor is the poem by Praed, for it is not in his works, though somewhat in his manner. We may therefore take it that Captain Curnow was the author.

TO A SKELETON.

> Behold this ruin! 'Twas a skull
> Once of ethereal spirit full;
> This narrow cell was Life's retreat;
> This space was Thought's mysterious seat.
> What beauteous visions filled this spot,
> What dreams of pleasure long forgot?
> Nor hope, nor joy, nor love, nor fear,
> Have left one trace of record here.
>
> Beneath this smouldering canopy
> Once shone the bright and busy eye;
> But start not at the dismal void,—
> If social love that eye employed,
> If with no lawless fire it gleamed,
> But through the dews of kindness beamed,
> That eye shall be forever bright
> When stars and sun are sunk in night.
>
> Within this hollow cavern hung
> The ready, swift and tuneful tongue;
> If Falsehood's honey it disdained,
> And when it could not praise was chained,
> If bold in Virtue's cause it spoke,
> Yet gentle concord never broke,—
> This silent tongue shall plead for thee
> When Time unveils Eternity!
>
> Say, did these fingers delve the mine,
> Or with the envied rubies shine?
> To hew the rock or wear a gem
> Can little now avail to them,
> But if the page of Truth they sought,
> Or comfort to the mourner brought,
> These hands a richer meed shall claim
> Than all that wait on Wealth and Fame.
>
> Avails it whether bare or shod
> These feet the paths of duty trod?
> If from the bowers of Ease they fled,
> To seek Affliction's humble shed;
> If Grandeur's guilty bribe they spurned,
> And home to Virtue's cot returned.—
> These feet with angel wings shall vie,
> And tread the palace of the sky!

VICTOR G. PLARR.

VOLUNTARY HOSPITALS CONFERENCE.

A CONFERENCE of representatives of London hospitals, convened by the British Hospitals Association, was held in the hall of the Royal Society of Medicine on December 2nd. The Hon. Sir ARTHUR STANLEY presided over an attendance of about 100.

A Committee of London Hospitals.

The CHAIRMAN at the outset read a letter from Charing Cross Hospital stating that, in view of the very different lines on which that hospital worked, its authorities had decided, though not in any truculent spirit, to preserve an independent attitude, and accordingly would not seek representation on the inter-hospital committee which it was proposed to form.

Sir Arthur Stanley went on to say that the difficulty of getting hospital representatives from all over the country to come to London frequently had led to the formation of regional committees in various parts of the country on which all the hospitals in each area should be represented. The formation of these committees had been taking place during the past year, and after a committee had been set up for London the only considerable gap remaining would be in South-West England. The committees were to consist, not necessarily of particular individuals specially appointed for a certain period, but of a certain established number of representatives for each hospital or hospital group, so that the hospitals could send on a particular occasion the persons most fitted to deal with the question for which the committee was summoned.

Sir EDWARD PENTON moved that a regional committee be formed for London, and said that most people concerned in hospital management had felt the need for some such central body, which would be a clearing-house of hospital thought, and would serve the purpose that a chamber of commerce served in industry. Lord GOSCHEN, in seconding, made it plain that the function of the proposed committee would be consultative, not executive. Sir SAMUEL SCOTT asked to what body the regional committees would report, and the CHAIRMAN said that they would report to the Council of the British Hospitals Association, which Council he hoped in time would consist of delegates from regional committees in all parts of the country.

The motion to set up such a committee was unanimously carried.

The CHAIRMAN then proposed and Sir EDWARD PENTON seconded the adoption of the following scheme of representation, by which the delegates would be allotted more or less proportionately to the number of beds in the institutions:

	Total Beds.	Delegates.
The 12 large hospitals with medical schools	5,431	12
The 8 larger general hospitals ...	1,439	4
The 13 smaller general hospitals ...	922	3
Consumption hospitals .. .	508	1
Women's hospitals	296	1
Children's hospitals	669	1
Eye hospitals	258	1
Nerve hospitals	354	1
Cottage hospitals	413	1
Lying-in hospitals	375	1
Unclassified special hospitals (34) ...	2,216	6
Totals	12,881	32

This was subjected to some criticism from various representatives, but the scheme as it stood was agreed to, with the addition that the committee when appointed would have power to co-opt members for any special business.

Financial Position of Hospitals.

Colonel F. B. MILDMAY, M.P., then moved:

> That the conference welcomes the appointment by the Minister of Health of a small committee to inquire into and report upon the financial position of the voluntary hospitals throughout the country and to make recommendations.

He said that during the discussion on the Ministry of Health Bill a number of members of Parliament had told him they were absolutely ignorant of hospital conditions and requirements, though most anxious to do their duty in the matter. He therefore called together members of the two Houses who were interested in hospital management, and a very useful interchange of opinion followed. The whole matter was then talked over between Dr. Addison and Sir Arthur Stanley and himself, and the Minister accepted all their views down to the wording of the terms of reference and the composition of the committee of inquiry.

Lord KNUTSFORD, in seconding, said that if they did not meet at a funeral breakfast they were certainly at the bedside of a sinking relative. ("No.") Although they felt inclined to weep there was no reason why the patient should not ultimately rise again. He was sure Dr. Addison would do his best to appoint to this committee men of proper calibre and independent judgement, unconnected with any particular hospital. For the purpose of this inquiry the hospitals should have their accounts submitted to a common audit; it was important for this purpose to get the accounts down to one denominator. He hoped the committee would report quickly and suggest remedial measures. Next March, when the quarterly accounts came in, would be a danger moment for all hospitals.

The CHAIRMAN refused to accept Lord Knutsford's suggestion that they were meeting at a funeral breakfast. It seemed rather to him as if they had been called in to deal with a refractory member of Council in the interests of the member himself! Already this action had had the effect of postponing the fatal day from January to March. He suggested that with the resolution there might be conveyed an expression of appreciation of the way in which Colonel Mildmay himself and others had been received by the Minister. (Hear, hear.)

The resolution was carried unanimously.

Sir NAPIER BURNETT wished that the meeting had indicated whether, supposing the committee of inquiry recommended some supplementary aid for the voluntary system, it was in favour of such aid coming from the rates or from the State. If the money came from the State he would like to see it [illegible]

The Treasury a few months ago issued a statement which showed that in 1919 the total expended on the National Insurance Act was £17,330,000, of which £13,700,000 was for benefits and the rest for administrative and other expenses. The receipts came to £24,400,000, so that there was a surplus from the Act in that one year of over £7,000,000. The Act had now been in existence for some years and there was probably an accumulated surplus of something like fifty millions.

As their hospital difficulties had been so greatly accentuated since the Insurance Act came into operation, and as no hospital benefit was included in the Act, although hospitals were flooded with insurance patients, why should not the Act be amended so as to help the hospitals? A Central Hospitals Board might secure block grants from these millions lying in reserve, and distribute such money to hospitals after an investigation of their needs.

A vote of thanks to the Chairman concluded the proceedings.

A MEDICAL SERVICE SCHEME FOR SCOTLAND.

REPORT OF THE SCOTTISH CONSULTATIVE COUNCIL.

THE Consultative Council on Medical and Allied Services to the Scottish Board of Health has now presented an interim report on a scheme of medical service for Scotland.* The reference to the Council on its constitution in March last was:

> "To consider and to make recommendations as to the systematized provision of such forms of medical and allied services as should in the opinion of the Council be available for the community."

While not yet in a position to present to the Board a report dealing in detail with the many issues involved in the reference, the Council has formulated the general principles which in its view should govern a comprehensive health service for the nation, and has framed the outlines of a systematized scheme for medical and allied services; these are embodied in the present report.

From a general survey of existing arrangements for the provision of medical services to the community in Scotland the Council draws two main conclusions:

> First, that the conception of the State's direct concern with the health of the people as a whole has recently been widened, and the terms "State Medicine," "Public Health," and "Preventive Medicine," which formerly defined the public responsibility for the physical welfare of the population, have received a more comprehensive interpretation.
>
> Secondly, that the corresponding developments in public provision of medical services, due to the change from a system which dealt mainly with aggregates and their hygienic environment to a system that includes the medical care and treatment of individuals and the safeguarding of individual health, have not proceeded upon any well ordered plan.

From time to time, and without much consideration of its relation to larger issues, provision, more or less complete, has been made by the State for one or another class of the community, or for particular diseases or groups of diseases; but in no case has the existing provision of medical advice and treatment been entirely adequate and complete. This argument is developed in several paragraphs, and the lack of co-ordination and continuity is illustrated by what happens in the case of a child suffering from defect or disease. As a first step towards securing the immediate co-ordination of medical services the Council welcomes the fusion of central authorities in the Board of Health, and regards the unification of local authorities concerned with health and treatment as the next step on the way to the systematic organization of medical services throughout the country.

We print below the summary of recommendations with which the report concludes. It will be seen that the Council holds it of primary importance that the organization of a national health service should be based upon the family as the normal unit, and on the family doctor as the normal medical attendant and guardian; that the first essential for efficient treatment of individuals is not institutional but personal service rendered to the people in their own homes. This central idea is expressed more fully in the body of the report; the paragraph ends thus:

> "Without the family doctor as a personal link, not only between agency and agency concerned with the same patient or family, the advantages of the publicly provided medical resources must inevitably come short of full realization."

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* Cmd. [illegible] Edinburgh. Published by His Majesty's Stationery Office. To be purchased through any bookseller. Price 2d.

The Council, it will be noted, advises that a complete health service ought first to be provided for that class which includes insured persons and their dependants and all other families and persons in like economic circumstances. Here, as elsewhere, the avowed aim of these proposals is to promote the efficiency, direct and indirect, of the family doctor. The need is recognized for distinguishing between distant ideals which should be kept in view and the practical steps that may be taken at once to improve the present conditions of service.

Scotland, it is remarked, presents many different problems from the point of view of medical organization. For the Highlands and Islands a separate Consultative Health Council for health services has already been set up, but in the Lowlands there are "Highland" areas in which the difficulties of medical practice are as great as those in the Highlands proper. The teeming industrial districts in and around Glasgow, and the dense population of the coal belt, present one problem; the city populations, another; and the rural areas, dotted here and there with small industrial centres, have problems of their own. Hence, while the Council's proposals presume a common basis of administration, local modifications of the general plan are seen to be inevitable.

The scheme for clinical laboratories, mentioned in paragraph 9 of the summary, is set out at some length in the body of the report. A working plan of organization was drawn up by a committee of the Council with the assistance of Professor James Ritchie. It is founded on the idea that there should be three grades of clinical laboratories: (1) Large central (first grade or headquarters) laboratories, six in number; each would stand in a sort of central relation to (2) the second grade or local laboratory-clinics in the larger towns of its region; upon these again would depend (3) the "side-room" or third grade laboratory-clinics, situated at first wherever a cottage hospital now exists. It is explained that arrangements for the third grade type of laboratories could easily be made for the small town centres, but something of the same kind must also be provided in the larger centres themselves. There should, for example, be about six of these minor laboratories in Edinburgh and at least twelve in Glasgow, which the local practitioners should frequent. The directors of the six headquarters laboratories should meet frequently and co-operate continuously. While the report does not deal with the financial aspects of the Council's recommendations, it is submitted that a grant in aid should be given for the establishment in Scotland of a system of laboratories and clinics such as that outlined by the special committee.

The Council is satisfied that the general scheme of medical services recommended in the report would be both economic in practice and directly profitable to the State, and this view is maintained in three cogent sentences towards the end of the report. Should the principles put forward meet with approval, the Council proposes to apply itself to the further consideration of necessary details, dealing first with improvements that seem immediately desirable and practicable, and reserving others which cannot well be compassed until that foundation is laid. The keynote of the whole scheme for promoting the communal health, it says, should be co-operation between all the particular agencies concerned. The impossibility of segregating the preventive from the curative side of medical practice must be more fully recognized by all, and the machinery devised for one common purpose so constructed or reconstructed as to work together as a single whole. Complete success can only be attained by the co-operation of every practising member of the medical profession, howsoever employed.

SUMMARY OF RECOMMENDATIONS.

1. Unification of the various local authorities concerned with health is urgently necessary as the next step on the way to the systematic organization of medical services throughout the country.

2. A complete and adequate medical service should be brought within the reach of every member of the community. We do not contemplate that such service should be provided for all at the public expense, or that it should be furnished to all by a body of State or civic officials and practitioners; but we recommend that the State should assume the duty of so organizing and supplementing existing arrangements as to ensure that to every unit of the population such medical advice and treatment as are necessary for the maintenance of health and efficiency are readily accessible.

3. The organization of the health service of the nation should be based upon the *family* as the normal unit and on the *family doctor* as the normal medical attendant and guardian. The resources of all the auxiliary health agencies established for the public benefit should be mediated to the individual patient through the family doctor.

4. Public provision should be made for a complete medical service for the whole population of the "National Insurance" grade. The present medical service for the insured should be *expanded* so as to provide everything that is still necessary to make it adequate and complete, and *extended* so as to include within its scope the dependants of the insured, all persons (including dependants) of the same economic status as the present insured class, and all now entitled to medical service under the existing Poor Law. In this extended service should also be merged the existing arrangements for the treatment of cases of disability arising from the war; and to this end we recommend that the transfer to the Scottish Board of Health of the powers and duties exercised in Scotland by the Ministry of Pensions in connexion with the treatment of discharged disabled sailors and soldiers should be accelerated.

5. Arrangements should also be made, as part of the general medical service scheme for the country, to bring within the reach of a section of the community above the economic level of the insured class, certain special services for which that section of the community is unable to make adequate private provision.

6. We recommend as an urgent need the provision of small local "hospices" or "recovery homes" for cases of ordinary illness where the patient cannot be properly treated at home and where no "cottage hospital" or "nursing home" is available.

7. We similarly recommend the provision of "invalid homes" for chronic invalids. Existing Poor Law hospital buildings, if not suitable for use as local public hospitals, might be made use of for this purpose.

8. Under the family medical service which we propose the family doctor should be provided with all necessary supplementary professional advice and assistance. All serious surgical cases, save a negligible few, should be sent to hospital for operation. For acute medical and other cases arrangements should be made for providing the services of "District Consultants" chosen by the local members of the profession, and for procuring further expert help or advice where necessary. For ambulant medical and surgical cases arrangements should be made, either with hospitals or otherwise, for the establishment of consultation clinics, where the services of experts would be at command under properly regulated conditions. Co-operation among general practitioners themselves for purposes of consultation and treatment should, however, be promoted.

9. Facilities should be afforded to all practitioners and to all classes under their care for reference to clinical laboratories, and (under suitable conditions) to experts in certain special branches of medical science (ophthalmic, aural, dermatological, dental, etc.).

We submit the outlines of a scheme of Laboratories and Clinics [included in the Report]

10. We reserve our recommendations on the question of hospital provision, and its place in relation to the medical service of the nation, until we have received the Report of a Joint Committee of this and other Consultative Councils which is considering a special reference to it by the Board on the question of the general hospitals service.

11. We urge, however, the necessity for a considerable increase in the number of convalescent homes. We classify the types of convalescent homes required as follows:

(*a*) Annexes or auxiliaries to general hospitals to which patients could be transferred a few days after surgical operation or after the acuter stages of illness in medical cases have been passed. The provision of these would do more to relieve hospital congestion than almost any other available method.

(*b*) Convalescent institutions in the more restricted meaning of the term for patients who have "recovered" from their illnesses and been discharged, but who have not yet been restored to their normal health and capacity for work.

(*c*) Preventive or rest homes.

12. In providing for the nursing requirements of the domiciliary medical service the Queen Victoria Jubilee Nurses organization should be utilized as furnishing a suitable basis for a national system of skilled "district" nursing.

13. We recommend the provision in populous areas of a service of fully trained health visitors who would serve as *liaison* officers between the local health services and centres, the family for whose benefit the services and centres are provided, and the family doctor in charge of its health.

14. An adequate maternity service should be provided as soon as a sufficient number of trained midwives is available as auxiliaries to medical practitioners in charge of the family health. Every expectant mother should be assured beforehand of the advice and services of a doctor and of a midwife should she choose or be advised to engage one. A necessary adjunct of such a maternity service would be the provision in each district of sufficient beds for difficult cases, and for cases where the home conditions are unsuitable.

15. We regard it as essential to a complete medical service that adequate facilities for preventive and conservative dentistry should be provided. A consulting dental surgeon should be attached to each laboratory-clinic as proposed in our scheme.

16. We recommend that the pharmaceutical arrangements in connexion with the proposed medical service should follow the provisions of Section 15 (5) of the National Insurance Act, 1911.

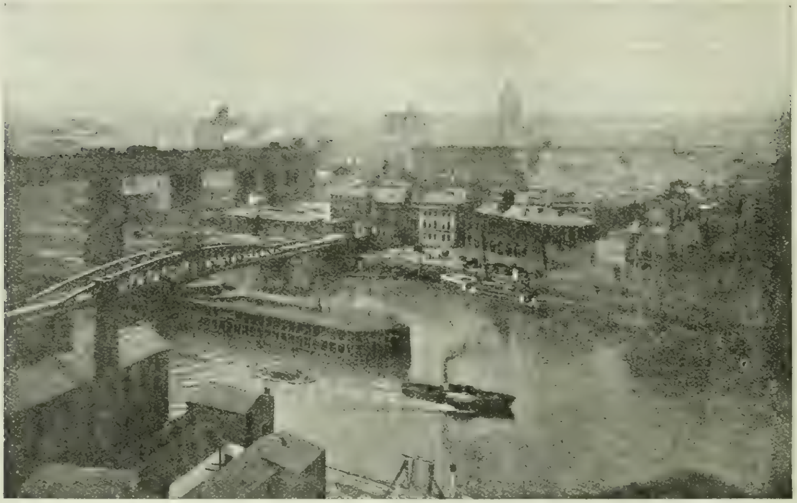

FIG. 1.—Newcastle as seen from the Gateshead side of the river. The Castle, the Moot Hall, and the Cathedral are seen in the midst of modern surroundings. (Block by permission from Reid's *Handbook to Newcastle-upon-Tyne.*)

EIGHTY-NINTH ANNUAL MEETING

of the

British Medical Association,

NEWCASTLE-UPON-TYNE, 1921.

THE expression "carrying coals to Newcastle" is responsible for the one-sided idea of this city which commonly prevails, for strangers are wont to imagine that from every point of view coal is the inhabitants' only interest! This impression is certainly fostered by the approach by rail, for only the industrial aspects are apparent, and it is indeed difficult to appreciate that Newcastle is the centre of a very beautiful district. Its story goes back to pre-historic times, and there is no part of the country where the Roman occupation is more plentifully illustrated by tangible remains than in the adjoining parts of Northumberland.

As our first illustration shows, the observant traveller from the South can easily pick out the ancient Castle, the Moot Hall built on the site of an earlier court of justice, and the mediaeval churches, studded among the buildings of the modern city.

NEWCASTLE'S HISTORY.

The history of the city really begins with the Emperor Hadrian, who bridged the Tyne in A.D. 120, though there can be little doubt that the ancient Britons appreciated the strategic importance of the site, and this is borne out by the sepulchral remains of the primaeval period which have been found in the neighbourhood.

In order to the more thoroughly strengthen his hold on the country, Hadrian caused a wall to be built, stretching from the Tyne to the Solway, and this is the Roman Wall of which so much remains, and within easy reach of the city. At distances of about four miles fortified camps or "stations" were distributed along the wall, and Newcastle occupies the site of the second station, known as Pons Aelii, from its proximity to the Bridge of Hadrian, who was of the Aelian family. Nothing now remains of what must have been an important station but a few sculptured stones and some altars and fragments of pottery, which have from time to time been discovered, and are preserved in the Black Gate and other local museums.

After the greatness of the Romans had waxed and finally waned there was a period of oblivion, in which we can imagine that the vengeance of the ancient Britons spent itself in the destruction of all that reminded them of their oppressors. This desolate age was succeeded by the Saxon occupation, of which nothing tangible remains in the town, though there are ample evidences of this period at Corbridge-on-Tyne, the Corstopium of the Romans, some sixteen miles to the west of the city.

Soon after the Conquest, William came north to quell one of the many risings with which the country was so familiar. On his return in 1072 he was compelled to halt at Newcastle on account of the flooding of the river and the partial destruction of the bridge. Probably in consequence of these experiences, he directed his son Robert Curthose to erect a castle for the protection of the bridge. This first castle was doubtless constructed of wood, and was succeeded in a comparatively short time by a more substantial structure of stone.

The town sprang up around the castle, and William Rufus must be looked upon as its founder, for he collected burgesses whose interest it was to foster the well-being of the new community. The fortunes of the place fluctuated in its early days, and during the troubled reign of Stephen it perforce owed allegiance to the Scottish throne. When Henry II regained possession of the border counties he gave the inhabitants increased privileges and replaced the castle of Rufus by the present structure, hence the "new castle" which gave the name to the town.

The next reign was an important one in local history, for in the time of Henry III the coal trade seems to have sprung into being, though there is some evidence that seams near the surface—drifts—were previously worked by the Romans. This reign also saw the government of the town vested in a mayor chosen by the people in lieu of a provost appointed by the Crown. In the time of the first three Edwards the town became the rendezvous and base for the many expeditions which those princes made

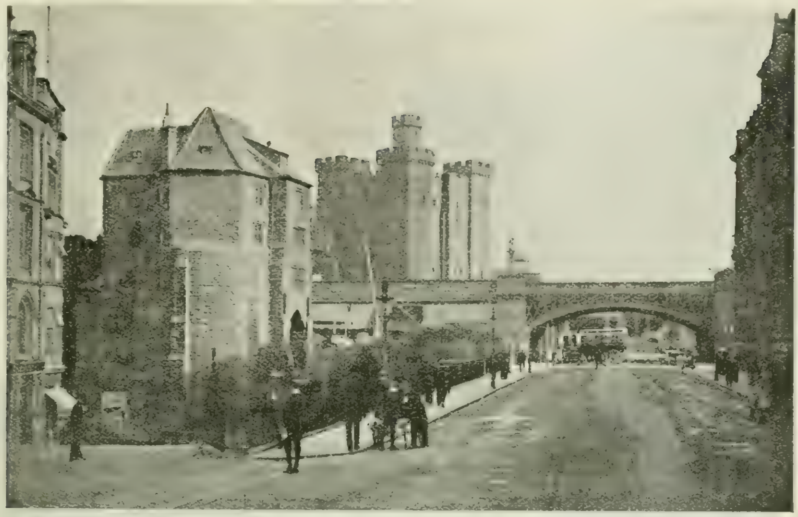

FIG. 2.—The Old Castle and Black Gate separated by the Tynemouth branch of the North-Eastern Railway. (Block by permission from Reid's *Handbook to Newcastle-upon-Tyne.*)

into Scotland, and in consequence it suffered much from war and pestilence.

The town was already walled, and the repair of its defences became a heavy charge on the inhabitants. We must pass over the striking events which occupied the years up to the middle of the seventeenth century, only stopping to take cognizance of that characteristic border feud in 1388 between the Douglas and Sir Henry Percy, which lives in the beautiful ballad of "Chevy Chase":

> It fell about the Lammas tide,
> When the muir-men win their hay,
> The doughty Douglas bound him to ride
> Into England to drive a prey.
>
> * * *
>
> This deed was done at the Otterbourne,
> About the breaking of the day:
> Earl Douglas was buried at the braken bush,
> And the Percy led captive away.

In the year 1644 the town was besieged by the Earl of Leven, and it was on account of the stubborn resistance then offered that the King conferred the motto which adorns the city arms:

> "Fortiter defendit triumphans."

On January 28th, 1647, the Scottish army delivered up Charles I in Newcastle to commissioners appointed by Parliament. The existing remains of a considerable stretch of the town walls adds interest to the story of the alarm caused by the rising of the Jacobites in 1715, for we read that the gates were walled up with solid masonry and a body of 700 volunteers raised for the defence of the town. In the cold perspective of history, succeeding events, though stirring enough at the time, have been domestic rather than national and have been mostly concerned with the development of industry and the useful arts.

The opening of the Newcastle and Carlisle Railway in 1838 was an event of first importance, which largely influenced not only the commercial activity of the immediate district, but throughout the length and breadth of the land, and the city is proud to be able to claim both George and Robert Stephenson as her gifted citizens.

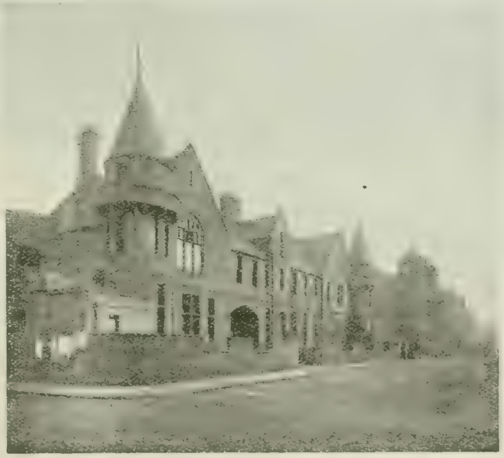

FIG. 3.—St. George's Drill Hall and the College of Medicine.

Ancient Remains in Newcastle and Vicinity.

> Still linger in our Northern clime
> Some remnant of the good old time.

The Castle of to-day is but the Keep of what must have been a large and imposing Norman stronghold, occupying an area ten times greater than the site of the present building. The boundary wall and the out-buildings have long since disappeared, though the south postern remains to this day, the only example of a Norman postern in England. It is with peculiar feelings that the visitor traverses the arched passage through the castle wall and treads the stair which has served as an exit since the time of Robert Curthose. The Black Gate, which is shown in our illustration (Fig. 2), was erected by Henry III; it became from that time the chief entrance to the castle. and was strongly guarded by a double moat, portcullis and drawbridges. It is now used by the Antiquarian Society as a museum, in which their exceedingly fine collection of Roman remains are housed.

The city walls were originally two miles in circumference, 12 to 20 ft. high, and some 8 ft. thick. A large stretch still remains, and may be seen in Back Stowell Street with the Heber Tower in excellent preservation.

Before the Reformation monastic institutions abounded, and part of the house of the Dominican or Black Friars remains to this day and is well worthy of a visit. Of the city churches, the Cathedral of St. Nicholas is the most interesting. Its early history is wrapped in obscurity, but it is known that the present structure was finished about 1350. "Its stately, high, stone Steeple, with many pinakles, a stately stone Lantherne, standing upon foure stone Arches, builded by Robert de Rhodes" is its ancient and principal glory, of which the town may well be proud. St. John's, near the Central Station, is on the line of the Roman Wall, and is probably largely built of stones obtained from that structure. The oldest church in the town is St. Andrew's, which almost abuts on the city wall and was just within the New Gate. It suffered severely from the Scottish cannon during the siege of 1644.

Subsequent articles must deal with the many objects of interest in the old town: of Akenside Hill, named after the physician poet, a native of the city; of the old building in the Side, with the window from which Bessie Surtees eloped with John Scott, afterwards Lord Chancellor Eldon; and of the Chapel of our Lady of Jesmond, which led to the origin of "Pilgrim Street," which marks the route taken by pilgrims to this noted shrine.

Lack of space forbids us even to mention much else that is of general as well as local interest, but those visiting the city in July next may be assured that its antiquarian treasures, its institutions, and its collections will furnish an added interest to the meeting itself.

THE INFIRMARY AND THE MEDICAL SCHOOL.

The history of these institutions, founded respectively in 1751 and 1832, is of sufficient interest to occupy considerable space in a subsequent article. Let us explain at once that the Medical School, though situated in Newcastle, is part of the University of Durham, with which it became affiliated in 1852, the connexion being made still closer in 1870. With Armstrong College it forms the Newcastle branch of the parent university.

LOCAL ARRANGEMENTS FOR THE MEETING.

The local arrangements for the Annual Meeting next July are now well in hand and the various committees are at work. The President-elect is Professor David Drummond, C.B.E., President of the University of Durham College of Medicine and Professor of Medicine in the Medical Faculty.

The reception rooms will be situated in the College of Medicine, which is centrally situated and quite near the principal tramway lines from the station. The Pathological Museum, which it is hoped will be an important feature of the meeting, will be situated in this building, and several of the Sections will also meet in the classrooms and lecture theatres. St. George's Hall, in which the Trades Exhibition will be housed, is within a stone's throw of the College of Medicine; both of these buildings are shown in our illustration (Fig. 3), from which the proximity of the two buildings can be readily seen. The hall is one of the largest in the city, and it will be possible for exhibitors to show their wares to the best possible advantage

Armstrong College will also extend hospitality to the meeting, and those Sections which do not meet in the Medical School will find quarters there. The building is in itself of considerable interest, and is the home of the Faculty of Science of the University of Durham. During the whole of the late war the 1st Northern General Hospital was domiciled in the college, and the building has only just been redecorated and restored to its former use. The Royal Victoria Infirmary and Pensions Hospital are just across the road from Armstrong College, and both are readily accessible from the reception rooms and the centre of the town.

FIG. 4.—The Waterfall in Jesmond Dene. (Block by permission from Reid's *Handbook to Newcastle-upon Tyne*.)

Those who only know the smoke and dirt of Newcastle as seen from the railway line or Central Station will be surprised to learn that there are several fine parks in the city and the immediate outskirts, and Jesmond Dene, which is shown in our illustration (Fig. 4), is known as a beauty spot far and wide. At Gosforth Park, about three miles from the Central Station, there is a very fine golf course, and during the week facilities will be given to devotees for indulging in this relaxation.

The whole of the surrounding district is steeped in the history of these islands, and excursions will be arranged to visit the Roman Wall; Rothbury, with its ancient British remains, and Cragside, the seat of Lord Armstrong; Jarrow, with the Monastery of the Venerable Bede, and Durham for the Cathedral and Castle. Others may be especially interested in the industries of the district, and in this direction the wishes of all can be satisfied, for almost every kind of manufacture is represented on the Tyneside and its vicinity, where shipyards, ironworks, chemical works, and, of course, coal mines abound.

Inquiries concerning the meeting should be addressed to Mr. R. J. Willan, M.V.O., O.B.E., General Secretary, at No. 6, Kensington Terrace, Newcastle-upon Tyne.

British Medical Journal.

SATURDAY, DECEMBER 11TH, 1920.

THE ASSOCIATION IN 1920.

THE luxury of motor transport is, perhaps, more fully appreciated by the pedestrian than by the man in the car. The latter is, from the nature of the case, more prone to consider the speed inadequate. He occasionally blames gear or engine for defects due to his own lack of skill, and he has been known to condemn the car when he himself has neglected to fill the petrol tank. This parable is worthy of consideration. For the moment it suggests that the man in the car may have something to learn from the attitude of the man on the pavement. Thus it may not be unprofitable to attempt to visualize the more recent work of the British Medical Association as it would appear to a disinterested observer of vocational organization—one who is familiar with its general development at the present time, but without any special knowledge of the particular problems of the medical practitioner. The result may prove the more striking if attention is directed solely to the record of the last twelve months, during which normal activities have been resumed after the period of war and demobilization. Detail is out of place in such a review. Only the broad general impression can be presented, but it is this general impression, so often missed in a closer study of particular problems, which is necessary to a just appreciation of the position as a whole.

From this standpoint, then, the extended sphere of operations would probably be the first feature for comment. The Medical Congress at Durban welcomed the representative of the parent Association in October. A few months earlier, intervention at home was of value in a dispute between the profession and the Lodges in Victoria. So also the far-scattered units of the Colonial Medical Services, too remote for effective influence upon developments determined in some measure from London, have found an advocate whose representations cannot ultimately be ignored.

A closer view distinguishes a diversity of activities as uncommon in its way. Organizations there are in plenty directed to some one particular end, and the measure of their efficiency is often determined by their concentration. In the case of the Association the record of the last twelve months shows definite achievement balanced by projected advance in almost every sphere proper to voluntary organization. To start with the narrower economic aspect. The new rates obtained for the Indian Medical Service, the increased insurance capitation fee and the increased mileage allowance for rural insurance practitioners are alone achievements comparable to those of the stronger trade unions during the same period. And it must not be forgotten that the period has been extraordinarily difficult for the professional as opposed to the industrial worker. It is usually easier to raise a bare subsistence minimum than to readjust an efficiency rate, and material production has sometimes a stronger position than personal service where collective bargaining is concerned. Progress in the instances just cited is not, of course, limited to increased remuneration. The work done in modification of conditions of service is equally striking. Such modification, if the experience of the trade unions is any criterion, is often more difficult than a mere advance in remuneration. Here, as elsewhere, the Association has been concerned with the creation and adjustment of higher standards. Passing to the sphere of legislation, the year is marked by the Act for the State Registration of Nurses and the introduction of the Proprietary Medicines Bill—to quote two large measures which are more directly the outcome of the policy and action of the Association. The Government programme includes proposals for the reform of coroners' law and the law of birth and death registration and certification, objects equally prominent in Association policy. From legislation to administration is an easy transition. Here the consolidation of departments under the Ministry of Health and the functioning of the Medical Consultative Councils may fairly be included in the survey, as the outcome in no small measure of the work of the Association.

In the service of science the general observer will naturally have more difficulty in distinguishing the particular features of the period, but he will appreciate the significance of the great Annual Meeting at Cambridge, the increased grants for research, and the popularity of the British Medical Association lecture scheme. If he is wise in distinguishing the basis of all stable organization, these things will also stand to him as a sign of fellowship grounded on common service and experience, nor will he pass over in this connexion the resumption of the normal social activities of the Divisions.

So far attention has been directed to the nature of the work accomplished or undertaken. The diversity of the classes affected also claims consideration. The Indian Medical Service, the Colonial Medical Service, and the insurance practitioners have already been mentioned. Such groups offer the normal field for effective combined action. But the work has not stopped there. Small isolated groups such as the medical officers of the Gas Light and Coke Company and those of Trinity House have seen their rates doubled or more than doubled by the intervention of the Association; and the fees for medical examinations for life assurance companies—a matter affecting all classes of the profession—have been the subject of central action. Cutting of rates has been countered in the case of lecturers to St. John Ambulance classes, an instance small in itself, but significant of salutary attention to detail. Nor have needs of the moment been overlooked in work for the future. Early in the year the right to their gratuity of temporary officers in the R.A.M.C. accepting new temporary contracts was vindicated. Later, temporary officers transferring to the permanent service were assisted in their claim to reckon temporary service for pay and seniority. Further, the help of the Association has not been lacking for the individual member; witness the case of the officer in the I.M.S. for whom an India Office miscalculation of Rs. 460 per mensem was rectified on representations from the central office; the members who secured early delivery of motor cars in the difficult period at the beginning of the year; the local authorities which have had to concede advances refused to their medical officers on individual application. The multiplication of instances beyond a certain point merely serves to confuse. Those cited are sufficient to justify the general impression that the resources of the British Medical Association are readily available for the service of its members.

In appraising the value of the record thus outlined two tests will suggest themselves to the inquirer—

the test of recognition and the test of current criticism. The application of both is possible without transgressing the bounds of the period under review. Of recognition there are two standards—membership and the attitude of authorities and individuals outside the profession itself. The position is satisfactory in respect of both: membership of the Association is more than keeping pace with the increase in the numerical strength of the profession; and external recognition is even more striking to one to whom it is not a matter of course. Commissioned service of the Crown, which normally shuts the individual off from all extra-service assistance, does not deprive a medical practitioner of the help of his Association: the Government departments concerned not only invite advice and assistance from the British Medical Association in matters of general application, but also consider representations in individual instances. In civil life there is no need to go beyond the position assigned to the Insurance Acts Committee. With such examples, the question of recognition cannot remain in doubt. If the year does not show any new developments in recognition it is because recognition has not been in question.

The second test is that of criticism. Here it is not so much the balance of favourable and adverse verdicts that has significance as their source and the general nature of the indictment offered. Roughly speaking, whilst criticisms of policy vary with the interests at stake, the only class which appears to entertain serious doubts as to the potentialities of the Association is a certain section of the medical profession. Hostile criticism is generally negative; it alleges either that the Association has not done certain things or could not do them if it would. On the second point the disinterested observer has his comment ready, for he can point to what has in fact been done. On the first, whilst admitting himself incompetent to pass a final judgement in certain professional matters, he will probably observe that the mere assumption that these matters lie within the province of the Association is a striking comment upon its power.

Further the detached observer can hardly go. He must appreciate the continuity and stability evidenced by the fruition during this one year of so much work in the pre-war period. He will respect the policy which has sought for settlement by agreement and consent, and will realize that much which should be done is still undone; but comprehensive criticism he will find it impossible to offer, mainly because he will have no adequate standard of comparison. For one conclusion will have followed surely from his survey, however brief: the conclusion that, in the broader sense, there is no existing vocational organization comparable to the British Medical Association at once in the scope and variety of its aims and work.

TUBERCULOSIS.

THE diversity of views expressed in the correspondence on tuberculous milk shows that much work remains to be done in comparative medicine and pathology before a final decision can be reached as to the exact part played by milk in the spread of tuberculosis. Many facts have, however, been established that may help to guide us in forming our opinions, and prevent us from jumping to premature conclusions.

The relation of bovine to human tuberculosis has given rise to discussions in the past and to much uncertainty at the present time. Calmette, in his recently published book on tuberculosis, which we review at p. 894, sums up the question of the specific difference between the two types by saying that although there are certain special biological characteristics which enable us to recognize in many instances the human or bovine origin of tubercle bacilli their specificity is not absolute. The bacillus commonly found in chronic tuberculous lesions in man is ordinarily non-virulent for cows, and the bacillus of bovine origin may not always prove virulent for man. Calves are less easily infected with the human type than children with the bovine. Nevertheless, Eber succeeded in infecting calves with human bacilli after passage through guinea-pigs, and recovered from the lesions in the calf bacilli which appeared to have the bovine characters, whilst cultures taken direct from the original human sources employed in the experiment had the human characters. The possibility of transforming the one type into the other cannot be regarded as conclusively proved by these experiments, still less can it be asserted that such a transformation habitually occurs in Nature. But it would be dangerous to assume this transformation impossible. Bovine tuberculosis, where it exists, constitutes a real menace to man on account of the susceptibility of young children to this type of infection.

Mitchell found that of 72 children suffering from cervical adenitis 65 (that is, 90 per cent.) were infected with the bovine type of bacillus. Fraser's figures for tuberculosis of bones and joints showed a similar predominance of this type. Other observers have come to like conclusions. So that Calmette remarks, "It is incontestable that in various European countries, as well as in the United States and Canada, bovine tuberculosis represents a sufficiently important contamination of the human species to make its abolition necessary."

It is not questioned that the mode of entry of the bovine bacillus is mainly by ingestion of tuberculous milk. We are therefore fully justified in requiring non-tuberculous milk in the interests of infants if they are to be fed on cow's milk. There are countries, on the other hand, where cow's milk is never used for infant feeding, and there are districts where bovine tuberculosis is practically unknown, yet under both these conditions a high rate of human mortality from tuberculosis may exist. In such circumstances the contagion is clearly from man to man. So that evidently we cannot ignore either source of infection in our efforts to combat tuberculosis. Dr. Marcus Paterson, in his letter of November 6th, rightly insisted that the value of small doses of tuberculous milk in protecting children against subsequent infections is doubtful. "I should altogether neglect," he wrote, "this haphazard uncontrolled source of possible immunization." The suggestion has been made that slight infections in early life may give rise to some degree of acquired immunity. The nature of this immunity or increased resistance is not generally appreciated, although much experimental work has been carried out on the subject.

The study of immunity to the tubercle bacillus begins with Koch's remarkable observation in 1891 that if susceptible animals are infected with a sufficiently small dose of bacilli to produce a chronic disease subsequent infections with minimal doses do not cause death, but an intolerance to the presence of the bacilli. This is manifested in efforts to expel the bacilli by local necrosis of the tissues where they lodge, and is sometimes known as Koch's phenomenon. Calmette and his fellow workers carried the investigation further and demonstrated that tuberculous animals are incomparably more resistant to intravenous inoculation than animals free from previous infection. Moreover, tuberculosis by reinfection (or more correctly superinfection) always assumes a chronic course. Calmette found, for instance, that a series of pulmonary infections by inhalation at short intervals is far less dangerous than a single one; but if the subsequent infections follow the initial infection after a long interval Koch's phenomenon occurs. That is to say, the expulsive efforts are more violent and remain localized to the place where the bacilli were introduced; massive necrotic lesions and extensive cellular destruction ensue. In view of these observations Fishberg's dogmatic statement that "experimental investigations have proved that it is impossible to reinfect a tuberculous animal with tubercle bacilli" needs some qualification or some indication that superinfection is not impossible.

Calmette explains the importance of Koch's phenomenon in the production of immunity thus: The organism becomes more and more intolerant of the bacillus at each superinfection. This intolerance is displayed in a more rapid tendency to caseation and suppuration of the tubercles and to the prompt expulsion of their contents. Clinical evidence here supports the experimental. Severe forms of pulmonary tuberculosis are rare in individuals who in infancy have suffered from a localized tuberculous lesion. We can see a reason why pulmonary phthisis and chronic tuberculosis only occur in subjects previously infected. They are individuals who are rendered very resistant by a first attack, but have not escaped frequent massive superinfections. "Virgin subjects" (rural dwellers transported to towns and certain native races) succumb to severe and rapidly fatal forms when first exposed to massive doses at close quarters.

If we concluded our examination at this point we might be satisfied that early infection in childhood was desirable by reason of the resistance it may confer on fortunate survivors. But this resistance is not a true immunity in the sense that the subject is cured of infection and is incapable of further infection. If the tubercle bacilli die off in the tissues and do not remain latent and living, then reinfection behaves as in virgin soil—such subjects have ceased to be resistant. Unfortunately it is from resistants that the chief dissemination of bacilli occurs. With each superinfection a resistant individual increases his intolerance for the bacillus, and by his capacity for local necrosis and prompt expulsion of the infecting agent becomes more dangerous to his neighbours than his disease is to himself. These "resistants" form the army of chronic phthisics with cavitation and abundant sputum teeming with bacilli. Herein lies the gravest danger of familial infection, in that it tends to afford opportunities for the production of "resistants" by initial infection, and for rendering them, through superinfections, increasingly intolerant and increasingly capable of spreading infection. Dr. Cobbett, in his letter of November 6th, pointed out that some degree of immunization of susceptible animals has been experimentally produced by injection of tubercle bacilli, but the immunity is short-lasting and its production uncertain. Moreover, the test animals demonstrated that the immunity only protected them from severe and fatal tuberculosis; it did not prevent them from harbouring the bacilli in a latent form. Calmette refers to this sort of immunity as placing the animals in a condition regarding superinfection precisely like that of "resistants." These considerations apply with equal force to all attempts at artificial protection by vaccination with increasing doses of living virulent bacilli that have hitherto been made.

Surveying these problems, then, in the light of our present incomplete knowledge, certain interim conclusions may be reached which will not stand in the way of accepting further knowledge as it is forthcoming. The first is that, since infants are clearly susceptible to bovine infection, they should be protected against the opportunities of contamination. In the second place, it must be recognized that the principal source of human contagion is "familial," and measures for protection must be framed with this outstanding fact borne in mind. Finally, whilst it may be admitted that early slight infection may produce resistant individuals, such persons require guarding against later infections lest they increase the already large numbers of disseminators of tuberculosis.

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EARLY MEDICAL JOURNALS.

LORD NORTHCLIFFE has accepted December 2nd, 1620, as the date of the publication of the first issue of the first British newspaper, and the tercentenary has been celebrated by the publication of a chronological record of all English newspapers, magazines, and reviews, compiled by Mr. J. G. Muddiman. The news sheet or corrant published on the date given was printed in Amsterdam, and it was not until the following year that any examples were first printed in London. These early corrantos were half sheets in folio printed on both sides. Twenty years later reports of proceedings in Parliament were embodied, and eventually, in 1665, when the court had been driven by the great plague from London to Oxford, an ancestor of Mr. Muddiman produced there what shortly afterwards became, and still is, the *London Gazette*, "the venerable parent of our existing periodical press." The first English medical journal appears to have been the *Medicina Curiosa*, printed for Thomas Basset at the George in Fleet Street; the name of its editor is not mentioned and is apparently not known. The first number, published on June 17th, 1684, contained 56 pages, the second and last, published on October 23rd of the same year, contained 64 pages. The first number consisted chiefly of translations or abstracts of articles published in French or Latin, but the second contained "an extract of some physical matters contained in a book called Memoirs for the Natural History of Human Blood, especially the Spirit of that Liquor, set forth this year in English by the Honourable Robert Boyle." Another article was entitled "The Use of Quinquina for curing fevers, published by the French King's order, extracted from the Paris *Journal de Scavans*, March 15th, 1683, a secret bought by the King from Sir Robert Talbor and called the English remedy." The *Medicina Curiosa* was, in the character of its matter and in the style of its title-page, an imitation of an annual entitled *Miscellana Curiosa Medico-Physica*, compiled by the Academy of Vienna and first published at Leipzig in 1670. The first 110 observations contained in this publication dealt exclusively with medical subjects, and consisted chiefly of reports of cases with commentaries; then, after a separate dedication to the Emperor, follows a set of observations communicated by Dr. Georgius Sebastianus Jung on curiosities of various sorts, generally trivial. Next comes more medical reports from divers hands, and the volume closes with an essay on snakes by Franciscus Radi, translated out of Italian into Latin. During the eighteenth century small informal societies existed in London and other centres, which met for discussion. Some of these societies published a volume of essays and reports annually or at irregular intervals. Dr. Arnold Chaplin in his FitzPatrick Lectures mentioned a number of medical publications, most of them short-lived, which appeared at various dates from 1757 onwards, but nothing of the nature of a medical journal was published till towards the end of that century. The *London Medical Journal* was founded by Dr. Simmons in

1781; ten years later its name was changed to *Medical Facts and Observations*; it ceased to appear in 1791. The *Medico-Chirurgical Review*, started in 1795, continued until 1807. The first medical journal to be firmly established in this country would seem to have been the *Medical and Physical Journal*. It was edited by Dr. T. Bradley and Dr. F. M. Willich, and professed to give its readers the "earliest information on subjects of medicine, surgery, pharmacy, chemistry, and natural history, and a critical analysis of all new books in those departments of literature." The first number appeared in March, 1799, and it was continued until 1833. The *British and Foreign Medico-Chirurgical Review* was founded in 1816 and had a long and useful career, but it was more of the nature of a review of current literature than what is now understood as a medical journal. The pioneer of these was the *Lancet*, started by Thomas Wakley in October, 1823; his main idea at the beginning was to assist his readers to obtain from it the education now called "post-graduate." The forerunner of the *British Medical Journal*, the *Provincial Medical Journal*, was started in 1840 by two members of the Provincial Medical and Surgical Association which had been founded by Sir Charles Hastings in 1832. It soon changed its name to the *Provincial Medical and Surgical Journal*, but when in 1856 the title of the Association was by a unanimous vote changed to the British Medical Association the Journal followed suit and from the first volume of 1857 has appeared with the title *British Medical Journal.*

THE FUTURE OF HOSPITALS.

In our correspondence columns last week Dr. William Collier suggested that the British Medical Association should call a meeting of representatives of the medical staffs of county hospitals, in order to discuss whether it is desirable or possible to continue these hospitals on a voluntary basis, or whether it would be better to hand them over to the State or to the ratepayers to control them. In a footnote to Dr. Collier's letter it was stated that the Association was taking steps to call such a conference, probably on December 16th. It has now been decided that a conference of representatives of the medical staffs of voluntary hospitals shall be held, not on the date mentioned, but on Tuesday, December 21st, at 11 a.m., in London, and we would draw the attention of readers to a Current Note on this subject which appears in the SUPPLEMENT this week. Further particulars of the conference will be given in our next issue.

VENEREAL DISEASE AND THE CRIMINAL LAW.

A COMMITTEE appointed by both Houses of Parliament has recommended that it should be made a criminal offence knowingly to communicate a venereal disease. In their report, which was published on December 2nd, they suggest a clause which provides that "a person who is suffering from venereal disease in a communicable form shall not have sexual intercourse with any other person, or solicit, or invite any other person to have intercourse with him or her." There are various safeguards. Thus, an accused person is entitled to be acquitted if he (or she) proves that he (or she) had reasonable ground to believe himself or herself free from venereal disease at the date of the alleged offence, or if, there being only one witness for the prosecution, that witness is not corroborated in some material particular. Again, in order to give an accused person every chance of disproving a charge, he may undergo medical examination either at the hands of the medical officer of the prison or by his own doctor. This proposal to create a new kind of criminal offence is one which nearly affects the medical profession. In the first place, it is difficult to imagine a case which would not involve the calling of medical witnesses; in the second place, it appears to be certain to raise the question of "privilege" in an acute form. For a prosecution to be successful it must be shown (*a*) that the prosecutor is suffering from venereal disease; (*b*) that this was due to sexual intercourse with the prisoner. The fact of the intercourse can be proved by the prosecutor, whose medical attendant can testify as to his condition. But this is not enough: it must be shown that that condition was due to the intercourse with the prisoner. Of course, if the prisoner refuses to be medically examined or to give evidence, a jury might be entitled to infer his guilt. But it is doubtful whether any prosecution would ever be undertaken unless it were possible to prove affirmatively that the prisoner was in such a condition that he must have communicated the disease. Such proof could only be obtained from his medical attendant. As the law now stands there is nothing to prevent that medical attendant from being subpoenaed on the part of the prosecution; nothing to prevent his being compelled to give evidence, even though he was specially invited by the prisoner to examine him for the very purposes of the case. That an innocent person charged with an offence of this nature would refuse to undergo examination is, of course, extremely unlikely. But he might have venereal disease without being conscious of the fact. In these circumstances, the Committee's proposals, if they become law in their present form, are likely to make the position of the practitioner in his confidential relationship to his patient very difficult. But there is no need to exaggerate the danger. The Committee, in its report, alludes to the fact that a representative of the Ministry of Health said the question whether the criminal law should be invoked was one for the Home Secretary, "and that the provisions of the Government bill might have a certain moral or a deterrent effect." Will it ever be, in practice, anything but a dead letter? Who is going to come forward, while human nature is what it is, to give on oath in a public court the self-incriminating evidence which must be adduced in order to secure a conviction?

THE INVENTOR OF THE TELEPHONE.

In 1906 Dr. Alexander Graham Bell, the inventor of the telephone, received the honorary degree of LL.D. from the University of Edinburgh, and now, on St. Andrew's Day, November 30th, he has been presented with the freedom of the City, becoming the first "burgess and Guild Brother" of an Edinburgh greatly enlarged in size by its amalgamation with Leith. Dr. Alexander Graham Bell was born in Edinburgh in 1847, and received his education at the Royal High School and the University; he then went to University College, London, and matriculated at the University of London in 1867. His father was Alexander Melville Bell, who gained some celebrity by his scientific analysis of the elements of speech. Through his mother, the daughter of Dr. Samuel Symonds, Surgeon, R.N., there was an early link with the medical profession. Graham Bell, like many other Scotsmen, went to Canada. He took the degree of M.D., and later on became Professor of Physiology in Boston University, becoming, to use his words addressed to the present pupils of the Edinburgh Royal High School, "a good and loyal citizen of the United States for about half a century." The patenting of the invention of the telephone followed in 1876. The Lord Provost of Edinburgh, in conferring the freedom of the city, said: "Though the first rudimentary telephone was constructed in 1861 by Philip Reis of Frankfort, it was not till 1876 that someone devised a practical instrument, which was used both for transmitting and receiving messages, and that someone was Dr. Graham Bell." The story of the happy chance which brought the late Dom Pedro, Emperor of Brazil, to Bell's side at the Philadelphia Centennial Exhibition of 1876, and how he was pertinacious enough to lead an exhausted company of judges to examine and report on one more invention—the telephone—at the end of a hard day's work, reads almost like a romance. In 1877 the University of Heidelberg, on the 500th anniversary of its foundation, gave to Bell its honorary M.D., more apparently for his invention of the photophone and the telephone probe for detecting bullets in the tissues and organs of the body than of the telephone itself. The writer of these lines well remembers the late Professor Annandale's opening lecture in 1877 from the Chair of Clinical Surgery, to which he had just been appointed on Lister's removal from Edinburgh to London; he then demonstrated the use of Graham Bell's telephone probe for the discovery of stone in the bladder, so that this early success was not long in finding recognition in Bell's alma mater. Another invention, carried out with C. A. Bell and Sumner Tainter, was the graphophone; the laws of flight and the education of the deaf both engaged Bell's attention, and the latter led to great advances in the teaching of speech to the deaf-mute, some of them closely connected with Dr. Graham Bell's own happiness. Within recent years he has invented in his workshop and laboratory in Nova Scotia a submarine chaser capable of travelling under water at the rate of seventy miles an hour. He has, indeed, invented many things; he has written much, and he has justly received many honours and prizes, for he has greatly added to the comfort and well-being of the whole human race, in the department of scientific medicine, as in so many other directions.

INDUSTRIAL FATIGUE.

For the last three years valuable work has been carried on under the aegis of the Industrial Fatigue Research Board (appointed jointly by the Department of Scientific and Industrial Research and the Medical Research Council), and we have received another of the Board's reports, making now almost a dozen, the present report being a *Study of Output in Silk Weaving during the Winter Months*.[1] Investigation into output in the different industries is necessary before the question of the relation of hours of labour and methods of work to both industrial efficiency and to the preservation of health among the workers can be considered, as in the absence of any known physiological or psychological test the only practical index of fatigue in industry at present is that of variation in output. Such an index, however, is only applicable to processes in which fatigue can show itself in reduced output—to those, therefore, in which production depends to an appreciable extent on human effort. In all textile industries many of the processes of manufacture are nearly automatic, and as the pace is set by the machine, such processes are unsuitable for correlating output with fatigue; but in silk weaving the output depends far more on human effort, and is affected to a correspondingly greater degree by fatigue. The present report is therefore one that contains many points of interest. For instance, investigation has shown that there is always a reduced output during hours when artificial lighting is used as compared with the output in daylight, however efficient the artificial lighting may be.

MEDICAL ASPECTS OF WAR TANKS.

It is well known that the tanks that actually saw service in the Great War were as nothing to the tanks that were being designed and were on the point of production, and in their further development it is important that the medical aspect should not be neglected, both as regards the provision of special tanks for medical purposes and as regards the alleviation and prevention of disabilities especially affecting the crews of tanks. In the *Journal of the Royal Army Medical Corps* for October there was an interesting and original article on this subject by Major L. R. Broster, who was D.A.D.M.S. of the Tank Corps during the war. He makes the suggestion that certain types of the larger tanks could be adapted for medical purposes with a dressing-table in the centre of the hold behind the engine, electric light provided, and stretchers and hammocks arranged in tiers capable of holding half a dozen lying cases or twenty sitting cases. As a matter of history we believe that during the battle of Cambrai one fighting tank brought back as many as sixteen wounded, and, during the operations of the Australian Corps at Hamel, altogether about 150 wounded were brought in by the tanks. A specially designed medical tank could, in battle, constitute a movable and protected advanced dressing station, manœuvring in liaison with the field ambulances, and would save enormously the work of and the casualties among the stretcher-bearers. On the other subject, namely, of the disabilities to which tank crews are liable, it has been found by experience that tanks with a full crew on board and closed down for action show, after running a certain time, both the presence of carbon monoxide in the air and a high wet bulb temperature, and the crew develop headache, giddiness, breathlessness, rise of body temperature, vomiting and nausea, sometimes mental confusion, and even collapse and unconsciousness. Some of these symptoms arise partly from a sort of sea-sickness caused by the motion of the tanks, and the symptoms are often aggravated in action by the fumes from the firing of the Hotchkiss and 6-pounders; but from the experiments which have been carried out and which Major Broster notes, the extent of the symptoms depends very largely on the mechanical efficiency of the tanks, and especially on the provision of good and efficient ventilation—points to which special notice must be given, therefore, in any future development of these engines of war.

MOTHER AND CHILD WELFARE IN FRANCE.

During the past twelve years Dr. Vidal[1] has been carrying out at Hyères an experiment in puericulture, or in mother and child welfare, as it is more commonly called in this country. It has consisted mainly in the establishment of a small maternity hospital in connexion with the cantonal hospital, and of a clinic for nursing mothers and their infants under the administrative control of the Board of Charity. He sees no reason why it should not be extended to all cantons and to all such communes as possess a hospital and a Board of Charity. All pregnant women in the communes of the canton of Hyères and also others who were not inhabitants of the place but who were in necessitous circumstances, had the right to come some days before their delivery to be confined in the maternity and to remain there for four weeks afterwards. When she entered, the expectant mother had a strongly alkaline bath and her garments were disinfected, she received necessary linen, was examined by a midwife, and had given to her all the care her state needed. Whilst waiting for her delivery she took several baths and had medical advice; her labour was conducted under strict asepsis. She and her baby did not leave till four weeks had elapsed after the confinement, and she had to promise to present herself and child at the public infant clinic which was held twice a week in the town. The babies were entered on a register kept for the purpose; they were visited, weighed, and cared for by a doctor of the Board of Charity; they might also receive care at their homes and such assistance by way of milk and clothes as they needed till the age of 2 years. During the same time the nursing mothers had the right to medical attention, to drugs, and even to additional food. Even after the age of 2 years these children were to some extent pursued by the beneficent care of the cantonal doctors and hygienists. Dr. Vidal is to be heartily congratulated on the results, for during twelve years there have been 245 deliveries in the little maternity hospital, and no deaths have occurred among either the newborn babies or their mothers. If this means that no stillbirths took place, Dr. Vidal is surely justified in calling it an extraordinary result, even in so health-giving a place as the Riviera, and in advising that similar small maternities be established in the other 2,915 cantons of France. He is unable to give so precise figures regarding the infantile mortality, but he was certain that it was much less among the children who were watched over at the infant clinics than among the general population of the canton of Hyères—namely, 13.3 per cent. The obstetrical results were undoubtedly remarkable, especially as the amount of prenatal care seems to have been limited to a few days before the births took place.

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[1] Reports of the Industrial Fatigue Research Board, No 9; Textile Series No. 3. 1920. H.M. Stationery Office. Price 2s. 6d. net.

[1] *Bull. de l'Acad. de Méd.*, 3 s., lxxxiv, 143-146, October 19th, 1920.

FROZEN FISH.

Fish is an important article of diet, of which the most is not made in this country, and one reason for this is the difficulty of preserving fish when landed in great quantity during a period of glut so that a normal supply can be made to the markets and the normal price obtained by the industry. The landings of fish in this country are increasing, and on many occasions the price of fish at the ports has fallen below the costs of landing; while fish is eaten "salted" in many countries, it is only owing to the difficulty in procuring it "fresh," and improved methods of preservation would create a demand for "fresh" fish abroad, and increase the export trade. The report[1] by the Food Investigation Board on methods of freezing fish is one of considerable interest. In any consideration of the freezing of flesh the fact of chief importance is that with sufficiently rapid freezing the relations, both chemical and physical, of the constituents are either preserved unchanged or, if they be changed, the altered relations are such as to be exactly reversed when the tissues are thawed. After death the muscle substance undergoes spontaneous chemical change, or autolysis; the effect of freezing upon the course of autolysis in beef and mutton has recently been studied, and it has been found that whereas if the flesh has previously been slowly frozen by air-freezing the rate of autolysis is higher and the chemical breakdown greater than in fresh unfrozen meat. In flesh which has been very rapidly frozen and then thawed, autolysis is precisely similar to that of fresh flesh which has never been chilled or frozen. The internal chemical and physical qualities of dead flesh can therefore be preserved by sufficiently rapid freezing. In commercial practice other factors must be considered also; in regard to preserving fish the texture, flavour, external appearance, and keeping properties are of importance. The present report is not exhaustive, but in it are discussed the various methods of freezing for dealing with gluts of fish, such as herring. The process of freezing in brine—which takes only one-tenth to one-fifteenth of the time needed to freeze in air—is recommended on the ground that it is the most rapid and gives the best preservation, without deterioration of appearance or flavour. The brine, it may be pointed out, is used in place of water, not for the purpose of preserving or pickling the surface of the fish, but in order to lower the freezing point of the water, and even strong brine does not cause the fish to retain a salt flavour.

CRIMES OF VIOLENCE.

Lord Justice Atkin, in an address which we printed a month ago, held it most important that a medical man should be able to form a just opinion when called upon to give evidence in cases of murder and other crimes of violence. In charges of wounding, he said, the main issue to be determined was whether the act was felonious or not—an issue depending very largely upon the medical evidence. Sir Richard Atkin spoke also of other perplexing situations in which medical men may find themselves when brought into relation with the administration of the criminal law, his object being to emphasize the great value to the doctor, no less than to the lawyer, of a working knowledge of medical jurisprudence. He was discretion itself in what he said about the teaching of forensic medicine to medical students; and, indeed, the difficulty of fitting this important subject into the crowded curriculum is plain to all. We would only observe here that in our experience it depends almost entirely on the lecturer whether students throng or shun the courses of instruction in this subject. Dr. B. H. Spilsbury's address to the Abernethian Society at St. Bartholomew's Hospital last week is a case in point; the great theatre was packed with students who followed every word with eager interest. His subject—the medical investigation of crimes of violence—is one of which he is an acknowledged master. The basis of his discourse was the need for careful and accurate observation, not only of the victim, but of all the circumstances and surroundings, when first approaching a supposed crime of violence. In investigating such cases trained powers of observation and good common sense are essential qualities. The kind of investigation needed was brought home to the audience by a number of illustrative cases, ranging from cut throat and gunshot wounds to that of the man Smith who murdered three wives by drowning them in baths. Dr. Spilsbury showed how it is often possible for the expert to reconstruct the crime, and so build up an hypothesis for the prosecution, and he expressed the hope that in the future more would be done in this way by co-operation between medical men and trained police officers. The cases he described in exact detail from personal knowledge illustrated some of the methods of investigating crimes of violence, and the various types of problems that may be encountered. Without skilled medical advice counsel for the Crown would often be at a loss when cross-examining a prisoner who elects to give evidence; but in this matter, as in his testimony, the medical witness must, of course, play a wholly impersonal part. Dr. Spilsbury insisted—and this is a point that needs emphasis—that a prisoner is found guilty in consequence of his own criminal acts: it is not the medical evidence that hangs the murderer, but his own guilt established to the satisfaction of the court by the aid of medical witnesses. In a criminal trial the medical witness gives evidence as to facts only; he is there to assist the court as an advocate of truth. It is therefore of the utmost importance that he should know what facts to look for, how to set about the investigation, and how to interpret the facts he observes.

MEDICINE IN THE "ENCYCLOPAEDIA OF RELIGION AND ETHICS."[1]

The appearance of the eleventh volume of the monumental work known as the *Encyclopaedia of Religion and Ethics* is really an event in the publishing world. In these days of dear paper and expensive printing it is something of a feat for Messrs. T. and T. Clark of Edinburgh to have continued during, and now after, the war to issue the successive instalments of Dr. James Hastings's magnum opus. To the present volume, which runs from Sacrifice to Sudra, and has 916 double columned pages, over 170 writers of eminence contribute, and although only a few have medical qualifications, a great many of them deal with medical, or semi-medical, matters. For instance, Dr. W. Crooke writes upon saliva, and tells most interestingly of the various beliefs which have assembled themselves round this secretion—those associated with it as a part of the personality, as a cause of conception, for the lustration of children, as medicinal or poisonous, as a cure for gout and hydrophobia, and as a protection against various evil influences.

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[1] Food Investigation Board. Special Report No. 4. 1920. H.M. Stationery Office. 1s. 6d. net.

[1] *Encyclopaedia of Religion and Ethics.* Edited by James Hastings, with the assistance of John A. Selbie, M.A., D.D., and Louis H. Gray, M.A., Ph.D. Vol. xi, Sacrifice–Sudra. Edinburgh: T. and T. Clark; New York: Charles Scribner's Sons. 1920. (Pp. xx + 916.)

Dr. George A. Barton deals with salutations, and shows how health considerations enter into so many of them; and Miss Czaplicka gives information regarding the anthropology of the Samoyeds. Other articles of medical interest are those on the Sannyasi, with their curious death rites; on Satanism and its strange psychology; on Satyrs, Sirens, and Silenoi; on the Greek scapegoat, or pharmakos; on the Scythians and their peculiar disease; on secret societies and their initiation rites; on the Skoptsi Sect in Russia, with its special form of mutilation; on sense and sensibility; on serpent worship and its meaning; on Shamanism and the medicine men; on the Siamese and their medical customs; on sin and its interrelation with disease; on the unpleasant custom of sin eating; on the skin, on stigmata, and on subconsciousness. The article on sex is full of interest, and deals with many problems, including that of the "free-martin"; there is, however, no reference to the late Dr. Berry Hart's numerous contributions to the study of the sex-ensemble, hermaphrodism, and the like—rather a serious omission.

UMBILICAL DIPHTHERIA IN THE NEWBORN.

SCHÖNFELDER describes an epidemic of umbilical diphtheria in a maternity hospital in Christiania.[1] Although the first case was admitted to the Ullevaal Fever Hospital on account of the mother, who was admitted with diphtheria of the fauces, the diagnosis of umbilical diphtheria was not made till after death, when a bacteriological examination proved positive. The infant did not, therefore, have the benefit of antitoxin treatment, and this was the only fatal case out of a total of 33. The author classifies his cases according to the severity of the disease, and notes that in the 10 cases in the first class the inflammation of the umbilicus was so slight that it would probably have been overlooked had not the practice been adopted during the epidemic of making a bacteriological examination of the umbilicus of every infant born. These cases might be regarded more or less as "carriers," but the precaution was taken of giving them antitoxin. It was therefore a moot point whether they would have developed into clinically demonstrable cases of diphtheria had antitoxin been withheld. In the second class, which included 19 cases, the inflammation was more severe, but there was no typical pseudo-membrane covering the ulcers. In the third class there were only 2 cases, in both of which the umbilicus formed a prominent suppurating mass. The fourth class also contained only 2 cases; one was the fatal case already referred to, the other showed profound toxaemia, but the injection of 6,000 units of antitoxin effected a rapid recovery. The author correlates the frequency of umbilical diphtheria during 1919 in both Christiania and Bergen with a marked increase in the frequency of wound diphtheria in other parts of the body, and he notes that this correlation was also observed in 1860 during an epidemic of diphtheria in Norway. In 1919 Axel Looft reported a small epidemic of umbilical diphtheria at a maternity hospital in Bergen, with a total of 5 cases. Carl Looft[2] supplements this report with an account of 2 cases of diphtheria in the newborn. In the first case the infant's snuffling was not taken seriously by the parents until it had lasted about three weeks. Then extensive polyneuritis developed, with paralysis of all four limbs, the muscles of the neck, and the lower facial muscles. Had it not been for the bacteriological examination this case, which terminated in death, would probably have been labelled as one of Heine-Medin's disease. The author believes this case to be almost unique, and the only approximately similar case on record is one described by Hennig, whose patient developed umbilical diphtheria when 7 days old, exhibiting various paralyses seven days later.

INTERNATIONAL UNION AGAINST TUBERCULOSIS.

THE permanent constitution of the International Union against Tuberculosis, set up in Paris last October, is now being drafted by the following Provisional Executive Committee: Sir Robert Philip, President; Dr. Dewoz (Belgium), Vice-President; Dr. Gerald Webb (United States), Professor Calmette (France), Professor Cantacuzène (Rumania), and Professor Léon Bernard (Paris), who is the honorary secretary. The following conclusions, unanimously approved by the Paris Conference, have been circulated to all national associations within the International Union against Tuberculosis: (1) The medical profession and the laity require further education in the prevention of tuberculosis. (2) Statistics are required as to the amount of active and of latent tuberculosis in different countries, and in relation to the age, sex, occupation, and social conditions of various groups of the population. (3) Comparative figures should be obtained as to the mortality and clinical varieties of tuberculosis in different countries. (4) An adequate number of dispensaries should be established, staffed by specially trained physicians, nurses, and health visitors. (5) Near urban centres provision should be made for the isolation of advanced cases and for the treatment of early cases. (6) Infant clinics, open-air schools, and foster homes for healthy children born of tuberculous parents are also required throughout the world.

WE regret to have to record the death, on December 2nd, after a long illness, of Sir Frederick Taylor, Bt., M.D., Consulting Physician to Guy's Hospital. He was President of the Royal College of Physicians of London from 1915 to 1918.

THE Minister of Health has appointed Dr. C. E. S. Flemming, of Bradford on-Avon, and Dr. E. H. Houfton, of Mansfield, to be members of the Consultative Council on Medical and Allied Services, in succession to Dr. A. Fulton and Dr. A. Linnell, who resigned from the Council on taking up appointments under the Ministry.

Medical Notes in Parliament.

Ministry of Health Bill.

THE consideration of the Ministry of Health (Miscellaneous Provisions) Bill was continued in Grand Committee on December 1st. It will be remembered that on the previous day Clause 11 had been under discussion and progress had been made to the point that the first portion of the clause had been amended at the instance of Dr. Addison so that it should read as follows:

> "(1) The council of a county shall, on such terms and conditions as may be approved by the Minister, have power—
>
> "(a) To acquire by agreement with any Poor Law authority any existing Poor Law hospital or infirmary belonging to that authority within their area and to maintain the same as a hospital for the treatment of illnesses and diseases generally, or for the treatment of any particular illness or disease, or any particular class of illnesses or diseases; and"

Mr. Trevelyan Thomson now moved to add the words:

> "including the care and treatment of persons suffering from mental disorder which is incipient in character and of recent origin."

He said that the amendment was designed to make sure that the few hospitals which would come under Clause 11 after the whittling down, should have the opportunity of dealing with cases of incipient mental disease indicated in Clause 10.

Dr. Addison offered the assurance that incipient mental disorder was "certainly an illness or disease covered by the words of the clause." The amendment was therefore, by leave, withdrawn.

Mr. Ormsby-Gore then moved to add the words:

> "to make agreements with boards of guardians providing for the reception, maintenance and treatment in Poor Law hospitals or infirmaries of any class of sick persons for whom the council is empowered by law to provide indoor maintenance and treatment."

He proposed this not as an alternative, but as an addition, so as to provide, that where a county council and a board of guardians failed to agree to the handing over of Poor Law hospitals to the county council, the county council should be able to maintain patients in the Poor Law hospitals.

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[1] *Norsk Mag. for Laegevidenskaben*, September, 1920.

[2] *Medicinsk Revue*, February, March, April, 1920.

Dr. Addison said he was unable to accept this amendment, as he thought it would stultify the decision already made. On a division the amendment was rejected by 16 votes to 7.

Colonel Leslie Wilson (for Dr. Addison) then moved the deletion of the subsection (*b*), under which county councils were to have been empowered to contribute to voluntary hospitals. Several members argued against the withdrawal of the provision; on the other hand, Earl Winterton thought that all who had to do with voluntary hospitals would be grateful to Dr. Addison for having adopted what they believed to be the only fair and reasonable way of dealing with the situation—namely, a fair, impartial and exhaustive, but quick inquiry into the whole matter. Sir Ryland Adkins said that those who were concerned in local government were increasingly convinced, the more they went into the problem of the correlation of health services, that voluntary hospitals such as those which flourished in English county towns must be retained as the proper crown and coping stone of medical services in their areas. For many years the county hospital had been the one thing in which the county borough and the county had been united without friction, and he welcomed the dropping of this particular section. On a division, the subsection was deleted by 17 votes to 10. The deletion of subsection (*c*) followed consequentially.

The Committee then discussed Subsection (*d*), under which it is proposed that the county council shall have power

> "To establish and maintain, or to contribute towards the cost of, or otherwise aid in establishing or maintaining, an ambulance service for dealing with cases of accident or illness within their area."

Mr. Guest moved to leave out the words "accident or," with the intention of proposing later to enlarge the definition of illness so as to include "any case of accident or other cases requiring surgical treatment, and any case of confinement in respect of childbirth." He recalled that the original provision for maintaining hospitals was for "the treatment of illnesses and diseases," and argued that the expression should embrace accidents. He feared that by the use of two terms in the ambulance subsection the function of the hospitals might be limited.

Colonel Leslie Wilson, for the Ministry of Health, agreed to the deletion of the words "accident or," and to consider before report whether a later amendment defining "illness" was required; but he could not accept Mr. Guest's amendment offhand.

At the instance of Dr. Fremantle, Dr. Addison accepted amendments to enable the ambulance service to be used for dealing with cases either within or without the area of a county authority, instead of being limited to within the area. Illness, Dr. Fremantle remarked, knew no geographical boundaries, and it should be made quite clear that these ambulances were available to serve a hospital rather than a county area.

Mr. Thomson next moved, as an addition, that the county authority should have power to establish and maintain hostels for the treatment of sufferers from incipient mental disorders. He urged that there were thousands of ex-service men suffering from such trouble whose cases could not be met by private homes. Colonel Wilson, for the Government, deprecated the reopening of the question which had been discussed on Clause 10, and he reminded the Committee that the Ministry of Pensions provided for "shell-shock" patients. The amendment was rejected by 20 votes to 10.

Dr. Fremantle, on behalf of Dr. Raw, moved the following new subsection:

> "Where on the application of the council of a county the Minister is satisfied that there is a deficiency of hospital accommodation in the area of the council and that any Poor Law hospital or infirmary could be made available for meeting such deficiency, he may, in default of agreement under this section between the council and the Poor Law authority concerned, after giving the authority an opportunity of being heard, by order require the authority to transfer the hospital or infirmary to the council on such terms and conditions as may be prescribed in the order. Any such order may contain such provisions with regard to the vesting of the hospital or infirmary in the council, and such consequential and supplemental provisions as the Minister may think necessary, and any order so made shall be binding on the authority: Provided that any such order shall be provisional only and shall be of no effect until confirmed by Parliament."

He submitted that having regard to the waiting list of 28,000 persons for hospital treatment, it might occasionally be advisable or necessary to force the hands of the guardians in this matter. The interests of the Poor Law authorities were, in his opinion, safeguarded by the order being provisional only, and of no effect until confirmed by Parliament.

Colonel Wilson, on behalf of the Government, accepted the amendment as entirely reasonable. Mr. Ormsby Gore protested against the proposal, which he said would be viewed with indignation by Poor Law authorities throughout the country.

Considerable discussion took place as to the meaning of the final sentence. Colonel Wilson, with the object of reassuring Mr. Ormsby Gore, stated that no transfer could take place until Parliament had passed a provisional order bill; but Sir Henry Craik thought the drafting of the amendment unsatisfactory, and its acceptance would be contrary to the undertaking given by the Minister of Health. Sir Ryland Adkins believed that the application of the proposal would be exceptional, and that the reference to Parliament would adequately protect Poor Law authorities. Colonel Wilson said that the terms employed were the common form for all such cases of reference to Parliament. On a division the proposal was carried by 20 votes to 6.

Mr. Ormsby Gore moved to leave out Subsection 2, the object of which is to allow two or more counties to combine for putting into force the powers given under the clause. After a brief discussion he agreed, however, to withdraw this amendment, and the subsection was then altered so that the powers should not include supplying but should be limited to maintaining.

Colonel Wilson (for the Government) moved the insertion of the following new subsection, which was agreed to.

> "3. The council of a county may, with the approval of the Minister, delegate to any joint hospital board or, in the case of the London County Council, to the managers of the Metropolitan Asylums District, the management on their behalf of any Poor Law hospital or infirmary acquired by them under this section."

Mr. Guest moved to omit the next subsection, designed to give to a county council the same power of recovering expenses of maintenance as a local authority has under Section 132 of the Public Health Act, 1875. This lays down that any expense incurred by a local authority in maintaining in a hospital a patient who is not a pauper should be deemed a debt from such patient to the local authority, and recoverable within six months after his discharge.

Dr. Addison said the question was complex, but they had to deal with facts as they were. Those in charge of the voluntary hospitals thought it would help their position if they had a system of payment by patients where the patients could properly be asked to contribute. In his opinion that was a fair and reasonable proposition. If that course were taken, then the distinction which Mr. Guest sought to make would not arise, because the same proceeding would apply to both classes of institution. Moreover, Section 60 of the Public Health Amendment Act, which amended Section 132, provided for recovery of the cost of maintenance in any hospital from any patient who was not a pauper, and where the local authorities were satisfied that the circumstances warranted it. Surely if it was right and proper to charge a person who went into a Poor Law institution, *a fortiori* it was fair and right to charge people who were able to pay. It was only proposed to apply in the enlarged application of this scheme the principles now existing. The alternative was to say that no charge should be made to anybody, and that he was not prepared to recommend.

After further debate the amendment to reject the subsection was defeated by 24 votes to 6.

Dr. Addison later moved a drafting amendment so as to bring the definition of "pauper" within Section 60 of the Public Health Acts Amendment Act, 1907. He moved another addition to enable the Minister to order that the expenses of a hospital under the clause might be charged to a part of a county instead of to the county as a whole. Mr. Ormsby-Gore inquired whether it was necessary to retain the following subsection, which was framed to give a county council power to borrow money for the purposes of the clause. Dr. Addison thought it would be necessary to continue this power. Suppose, for example, the county council were to provide extra accommodation in connexion with any existing institution, they would have to obtain sanction for that. The question whether it should be done out of loan and not financed out of current income would depend upon how big the matter was. All these cases must be judged on their merits. The smaller ones could be financed out of current income, for the bigger ones the expense would be met by borrowing.

Earl Winterton asked whether the section would empower a council to borrow money for a building programme; Dr. Addison replied he thought not. The provision was confined to an existing institution, and clearly building other institutions would be beyond the powers which the bill conferred. That was a different thing from putting on a room or making the place capable of being run as an institution. That, clearly, was all that was implied in the term "existing institution." Dr. Addison further said he was advised that as the clause stood the council would have to provide extra beds and equipment out of current revenue. It might be that they would have to alter some buildings to make them suitable. Alterations of that kind would have to be met out of current revenue. He was willing to give an undertaking that such things would have to be provided out of current revenue.

On a further assurance by Dr. Addison that he would get the Law Officers' opinion, and if necessary would produce limiting words on report, a motion by Earl Winterton to delete the subsection was withdrawn. Another new subsection was then added to indemnify any persons who might suffer pecuniary loss by the transfer of Poor Law infirmaries from the one authority to the other.

On the main question that Clause 11 as amended stand part of the bill, Sir Henry Craik expressed the view that it would not tend to benefit hospital management or the great interests of the medical profession; Mr. Gwynne regretted that the Poor Law authorities had not apparently been consulted; Mr. Hopkinson thought it would have been better if the clause had not been pressed forward until the Committee of Inquiry into the hospital question as a whole had made its report. The clause was agreed to by 17 votes to 7.

On December 1st the clause to restrict the sale of clinical thermometers (except for export) to thermometers which had been tested, approved, and marked in accordance with Regulations made by the Minister, was carried by 19 votes to 11, after considerable discussion.

On appeal by Dr. Addison, various new clauses standing for submission by private members were not pressed, the understanding being that they could be brought up on report in the House of Commons.

The Tuberculosis Bill.

In view of the fact that the Tuberculosis Bill cannot be proceeded with this session, Dr. Addison has issued a circular to clerks to county councils in England and Wales intimating that the transfer of powers under the Insurance Act, which was under the Health Ministry Amending Act of last summer to take place on December 31st, will be postponed until May 1st next. This will give time for a Tuberculosis Bill to be passed in the new session.

Grants to London Medical Schools.—Mr. Gilbert asked, on November 24th, which of the London medical schools received grants in aid of medical education during the years 1918 and 1919 respectively; how much was granted to each school; whether any of the medical schools had adopted the clinical unit system advocated by the Advisory Committee on University Grants, and, if so, what were the financial details.

Medical School.	Academic Year 1918-19.	Academic Year, 1919-20.	
		Block Grant.	Clinical Unit Grant (if any).
	£ s.	£	£
Charing Cross Hospital ..	750 0	1,000	—
King's College Hospital ..	633 10	700	—
London Hospital	5,200 0	6,000	—
Royal Free Hospital	3,576 0	4,000	—
St. George's Hospital	650 0	700	—
St. Bartholomew's Hospital	4,260 10	5,000	5,750
St. Mary's Hospital . .	1,700 0	1,900	
St. Thomas's Hospital	3,800 0	4,500	2,330
University College Hospital	3,375 0	4,000	5,570
Westminster Hospital	290 10	300	—
London School of Tropical Medicine	985 0	1,100	—
Middlesex Hospital	—	2,000	—
Royal Dental Hospital ...	—	1,000	—
Total	25,220 10	32,200	13,650

Clinical units were established for the academic year 1919–20 at the medical schools of St. Bartholomew's (medical and surgical), St. Thomas's (surgical), and University College Hospital (medical and surgical), and special additional grants were paid to those schools shown above.

The Dentists Bill.—Dr. Addison said, in reply to questions on December 1st, that it was hoped to introduce this bill before the end of the session in sufficient time for it to be printed and circulated. He regretted that more could not be done for it.

Milk and Dairies Bill.—Dr. Fremantle asked, on December 1st, if, in view of the need of preventing tuberculosis and the delay in putting into operation the Milk and Daicies (Consolidation) Act, 1915, he would take the second reading of the Milk and Dairies Bill in the current or the following week. Mr. Bonar Law regretted that it would not be possible to find time for the further stages of this bill this session. Dr. Fremantle asked whether the Government would give any assurance that the matter would be dealt with early next session, seeing that it was one of life and death. Mr. Bonar Law said that would be carefully considered.

Deputy Commissioners of Medical Services.—Asked by Commander Young, on November 24th, whether he would consider the desirability of abolishing the office of Deputy Commissioner of Medical Services and delegating the work to local committees, as before October, 1919, Major Tryon replied that the Deputy Commissioner was responsible both for the machinery of medical boards and the examination of pensioners, as well as for the supervision of their medical treatment. The post served the interests both of economy and of sound administration.

Pensions Department: Hospital Staffs.—Mr. Macpherson stated, on December 1st, on inquiry by Sir H. Nield, that the administrative and clerical staffs employed in London and the Regions were reduced by 175. The staffs of hospitals and institutions increased during the month by 370. A large hospital at Ashhurst, with a staff of 218, was taken over from the War Office, but this involved no extra charge on public funds. The balance of the increase was made up of small additions to numerous other hospitals.

Concurrent Treatment and Training.—In reply to Mr. Grundy, who put it that disabled men were being prevented by the increased cost of living from taking concurrent treatment and training under the present scale of allowances, Mr. Macpherson on December 2nd said that the Government had recently considered a proposal for an addition to pensions and allowances, and had decided that no increase could be sanctioned at present. He had no information to support the view that disabled men were either unwilling to undertake, or were failing to complete, courses of concurrent treatment and training on the ground that the allowances were inadequate. Mr. Macpherson promised, however, to consider sympathetically any cases of the kind indicated brought before him; many hundreds of men were waiting for the advantages of the treatment.

Hospitals Abroad.—Mr. Swan asked the Minister of Health, on December 2nd, whether the hospitals and infirmaries of Denmark were State owned and controlled, and whether any charge was demanded from those who needed treatment; and whether such services were efficient. Dr. Addison replied that there was one State hospital in Denmark—at Copenhagen—and a number of voluntary hospitals provided by religious and philanthropic bodies, but the majority of general hospitals were provided and controlled by the local authorities. A scale of charges was laid down for each hospital, varying according to the accommodation provided. Payment was made for all patients, either by the patient himself, by the sickness society of which he was a member, or by the Poor Law authority. The information available was not sufficient to enable him to express any opinion as to the efficiency of the hospital service.—Sir J. D. Rees, on December 2nd, asked whether large subscriptions were obtained in America from trade unions towards the upkeep of voluntary hospitals. Dr. Addison replied that he had no information on the point but would have inquiry made.

Borough Coroners' Remuneration.—Asked by Captain Bagley, on November 24th, whether the remuneration of borough coroners had remained unaltered for twenty-three years under limitation by law, and whether the Government would pass a short bill this session to adjust the pay to present-day conditions, Mr. Shortt said there had been no change in the law on this point for a much longer period, but it was not possible to legislate on the matter during this session.

Dangerous Drugs Act.—Mr. Gilbert asked, on November 25th, whether all the Regulations under the Dangerous Drugs Act had been issued and were now in operation. Mr. Shortt said that Regulations were in preparation and would soon be issued.

Empty Beds in Poor Law Institutions.—In answer to Sir Cyril Cobb, on November 24th, Dr. Addison stated that the estimate of 30,000 empty beds in Poor Law infirmaries in England and Wales was based on information obtained in the last few months. The total number of empty beds of all kinds in Poor Law institutions was much larger. There were approximately 13,000 empty beds of all kinds in London and 89,000 in the rest of the country on January 31st, and 14,000 in London and 91,000 in the rest of the country on July 31st.

Medical Officers in Mesopotamia and Persia.—Lieut.-Colonel Spender Clay asked, on November 17th, whether officers of the Indian Medical Service now stationed in Persia have been in that country for over five years without leave, and whether steps would be taken to replace them without further delay. Mr. Churchill replied he was not clear whether the question referred to leave to the United Kingdom or to India. It was possible that a certain number of officers of the Indian Medical Service in Mesopotamia and Persia had not had leave to the United Kingdom during the period mentioned. Everything possible was being done to relieve officers who had served for lengthy periods without leave; but, owing to the shortage of officers of the Indian Medical Service and to the greatly increased number of officers of that service required for duty in garrisons other than India, no promise could be given to relieve any particular officer. The grant of leave to India was a matter for the authorities under whom the officer might be serving, and he was sure that they were doing all that was possible in the prevailing conditions.

Industrial Diseases.—Mr. William Thorne asked, on November 16th, whether the Home Secretary was aware that the vibration of the portable drills introduced in lead mines during the past few years was such as to create paralysis of the shoulder muscles; that a number of men suffered from neuritis due to working the hand drill; that the Non-ferrous Metal Council agreed that the disease should be brought within the schedule of industrial diseases, and that compensation should be given to men suffering from paralysis, "beat" hand or knee, and silicosis. Mr. Shortt replied that he had no information of the kind suggested in the first two parts of the question, and as for the third he understood that the Non-ferrous Mining Interim Industrial Committee, to which Mr. Thorne doubtless referred, had not come to any agreement, there being a conflict between the employers' and the workers' representatives. If the hon. member would furnish him with particulars of the cases of paralysis or neuritis attributed to the use of drills, and also of any cases of silicosis among lead miners, he should be glad to make inquiry into the matter. "Beat" hand and miner's "beat" knee were already scheduled as industrial diseases under the Workmen's Compensation Act, 1906.

Dr. Addison is unable to say whether there are any discharged sailors or soldiers suffering from loss of memory or other nervous disability in pauper lunatic asylums or Poor Law institutions. He is making further inquiries.

The Board of Control is considering whether there should be posted up in the waiting rooms of all public asylums Section 79 of the Lunacy Act, 1890, which gives a relative or friend of a pauper patient the right to claim that the patient shall be delivered to their care on their undertaking responsibility that he shall not harm himself or others, or become chargeable to any union.

The accounts of the Metropolitan Asylums Board show an increase of 174 per cent. on salaries and wages accounts as between 1918-19 and 1920–21. The explanation given is general increase in work, increase in numbers of hospitals in use, increase in the number of fever patients, and adoption of a forty-eight hour week, which compels the employment of more persons.

The Government has decided not to proceed with the Temporary Provisions Bill for dealing with the liquor trade, but to introduce a measure next session.

The University Grants Committee is now considering its report and hopes to submit this to the Treasury early in the new year.

Major Tryon states that service pensioners are allowed to choose any limb in the Ministry's approved list which is suitable from a surgical point of view

AUSTRALASIAN MEDICAL CONGRESS.

WE have already reported (November 13th, p. 763) the opinions recorded by the Australasian Medical Congress, during its eleventh session in Brisbane last August, with regard to the white colonization of tropical Australia. We propose now to give some account of other resolutions passed by the sections and confirmed at the final plenary meeting of the Congress; many of them illustrate the conflict of two principles—that which we may call the voluntary principle on the one hand, and the principle of State control on the other. Before the war Germany, in some of its aspects, had developed the socialist idea of a well ordered State to a greater degree than any other country; it is curious that after the war the countries which broke the power of this system should seem bent on introducing the selfsame ideal of a disciplined State under the guise of reconstruction. Probably either principle, carried to its logical conclusion, would be unendurable by the human race, so that compromise is necessary. In adjusting the method of compromise to the needs of the moment there is a play of action and reaction; and in Australia at the present time the action of the supporters of State control seems to be in the ascendant.

The Section of Naval and Military Medicine and Surgery in the Congress was struck by the success of military public administration during the war, differing herein perhaps from some of our civilian critics at home. The Section expressed the opinion that the principles which underlay this success can be adapted to civil life, and proceeded to lay down lines for this adaptation. It is proposed that the Central Commonwealth Authority shall direct public health activities through an expert medical staff and co-ordinate action and legislation between the States. It is suggested that the greatest possible amount of autonomy should be granted to local health authorities, which should be encouraged in initiative and self-reliance. It is hoped to organize the medical profession so that every member has his part in the public health organization, and so that the closest co-operation may be ensured between administrative medical officers and medical practitioners. Research is to be advanced by the central authority, and directed along proper channels. The community is to be educated into developing a public health outlook, a start being made by enforcing a field service regulation under the Commonwealth Defence Scheme, that "the study of sanitation and the preservation of health is incumbent on every officer and soldier." Further, it is proposed that under the defence scheme note should be kept of those medical officers best suited to perform efficiently the work of examination of recruits; and that whenever it becomes necessary to enrol men again these medical officers shall be withdrawn from practice, and become whole-time officers for medical examination.

The Section of Public Health and State Medicine advocated a complete system of medical inspection of all school children to be conducted by a staff of full-time medical officers. Treatment to follow inspection is to be provided, but it is suggested that it should be carried out as far as possible by the regular medical attendant. Various other whole-time officials are suggested for conducting campaigns for eradicating mosquitos and hookworm; and the establishment of laboratories, of a commission for making a really effective campaign of preventive medicine, and of reservations for wild animals, was demanded.

The Section of Obstetrics and Gynaecology urged the Federal and State Governments to make the most up to date methods of prophylaxis against venereal disease as widely known as possible, and to make such measures available where possible. The Section also recommended the establishment by the State Governments of Central Midwives Boards, and the compulsory notification of puerperal septicaemia. It is of opinion that the maternity bonus, being frequently misspent by the recipients, should be used, presumably by the Government, to pay for efficient nursing and medical attendance.

The Section of Diseases of Children expressed dissatisfaction that there are no State regulations to enforce the provision of fly-proof closets, and to prohibit the use of lead paint on verandah railings.

The rest of the resolutions are of more domestic interest, and need not detain us, but it seems clear that the Australian medical profession desires to see State control extended. Those in whom admiration for voluntary effort still lingers may, perhaps, wonder how far the public health organization proposed is compatible with the self-reliance on the part of the community mentioned in one of the resolutions, and whether better results might not be obtained in the end by the gradual education of the people in knowledge of matters appertaining to health. However, it is necessary, as we have said, to effect a compromise. Where the people can be shown to be acting in a manner not merely deleterious to their own health but dangerous to the health of others, it must be agreed that there is ground for State interference. The absence of fly-proof closets is no doubt a fruitful source of typhoid, dysentery, and summer diarrhoea, so that a case has been made out for State compulsion in the provision of these conveniences, just as the pollution of streams used for the supply of water to the community is an offence. With regard to medical treatment, we believe that the majority of the medical profession in the British Isles is still averse to the multiplication of whole-time medical officers.

Is it not possible that one of the chief guides to State interference in, and regulation of, the habits of the people should be the amount of harm done by individuals to others, that the evidence of the harm done should be clear, and that in every case the mildest methods of restricting the danger should be tried before embarking on measures which seriously interfere with the freedom of the people, put the community to excessive cost, or involve the expenditure of an unreasonable amount of time and energy? Is it quite certain that in the hasty pursuit of an A 1 standard of health by means of State interference the people will not lose something of their independence and virility, and cease to feel a proper sense of responsibility for themselves, their children, and their neighbours? The demand for State control is frequently based on what are called the rights of the people. We venture to urge that some portion of the control might be dropped if it were possible to instil into the people some better notion of their duties.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last two meetings of the Committee fifty-eight cases were considered and £687 voted to forty-nine of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 66, of M.R.C.P.Edin. who died in 1905. Was left at husband's death with house which has since been mortgaged and is in bad repair, leaving net rent of £32 per annum. Pays £27 per annum for one room. Finds it impossible to obtain employment. One son, aged 36, who is married, with two children, unable to assist her. Voted £18 in twelve instalments.

Widow, aged 26, of L.S.A.Lond. who died in 1920. Applicant requires a little assistance until her late husband's estate is realized. Two children, one aged 3 years and the other 10 months. At present residing with father. Before marriage was a hospital sister. Voted £10.

Daughter, aged 68, of M.R.C.S.Eng. who died in 1870. Suffers from chronic chest trouble. Living with an old nurse. Only income £20 per annum from the Royal Hospital for Incurables. Rent 3s. 6d. per week. The Fund made grants of £10 in 1890 and 1895. Voted £18 in twelve instalments.

Daughter, aged 62, of M.R.C.S.Eng. who died in 1891. Suffers from deafness and bodily weakness. Income an annuity of £22 18s., and during the last twelve months £8 by painting miniatures. Does not pay rent as she lives with relatives. Voted £10 in two instalments.

Daughter, aged 69, of M.R.C.S. who died in 18 3. Applicant suffers from cancer and has had six operations; not strong enough to undergo another, which is necessary. Income from other charities £35, and £13 earned by reading to an old lady. Rent 8s. 6d. per week. Voted £18 in twelve instalments.

L.R.F.P.S.Glas., aged 73, married. Both himself and his wife, aged 88, have suffered from ill health for some years. The applicant first suffered from an ulcerated leg which prevented him earning, and all savings were spent. He has now developed cancer of the tongue and is in a desperate condition both in health and financially. Wife is also bedridden, and their only income is the old age pension which both receive. Granted £5 a month.

M.D.Lond., aged 51. Married, wife in mental home. There are two children away at school and provided for. The applicant has suffered from paralysis for over ten years and is quite incapacitated. His net income is only £64 a year and he requires someone to look after him. Helped four times, £86. Granted £26 in twelve instalments.

The Committee also agreed to give each annuitant a Christmas gift of 30s. This will require £266, and a similar gift to over 100 of the grantees. The Honorary Treasurer will be pleased to receive special donations for these gifts which do much to assist the recipients to have a happy Christmas, especially in these days of high prices.

The following very sad case is especially brought to the notice of our readers:

Dr McA. is 75, has hemiplegia and has now developed sarcoma of the jaw. He and his wife, who is 86, draw old age pensions, which with the help from the fund enables them to exist. Comforts are also necessary, and it is hoped that some who read this will send a donation to the Treasurer. A medical friend at Norwood will see to the proper distribution of any gift.

Subscriptions to the Fund may be sent to the Honorary Treasurer, Sir Charters J. Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

Scotland.

THE HEALTH OF EDINBURGH AND GLASGOW.

THE almost simultaneous appearance of reports[1] on the health of Edinburgh and Glasgow by their respective medical officers of health suggests the making of a comparison between the conditions prevailing in these two large centres of population not far apart as to distance but differing widely in their characters as cities. Since, however, Dr. Chalmers's report on Glasgow covers six years (no reports having been issued during the war years), whilst Dr. Williamson deals with only one year of Edinburgh's health affairs, it will be better to restrict the comparison to a few leading matters, leaving the fuller consideration of the subject till a more normal year's results is available.

It is no fortuitous occurrence that both reports give a prominent place to maternity and child welfare. The coming into force of the Notification of Births (Extension) Act of 1915 made schemes for the saving of the lives of expectant mothers and young infants highly desirable and greatly facilitated their coming into action. Both Glasgow and Edinburgh had good material to work upon in the presence in their midst of admirable institutions already doing good work of the kind called for. There were differences in the two cities—for instance, Edinburgh had had beds for pregnancy or antenatal cases for some years, whilst in 1916 Dr. Chalmers reported the absence of any such "antenatal ward" in Glasgow; but, on the other hand, Glasgow earlier set about an inquiry into the causes of stillbirths than Edinburgh, and Dr. Chalmers is able to report on this important matter from material investigated between February, 1917, and April, 1920. These differences are in process of being smoothed out, for Glasgow got its antenatal ward with 23 beds and started its antenatal dispensary in August, 1918, and Edinburgh has been carrying on an inquiry into stillbirths since 1919. The Edinburgh report gives a separate and a prominent place to the statement of the neonatal mortality (the rate of deaths among live-born infants during the first month), whilst the Glasgow one is content with giving the infantile mortality (deaths within the first year of life). There is much to be said for recording separately the deaths in the first month after birth, for it is by far the most fatal month (having a rate of about 40 per 1,000 live births), and it is more than likely that the causes of death then operative are in a large measure peculiar to it. The infantile mortality in Edinburgh and Glasgow for the past six years is stated below.

	1914.	1915.	1916.	1917.	1918.	1919.
Edinburgh	110	132	100	123	94	117
Glasgow	133	143	111	129	113	114

These results are somewhat surprising and obviously close scrutiny of the factors at work will be needed before the causes of the unexpected figures become apparent. Thus the year 1916 in both cities had a lower infantile mortality than 1919, and in the case of Glasgow it was smaller than in any of the three years following; yet in both cities a mother and child welfare scheme was set agoing in 1917. More surprising still is the fact that the infantile mortality rate rose in 1919 over that of 1918, and very markedly so in the case of Edinburgh which in that very year had adopted its venereal diseases prevention and treatment scheme. Obviously one must not be tempted to lay too great stress upon variations (upward or downward) in single years, but must look to periods of years. In addition it would also be well to set forth the neonatal mortality rate for the sake of comparison and investigation, for its causation is complex and contains factors (such as prematurity or immaturity) not present at other times in the first year of life. In the meantime it would be sheer foolishness for towns to put aside as useless schemes of maternity and child welfare.

The birth rate in both Glasgow and Edinburgh continued to fall during the years of war, with in each case a slight recovery of almost the same amount in 1919 over 1918. This is brought out as follows:

	1914.	1915.	1916	1917.	1918.	1919.
Glasgow	28.00	26.00	24.8	21.8	21.2	23.2
Edinburgh	19.9	17.9	17.5	14.8	14.5	16.6

Glasgow in each year was above the average birth rate for Scotland, and Edinburgh was below it.

The general death rate was higher in Glasgow than in Edinburgh in all the years from 1914 to 1918, but in 1919 that of Edinburgh was a shade higher than that of Glasgow (as 16.5 to 16.4). The details were as follows:

	1914.	1915.	1916.	1917.	1918.	1919.
Glasgow	16.6	18.8	15.2	15.1	16.5	16.4
Edinburgh	15.5	16.6	14.6	14.9	15.2	16.5

Many other exceedingly interesting matters are dealt with in these two reports, including such subjects as the outbreaks of influenza, malaria, and trachoma in Glasgow, and the Corporation's scheme for the prevention and treatment of the venereal diseases in Edinburgh; the whole of each report is worthy of close study.

THE MACKIE EXPEDITION.

The expedition to Central Africa, the whole of the expenses of which have been borne by Sir Peter J. Mackie of Glenreasdell, which started in May, 1919, under the leadership of the Rev. J. Roscoe, has returned. Mr. Roscoe, who is lecturer on the anthropology of Africa for the Board of Anthropological Studies in Cambridge, spent twenty-five years in the service of the Church Missionary Society in Uganda, and was therefore well qualified to lead the expedition. Its purpose was to investigate the laws, customs, and beliefs of the native tribes under British rule in Central Africa, particularly in the Uganda Protectorate. Much material with regard to the ethnology and customs of the native tribes has been collected; among other matters, inquiries were made as to the medicines used by the various tribes both for man and cattle, and specimens which were brought home are now being investigated in the Edinburgh University laboratories. Further material is on its way, and it is considered possible that useful results may be obtained.

Ireland.

MEMORIAL TO THE LATE MR. ROBERT CAMPBELL.

As announced a fortnight ago, the medical profession in Ulster has resolved to establish a fund to commemorate the pioneer work the late Mr. Robert Campbell of Belfast did for surgery in Ulster. It is proposed that the memorial shall be a prize to be awarded for distinguished work in any branch of medical science done by a member of the medical profession in Ulster or a graduate of Queen's University, Belfast. The following additional subscriptions have been received:

	£	s.	d.		£	s.	d.
J. C. Rankin	21	0	0	D. R. Taylor	5	5	0
A. B. Mitchell	21	0	0	R. A. Parkhill (Burton-on-Trent)	3	3	0
Andrew Fullerton	10	10	0	J. R. Lawther (York)	5	5	0
Robert Hall	5	5	0	J. D. Boyd (Manchester)	5	5	0
P. T. Crymble	10	10	0	George Chiene (Edinburgh)	2	2	0
D. J. McKinney	5	5	0	W. D. Donnan (Holywood)	5	5	0
J. A. Craig	21	0	0	W. W. D. Thomson	5	5	0
S. T. Irwin	10	10	0	W. A. Anderson	5	5	0
W. Porter (Portrush)	10	10	0	W. Martin (Whitehead)	3	3	0
James Colville	10	10	0	E. Coey Bigger (Dublin)	1	1	0
Wm. St.C. Symmers	1	1	0	R. W. Leslie	5	0	0
Lady Byers	21	0	0				
John Rusk	5	5	0				
James Moore	52	10	0				
Norman Graham	2	2	0				
M. F. Cahill	5	0	0	Total received ..	£715	14	0

In the list of subscriptions already published R. M. Beatty (Heckmondwike) should have read £5 5s., making the amount acknowledged on November 27th £456 17s. 0d.

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[1] Annual Report of the Public Health Department and various Sub-departments of the City of Edinburgh for the Year 1919, by A. Maxwell Williamson, M.D., B.Sc., M.O.H. Report of the Medical Officer of Health, City of Glasgow, 1914–19.

Correspondence.

THE PROBLEMS OF "ENCEPHALITIS LETHARGICA."

Sir,—The interesting and important annotation in the British Medical Journal of November 27th (p. 829) cannot fail to provoke some criticism, not of the technical capacity, but of the logical methods of some able experimenters, pathologists, and others.

No proposition can be proved by deduction from premisses of which one is that the proposition to be proved is true; and specific characters for encephalitis lethargica cannot be proved by "deductions" which depend on the premisses that "encephalitis lethargica" has specific characters, and that these characters are those displayed by any particular case or group of cases under examination.

Now, as stated by you, Harvier declares that the virus of lethargic encephalitis differs from that of poliomyelitis in not being directly pathogenic to the monkey (*Rev. de Méd.*, 1920, vi). But McIntosh (*Brit. Journ. Exp. Path.*, 1920, i, 89) declares that it is so pathogenic. Assuming (as we must) that the experiments were valid, either Harvier's logic is bad or McIntosh's case was not one of encephalitis lethargica: it was, perhaps, one of poliomyelitis! But Levaditi has already stated (*C.R. Soc. Biol.*, March, 1920) that the virus of lethargic encephalitis differs from that of poliomyelitis in being directly pathogenic to rabbits. If this is so, the epidemics in Germany, in 1909, investigated by Römer (*Epidemic Infantile Paralysis*, trans. by Prentice, 1913) were not epidemics of poliomyelitis, but of a kind of encephalitis lethargica clinically indistinguishable from poliomyelitis!

The question is still further obscured by the results of Cleland and Campbell (*Journal of Hygiene*, 1920), who, logically enough, but from false premisses, conclude that their experimental observations in Australia had reference to a disease which is neither poliomyelitis nor encephalitis lethargica, and is distinct from that investigated by Breinl (*Med. Journ. of Australia*, 1918).

All these observers, assuming that there is a condition, "encephalitis lethargica," distinguishable experimentally from other "analogous" conditions, have generalized from a few particulars; forgetting that generalizations in respect of a world wide prevalence require the synthesis of a vast number of data drawn from world-wide sources.

Nor can it be said that the pathologists (or morbid anatomists) are less exposed to criticism. Marinesco and McIntosh (Report . . . Encephalitis Lethargica, L.G.B., 1918) distinguish between encephalitis lethargica and acute poliomyelitis by saying (among other things) that in the former affection haemorrhages are not common and are microscopic (loc. cit., p. 5); while McIntosh (Ann. Rep. Chief Med. Officer, Ministry of Health, 1919–20, p. 362) impugns Strauss's experiments as not having reference to encephalitis lethargica for the reason (*inter alia*) that gross haemorrhages were produced by him in monkeys.

Yet Box (*Lancet*, 1918, ii, p. 723) and Buzzard (ibid., p. 835), amongst many others, draw attention to the gross haemorrhages sometimes seen in human encephalitis lethargica, and, as is now well known, von Economo has withdrawn, as a misnomer, the name "encephalitis lethargica" invented by him, substituting the appellation "polioencephalitis haemorrhagica epidemica" (Wieland: *Schweitze med. Woch.*, July 8th, 1920). At the same time, we have constant assurances from many sources that it is influenzal encephalitis, and not encephalitis lethargica, which really is haemorrhagic; and McIntosh and Turnbull, in the case utilized by the former for successful experiment, found *no lesion*" (Loc. cit.).

We thus are in the ludicrous position of being assured that, of lethargic encephalitis, polioencephalitis, and influenzal encephalitis, each is distinguishable from the others by a criterion which is sometimes present in all.

On the clinical side, as your annotator justly observes, "almost any combination of nervous symptoms may be produced," a point to which I repeatedly drew attention in 1918 (*Lancet*, 1920, ii, p. 216), while Netter, a determined believer in "specificity," now admits that there is a poliomyelitic form of encephalitis and an encephalitic form of poliomyelitis (*Bull. et Mém. Soc. Méd. des Hôpitaux*, 1920, pp. 557-560).

The alleged epidemiological differentiae are even less substantial. Dr. Findlay (British Medical Journal, 1920, ii, 820) reports cases of encephalitis lethargica in young children seen in the month of May; and Dr. McNalty (Report, Ministry of Health, cit., p. 357) reports an institutional outbreak seen in August, also ascribed to encephalitis lethargica. Yet, in 1918, we were told that encephalitis lethargica differed from poliomyelitis (1) in avoiding children, (2) in eschewing, for the winter and early spring, the summer and autumn seasons, and (3) in not exhibiting group association. Moreover, we were told that the small numbers of cases of poliomyelitis notified in 1918, during the encephalitis lethargica prevalence, argued for distinction. The argument was a bad one; but in 1919 (Report C.M.O., Ministry of Health, p. 260) it appears that the two "diseases" occurred with an equal frequency.

The fact is that not one single specific clinical, experimental, pathological, or epidemiological criterion can now be alleged in distinction between so-called encephalitis lethargica and poliomyelitis, polioencephalitis, or any other of the many forms of encephalitis, myelitis, and neuritis that are epidemic during influenza periods.

For this reason, what is known abroad as the unitarian or synthetic concept of epidemic encephalomyelitis is there gaining ground every day, being supported by Maragliano, Bignami, Chauffard, and many others, including Pic and Cruchet. At home there has been some reluctance to discuss it, and no opportunity to state it in full has yet occurred.

But it must be repeated that specific conceptions can only be maintained by specific distinctions. If it is sought to support such conceptions by detailing such criteria as the alleged *quantitative* differences between encephalitis lethargica and the so-called "analogous diseases," the reply must be that one cannot arbitrarily distribute things into different classes and then "prove" that these classes are distinguishable specifically by *assuming* that they are, and saying that so-and-so are then the *non-specific* grounds of distinction. Yet this is precisely what is attempted by those who maintain that encephalitis lethargica is a disease *sui generis*, and who, even more strangely, speak of it as a "disease" with biological characters that are now altering. (Report C.M.O., Ministry of Health, 1919–1920, p. 366.) In what sense a disease, as distinguished from either the patient or the supposed germ, can be said to have "biological properties," I cannot conceive.—I am, etc.,

London, W., Nov. 30th. **F. G. Crookshank.**

GLOUCESTERSHIRE SCHEME FOR EXTENSION OF MEDICAL SERVICES.

Sir,—To correct any misapprehension which might result from Dr. Todd-White's letter in your issue of November 27th, it would be well to mention:

1. The primary object of the Gloucestershire scheme is the out patient treatment of certain sections of the population, but there is in the county a system of ambulances which will be used for the conveyance of patients requiring in patient treatment.

2. In order that persons may be able to obtain out-patient treatment, out stations will be arranged, so that ultimately there will be one accessible within, on the average, three miles of every part of the county.

3. The estimated initial cost of providing the out-stations was £14,000, but, in view of the rise in prices since this estimate was formed, the total cost of providing all the fifty-two out-stations may amount to a third as much again.

4. The total estimated cost of running the scheme for the first year is under £15,000, which is made up of the sums which would otherwise be used for independent arrangements for the services included in this scheme—namely, the treatment of school children, tuberculous patients, etc.

If any member of the Association would like further information as to the scope of the Gloucestershire scheme, I shall be happy in supplying it. Meanwhile I enclose for your information the latest print. I am, etc.,

Shire Hall, Gloucester, Nov. 30th. J. Middleton Martin.

⁂ Dr. Middleton Martin gave some account of the scheme to the meeting called at Bristol by the Bath and Bristol Branch of the British Medical Association on July 9th. His remarks were published in the issue of July 17th, p. 85. The pamphlet mentioned in his letter is entitled "Gloucestershire Scheme for the Extension of Medical Services"; it is published by Wellington and Co., Gloucester, price 1s.

MINER'S NYSTAGMUS.

SIR,—The two articles on the above subject which appear in your issue of November 27th will be welcomed by all who are interested in this important problem. Naturally I am specially in accord with Dr. Martin's paper, as he has developed the view which I put forward very strongly in my paper on the "Visual neuroses of miners in their relation to military service," published in your issue for March 4th, 1916. As will be noticed, I spoke of the complaint as a "visual neurosis," and claimed, as Dr. Martin has done, that it should receive much more attention from the neurologist. I hope that Dr. Martin's views will receive due attention.

Dr. Lechmere Anderson has given some interesting figures as to the prevalence of refractive errors in the disease. I think it will be generally admitted that most if not all cases show some refractive error, and I believe that some disturbance of the neuro-muscular mechanism of the eyes is a prominent factor in the origin of the symptoms. I feel, however, that his proposal to exclude from the mines cases of obvious ametropia is quite unworkable. At the recent meeting of the Illuminating Engineering Society, to which members of the Ophthalmological Section of the Royal Society of Medicine were invited, it was generally agreed, on very strong evidence, that the one practical measure which was likely to do good was the better illumination of the mines. I earnestly hope that nothing may be allowed to distract attention from this fundamental reform.—I am, etc.,

London, E.C., Nov. 29th. **CHARLES F. HARFORD, M.D.**

SIR,—It is with some hesitation that any one acquainted with the literature of miner's nystagmus, both before and after Llewellyn's classic essay, ventures to spill more ink on the subject. Little is yet known of the fundamental causation of these peculiar rhythmic movements, and until physiologists tell us more of rhythmic impulses both to and from the central nervous system we shall be at a loss to explain them.

But we may at least avoid inaccurate expressions in discussing the subject. Dr. Martin tells us that

> the disease is essentially one of exhaustion. First the visual centres and then the higher centres become worn out by constant effort.

But what evidence have we of constant effort on the part of the nystagmic miner? It used to be thought, on insufficient evidence (S. Snell), that this effort was put forth by the elevator muscles. I disproved this (*Brain*, 1906), and the theory is now given up. Have we advanced by putting the effort on to the nervous centres—that is, cell groups, I suppose, having to do with acuity of vision? But does the nystagmic miner, or any miner, attempt to see in the dark in any way approaching the effort put forth by an astigmatic office clerk? The latter is constantly attempting to interpret indistinct images, and at the same time to render them more distinct at the fovea. The miner in the dark probably does not use his fovea at all. In fact, he gives up all effort, and so avoids all strain. There is no evidence of strain or fatigue. What, in my opinion, has taken place is that the afferent impulses that control the normal equilibrium of the eyeball have been put in abeyance in the dark, and replaced by other, disordered, impulses—as from the rhythmic swinging of the pick, acting through the semicircular canals.

The eyeballs are, as it were, abandoned to these, and the more or less rhythmic movements are set up. Whether these may be but an exaggeration of normal very fine imperceptible rhythmic efferent impulses we must wait to hear from the physiologists. But on this theory the idea of strain, fatigue, and effort sinks into a secondary place.

The general tremors are probably of the same nature and origin. Tremor of a limb is essentially a disturbance of the equilibrium of the limb due to loss of control, and does not in any way postulate fatigue or strain of the limb. The results of these tremors and nystagmic movements are, of course, very distressing, amounting to what we call a neurosis, as Jeaffreson emphasized many years ago.

I have said enough to show that we must not dogmatize in terms that as yet we do not understand.

I should have liked to discuss Dr. Anderson's suggestions, but I think he will not go far before he finds that some of the worst cases have no appreciable refractive error. Having had some experience in colliery practice I know how keenly any systematic examination of the eyes of young miners would be opposed by them; and knowing something of the examination of the eyes of miners' children at school in a large mining town (Mansfield) I realize how ineffective are present methods to prevent lads with grave refractive errors from going down the pit. Improved (electric) illumination has already eliminated the disease from certain areas—for example, Mines de Bruay (Pas de Calais)—as evidenced by my inquiries when in France; and if there, why not here?—I am, etc.,

Nottingham, Dec. 4th. A. CHRISTIE REID.

THE NAVAL MEDICAL SERVICE AS A CAREER.

SIR,—You have been good enough to publish from time to time various grievances of the Naval Medical Service, and were instrumental before the war in effecting some improvement thereby. That many disabilities remain it is the purpose of this letter to point out.

It is an undisputed fact that the great majority of newly qualified men who join this branch do so with almost no knowledge of the service. A fact that speaks for itself is that out of the 850 odd temporary surgeons who joined for the war and saw the medical service from within, only one in ten have accepted permanent commissions.

It is no exaggeration to say that there is great disappointment and dissatisfaction in the medical branch at the present time, and the causes of this are many and various, but some of the more important ones can be dealt with in a few words.

Professional.—There is a great lack of clinical material in a warship of any class, and for this defect no remedy seems possible, as even in a Super-Dreadnought there is not enough purely medical work to keep one doctor adequately employed, and these ships all carry at least two medical officers. There is no fair distribution of sea and hospital time, and thus many excellent officers have served from fifteen years to the whole of their career without ever having held a hospital appointment.

Treatment of medical officers during the late war is a clear index of the value placed on medical services by the executive authority. If we take the October *Navy List* and refer to the purely British decorations awarded we elicit some interesting comparisons. Counting all medical officers who entered prior to 1916 we find the percentage decorated is 13.7. For paymasters the percentage decorated is 28.8. For executive officers it is 42.2. Further, out of the 57 medical officers who have received a decoration, 42 were given the O.B.E. simple.

This marked differentiation may be due to the fact that a higher standard of gallantry is expected of the doctor than of his brother officers, but it may possibly be due to the fact that there was no medical officer on the committee for awarding decorations.

Financial.—If the intending applicant fully understood how badly naval doctors compare in this matter with their brethren in the other medical services of the Crown, there would be no candidates for the navy. Well knowing the smooth-tongued sophistry of the Admiralty, we hasten to state that we do not only mean what is called daily rate of pay, but also all the allowances, emoluments, and privileges which have a pecuniary value. In this respect the medical officer comes last of all. He receives no marriage allowance like his military brother, his wife being to all intents and purposes not recognized at all. By virtue of the fact that a military officer is married and over 30, he is entitled to married quarters or the allowance in lieu, also servant, light, fuel, and furniture allowances. No such right is extended to the naval officer, as his wife is not recognized, and as only bachelor quarters are provided, except in rare instances, he must find quarters for his wife entirely at his own expense. Further, when the naval officer is moved from one appointment to another (usually every two years or less), the expense of moving his wife and family must be borne entirely by himself. In the case of his military brother it is met by the Crown.

The Treasury have a way of comparing the naval doctor with other naval officers when it is a question of pay or allowances, but with the army doctor when it is a question of the number of senior ranks allowed, always to the disadvantage of the naval doctor. For example, he does not receive the army doctor's good allowances, nor does he receive the executive naval officer's high proportion of senior ranks. Thus on referring to the October *Navy List* we find that of lieutenants, lieutenant commanders, and commanders 1 out of 7 may hope to become a rear admiral. With doctors 1 out of 86 may hope to reach this rank. This is with the great shortage of junior ranks (we are over 250 short). If we had the full establishment of surgeon lieutenants, only 1 in 110 could ever hope to become a surgeon rear admiral.

In the recently greatly advertised and badly needed rise of pay to all ranks the naval doctor again occupied the usual position of coming off worst of all, his percentage rise being far below that of the other branches. The few allowances he got before the war have in nearly every case been abolished, while most of the executive allowances have been retained, and many of them increased and made free of income tax. As a glaring instance of this invidious discrimination the case of two officers of the same relative rank, each in charge of his own establishment and serving under the same Commander-in-Chief, may be quoted:

Surgeon Rear Admiral: Pay £1,916 5s. per annum. No allowances whatever (previous ones abolished).

Rear Admiral: Pay £1,825 per annum. Allowances exceeding £1,500 per annum *free of income tax* (previous allowances increased).

Surgeon Captain of Naval Hospital: Pay £1,186 5s. per annum. Allowances £67 per annum.

Captain of Dockyard: Pay £1,095 per annum. Allowances exceeding £400 per annum *free of income tax*.

The above are merely instances and could be multiplied indefinitely.

Status.—The executive naval officer frankly does not accord the naval doctor the same respect that is extended to civil practitioners. (Officially, of course, he is not entitled to the same marks of respect as are paid to an executive officer of similar rank, differing in this respect from his R.A.M.C. *confrère*). This disadvantageous comparison with the civilian doctor is partly due to the fact that the executive officer can easily see the great limitation of the naval doctor's practice, and is apt to think and say that the latter's work is chiefly connected with venereal disease. He is also prone to think that the doctor must be work-shy or he would never have entered the navy. He respects him accordingly, and this stigma remains.

In view of the above, which are only a few of the many disabilities under which medical officers serve, all intending candidates would be well advised to steer clear of the Naval Medical Service.—We are, etc.,

December 1st. SIX NAVAL MEDICAL OFFICERS.

HYPNOTISM AND SUGGESTION.

SIR,—Dr. William Brown, in his lecture on psychopathology and dissociation, published in your issue of December 4th, seems to anticipate criticism of his view of hypnotism. He is not likely to be disappointed. To most psychiatrists it will appear that the subject of psychopathology is already sufficiently confused without introducing arbitrary and contradictory definitions. There is general agreement that when we speak of hypnotism we mean a state of increased suggestibility, and that by somnambulism we mean the deepest stage of hypnosis (see Forel on hypnotism, and Bonnet's *Traité pratique d'Hypnotism*). To propose to confine the term hypnosis to the ultimate phenomena of that state is only to confuse the issue.

Is it not possible that the sympathy which Dr. Brown evinces towards the views of Charcot is due to the fact that he has been operating with similar material? The soldier who succumbed to war shock was a potential neurotic before the war. It is true that the majority of them fought bravely, and only succumbed to a succession of shocks, but the predisposing cause was an inherent instability of the nervous system, which sooner or later, to a greater or lesser degree, would have shown itself under the strain of civil life. Such men, particularly when fresh from the battlefield, can readily be thrown into a state of "fugue," in which the phenomena of abreaction can be induced; but I am not at all certain that this state of fugue is identical with the state of artificially induced somnambulism such as one gets in hypnosis. It is true that, taking an average of a number of subjects drawn at random from the community, one finds that deep hypnosis with amnesia on awaking can only be produced in a minority, but I am not at all prepared to agree that this minority consists of hysterical subjects. When used for therapeutic purposes, hypnotism has very definite limitations. This is due to the fact that hypnotism cannot affect a patient unless it is presented to him in a form which his unconscious can understand. The symptoms of a neurosis have their origin deep down in the unconscious self. They are a defence mechanism by which the patient retires from responsibility as a snail into his shell. Until psychological analysis has exposed the hidden causes, suggestion slips off like water off a duck. Once the complex has been discovered, then suggestion can be put in such a way as to materially reinforce the benefits of "autognosis," to borrow Dr. Brown's useful word.

The chief value of hypnotism will be found in the removal of pain from organic cause, and in alleviating the functional aura which always surrounds organic complaints, but its usefulness in hysteria is very subsidiary. To regard hypnotism as a pathological state in the same sense as is an hysterical fugue, would be to deprive medicine of a valuable weapon.—I am, etc.,

Wylde Green, Birmingham, Dec. 6th. R. MacD. LADELL.

HOMES FOR THE TREATMENT OF INCIPIENT INSANITY.

SIR,—I beg you to allow me space to express my regret that the proposed legislation for incipient insanity appears to me to be so framed as to pander to the popular prejudice against mental diseases as being something apart from the ordinary ills of the flesh. Much has been done in recent years to educate the public out of this prejudice by the establishment of out-patient departments for mental diseases in connexion with general hospitals by the voluntary boarder system, by organizing asylums as hospitals, and by the after-care of convalescent and recovered cases in cottagers' homes. That these efforts have not been without result is proved by the experience of the Mental After-Care Association, which has now little difficulty in finding occupation for such cases, the employers being fully informed of the previous illness.

Much of this progress will, I fear, be lost by placing these houses under a special bureau unassociated either with mental or general hospitals. It is right to recall that Lord Halsbury, when Lord Chancellor, introduced similar clauses in his Lunacy Bills in 1900–1–2, and placed the supervision with the then Lunacy Commission. This new bureau has only to incur the enmity of one or two imperfectly recovered cases, and with the aid of a few well-meaning but uninformed sympathizers it will become the object of the same unreasoning vituperation and exaggerated accusations as those with which the present lunacy administration is assailed.

The proposed homes may be scattered from Land's End to Carlisle; their inspection and continuous visitation will need a bureau as expensive as that of the Board of Control which covers the same ground; it could do the work with little, if any, addition to its present staff and with far more knowledge and experience of the needs of such treatment than a new bureau is likely to possess until after many years of experience. It is obviously of great importance that the supervision of mental disease should be under one authority from incipience to after-care, if we are to learn statistically the results of treatment and the relative incidence of disease at various times and in different localities.

The bill as it at present stands makes no provision that the treatment in these homes should be conducted by persons having suitable experience, and this is a very serious omission. The Board of Control has certainly more opportunities of knowing the suitability of persons for such work than any other body can possess.

It is to be hoped that the bill, in its passage through the House of Lords, may be amended in these respects, or this greatly needed and long delayed legislation will be shorn of much of its usefulness.—I am, etc.,

London, N.W., Dec. 6th. HENRY RAYNER, M.D.Aberd.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

SIR,—In your issue of November 27th Dr. Charles Mackay quotes Professor Arthur Keith's criticism of Ling's system of medical gymnastics in support of his theory:

> "We have been searching Europe of the nineteenth century to discover the principles and practice of the men who sought to repair the human machine by throwing it into action, sometimes by active and at other times by passive means. It must be owned we have discovered practice rather than principle. Anyone who examines critically the writings of the modern representatives of the Swedish school will discover that Ling's system of 'medical gymnastics' has grown into a bewildering code of arbitrary and empirical practices which can be justified only by the benefits which are said to attend their application."

This must not pass unchallenged. The great merit of the Swedish method over other forms of exercises is just the fact that it is based on strict anatomical and physiological principles. All textbooks on physiology point out the important functions of muscular contractions and relaxations in the economy of the body, and it is Ling's achievement to have shown how alternating contractions and relaxations of muscles should be carried out to secure the greatest possible physiological effect.

The fundamental principle of Ling's system is, in short, that the body, first of all, is placed in a position to provide perfect anatomical rest for the muscle or group of muscles to be exercised. The muscle is now made to contract. Each contraction, therefore, begins necessarily at zero, and is continued to its maximal capacity, followed up again by complete relaxation in the position of anatomical rest. These muscular contractions are either resisted or guided according to the power or want of power in the muscle, and repeated as often as required in each individual case or for any particular purpose of treatment.

Exercises carried out in this way are not only physiologically more effective than ordinary exercises, but as another advantage also cause no fatigue or strain, and have therefore proved invaluable in the treatment of all atonic conditions, more particularly however in atonic conditions of the heart.

That Professor Keith should have called this system "a bewildering code of arbitrary and empirical practices" is beyond my comprehension.—I am, etc.,

London, W., Nov. 29th. GUST. HAMEL.

SIR,—I cannot let Dr. Mackay's reply of November 27th to my letter of October 30th pass unnoticed.

I wish to point out that although a knowledge of the zero position may be essential for correct splinting for obtaining physiological rest, such splinting is not essential in the treatment of infantile paralysis. During the last seventy years the Swedish school have treated this disease without splinting—a method which I have always adopted—and have obtained very good results; personally I have had cases in which an absolutely perfect and complete cure took place. In the non-splinting method the zero position assumes a very minor importance, for the rule of the Swedish school has always been to place the affected limb in that position from which the greatest signs of muscular activity were obtainable.[1] Specially has this been the case with the so-called excentric movements, in which no voluntary movement may be possible from the zero position but may be readily obtainable from other ones. A perusal of A. C. Neumann's *Die Heilgymnastik*, 1852, and *Das Muskelleben des Menschen*, 1855, will soon convince the reader how minutely the actions of muscles in the various "isolation" movements had been worked out. Neumann made prolonged studies at the Central Gymnastic Institute of Stockholm from 1848 to 1851.

In any case, neither physiological rest by splinting nor appreciation of the zero position constitute a portion of muscular re-education. They are merely a preliminary to it, just as splinting a fracture in correct position is a preliminary to subsequent massage and mobilization. Dr. Mackay's definition of muscular re education which he purposely gives in great detail in order that there may be no misunderstanding as to what is meant by it, is neither more nor less than the Swedish conception of the same by their system of movements. On it was based the Swedish method of muscular re-education in all kinds of motor paralysis, whether from hemiplegia, paraplegia, tabes dorsalis, infantile paralysis, or peripheral paralysis. A perusal of the literature from 1850 to 1870 (mostly in Swedish and German) will soon demonstrate this. Some of the works of C. F. Taylor of New York, namely, *The Movement Cure*, 1860, pp. 300–307, *Theory and Practice of the Movement Cure*, 1861, pp. 116–160, will give quite a good insight into the methods and status of motor re-education by Swedish methods sixty years ago. A case which I think must have been infantile paralysis has been described, together with the gymnastic prescription used, by Neumann (*Ath. f. d. rat. Gymn.*, 1853, I, 71–72); this is the earliest such record that I can find.—I am, etc.,

London, W.1. Dec. 4th. EDGAR F. CYRIAX.

THEORIES OF HEARING.

SIR,—In a report of the meeting of the Sheffield Medico-Chirurgical Society under the above heading in the BRITISH MEDICAL JOURNAL of December 4th, p. 859, mention is made of the possibility that the ligamentum spirale regulates the transverse tension of the basilar membrane, and this theory is attributed to Professor A. Gray. May I be permitted to quote from a paper of my own entitled, "A New Theory of Hearing," published in the *Journal of Laryngology, Rhinology, and Otology*, for April, 1914?

> With regard to the share which the ligamentum spirale has in the intricate mechanism of auditory accommodation, I shall, in this communication, merely state that many experiments and clinical and histological observations have convinced me that there must be an intralabyrinthine muscle capable of altering the tension of the basilar fibres and Corti's rods, and I believe that there is sufficient evidence to warrant at least the provisional assumption that this muscle is the spiral ligament. The size of this so-called ligament is entirely disproportionate to its function, if such is merely to attach the edge of the basilar membrane to the outer wall of the labyrinth. It is, moreover, possible to demonstrate the fact that the nucleated spindles, of which it is largely composed, all radiate outwards from its attachment to the edge of the basilar membrane. My own observations, carried out upon fresh human and animal labyrinths, leave no room for personal doubt that these nucleated spindles are a form of plain muscle fibre, in many ways analogous to those which Schäfer has demonstrated as constituting the long-disputed dilator pupillae of the human eye.

Although my theory of hearing is quite new, no precedence can be claimed by myself or any living authority for the above view of the functions of the spiral ligament. Since my paper was written I have discovered that Todd and Bowman made exactly similar observations as long ago as 1856, and published them in their joint work, *Physiological Anatomy*, which appeared in that year.—I am, etc.,

Leigh, Lancs, Dec. 4th. F. PEARCE STURM, Ch.M.Aberd.

FAT-SOLUBLE CONTENT OF OILS.

SIR,—As a very recent worker on vitamines, may I be allowed to draw attention to a point which appears to be a very essential one?

A great deal of work has been and is being done in connexion with the fat-soluble content of certain edible oils. Innumerable results have been published, the technique has been described in detail, but one important (and in my opinion, from the practical standpoint, vital) detail has been omitted.

It is unfortunate, therefore, that such results as the following (I quote from the Medical Research Committee's Report, but the same remarks apply to most of the published results upon edible oils) should be practically worthless:

Description of Fat.	Distribution of Fat-Soluble A or Anti-rachitic Factor.
Cod-liver oil	+++
Lard	0
Olive oil	0
Cottonseed oil	0
Cocoanut oil	0
Linseed oil	0

A brief example will explain why this is so. Dr. Drummond has recently pointed out that in certain circumstances lard may contain the fat-soluble factor—it depends upon the nature of the pig's food. In other words, the method of production (or treatment) of the fat or oil has an all-important effect upon the fat-soluble A content. This, of course, has been well known for some time. It is common knowledge that hydrogenated oils have their fat-soluble content detroyed by the process of hydrogenation.

But there are more varieties of, say, linseed oil than the hydrogenated and the unhydrogenated, and it is a bold, and in my opinion a quite unjustifiable, statement that linseed oil contains no fat-soluble A. At the present moment I have in my laboratory a sample simply labelled "maize oil," which is waiting to be tested. If I get a negative result, I dare not say, "Maize oil contains no fat-soluble factor." Before I dare report upon the matter at all it will be necessary for me to have the history of this sample. I can then say, "Maize oil prepared by such and such a method contains no fat-soluble factor."

What I would suggest to other workers on this subject therefore is this (if their published results are to be of any practical utility): in every case where the fat-soluble A content of an oil is discussed and reported upon the history of the sample used should be given, and the process through which it has passed before it has come into the hands of the worker who reports upon it. A greater precision in details of this kind will create a better impression of scientists generally, and help to remove the suspicion from the lay mind that a research worker is too often inclined to make statements which have an insufficient foundation in fact.—I am, etc.,

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[1] See *The Elements of Kellgren's Manual Treatment*, 1903, p. 393, and *Brit. Journ. Child. Dis.*, 1914, xi, 155–167

A. D. Stammers, B.A.Cantab.

Research Laboratory, Port Sunlight,
November 16th.

TUBERCULOSIS IN GUERNSEY.

Sir,—Since the discussion upon tuberculous milk was started in your columns I have received many inquiries as to the incidence and age incidence of tuberculosis in Guernsey. I would therefore ask you to publish the enclosed statistics for the ten years 1910–1919.

The average annual population was 40,832. The number of deaths registered from all forms of tuberculosis during this period was 478, and from phthisis 357.

These deaths are further subdivided as follows: Tuberculosis 47, tabes mesenterica 13, meningitis 31, peritonitis 12, joints 9, kidney 7, and lupus 2; total 478.

As regards age incidence the deaths fall under the following age periods and percentages:

Deaths Registered according to Age Periods.

		Percentage of Total Deaths.
Under 1 year	15	3.1
1 to 5 years	26	5.4
5 to 15 "	51	10.7
15 to 25 "	122	25.5
25 to 65 "	251	52.5
Over 65 "	13	2.7
	478	

As is always the case, a certain number of deaths from phthisis are registered as tuberculosis; but I am now ignoring these, as I do not wish to alter the registered causes of death in any way. The total death rate for the ten years under review is—tuberculosis 1.17 and phthisis 0.87.

A few remarks as to our population may not be out of place. A large number of people with damaged lungs, notably fruit growers, have settled here in the past and become permanent residents. The French population, probably during the period in question about one-twentieth of the total, numbers a large proportion of very desirable people whom any community would heartily welcome, but still furnishes us with many undesirable ones who have in the past been allowed to settle here without hindrance. The incidence of tuberculosis amongst these people is very high and also very fatal.

The figures I have given include the civil, military, and naval population for the whole period.

The climate of Guernsey would not at first sight be reckoned as suitable for all stages of phthisis. The average rainfall is 35 inches, the mean relative humidity 84, the mean annual temperature 50.9°, the mean daily range 9.9°, and the average sunshine during the past twenty-five years 1,898 hours (1919, 2,003 hours). Doubtless the humidity is somewhat high, as might be expected, yet the rainfall in this small island varies greatly. In some parts it is only 80 per cent. of the average; open, bracing, and comparatively dry spots are available, such as L'Ancresse in the north part, or sheltered and sunny valleys on the south and west coasts.

The records of sunshine speak for themselves; there are no factories or chemical works to pour poisonous products into the pure and ever-changing air. From its position, and being a small island, Guernsey is warmer in winter and cooler in summer than the mainland.

I do not think that I need enlarge further upon its great advantages as a health resort, but this I must say: The Guernsey cow (and this includes the Alderney) is the finest dairy cow in the world, as it yields milk so rich in butter fat and so free from the bacilli of tuberculosis. I cannot help thinking as I look back upon my twenty-one years' residence here that in this fact lies the chief reason, not only of the comparative immunity of the islanders from tuberculosis, but of the remarkably successful results of those already infected who have made Guernsey their more or less permanent home.—I am, etc.,

H. D. Bishop,
M.O.H. States of Guernsey.

Guernsey, [illegible]

SUBACUTE INFECTIVE ENDOCARDITIS.

Sir,—Dr. Cotton's article in the Journal of December 4th is of interest in mentioning clubbing of the finger-tips as one of the most striking clinical features of this disease; the marked pallor of the hands often makes it most noticeable, and it is seen even in cases where there is no apparent evidence of any grave cardiac trouble. He considers a gross valvular lesion one of the chief diagnostic signs, but this is misleading unless it is recognized that his paper is dealing only with soldiers who are definitely labelled as cardiac cases, and who might be expected to show evidences of valvular disease.

At autopsy the recent infection is usually found to be imposed upon a valve which has been previously damaged, but clinically many cases occur in which auscultation fails to indicate any gross valve lesion, at any rate in the early stages of the disease.

It cannot be too strongly emphasized that subacute infective endocarditis is not primarily a disease of the heart; and if a gross valvular lesion is to be sought for at the bedside as one of the cardinal signs, many cases will be inaccurately diagnosed until late in the illness. A slight murmur may increase in intensity during the course of the complaint, but at its commencement may be almost undetected.

In a special heart clinic one would naturally be on the look-out for this disease, but in ordinary general practice it would be very misleading if one's suspicions were only aroused in patients with a marked valve lesion.

Apart from malaise and pallor, a continued low febrile condition, without any definite cardiac signs, may be the only noticeable feature for many weeks, and it may be easily overlooked; by the time the spleen has enlarged or the finger-tips have clubbed the degree of toxaemia is considerable. Patients suffering from this disease are not infrequently considered convalescent from an influenzal or rheumatic infection, until the continued malaise results in the discovery of a low fever.

Dr. Cotton's diagnostic points—pallor, enlarged spleen, and clubbed fingers—in a patient with a gross valvular lesion would naturally make one suspect the possibility of subacute infective endocarditis, but the absence of any definite valve defect would by no means negative the diagnosis.—I am, etc.,

Bexhill-on-Sea, Dec. 5th. G. Lowell Webb.

VENEREAL DISEASE PROPHYLAXIS.

Sir,—The Society for the Prevention of Venereal Diseases seems to be attacking the problem at the wrong end. Instead of immediate self-disinfection being the panacea for eradicating venereal disease, it would, I do not doubt, merely weaken moral resistance—in the end the only safeguard.

The education of the young in disinfecting methods would have to be very extensive to prevent cases slipping through and keeping up infection. Such education, if seriously set about, must apply to (1) the vicious—euphemistically described as voluntary exposers to the risk; (2) the ignorant and weak; (3) the morally strong.

Among (1), the vicious, a certain amount of disease might be prevented; even that is doubtful, the assumed security increasing the chances of infection. But when these doctrines reach Class (2), the ignorant and weak, you at once set about getting recruits for Class (1), the force of example and the fancied security acting very damagingly. In Class (3) you cannot fail to weaken the high moral tone and, in certain instances, swell the numbers of Class (1).

Whether the individuals who rely on disinfection to escape venereal disease really do escape infection is a matter we may leave on one side. What is undoubtedly true is that in trying to prevent venereal disease the moral fibre of the nation would be undermined. That is in the long run a worse thing for a country than the existence of venereal disease. The innocent victims are always brought in, in every argument. It is probable that their numbers would be augmented, not decreased. But the matter is one of principle, not of sentiment. The argument of the society seems, therefore, to favour promiscuity in the attempt to eradicate venereal disease, and I am glad to hear that it is receiving no Government support.

Germ killing, useful as it is, is not the real safeguard against disease, as is notoriously the case in tuberculosis.

Improvement of health is more important in the long run than destroying germs. In this case it is the moral health—the education of the higher inhibitive powers—upon which the diminution of venereal disease will depend, and societies like the Alliance of Honour seem to me to be tackling the question in a more right and proper spirit than the Society for the Prevention of Venereal Diseases.—I am, etc.,

London, S.E., Dec. 4th. H. B. GLADSTONE, M.D.

THE STATUS OF ORTHOPAEDIC SURGERY.

SIR,—Among the most interesting and valuable remarks of Sir Robert Jones (published on November 20th) there occurs an expression of opinion which seems to me so detrimental both to orthopaedic surgery and to the hospital patient that I beg to lodge a protest.

After suggesting the group of cases which a modern orthopaedic surgeon should be prepared to treat, he goes on to say that the general surgeon may very properly urge that if so large a group of cases be taken from his wards much valuable teaching material would be lost to him, and he answers this hypothetical objection by saying:

> "The general surgeon should have an absolute right to treat any case and as many of any type of cases as he desires. The orthopaedic surgeon is alone to be limited as to type. The general surgeon should not be limited by any definition of any sort."

Now, nothing could be arranged more unfairly for the orthopaedic surgeon, nor more unsatisfactorily for the patient. I say unfairly, because in actual practice under such a system only the uninteresting and tedious and difficult cases will reach the orthopaedic surgeon, while the rarities and the "good" cases will all be retained; and I say unsatisfactorily, because the patient wants to receive treatment from the expert right away, instead of waiting until after the general surgeon has made one or more unsuccessful attempts at it.

I should like further to protest against the low view which Sir Robert Jones seems to take of his speciality when he says—

> A well organized orthopaedic department should prove a pleasant dumping ground to many a skilful and conscientious surgeon.

Nothing of the sort, Sir; it should be a privilege for the surgeon to be allowed to send a case to the orthopaedic department, and, if I may carry on the metaphor, the department should be a garden of growing flowers, not a waste of mouldering rubbish that nobody wants.—I am, etc.,

London, W., Nov. 27th. PAUL BERNARD ROTH.

SELF-ADMINISTRATION OF NITROUS OXIDE GAS.

SIR,—With reference to this subject, and in answer to Dr. Holmes's invitation for report upon any other known case, I beg to record the following:

Just previous to the war, while practising in a provincial town, I was called by a dentist's caretaker to see the page-boy. I found him sitting in the operating chair, dead, with the gas mask still over the face. He had evidently been playing with the apparatus, had become unconscious while sitting in the chair, and fallen forwards and sideways, jamming the mask between the left-hand arm of the chair and his face, in which position it was found. The gas cylinder had emptied itself.—I am, etc.,

Colnbrook, Nov. 13th. A. L. HEISER.

TROPICAL FLEAS.

SIR,—In the *Journal of the Royal Sanitary Institute*, September, 1919, vol. 40, No. 1, Mr. A. W. Bacot, a very well known entomologist, has given a list of fleas found on rats and the countries in which these fleas are found. He describes *Pulex irritans* as world-wide. Dr. Alcock, in his book, *Entomology for Medical Officers*, says *P. irritans* is as cosmopolitan as its host, and Patton and Cragg mention that it is found practically all over the world.

I believe that these gentlemen are incorrect. In my paper on the etiology of rheumatic fever from a tropical point of view, published in the *Transactions* of the Society of Tropical Medicine and Hygiene, January, 1920, I laid stress on the fact that neither *Pulex irritans* nor *Ceratophyllus fasciatus* has been found in the Malay Peninsula, and gave reasons for believing that neither of them occurred anywhere in the tropics at or about sea level.

Dr. Jordan, of the Rothschild Museum, Tring, was able to show me only two specimens of *P. irritans* from the tropics—one from New Guinea at an elevation of 10,000 ft., the other from India, just on the edge of the tropics.

My theory that rheumatic fever is flea-carried is founded on the geographical distribution of the disease and of *P. irritans* and *C. fasciatus*. If I am wrong about the distribution of these fleas, though I incriminate *C. fasciatus* primarily, my theory falls to the ground.

I would therefore be much obliged if the evidence on which the statements rest that *P. irritans* is ubiquitous could be published in the BRITISH MEDICAL JOURNAL.—I am, etc.,

J. TERTIUS CLARKE.

Tampin, Malacca, Straits Settlements,
Oct. 31st.

Obituary.

DR. GEORGE W. W. ASHDOWN of Ripley, Derby, who died on November 25th, was born at Northampton in 1857. He received his medical education at the University of Edinburgh, where he graduated M.B., C.M. with commendation in 1880 and M.D. in 1883, when he was commended for his dissertation. After holding the post of resident physician to the Edinburgh Royal Maternity and Simpson Memorial Hospital he commenced practice at Tetbury, Glos., and removed to Ripley in 1903, where he held the posts of M.O.H. Ripley Urban District, and certifying factory surgeon, and was also on the staff of the Ripley Cottage Hospital.

DR. HAROLD EDWARD OWEN, who held a commission as captain in the New Zealand Medical Corps, died in the Military Hospital at Trentham, New Zealand, on November 18th. He was the second son of the late Thomas Edward Owen, surgeon, of Plymouth, formerly of Totnes, was educated at the London Hospital, and after taking the L.R.C.P.Lond. in 1888, went to New Zealand, where he was in practice at Raetihi, Upper Wanganui, and was honorary surgeon to the Taihape Hospital.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following dates have been appointed for the conferring of medical and other degrees:

Friday, December 17th, at 10 a.m.; Thursday, January 20th, 1921, at 10 a.m.; Saturday, February 12th, at 2.30 p.m.; Thursday, March 3rd at 10 a.m.; Saturday, March 19th at 10 a.m.

The Sidney Ball lecture, 1921, will be delivered by M. Émile Vandervelde, Minister of Justice of Belgium.

The final edition of the University Roll of Service will be issued during the present month.

UNIVERSITY OF CAMBRIDGE.

AT a congregation, held on December 4th, the following medical degrees were conferred:

M.D.—G. D. Read.
M.B., B.CH. M. K. Robertson.
M.B.—J. H. Burn, F. R. G. Heif.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on November 17th. A letter was read from the President of the Board of Education announcing that, subject to conditions indicated, the Government were making arrangements to conclude the purchase of the site in Bloomsbury for the headquarters of the University.

The following were recognized as teachers of the University in the subjects and at the institutions indicated:

Westminster Hospital Medical School (Bacteriology): Dr. J. A. Braxton Hicks. *St. George's Hospital Medical School (Pathology)*: Mr. Robert Donaldson. *London Hospital Medical School (Forensic Medicine)*: Mr. George Jones. *Middlesex Hospital Medical School (Medicine)*: Dr. George E. Beaumont. *London School of Medicine for Women (Dermatology)*: Mr. Haldin Davis. *University College Hospital Medical School (Surgery)*: Mr. C. C. Choyce.

Mr. C. S. Gibson, O.B.E., M.A., was appointed to the University chair of chemistry tenable at Guy's Hospital Medical School.

The title of Professor of Medicine of the University was conferred upon Dr. T. R. Elliott, C.B.E., D.S.O., F.R.S., of University College Hospital Medical School.

Dr. Herbert Tilley and Sir William Milligan have been appointed internal and external examiners respectively for the M.S. Examination, Branch IV, Oto-rhino-laryngology. Dr. Newton Pitt, O.B.E., has been appointed a member of the council of St. Thomas's Hospital Medical School. Sir Charles Ballance, K.C.M.G., C.B., and Sir William Collins, K.C.V.O., have resigned their membership of the Senate and External Council respectively.

Essays or dissertations on hyperthyroidism and its surgical treatment for the Rogers prize, value £100, should be received by the Vice-Chancellor by April 30th, 1921.

UNIVERSITY OF EDINBURGH.

THE undermentioned candidates have passed the clinical examination for the degree of M.D.:

S. Arnott, W. M. Biden, D. A. Cadman, H. P. Caithness, T. L. Clark, F. A. E. Crew, L. S. P. Davidson, A. V. Dill, F. Dillon, J. D. Don, H. B. Dykes, J. W. Gray, G. H. Gunn, J. B. Kirk, M. Lipschitz, D. A. Miller, H. J. Parish, J. M. D. Scott, E. T. A. Stedeford, C. W. Stump, R. M. Wishart, G. G. Wray, H. D. Wright.

The Services.

LIEUT.-COLONEL H. R. KENWOOD, C.M.G., will deliver his presidential address to the Navy, Army, and R.A.F. Hygiene Group of the Society of Medical Officers of Health on Friday, December 17th, at 5 p.m., at the house of the Society, No. 1, Upper Montague Street, W.C.1. All past and present officers interested in naval and military hygiene are invited to attend.

THE name of Surgeon Commander E. Cameron, R.N., has been brought to the notice of the Secretary of State for War for valuable and distinguished services rendered in connexion with military operations in Somaliland.

DEATHS IN THE SERVICES.

LIEUT.-COLONEL WILLIAM HENRY ODLUM, Indian Medical Service, of Cappancur, Tullamore, died in the Meath Hospital, Dublin, of injuries received in a motor accident on November 25th, aged 47. He was educated in Dublin, at the Meath Hospital, where he was resident medical pupil, and took the L.R.C.P.and S.I. in 1898. He served in the South African war as a civil surgeon from April 18th to November 14th, 1900, and on the latter date took a commission as lieutenant in the R.A.M.C. On December 18th, 1907, as a captain, he exchanged into the I.M.S. At the time of his death he had just been promoted to lieutenant-colonel on attaining twenty years' service. He served in the South African war from May, 1900, to the end of the war in May, 1902, in the operations in the Orange River Colony, was present in the actions at Biddulphsberg, Bethlehem, Wittebergen, Witpoort, Ladybrand, and Caledon River, was mentioned in dispatches in the *London Gazette* of November 15th, 1901, and received the Queen's medal with three clasps and the King's medal with two clasps. He had also served in the recent war, and was mentioned in dispatches in the *London Gazette* of June 22nd, 1915. Before he came home on furlough he was in command of the Indian station hospital at Jhansi.

Medical News.

SIR AUCKLAND GEDDES attended the first meeting of the fifteenth International Congress against Alcoholism, recently held in Washington, and the British Government was represented at the remaining meetings by a member of the staff of the Embassy at Washington.

DR. J. W. BALLANTYNE of Edinburgh has been elected an honorary member of the American Child Hygiene Association. It was founded in 1909 as the American Association for the Study and Prevention of Infantile Mortality, but two years ago changed its name to conform to its enlarged activities. The Association holds an annual meeting and publishes transactions; it also issues a magazine entitled *Mother and Child*.

A MEETING of the Harveian Society of London will be held at No. 11, Chandos Street, Cavendish Square, on December 16th at 8.30 p.m., when a discussion on the future of the Poor Law Infirmary will be introduced by Dr. C. M. Wilson and Dr. Charles Buttar, who will be followed by Mr. E. W. Morris (House Governor, London Hospital) and others.

DR. H. [illegible], of Leicester, has been awarded a Government grant for successful vaccination in his district, and Dr. W. Millar, of Welton, East Yorks, has been awarded a grant for the [illegible] time.

A MEETING of the Society of Superintendents of Tuberculosis Institutions will be held at 122, Harley Street, at 4 p.m., on Monday, December 13th, when reports will be submitted by committees on standards of medical and nursing staffs and on the co-ordination of tuberculosis statistics. A discussion will also take place on a scheme of sickness insurance for ex-patients.

LIEUT.-COLONEL C. I. ELLIS, C.M.G., M.D., R.A.M.C.(T.), of Torquay, has been made a Knight of Grace of the Order of St. John of Jerusalem for services rendered to the Order.

AT the November session of the Central Midwives Board for England and Wales, with Sir Francis Champneys in the chair, eleven midwives were removed from the roll. Dr. Fairbairn and the secretary were nominated as representatives to give evidence as to the training of midwives in respect of the prevention of ophthalmia neonatorum before the Committee on the Causes and Prevention of Blindness, and Dr. Pilliet was invited to attend. Dr. Cuthbert Lockyer having tendered his resignation as one of the Board's examiners for the London centre, the vacancy was filled by the appointment of Dr. Malcolm Donaldson. It was decided to approve the principle of payment by the Board, at its discretion, as from January, 1921, of the expenses of officials or other persons attending as witnesses on behalf of the prosecution at the hearing of penal cases.

THE House of Lords, on December 3rd, decided a case in which the Fife Coal Company appealed against a judgement in the Court of Sessions. A miner had met with an accident and was paid compensation, at first for total and afterwards for partial incapacity. The company sought to terminate the payment of compensation on the ground that the miner's continued incapacity was due to unreasonable conduct, consisting in a refusal to undergo a surgical operation; his refusal was in accordance with the advice of his own doctor. The House of Lords dismissed the appeal, the Lord Chancellor observing that there might be a nice balance in the mind of a sagacious man which advice he would accept when one set of doctors recommended one course and his own doctor another.

THE December meeting of the Newcastle-upon-Tyne and Northern Counties Medical Society was held on December 3rd in Newcastle-upon-Tyne. In the afternoon an address was delivered in the Connaught Hall by Sir William Macewen, Regius Professor of Surgery in the University of Glasgow. His subject was "Remarks on Carcinoma of the Extremities of the Alimentary Tract, Tongue, and Rectum." The address, which was illustrated by lantern slides, was most interesting and original, and was listened to by a large and attentive audience. In the evening the annual dinner of the Society was held in the Barras Bridge Assembly Rooms. Dr. J. W. Smith presided, and the guests were Professor Sir William Macewen and Professor David Drummond, the President-elect of the British Medical Association for 1921. Considerably over 100 medical men were present, and a most enjoyable evening was spent.

THE Probate Court has declared in favour of a will made by the late Dr. Charles A. Mercier, about the form of which there was some doubt which the Public Trustee considered should be set at rest. One of the testamentary dispositions concerned the establishment of a professional chair of rational logic and scientific method. The testator bequeathed all his property to the Public Trustee to carry out this and other trusts. To the Royal College of Physicians of London he left the two silver-gilt Swiney cups which had been awarded to him, and also a set of great fire-irons of fifteenth century Italian workmanship.

THE London County Council has decided to promote legislation to enable it to pay coroners a fixed salary. This proposal forms part of a larger scheme for amending the law relating to inquests, but the present time is not judged favourable for submitting to Parliament the complete scheme. A fixed salary for coroners would involve the transfer to the Council of the obligation to pay certain expenses of office which are now met indirectly through the coroner's gross salary, and at its meeting last month the Council resolved to include in its application for further powers the power to appoint and pay deputy coroners and to exercise reasonable control over the employment by a coroner of a deputy.

IN an action for damages against a chemist, heard at the recent Leeds Assizes, the plaintiff alleged that he had suffered serious injury owing to a lotion prescribed for ear disease being inaccurately dispensed. The amount of carbolic acid which should have been present was 6.2 per cent.; the amount found on analysis was 10.2 per cent. It was suggested that the carbolic acid had accumulated at the bottom of the bottle. The jury awarded the plaintiff £500 damages.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"R. S." has taken over a practice and has been assessed to income tax on the basis of his predecessor's profits for the past three years. He asks: Is this correct?

*** Yes; the fact that the previous earnings of our correspondent have been less does not affect the assessment for the period subsequent to purchase of the practice, as the average applies strictly to the practice and not to the individual. If, however, his earnings for the current year fall short of the sum at which he has been assessed, by reason of the change of practitioners or of some other specific fact, he will be entitled to a reduction of the assessment accordingly.

J. H.," being invalided out of the R.A.M.C., returned to civil life, and went to reside in another town on the request of the Scottish War Emergency Committee to set free the local M.O.H. for war service. He has since returned to take up his own appointment, and the assessor declines to admit the expense of removal and return as allowable for income tax.

*** In point of law the assessor's ruling seems correct, though its application in these particular circumstances seems distinctly hard. We have been told that during the war special allowances were given to munition workers whom circumstances compelled to live away from their homes, and the expenses in this case seem closely analogous. Possibly our correspondent might be able to represent his case in this light to the local inspector or the Board of Inland Revenue, and induce them to grant him some relief from the legal hardship. With regard to subscriptions to medical associations and the cost of new books, we are of opinion that they are admissible to the extent necessary to maintain that up-to-date knowledge which is essential to the proper performance of his duties. The allowance for rent in the case of a general practitioner usually varies from one-half to two-thirds; in the case of an income derived from an appointment the proportion of the house used for the purposes of the work is usually much less; there is no fixed rule, but one-eighth is the fraction applicable to a clergyman using a study for his work, and the analogy is sometimes applied to other persons.

W. R. A. C." inquires as to the expenses to be claimed from a separate assessment on his salary as a medical officer of health.

*** It is almost impossible to arrive at an accurate figure for the amount of the expenses incurred in connexion with the appointment regarded separately. We suggest that the best means of dealing with the question is to calculate the expenses for the practice as a whole, and then to make some reasonable division of the total sum between the appointment and the work as a general practitioner. The more usual way of dealing with the question is to make one return under Schedule D for the whole of the earnings; in the normal case this seems preferable.

"J. A. S." inquires as to the method of claiming the allowance in respect of bank interest paid in full from a taxed income.

*** The local inspector appears to have misunderstood the claim made. We believe that there are special forms of claim obtainable, one page of which is completed by the bank and one by the taxpayer. We suggest that "J. A. S." might write once more to the local inspector pointing out that his claim is in respect of "bank interest paid by" him, and asking for a copy of the appropriate form.

LETTERS, NOTES, ETC.

THE LOUSE AS DISEASE CARRIER.

DR. EDMOND SERGENT, Director of the Pasteur Institute, Algiers, has written to us on the question of priority in the suggestion that the louse plays a part in the dissemination of human diseases. It seems best to give Dr. Sergent's statements in English.

He was moved to write to us by a reference to the matter in a letter published on March 13th last from Major F. P. Mackie, I.M.S. Major Mackie there said that the credit of priority should be given to him, owing to the statements contained in a paper by him published in the BRITISH MEDICAL JOURNAL of December 14th, 1907. Dr. Sergent points out that Major Mackie was led to conclude that lice played a part in the propagation of relapsing fever from his epidemiological observations in India. Dr. Sergent says that, independently of Mackie, he and H. Foley at the same period (1907) were studying the same question in the Sud-Oranais, Algeria. The conditions were very favourable to the inquiry, and they were able to demonstrate that the louse alone could be concerned in the propagation of an epidemic of relapsing fever which they had observed during the winter. When Mackie's researches became known to them in 1908 Sergent and Foley at once published their results (*Bull. Soc. Path. Exot.*, March 4th, 1908). They continued their researches and in the same year produced the crucial proof that North African relapsing fever, due as they had shown to *Sp. berbera*, was exclusively transmitted by the louse. This proof was that the spirochaetosis was conveyed to two healthy persons by lice placed on their clothing under conditions fulfilling the most rigorous requirements as to complete isolation in an environment which had been disinfected and disinfested. (The facts were published in a complete memoir on recurrent fever in Algeria in May, 1910. *Ann. Inst. Pasteur.*)

Then in 1912 C. Nicolle, L. Blaizot, and E. Conseil (*C.R. Acad. des Sci.*, June 10th, 1912, August 26th, 1912; *Ann. Inst. Pasteur*, March 25th, 1913; *Arch. Inst. Pasteur*, Tunis, 1913) described in Tunis the development of the spirochaetes in the louse, their apparent disappearance after an infected meal, and their reappearance from the sixth to the eighth day in the form of very small elements which grew slowly. In 1908, in 1911, and then in 1914 Sergent and Foley showed that when in this invisible stage the spirochaetes in the body of the louse were particularly virulent (*Bull. Soc. Path. Exot.*, July 12th, 1911; *C.R. Acad. des Sci.*, July 6th, 1914); they demonstrated that the virus existed in the circulating blood of man and that it was virulent for monkeys in the afebrile interval between the two attacks of recurrent fever, that is, at a time when it is impossible to discover a spirochaete under the microscope. The virus therefore has an invisible virulent stage not only in the louse but in man (*C.R. Acad. des Sci.*, June 22nd, 1914). Dr. Sergent considers that the facts established with regard to the part played by lice in the transmission of human diseases may be thus summarized:

1. On the one hand, Mackie in India, in December, 1907, and on the other, Sergent and Foley in Algeria, in March, 1908, established the part played by the louse in the transmission of relapsing fever by epidemiological observation.
2. In November, 1908, Sergent and Foley proved by experiments the exclusive part played by the louse in the transmission of relapsing fever.
3. C. Nicolle and Conseil demonstrated experimentally in 1909 the part played by the louse in the transmission of typhus fever.
4. Anglo-American observations in 1918 established experimentally the part played by the louse in the transmission of trench fever.

POSTURE IN DEFAECATION.

DR. D. DE V. HUGO (Capetown) writes: Dr. Vickery's recommendation (BRITISH MEDICAL JOURNAL, August 21st, 1920) to follow Nature's posture in the act of defaecation is by no means a new observation. I met my old teacher, the late Sir John Chiene, when on his way home after the Boer war, and in reply to my remark that I hoped he was carrying back a good many valuable practical experiences to his classes, he told me the campaign had, among other things, taught him that the construction of the w.c. seat was wrong in principle, and he gave me many reasons. Later on I visited England, and I saw a model, constructed according to his design, exhibited at the British Medical Association meeting held at Exeter. The seat was low and sloped backwards, while two arm rests were provided at the sides. The user had to sit straight up, and I need not go into details to show how Nature's needs were met in every way by the enforced posture.

MENSTRUATION DURING SCHOOL LIFE.

DR. F. D. DANA (Bombay) writes: I have read Dr. Alice Clow's paper on menstruation during school life in the BRITISH MEDICAL JOURNAL of October 2nd, 1920, and Dr. Mary Andrews's letter in the next issue wherein she says: "Though a natural function, menstruation is a temporary drain on a girl's vital energy, and it calls for special care." I quite agree with her, and do not wonder at the folly of the athletic girl who went in for violent exercise during her early courses of menstruation now paying the penalty for these excesses. This reminds me of a very good principle we Indians have in India. As a rule, including us Parsis, there is a custom that no girl or woman should do any heavy work, even domestic work, for at least three days during her course, and is allowed to rest, by isolation in a separate room and bed. With us Parsis the good old orthodox way was to enjoin her not to touch anybody, not even furniture, clothes, etc., save her own utensils. She is given a separate glass bowl and tray for her meals and has to occupy a room downstairs specially kept for the purpose. This was enjoined as a strict religious behest up till now; and the principle was good, as it gave her good rest and kept her to herself in a way. Anything or anybody touching her was believed to be contaminated. Unfortunately this is being given up now, and a Parsi girl of the present day neither likes to occupy a separate room nor bed during her course and goes about as she likes, too often, as in the case cited by Dr. Mary Andrews, taking some sort of exercise or other and thus undermining her constitution, for which she is more often sorry when she comes to bear children, or later in life when she suffers from menstrual irregularities. I am not an advocate of total confinement or the isolation system, yet I consider that during her course there is a large amount of katabolic changes occurring in the female system—that a little more rest, a little more discretion, is all that is needed, and not violent or active exercise.

THREE GENERATIONS OF HOUSE-SURGEONS.

DR. EDWARD JEPSON tells us that three generations of Jepsons have been house-surgeons at St. Bartholomew's Hospital. He writes:

Edward Cane Jepson, F.R.C.S., L.S.A., was house-surgeon about the year 1835 in the time of Lawrence, Stanley, and Earle; before chloroform came into use, when tartar emetic was given, and bleeding was freely carried out. He used to recount how the "Charlies" proclaimed the hour in the night and the state of the weather. For about fifty years he practised in Durham City and retired to Scarborough, where he died in [illegible].

Edward Jepson, M.D., M.R.C.S., L.S.A., son of the above, was [illegible] to Callender about the year 1870 and house-[illegible] to Dr. [illegible] the year following. He had much to do with the first introduction of a Flower Mission in the hospital, through the kindness of Lady Stanley, wife of Dean Stanley of Westminster. He practised in Durham City for [illegible] years and is now living at Ruislip.

Baly William Jepson, M.R.C.S., L.R.C.P., late Captain R.A.M.C., nephew of Edward Jepson, was severely wounded in the war. He is now junior house-surgeon to Sir Gordon Watson. He is named Baly after Dr. Baly, assistant physician to the hospital and Physician to Queen Victoria many years ago, and a great friend of Edward Cane Jepson.

UNSUCCESSFUL APPLICATIONS FOR PUBLIC POSTS.

A CORRESPONDENT writes: It seems to be not uncommon for public authorities, who have advertised public medical appointments, to fail to send a notification to unsuccessful candidates that the vacancy has been filled. Such an omission, besides being discourteous, is apt to inconvenience applicants, who, it should be remembered, have been put to considerable effort and expense in the procuring, printing, and posting of testimonials, etc. No doubt the omission may be due to the negligence of clerical officials rather than of medical officers of health; but the latter could use their influence to prevent such breaches of good manners.

A BEE AND A WASP.

DR. [illegible] (Federated Malay States) sends the following note:

[illegible] saying [illegible]. He had been [illegible] over a young [illegible] to jump a [illegible] wood [illegible] developed [illegible] on the side of his face [illegible] he gave [illegible]. He felt a loud buzzing and very [illegible] in his ear. On arrival at the [illegible] with a [illegible], but without [illegible]. When I examined with the speculum I could see a [illegible] like a small plug of wax. After syringing [illegible] was delivered. A few [illegible] and the young man returned to [illegible].

I received an urgent message to attend the manager of a [illegible]. I found him very ill in bed. He had [illegible] field, he wandered into the [illegible] under the right eye. He proceeded [illegible] and vomited [illegible] the feeling that [illegible]. When I saw him he was prostrate, the right eye was bunged up, the face much swollen, his body covered with a red scarlatina-like rash, the pulse was 140 and feeble, the temperature 102° F., and altogether he was very miserable. Simple stimulant treatment with warm alkaline baths revived him. He told me that on a former occasion two stings had almost killed him, and he believes that in his case three or more would involve a fatal issue. The local wasp is larger than the home variety, and the natives are quite aware of its dangerous sting, and take every opportunity of burning the nests.

ANTI-VIVISECTION IN AMERICA.

THE "referendum" in California, which included proposals on behalf of anti-vivisection and anti-vaccination, was decided, on November 2nd, by the popular vote. The anti-vivisection bill was defeated by a large majority; the anti-vaccination bill was defeated by a majority not so large. The upholders of the anti-vivisection bill seem to have worked hard for it; we hear of "waggons toted about the streets, with stuffed dogs having their jaws pried open with clamps." All's well that ends well; but the work of popular education must be continued. There was a time when our profession stood aside from the work, but both in this country and in America we are beginning to see that our duty to the State includes the duty of teaching people to understand the character and the purposes of medical and surgical methods, and the principles on which these methods were founded and are maintained.

THE ANGLO-AMERICAN UNIVERSITY LIBRARY FOR CENTRAL EUROPE.

IN connexion with the relief work in Central Europe, attention has been drawn to the privations suffered by university teachers. Owing to the unfavourable rate of exchange and the high cost of living the prices of recent English and American books and papers on philosophical, scientific, and literary subjects have made it impossible for the universities of Central Europe to keep in touch with English and American thought. A scheme has, therefore, been formed to establish under British-American auspices an Anglo-American university library for Central Europe; the president is Viscount Bryce, O.M. The committee is assured that Central Europe desires and welcomes its help, and reports that the necessary organization is ready on the one side to receive, catalogue, and transmit publications, and on the other to distribute them. Several consignments of literature have already been dispatched. Books and periodicals in English published since 1914, will be accepted as loans or gifts, and may be sent to the honorary secretary, Mr. B. M. Headicar, London School of Economics, Clare Market, W.C.2.

NUMBER PLATES ON MOTOR VEHICLES.

THE Automobile Association directs the attention of motorists to the need for the exercise of greater care regarding their number plates. A large number of prosecutions are taking place every day, and the technical offences committed include incorrect dimensions of letters and figures and insufficient spaces between them; inadequacy of the margin between the registration mark and the top, bottom, or ends of the plate; allowing the letters or figures to become faint, obscured by mud and dust, or in the case of motor cycles by the clothing of persons riding on the carrier. Any motorist who is in doubt as to the accuracy of his number plate can verify his position by communicating with the Automobile Association, Fanum House, Whitcomb Street, London, W.C.2.

ERRATUM.

THERE was an obvious slip in the obituary notice of Mr. Willard in last week's JOURNAL (p. 874). The word "formerly," in the ninth line, should be "for nearly."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 70, 73, 74, 75, 76, and 77 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 71, 72, and 73.

THE appointment of certifying factory surgeon at Barnstaple (Devon) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

ON AUTO-HAEMAGGLUTINATION:

A CONTRIBUTION TO THE PHYSIOLOGY AND PATHOLOGY OF THE BLOOD.

BY

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Part I.—EXPERIMENTAL.

The phenomena of haemagglutination employed by Landsteiner, Mosso, Hirschfeld, and others as a means of differentiating human individuals into different "blood groups" have hitherto been thought to possess only a biological or evolutionary significance.

It is the object of this communication to show that the facts concerning haemagglutination so far studied really form links in a chain of events in the life-history of the red corpuscle, and that they depend on certain biochemical and physical changes which take place in these cells in health and disease. Evidence will also be brought forward to show that the blood serum and the red cells contain haemagglutinins and haemagglutinogens respectively, which, although they resemble in some respects the specific haemagglutinins and haemagglutinogens already known, differ from these in being non specific in character.

The Capacity of all Red Cells to form Haemagglutinogens.

Human red blood corpuscles and those of the different species of animals so far examined all seem capable of elaborating haemagglutinogen under certain conditions.

An examination of the red blood cells of more than fifty sheep shows that no auto-agglutination (that is, agglutination of the fresh red cells by the native serum) occurs in the blood of healthy animals examined soon after death. If, however, defibrinated sheep's blood be centrifuged or allowed to sediment, then after standing four to seven days at room temperature the red cells become agglutinable by their own serum, although they do not show mass agglutination while standing in the tube. This auto-agglutinability can be shown in the usual way by placing a drop of the clear supernatant serum on a slide and mixing with it a drop of the sedimented red cells. Under ordinary conditions well marked agglutination of the red cells takes place in a few minutes or within half an hour. Agglutination also takes place in red cells which have been previously washed in normal saline. Certain conditions favour this development of auto-agglutinability. Thus, if different samples of washed red cells from recently shed defibrinated sheep's blood be added to (1) normal saline containing 0.25 per cent. of gelatine, (2) normal saline, and (3) native sheep's serum which has been filtered through a porcelain filter candle, it will be found that the red cells in the gelatine solution develop auto-agglutinability after standing four or five days, and those in the saline solution in two or three days, whereas the cells which have stood in the native filtered serum develop well marked agglutinability with native serum in forty eight hours, while red cells which have stood in unfiltered serum only become agglutinable after six or seven days. The cells must be tested in each case by native serum previously pipetted off the defibrinated blood shortly after bleeding. In this way error due to the use of samples of serum of different agglutinin content is avoided. Cold delays the change. Thus defibrinated and sedimented sheep's blood, if kept in an ice chest, only shows commencing auto-agglutinability of the red cells after an interval of eight or nine days, though the change rapidly develops as soon as the blood is restored to room temperature.

These observations show, first, that washed red cells can develop agglutinability when standing in normal saline in the absence of blood serum; second, that the elaboration of agglutinogen is hastened by standing in filtered serum. Now, serum which has passed through a porcelain earth filter is deprived of all haemagglutinins. This fact will be considered later when discussing the specificity of the auto-agglutination reaction. The absence of agglutinins in the filtered serum culture medium in which the red cells stand has probably some bearing on the rapid development of agglutinability by those cells.

The Nature of the Auto-agglutination Reaction.

The question arises whether the agglutinability which occurs—slowly in washed red cells which have stood in native serum and more rapidly in cells which have stood in filtered serum—is a specific character; that is to say, whether the reaction which it produces resembles that which occurs when the freshly drawn red cells of one human individual are mixed with the serum of another individual belonging to a different "blood group."

Experiment shows that the increased agglutinability which sheep's red cells develop after standing some days in native serum is non-specific in character. Such red cells are not only agglutinated by native serum, they also agglutinate with the serum of other species of animals with which in the freshly drawn condition they give no reaction, thus: As the result of testing the mutual reaction of the blood of fifty individual sheep of different breeds with the blood of fifty individual guinea-pigs, it was found that, while the blood serum of the full-grown healthy sheep always agglutinates the red cells of the adult guinea-pig, the blood serum of the healthy adult guinea pig never agglutinates the fresh red cells of the adult healthy sheep. We find, however, that sheep's "old" red cells—that is, red cells which have stood for some days in native serum or in normal saline—are agglutinated by a guinea-pig's blood serum. They are also agglutinated by the serum of other individual sheep which in the freshly drawn state have no agglutinative effect upon them. They also agglutinate with the blood serum of certain human individuals with which when freshly drawn they are inactive. This means that the agglutinogen formed* by "old" sheep's red cells differs from the agglutinogen formed by the same red cells while fresh or immediately after withdrawal, inasmuch as the latter only responds to certain agglutinins while the former responds to all.

There is, however, a close association between the non-specific and the specific type of reaction, for the capacity of the red cells to undergo *specific* agglutination is also increased by age. Thus cells which in the fresh state give no reaction, or only a partial reaction, with certain human and animal blood serums, when allowed to stand in native serum for some days give a reaction, or a more complete reaction, in proportion to their agglutinophil affinity for those particular blood serums in the fresh condition. This may be due to the fact that a non-specific auto-agglutinability has been superadded to the specific agglutinability previously possessed by these cells.

This increase in agglutinability in old cells has a practical application. It emphasizes the desirability for using freshly drawn red cells in testing for blood groups, and it has a bearing on the length of time for which red cells can be stored with safety for transfusion purposes.

The *serum saturation method* provides another way in which we can demonstrate the fact that the non-specific differs from the specific reaction.

If washed red cells which have stood for some days in native serum, and have thereby formed agglutinogen, are mixed with a small volume of native serum, saturation of the non-specific agglutinin occurs which renders the serum incapable of agglutinating a second dose of the same red cells. Serum so saturated, however, retains unimpaired its power of agglutinating fresh red cells from other individuals or from other species of animals with which it has specific affinities. This can be shown either by saturating the serum *en masse* by the appropriate red cells in a tube, or, more strikingly, by using a few drops of the serum on a slide. If a suspension of old washed sheep's red cells is mixed with a drop of this native serum the non-specific auto-agglutinin in the serum is saturated. After complete agglutination has taken place a drop of the clear saturated serum is pipetted off and placed on another part of the slide; if this no longer agglutinates a second dose of the same red cells saturation is complete. A second drop of the same saturated serum is now mixed with fresh human red cells or those of an animal known to be specifically agglutinated by the same serum Prompt agglutination occurs; the specific agglutinin present in the serum has not been saturated by the non-specific agglutinogen present in the old native sheep's red cells used to saturate the serum.

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* In thus speaking of haemagglutination as an interaction between some substance *formed by* the red cells and a constituent in the serum, it may be that we are prejudging the real nature of the reaction. It is quite possible, as Dr Dale has suggested to me, that the acquirement of agglutinability by the red cells may be really due to the *loss of* some constituent by those cells. The red cells by losing some protective substance may more readily absorb and become more easily acted on by the haemagglutinin present in the blood serum.

With regard to the reverse condition—namely, the neutralization of non-specific agglutinin by saturation with specific agglutinogen—the results obtained are not quite so harmonious.

If sheep's blood serum is saturated with red cells of certain human individuals known to be agglutinable by sheep's serum, serum so treated, although no longer capable of agglutinating a second dose of the same human red cells, retains its capacity to agglutinate washed old sheep's red cells.

On the other hand, if a human serum known to have developed auto-agglutinative capacity as the result of disease be saturated with specific agglutinogen from the washed red cells from another human individual or by guinea-pig's red cells the auto-agglutinative power of the saturated serum seems to be impaired or destroyed.

In human blood apparently the neutralization of the specific agglutinins present in the serum also brings about the neutralization of the weaker and more evanescent auto-agglutinin. It would seem, therefore, that there is some difference in potency or neutralizability between human and sheep's auto-agglutinin, and further investigation is necessary to clear up this point. It seems to be true, however, speaking generally, that while saturation of the stronger specific agglutinins by the specific agglutinogens saturates the weaker non-specific agglutinin, saturation on the other hand of the weaker non-specific agglutinin by non-specific agglutinogen does not always neutralize the specific agglutinins normally present in the serum.

These observations seem to prove that the auto-agglutinogen formed by red cells which have stood in native serum is not identical with the specific agglutinogens which the same red cells contain in the freshly drawn state, and the same thing apparently applies also to the relationship between the non-specific auto-agglutinin and the specific hetero-agglutinins present in the serum.

Haemagglutinogens (like haemagglutinins) apparently form a graded series. Starting with the basal non-specific agglutinogen A, which combines with the non-specific agglutinin A present in every serum, human and animal so far tested, we pass to the specific agglutinogens B, C, D, etc., each different in composition and each capable of combining with its corresponding agglutinin.

The non-specific auto-agglutinogen A, unlike the specific agglutinogens, is not found in the freshly drawn healthy red cells. This is shown by the fact that both intact and fragmented freshly drawn red cells are not agglutinated by their own native serum.

The bruising of the stroma and the rupture of the enveloping membrane of the fresh cells does not cause the liberation of any preformed agglutinogen. The lapse of time and certain degenerative changes in the corpuscles seem to be necessary before this agglutinogen is formed by the cell, and before it can permeate the outer membrane and appear on the surface. If red cells, however, which have stood in native serum be ruptured by grinding with a pestle and mortar, then the contained agglutinogen is liberated more quickly than by the intact cells and the auto-agglutinative reaction is considerably hastened. On the other hand, non-specific auto-agglutinin does exist ready formed in the fresh serums. All old red cells which have become agglutinable by standing and fresh red cells which have developed auto-agglutinability as the result of disease are agglutinated by the non-specific agglutinin present in all varieties of freshly drawn serum so far examined. This grading of specific haemagglutinability and the fact that specific agglutinogens are connected with non-specific agglutinogens is important in relation to recently established knowledge concerning the relation of specific to non-specific immunity reactions in general. It would seem that while the specific agglutinogens can permeate the stroma envelope of the red cell immediately after the blood is shed, the non-specific agglutinogens now described only reach the surface of the corpuscle after it has stood for some days in blood serum or other medium and after its envelope has become permeable to them. The specific agglutinogens of biological interest seem to be capable of rapid mobilization, while the non-specific agglutinogens which are produced during the reaction of the organism to disease are mobilized more slowly. Whether any agglutinogens or agglutinins are present in the blood in the circulation during life and before the blood plasma has become changed into blood serum by coagulation is a question of fundamental importance which will be discussed later in Part II.

On the way in which Agglutinogens are formed by the Red Cells.

Experiments have been carried out to ascertain whether agglutinogen is formed on the surface only, or whether it is present also in the interior of the red cells. If sheep's red cells are washed in saline, then ground with a pestle and mortar, and the fragmented cells again washed several times, the haemoglobin constituent is removed, and on centrifuging the broken cells form a yellowish-white sticky sediment. A suspension in saline of these washed cell fragments agglutinates when mixed with native serum. This shows that the agglutinogen constituent is not removed with the haemoglobin by washing. It also shows that the cell fragments themselves contain agglutinogen, and that this substance is not merely held in solution within the corpuscle, like water in a bag, and liberated when the enveloping membrane becomes permeable by it, or when it is ruptured by injury.

Attempts have also been made to obtain haemagglutinogen in the free state. Saline solution previously used for washing agglutinable red cells was tested for the presence of agglutinogen in two ways: (*a*) Fresh red cells not yet agglutinable were suspended in the fluid, and these were tested later with an agglutinating serum. (*b*) The saline fluid supposed to contain agglutinogen was added in equal volume to an agglutinating serum in which any reduction of agglutinative capacity would indicate some neutralization of free agglutinin in the serum so treated.

A considerable number of trials were made by both methods with various varieties of red cells, human and animal. No constant or marked evidence of the presence in such saline solution of free agglutinogen capable of rendering red cells agglutinable or of saturating agglutinin in serum has been obtained. In two or three cases some neutralization of the agglutinin in the serum occurred; the inhibitory results, however, were not constant and may have been due to the presence of haemolysins which destroyed the red cells before the agglutination reaction could take place.

Further evidence that agglutinogen can only exist in combination with the stroma of the red cell is found in the fact that agglutinable red cells can be washed six or eight times in normal saline without losing their surface agglutinogen. Moreover, as we have seen, fragmentation of the corpuscles followed by washing fails to remove it.

While, however, agglutinogen cannot be obtained in the free state, the linkage between agglutinogen and agglutinin can be separated by repeated washing. Red cells which have been auto-agglutinated by native serum can be separated by washing and enabled to reagglutinate with a fresh dose of the same serum. This also applies, though to a less extent, to the specific reaction.

Certain Conditions which affect Agglutinogen Formation.

We have already found that filtered serum forms a better culture medium for the elaboration of agglutinogen than normal serum.

If this filtered serum is slightly diluted with normal saline fluid still better results are obtained. The addition of gelatine 0.25 per cent. to the saline solution delays agglutinogen formation. In defibrinated sheep's blood the red cells from the lower portion of the tube show more agglutinability when mixed with native serum than cells taken from the upper layer. This may depend on the fact that the agglutinogen in the cells of the upper layer is partly neutralized by the agglutinin of the serum with which they come in freer contact, or it may be due to a readier access to the oxygen of the air in this situation.

The Effect of Oxygenation on Agglutinogen Formation.

Two samples of defibrinated sheep's blood were taken. Sample (*a*) was sealed in a tube; sample (*b*) was placed in an open tube and repeatedly oxygenated either by agitation or by bubbling air through the blood. After several days both samples were sedimented and examined for auto-agglutinability. No great difference was detected in the two samples. In general the red cells from the oxygenated blood became agglutinable a day or two before those in the sealed tube.

The Effect of Heat.

The non-specific and the specific agglutinins resemble each other in being thermostable. If sheep's serum capable of auto-agglutinating native washed red cells and of specifically agglutinating human red cells be subjected to a temperature of 56° C. for half an hour it retains its capacity to agglutinate both kinds of red cells.

The Removal of Agglutinins from Blood Serum by Filtration through Porcelain.

We have already seen that while agglutinogens are only found in combination with the red cells, agglutinins, on the other hand, exist in the serum in the free state. If freshly drawn sheep's serum be filtered through a porcelain earth filter candle under diminished atmospheric pressure, a pale clear fluid of low specific gravity is obtained free from specific and non-specific agglutinins. Such filtered serum has no agglutinative action on fresh red cells which a control sample rapidly agglutinates, or on old native red cells in which the control sample produces auto-agglutination. It is a point of interest that while filter candles of a certain fineness of porosity block the passage of all haemagglutinins, those of a slightly more porous character let some through. The size of the agglutinin aggregate would seem to correspond, therefore, to the diameter of the pores of a moderately fine filter candle. An attempt was made by using candles of different degrees of porosity to ascertain whether any difference in filtrability—that is, in the size of the aggregrate—occurred between the non-specific and the specific form. As far as can be ascertained, however, both seem to pass with equal readiness through candles of the same fineness of pore.

It may be that the excellence of filtered native serum as a medium for the formation of agglutinogen by red cells depends on the fact that filtered serum contains no haemagglutinin, consequently the agglutinogen is not neutralized as soon as formed.

Conclusion.

The subject of auto-haemagglutination in disease will be considered in Part II. It is, however, desirable to sum up the conclusion established in regard to this (*in vitro*) part of the inquiry.

In the first place the phenomena of haemagglutination have been shown to possess a physiological as well as a biological significance. All red blood corpuscles are capable of forming haemagglutinogen under certain conditions.

Agglutinogen, like agglutinin, exists in the non-specific form, agglutinogen A, and in a graded series of specific forms, agglutinogen B, C, D, etc. The specific and the non-specific agglutinogens (like the corresponding agglutinins) although allied, are not identical in composition or character.

Agglutinogen has so far only been found in combination with or attached to the surface or stroma of the red cells. It apparently does not exist in the serum in the free or uncombined state. The specific and non-specific agglutinins, on the other hand, are present in the serum in the free state, and both kinds are removed by filtering the serum through a porcelain filter.

THE Ministry of Pensions announces that officers and nurses who have completed a course of sanatorium treatment and are certified as likely to benefit by a further course of treatment combined with training, will, if they decide to undergo such course, be granted retired pay at the rate appropriate to 100 per cent. disablement during such curative training and for a period of six months after its termination. Further, the retired pay will be continued at a rate not less than that for 50 per cent. disablement for two years thereafter. These special extensions will be conditional on the officers presenting themselves for examination by the local tuberculosis officer from time to time as directed, and complying with any instructions considered necessary for their treatment.

SOME POINTS IN MIDWIFERY PRACTICE.

A PAPER READ BEFORE THE CAMBRIDGE MEDICAL SOCIETY.

BY

W. J. YOUNG, L.R.C.P., M.R.C.S.,

PRESIDENT.

THE doctor probably more than any man, and perhaps the accoucheur most of all, desires that the generation which succeeds him shall emulate his virtues, improve on his methods and avoid his errors, a sentiment expressed in the well-worn tag of the Sophoclean Ajax,

ὦ παῖ, γένοιο πατρὸς εὐγενέστερος.

When we have become old enough to look back, when we have grown candid enough to admit, even to ourselves, our defects and our failures, we can still desire perfection; hence it seemed to me, since in this important branch of our profession so much can be done for the good of the patient, that a profitable discussion might well result from a paper on some points in midwifery practice.

During Pregnancy.

Taking the first of the three great natural divisions of our subject, we will look at a few matters in relation to pregnancy concerning which we are often called on to give advice—what to do and to avoid, and so forth. My custom is to tell the woman to lead a normal active life in all respects, avoiding three things—shock, strain, and fatigue. I advise her also to turn a deaf ear to the counsels of old women of both sexes, and of certain books whose chief characteristics seem to be sticky sentiment and sloppy moralizing.

In the absence of signs or symptoms, it is probably needless to trouble the prospective mother till the expiry of seven months, when external pelvimetry should be done and abdominal examination made to determine if there is likely to be plenty of room for the head. If there seems any ground for fear, the examination should be repeated every week and labour induced if and when indicated. By this means we can avoid what may be fairly regarded as a discredit to our art—the bad forceps case with head at or above the brim. I fear that perhaps too many of us can look back on such cases with mingled feelings. The woman should also be instructed to report any departure from her normal health, and systematic repeated examinations of the urine should be made if there is previous history of renal or toxaemic trouble, or any sign that all is not well.

In preparation for the confinement, I think that the routine administration of quinine, gr. 1 twice a day for a month before the event, with or without digitalis, acts as a good uterine tonic. I shall refer to this again.

I have always opposed, and I hope always to oppose, the practice of midwifery by midwives, sanctioned though it is by the hoariest antiquity, supported by widespread prejudice and ignorance, and backed by the Legislature. When we consider how much the medical man can do—and, indeed, ought to do—to take his patient through her confinement expeditiously, safely, with a minimum of pain, distress of mind, discomfort, and injury, we cannot view with indifference the denial of these advantages to so large a proportion of mothers. True, one sometimes hears a doctor say that he hates this branch of his work, and we all know how very awkward its incidence can be, but such things are not good arguments for the employment of midwives. What is wanted is doctors who love their work.

A word on the thorny question of the induction of labour. My view is that this *dernier ressort* should not be postponed too long. If the patient is wasted and wasting, if vomiting is severe and persistent in spite of treatment, if albuminuria and toxaemia are present, or even an obscure condition of marasmus, we ought not to wait on and on in the hope for a living child when every day diminishes the mother's chances. My mind goes back to such a case in which induction was postponed; the woman had a spontaneous labour at seven months, the child dying in thirty-six hours, and the mother some hours later. Frankly, I am not in love with the dictum of Pinard concerning the right of the fetus to its life. Hydrops amnii should be watched literally from day to day, and relief given before symptoms become too grave, if Nature does not forestall us.

For the vomiting of pregnancy I am old-fashioned enough to think highly of iodine, of bismuth, and of ingluvin, but from what we were told at the last annual meeting of the British Medical Association, I suppose that one should resort early to treatment by psychotherapy for this condition.

During Labour.

As to the second division, labour itself, whilst it is true that meddlesome midwifery is bad, the doctor who "never interferes, but leaves it all to Nature," may attend confinements; he does not practise midwifery.

We all know but too well that the course of labour varies within extremely wide limits, even in the same woman at different times. Probably most of us can recall such cases as that of a quite young woman whose first labour gave her over three days of constant and severe pain, and of the woman of 36 whose big first baby was born after only one hour and a half. On the question of the influence of the age of the mother, my view—the outcome of the experience of myself and of others—is that in the great majority of cases of primiparae it makes extremely little difference, and that the talk in the books about "elderly primiparae—that is, over 30," is largely nonsense.

For irregular or fruitless pains in the first stage I believe quinine bisulphate gr. vi in one dose to be useful, as is also chloral, and particularly morphine and scopolamine. This latter combination is a sheet anchor in those trying cases of first stage in which the pains are very severe with "nothing doing"—the so-called "disturbed polarity"—which sometimes tend to go on for days, wearing out the strength of the woman and the patience of the doctor. The dose, from ¼ to ⅓ gr. of morphine, can be repeated as often as indicated, but it is very seldom that one need give more than two doses, generally in from four to eight hours after the first dose one finds the cervix dilated and the second stage progressing normally; not infrequently the child is born before the effects are passed off, much to the mother's gratification and to the credit of the accoucheur.

Whilst on this part of our subject I ought to say a word about twilight sleep—blessed phrase, worthy companion to "Mesopotamia" and "profound toxaemia"! I was fortunate in attending a discussion at Harrow on this subject some time ago, the outcome of which was a general agreement that for the great bulk of cases it is neither necessary nor desirable; that its overloaded technique is either frivolous or puts it largely out of court for general practice; and that most, if not all, of its real benefits can be secured without the maintenance of the full state of amnesia. My own assurance to patients who ask me about twilight sleep is that they shall not be allowed to suffer unduly, a promise I do my best to fulfil; more than this no woman needs and no sensible woman wants.

Of complications of the first stage perhaps the chief in importance, from the point of view of discussion, is placenta praevia. Many years ago I stated my conviction, to which I still adhere, that in this formidable condition the interests of mother and child are so completely opposed that the soundest practice is to make no attempt to secure a living child unless the placenta is fairly well out of the way, the os dilated or easily dilatable, and the bleeding slight. Our procedure must largely depend on the condition of the os; if it dilates fairly readily to the fingers—and with all respect to the vaginal bags and dilators, I still think that fingers were made before them—the best treatment is to separate the membranes and the placenta as far as one can reach with the finger, dilate up to four or five fingers, bring down a foot, pull the breech well down, give ergot or pituitary, or nothing, and await; it is seldom or never long before delivery. On the other hand, if the cervix is unyielding and the haemorrhage such as to cause anxiety, I believe that the proper treatment is Caesarean section. I think that resort to this operation as a routine treatment for the condition of placenta praevia is quite unjustified. Plugging the vagina for this complication I have never done, and do not think that I ever shall.

The course of the second stage and its treatment are to a great extent dominated by the presentation. It is said of Pinard that he was so enamoured of his discovery of differential percussion that he could percuss out a tapeworm in the small intestine; after reading about abdominal palpation I am quite willing to believe that some of those to whom the vagina is a *via sacra* are able to diagnose all presentations, even the most complex, yea, even to tell the sex of the child. But to most of us this Parnassus is unscalable; not infrequently also we have to confess failure with the classic two fingers. A story is told of a French professor who, demonstrating what he said was a face case, withdrew his finger from the mouth and held it up covered with meconium! All doubts about head presentations can be set at rest by introducing enough of the hand to find the ear and to determine exactly how it lies; the condition of the os can be investigated at the same time, and the state of the pelvis. Not long ago I had an occipito-posterior case in which a hand, a foot, and the funis were also presenting; I think that such a case might possibly tax the skill of the palpating expert. I do not wish to decry abdominal palpation, but only to suggest that it is not everything.

The occiput in posterior presentations should invariably be rotated forwards unless Nature terminates the labour speedily, and it should be a maxim with every accoucheur never to put on forceps in these cases without first rotating; it makes all the difference.

Face cases at or above the brim should be either turned or rectified. For myself, I much prefer rectification, as then one knows exactly what there is to deal with. The great point in attempting rectification is first of all to rotate the occiput into the left inguinal region, if it is not already there; this manœuvre, which I had the honour to use and to describe in 1911, is now included in the new edition of a leading textbook. With the anaesthetized patient on her back across the bed, the ulnar border of the right fist pressing down the occiput and the left hand in the vagina pressing up the face, rectification is easily and speedily accomplished. Full flexion of the head can then be secured and the forceps applied.

With regard to version for other conditions than placenta praevia, if I am in any doubt about the amount of room in the pelvis, I prefer to deal with the head first rather than last, and I do not regard podalic version as good practice in cases of small round pelvis.

It is, I think, much to be regretted that so many practitioners still use the ordinary forceps instead of the axis traction instrument. I have already remarked that the high forceps case, particularly in primiparae, is a discredit to us which should be avoided by the induction of labour directly it becomes difficult to press down the head into the pelvis. The funnel-shaped pelvis will, however, still lie in wait for us and sometimes cause very great difficulty in delivery, even to the death of the child. If it should so happen that we have to apply forceps at the brim, then we should make sure that the head is in the optimum position, adjust the forceps as accurately as possible to the sides of the head—the "lateral meridian" of the French school—make use of the advantage of Walcher's position, and pull in the axis of the pelvis. If, in spite of all our skill, we fail to deliver, the treatment is craniotomy; I consider Caesarean section in such cases improper practice.

I take for granted that chloroform is not spared whenever indicated in labour. I always use the inhaler of Roth Dräger, which is again obtainable in this country. It ensures a supply of fresh air at every breath, the amount of chloroform is easily controlled, and the patient can hold the inhaler herself. A whiff of chloroform after the dose of scopolamine-morphine helps its action very materially.

No "point" in midwifery is of more vital concern or of more perennial interest than that of *post-partum* haemorrhage, in which, for convenience, we may include bleeding in the third stage. We all know the many devices for dealing with this enemy, from compressing the aorta to pressing down and twisting the uterus with vulsella. But surely the best treatment is to prevent it if possible, and I believe that much in this direction can be done by giving quinine and digitalis, and also calcium chloride or lactate, during the last month; it is also of the greatest importance that labour should not be allowed to drag on too long in the second stage. I generally give an intramuscular injection of calcium chloride before delivery, and one of pituitary extract directly the head is born; sugar also is probably very useful. One of my patients, who had nearly died in her twelfth and thirteenth labours, came quickly and safely through her fourteenth and fifteenth under treatment on these lines; labour was terminated by the forceps directly dilatation was sufficient, and ergot was given twenty minutes before delivery.

But, alas! it has to be confessed that there seem to be bloods which fail to respond to the clotting influence of calcium, and uteri which laugh at pituitary and at ergot, and these will occasionally give us a crowded hour of mouth-drying anxiety. Fortunately, there is probably no uterine haemorrhage that cannot be controlled by bimanual compression, which cannot be arrested by the hot douche. One curious condition ought to be noted here, which I have observed several times. The uterus feels hard, and is obviously well contracted, and yet the bleeding goes on. Vaginal examination shows, however, that the lowest part of the uterus is still quite flabby, and sometimes distended with clot. If the placenta has had some attachment to this area bleeding takes place, and the usual stimulants seem powerless to stop it; it ceases at once under the hot douche.

I am still an obdurate sceptic, despite the eloquence of our Regius, in regard to the educational value of the M.B. thesis. If, however, we still must suffer such things, then I would modestly suggest the investigation of the reaction of different bloods or blood groups to calcium chloride, with a view to placing our clinical use of this sometimes potent agent on a sound and scientific basis, and to determining the proper dosage. To Dr. Grove is due the credit of introducing it for the treatment of haemorrhages, but I certainly think his dose of 1 grain too small. I usually give 2 grains, dissolved—I keep the solution ready made—in 20 minims of 2 per cent. carbolic lotion. Another subject for investigation is the factors which in some cases seem to inhibit the action of pituitary extract on the uterus.

A further word about pituitary must be added before quitting this part of our subject. Practitioners of much greater experience than myself agree that it is one of our most powerful weapons, terminating in a few minutes what would often otherwise be interminable cases in multiparae, and preventing or arresting haemorrhage. It acts at once or not at all, and I do not believe the tales about it causing rupture of the uterus an hour after injection; the fact of rupture occurring then would to my mind prove that the rupture was not due to the drug. There were brave men before Agamemnon, and there were ruptured uteri before pituitary extract. Of course, if a practitioner asks for trouble by giving it in obstructed labour he has only himself to thank, but I decline to believe that there is any risk at all in giving this drug to multiparae in cases where the head is in the pelvis and there is room for easy natural delivery.

Our third division is concerned with puerperal conditions and their treatment. The aseptic accoucheur, if any such there be in actual existence, gowned and gloved and gas-masked, who shaves the vulva and gives a bath of picric acid, will naturally douche the uterus in all cases and pursue a consonant post-operative routine; the ordinary general practitioner will, like Gallio, care for none of these things, and his patients will get along equally well. Cases of sepsis will occur, just as cases of embolism and white leg and mammitis and puerperal insanity, in which one will not be able to trace a cause, in which also there may have been no vaginal or other interference and no ascertainable history of exposure to infection. In view of this fact, the pursuit of a technique which experience has shown to be adequate is enough. As a last word on this I would like to ask two questions: "Ought retained membranes always to be removed at once, or may they be left awhile?" also, "Should a torn cervix be sutured?"

Two other deadly complications of the early puerperium may be mentioned. The first is reactionary, or late *post-partum* haemorrhage. A friend of mine died of it some years ago, and I have had one narrow shave in my own practice. One stays with the patient a reasonable time, all seems well, and then after an hour or two one is urgently summoned, to find the uterus full of clot, the woman blanched, bleeding, and in pain. Fortunately this trouble is rare, or our practice would be a nightmare.

The other trouble is *post-partum* vomiting, of which I have had a fatal case. I suppose that it must be due to some form of toxaemia where it is not hysterical. It certainly constitutes a very formidable complication, and is very refractory to treatment.

Though there of course remain a large number of points of great interest and importance, I think that I have gone on quite long enough, so will close without flourish or peroration.

OBSERVATIONS ON CASES OF RICKETS IN AN OUT-PATIENT DEPARTMENT.

BY

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AT the present time, in spite of the large amount of attention which has been focussed upon the etiology of rickets, there appears to be no general agreement as to its cause. Mellanby believes that the ultimate factor determining the occurrence of rickets in puppies of a susceptible age is the absence in the diet of a sufficient quantity of "anti-rachitic factor"[1]—a substance which has been held to be identical with fat-soluble A.[2] Yet Noël Paton and his co-workers, who, in the course of their investigations on rickets, have carried out somewhat similar experiments in dogs, consider that "some other factor than diet is the prime cause of rickets,"[3] and that rickets "is directly correlated with overcrowding and confinement in insanitary houses."[4] Hess, who, like most clinical workers, holds that rickets "is primarily a dietetic disorder," believes that cod-liver oil "is almost a specific" as a prophylactic or curative remedy, but at the same time holds that fat-soluble A is only one among several factors concerned in the pathogenesis of rickets,[5] and that probably "the danger to infants of a diet deficient in fat-soluble vitamine is slight, provided it includes sufficient calories and is otherwise complete."[6]

Bull, commenting on his clinical and experimental investigations on rickets among foxhound puppies, concludes that "although the faulty nature of the food was closely associated with the production of the disease, it has been shown that it was not capable of producing the disease when other conditions were altered," and that rickets is probably "due to a reaction on the part of the organism to an infection or chronic intoxication."[7] Erdheim (working in Vienna during the time of shortage and of high prices, when very many among the population were under-nourished) examined pathologically a large number of caged rats which had spontaneously developed rickets at this time. He gives in his published report no particulars of the diet of these animals, but he shows a close relationship to exist between hypertrophic changes in the parathyroids and the presence of rachitic changes in the rats' bones—those rats having rickets had enlarged parathyroids with microscopic appearances indicative of hyperactivity of the glands.[8] Erdheim also removed the parathyroids in rats, and bone changes similar to rickets followed this operation. This apparent contradiction he explains on the theory that the parathyroids in some way control calcium metabolism, and that in spontaneous rickets the hypertrophy indicates an effort at compensation on the part of the organism. Erdheim's observations are of considerable interest, in view of the following facts: (*a*) The occurrence of a condition resembling tetany as a result of the experimental removal of the parathyroids;[9] (*b*) the extremely frequent association of tetany with rickets and artificial feeding in children; and (*c*) the fact, as stated for instance by Holt, that in children "the active symptoms of tetany may be controlled by calcium,"[10] the metabolism of which is disturbed in rickets. These facts would suggest that the hypertrophy of the parathyroids may, as Erdheim suggests, be a protective measure against some common cause giving rise to abnormal calcium metabolism, to an increase of guanidin in the blood, and in some way to both rickets and tetany.

Guanidin, a product of decomposition of protein, is, according to Noël Paton, the chemical substance which gives rise to the symptoms of tetany.[11] Morpurgo[12] isolated from the organs of white rats which suffered from a spontaneous outbreak of osteomalacia in his laboratory a Gram-negative diplococcus, and succeeded in producing the disease in hundreds of other rats by subcutaneous inoculation of either the pure culture or the organs of animals containing the diplococcus. When adult animals were the subject of experiment a disease resembling osteomalacia was produced, but with newborn rats the effects were closely similar to the changes observed in rickets in children. Schmorl, who examined Morpurgo's specimens, agrees that the histological changes are identical with those of rickets.

Looser[13] is of opinion that rickets and osteomalacia are one disease, and supports his views by the results of clinical, radiographic, and pathological examinations of cases coming under his observation during a period of many years. He believes that the cause is most probably an infective one.

The papers heretofore quoted are all recent publications, but Bland-Sutton, working on animals at the Zoological Gardens, described over forty-five years ago how gerbillis in captivity developed a condition either of rickets or of osteomalacia according to their age, and concluded that the causes of these two conditions are one and the same.[14] He showed, too, how monkeys frequently developed rickets, and he considers the "rickets of maturity" in monkeys comparable with osteomalacia.[15] His experiments on lion cubs at the Zoo, and the prevention among them of rickets by means of dietetic measures,[16] are well known, and his observations indicate that both osteomalacia and rickets are mainly dietetic diseases, and can be prevented by an adequate diet.

Thus it will be seen that there are at present in our possession no facts conclusively proving the cause or causes of rickets, though it would appear to be at least in part a dietetic disease, and that its occurrence in rats is associated with changes in the parathyroid glands.

INVESTIGATION OF 51 RACHITIC OUT-PATIENTS.

In 1920 I carried out some clinical investigations on rickets among children attending the out-patient department of the Queen's Hospital for Children and the infant clinic at University College Hospital. In all I collected 51 cases of rickets in children between 5 months and 4 years of age, of whom 46 were under 3 years of age. I limited myself to cases in which the condition was, so far as I could tell, still active. The majority were heretofore untreated, and a few were cases growing worse, in spite of previous treatment.

I began with the belief that rickets was mainly, perhaps entirely, a dietetic disease, and it seemed reasonable to start from the hypothesis that it is due, in part at least, to a want of fat-soluble A and to investigate the cases from this point of view.

My results go to prove the impossibility of obtaining data of sufficient accuracy from out-patient work to give any conclusive results. There was a very wide margin of error in the histories given me; irregular attendances, intercurrent diseases, and radical changes made by the mother in the food (which, perhaps, in spite of careful questioning, I only discovered by chance weeks later), also invalidated very many of my records. These sources of error point to the absolute necessity that an investigation in clinical work undertaken with a view to elucidating the cause of a supposed dietetic disorder should be institutional. Nevertheless, some points of interest appear worth recording.

The Diet of Rachitic Cases.

The history revealed that in 35 out of 51 rachitic children (that is, nearly 69 per cent.) artificial feeding was begun before six months of age. Allowing for the uncertainties of the history, there seems no doubt that in at least 29 of these 35 cases the diet would have been markedly deficient in fat, as compared with human milk, for a period of anything between one and a half to seven and a half months before the age of 8 months. The degree of deficiency it was quite impossible to estimate. But, as against this, it must of course be remembered that, unless fed on a dried milk (which is very usually given in a strength roughly equivalent to undiluted cow's milk), the vast majority of artificially fed infants of the poorer classes in London receive a diet containing a considerably smaller percentage of fat than human milk, and I think there can be no question that the majority of these do not develop rickets.

Twenty-two of the 35 bottle-fed children, and probably a considerably larger number, received for a period of six weeks or more before the age of 6 months a food containing a large percentage of carbohydrate (for example, sweetened condensed milk, or a food with added starch. The older children on mixed diets appeared to receive a large quantity of carbohydrate food, but I did not come to any conclusion as to whether it was more than that consumed by the majority of children of corresponding age of the same social class.

In at least two children under nine months of age rickets developed on a diet of breast-milk only, and it is interesting to note the particulars obtained of the diet of one of the two mothers in question (the husband was a casual labourer at the docks, and sometimes only able to get one day's work in the week):

Breakfast: A cup of tea with milk.
Dinner: Potatoes daily, suet or batter pudding (about four days a week), or meat or fish (about three days a week), greens once or twice in the week, bread sometimes.
Tea or Supper: Generally none, occasionally bread and margarine.

It seems that under these circumstances the milk secreted might well have been poor in quality (*cf.* Dalyell, BRITISH MEDICAL JOURNAL, July 31st, 1920). Unfortunately it was not possible to obtain a specimen for examination. In the second case I was not able to get details of the mother's diet.

A communication made to me by a medical woman working in India has some bearing on the association of rickets with diet. She informed me that, except among the "mission" children, she rarely saw a case of rickets in a native. Among the "mission" children it was not uncommon. She attributed this to the fact that many of these children were bottle-fed, whereas a child reared on the bottle was comparatively rare among the general population.

Antiscorbutic in the Diet.

I was interested in the question of whether an antiscorbutic deficiency could play any part in the production of rickets. It is obvious that if fat-soluble A is often deficient in an infant's food as a result, for instance, of dilution, the proportion of the less stable antiscorbutic vitamine may be correspondingly even further reduced in the same food, and even fresh cow's milk is not rich in antiscorbutic. Hess and Unger calculate that an infant probably requires the antiscorbutic equivalent of 1 pint of fresh cow's milk per day.[17] It was impossible to ascertain from the data available whether there was any antiscorbutic deficiency in the diets as a whole. However, in view of Hess's suggestion that a condition of subacute scurvy is not infrequently mistaken for rickets,[18] it is of some interest to note the following two cases which were sent to me as rickets: Rose M., aged 9 months, had been fed on proprietary foods since 2 weeks old, but had had "an orange quarter to suck twice a day since 6 months old." She was brought to the hospital because "she screamed when the ankles were touched." When seen there was beading of the ribs, and enlargement of the epiphyses of the wrists and ankles, the limbs appeared very tender, the gums were swollen and bluish-red round the erupted teeth, and the capillary resistance test of Hess and Unger[19] was strongly positive, a test which, though probably not pathognomonic, yet I think clinches the diagnosis of scurvy in this case. Unfortunately this child was seen once only.

The directions given by these authors for the test are briefly as follows: The blood-pressure band of the sphygmomanometer—Tycos apparatus was used by them—is put round the arm and the pressure raised and kept at, say, 90 mm. of mercury for three minutes. The object is to obliterate the flow of blood and so produce cyanosis without obliterating the pulse. They claim that, after removal of the band, infantile scurvy cases show very numerous points of bleeding, normal cases none, or perhaps one or two—petechiae just below the pressure band are to be ignored. Obviously there is more probability of obtaining petechial haemorrhages, other conditions being equal, in a child which has raised its blood pressure by crying than in one which is quiet—a point, I think, to be borne in mind in doubtful cases.

The second child, Bertram S., aged 1 year 3½ months, would have appeared from his history to be receiving a sufficiency of antiscorbutic, but the teeth were decayed, the mouth in a condition of stomatitis, the capillary resistance test positive, and in sixteen weeks he had lost ½ lb. in weight. Therefore he was put on large doses of orange juice (about ʒij daily), besides local treatment for the mouth, and he rapidly improved, and gained an average of over 8 oz. a week for five weeks—facts which suggest that the condition may have been subacute scurvy. This child also showed beading of the ribs and enlargement of the epiphyses at the wrists as well as tuberculous dactylitis. I presume that clinically the enlargement of the epiphyses in both these cases would be held to justify a diagnosis of rickets whatever other conditions were also present.

Result of Treatment with Single Additions to the Diet.

I pass now to the results of treatment. I divided the cases as I saw them into five groups, endeavouring to keep all the groups as equal as possible with regard to age and types of case composing them. To the previous diet of the children of each of these groups I made one of the following additions:

1. An animal fat presumably rich in fat-soluble A, namely, cod-liver oil ʒ ij daily.
2. An animal fat also presumably rich in fat-soluble A, namely, butter ʒ ij daily.
3. An animal fat *plus* a substance rich in antiscorbutic, namely, butter ʒ ij *plus* orange juice ʒ iij daily.
4. An animal fat *plus* a substance rich in water-soluble B, namely, butter ʒ ij *plus* marmite ʒ ss daily.
5. A vegetable oil presumably much lower in fat-soluble A than the foregoing animal fats—namely, cottonseed oil ʒ ij daily.

The fats were given as emulsions, and all the substances, including the orange juice, were dispensed at the hospital. Of course any outstanding symptoms, such as constipation, diarrhoea, or cough, had to be treated, but I avoided, as far as possible, giving the mother any directions as to feeding or hygiene in the home, with a view to keeping those factors unaltered. The results were disappointing. Owing to the small number of cases which attended with any regularity I have grouped under the one head of "butter" in the following table all the cases receiving butter, butter and orange juice, or butter and marmite.

Period March to July, 1920. Results of Treatment.

	Addition to Diet.		
	Butter ʒ ij daily.	Cod-liver oil ʒ ij daily.	Cottonseed oil ʒ ij daily.
Number of cases	9	4	6
Average age	25½ mos.	18¾ mos.	21¾ mos.
Average deficiency of weight (compared to normal child) at beginning of treatment	75 oz.	40 oz.	71 oz.
Average deficiency of weight at end of treatment	79 oz.	32½ oz.	59 oz.
Total period of treatment of all cases	58 wks.	34 wks.	45 wks.
Average duration of treatment for each case	6½ wks.	7½ wks.	8½ wks.
Average change in deficiency of weight	Deficiency increased by 4 oz.	Deficiency decreased by 7 oz.	Deficiency decreased by 12 oz.
Average weekly gain of each child	2 oz. nearly.	2½ oz.	2½ oz.

Obviously the numbers are extremely small, and to my knowledge the general diet was modified in several cases during the period of observation, so that I do not think that any deductions can be drawn from differences between the groups. It, however, is noteworthy that no group showed any striking improvement. Some of the cases included, however, had only two consecutive weeks of treatment. About half of the 19 cases showed definite improvement in their general condition, but none could be said to show any definite improvement in the bone lesions, and the sweating persisted in those cases in which it had been present at the beginning of the period. These observations extended from March to the middle of July.

Result of More Extensive Changes in the Diet.

In July I decided to see if I could obtain any marked improvement in the children by attempting to bring about a greater change in the diet. I gave the mothers instructions as to the general feeding, particularly concerning any obvious errors in the dietary, usually instructing them to increase the quantity of animal fat and protein and cut down the quantity of carbohydrate in the diet. At the same time I endeavoured to push the quantity of cod-liver oil—in some cases I gave as much as ʒ vj daily to a child of about one year. The improvement in this set of cases as compared with the last set of 19 was marked. (This group includes many of the cases already treated in the first group.)

Table showing Results following General Directions as to Diet, with increasing doses of Cod-liver Oil (ʒ ij to ʒ vj daily).

Number of cases	18
Average age (in months)	23
Average deficiency of weight at beginning of treatment	57½ oz.
Average deficiency of weight at end of treatment	41 oz.
Total period of treatment of all cases ...	115 weeks
Average duration of treatment	6½ weeks
Average change in deficiency of weight:	Deficiency decreased by 16½ oz.
Average weekly gain	4 oz.

Not only did the weight approach the normal, but in nearly every case there was a definite improvement in the child's general condition, and in several cases there was an improvement in the bone lesions—for example, less marked beading of the ribs or reduction in size, of enlarged epiphyses; 9 of the 18 cases had excessive sweating at the beginning of the period, and in 5 of these the condition improved or disappeared. On the other hand, David H., aged 1 year and 3 months, for example, who showed very marked improvement in weight and general condition (his weight increased from 11 lb. 14 oz. to 15 lb. 4 oz. in eight weeks), showed no improvement in the sweating. This child at the end of the period was receiving ʒvj of cod-liver oil daily, and I presume the sweating was evidence that the rachitic condition was still active in spite of the large consumption of cod-liver oil.

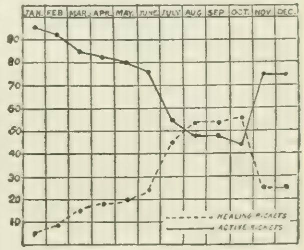
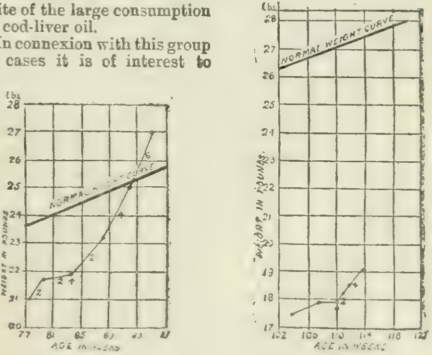


Chart showing percentage of cases examined *post mortem* (386 in all) with active and healing rickets for each month of the year. Compiled after Schmorl. Reproduced from "A Study of Social and Economic Factors in the Causation of Rickets," by M. Ferguson and L. Findlay (Medical Research Committee Report).

In connexion with this group of cases it is of interest to note the seasonal curve of rickets reproduced herewith. It will be seen that July shows a sharp rise in the incidence of "healing rickets." Whether the contrast between this group of 18 cases as compared with the previous group is merely due to the season at which treatment was carried



Victor B.

Elsie B.

Weight charts of two cases in which there was definite improvement from the date at which general dietetic treatment was begun. The arrow indicates the date at which directions as to general diet were given; the numbers against the weight curve indicate the daily dose of cod-liver oil in drachms.

Victor B., aged 1½ years, was the son of a pastrycook, and received large quantities of "pastries." He has attended for seventeen weeks, and shows improvement in the size of the rosary and wrist epiphyses.

Elsie B., aged 2 years, is the child of a widow in extremely poor circumstances.

out, or whether the dietetic treatment was an important factor, it is impossible to say with certainty, but from the observations of Dalyell[21] on the effect of small additions of animal fat to the diets of children suffering from arrested development in Vienna, my impression is that the general dietetic treatment played an important part in the improvement which occurred. (See weight charts.)

Summary.

My observations on these cases are, therefore, so far as they go, in accordance with the fairly general belief that rickets is a dietetic disease and commonly develops in children receiving insufficient fat and too much carbohydrate in the food, and that it shows itself most commonly among those who have been bottle-fed. In the case of one child known to have developed rickets while at the breast it is evident that the mother was receiving an inadequate diet, and it is probable that the infant's diet was also inadequate as a result.

The number of cases observed was unfortunately small, but they gave no indication that fat in the form of cod-liver oil, butter, or cottonseed oil exerts any specific curative influence on the disease in doses of ʒij daily. On the other hand, there was a marked improvement in a group of 18 cases treated during July, August, and September with larger doses of cod-liver oil, together with advice as to diet, but it is certain that this improvement was in part due to the season of the year.

Still has drawn attention to the fact that children suffering from coeliac disease in which there is failure to absorb fat "show a remarkable freedom from rickets."[20] In two experiments recently carried out at the Lister Institute, kittens given a diet deficient in fat-soluble A developed a condition showing a striking resemblance to that of children with coeliac disease: together with arrest of growth and distension of the abdomen there was muscular feebleness and apathy with a "pathetic interest in food." A small liver appears in many cases to be a feature of the disease. All these are points to which Still draws attention in coeliac disease in children.[22] These facts would suggest the conclusion that a deficient absorption of fat-soluble A accounts for the picture in coeliac disease. If that be so, some other factor and not a deficiency of fat-soluble A alone must be concerned in the production of rickets.

In conclusion, I should like to express my great indebtedness to Dr. C. J. Martin for his help and for his kindness in arranging that the expense of this investigation should be defrayed by the Lister Institute; to Dr. E. A. Barton, who took much trouble in collecting suitable cases for me at his infant consultations at University College Hospital; to Miss S. E. Jacob, pharmacist to the Queen's Hospital, and to the many others who were kind enough to send me cases and to co-operate in other ways.

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THE VALUE OF EXTENSIVE INOCULATION OF A COMMUNITY DURING AN EPIDEMIC OF TYPHOID FEVER.

BY

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DOUBT can no longer exist concerning the incalculable value of antityphoid inoculation as a means of preventing typhoid fever in military communities. The published figures of the incidence of typhoid fever in all armies during the late war prove this point conclusively. In this case the inoculation has almost invariably been carried out under favourable circumstances and in the absence of an epidemic prevalence of the disease.

The question arises as to the value of inoculation as a means of protection—first, to the individual, and secondly, to the community as a whole—during an actual epidemic. The opportunities for the study of this subject on a scale large enough to give any reliable results have been few. It seems desirable, therefore, to place on record any evidence which will enable an opinion to be formed concerning inoculation under these circumstances.

The opinions hitherto expressed on the matter are of a rather divergent nature. Spooner, speaking of a water-borne epidemic in a Vermont village, remarks that "inoculation in the time of epidemic must be performed with care, since it is inevitable that many must be inoculated during the incubation period. The result of this accident is not serious, however. My experience would indicate that the onset of symptoms was hastened by this step, but that the infection was shorter and of a less severe character." He also notes in another instance the small morbidity among a number of nurses and others intimately exposed to infection before and during inoculation, and points out that this agrees with the observations of Pfeiffer, Leishman, and Russell, that the period following inoculation is one of increased resistance.

Elmer, recording a food epidemic in a hospital at St. Louis, says: "The fact that only 20 out of the 261 who received the vaccine developed typhoid speaks against any marked increase of susceptibility, and the fact that 20 did develop typhoid is against any marked increase of resistance following recently given vaccine."

Basten reports the result of inoculating 245 members of a Sanitats Kompagnie, in which 15 cases of typhoid fever had occurred, 3 of which died. Three doses, of ½ c.cm., 1 c.cm., and 1 c.cm., of antityphoid vaccine were given at intervals of eight days. After the first inoculation, 13 cases of typhoid occurred, two being fatal; after the second, 9 cases occurred, one being fatal; after the third, one case occurred. In a field hospital 4 cases occurred after one inoculation; one after the second, while after the third, five men had elevation of temperature for five days, one of whom died after a relapse during the third week.

Furth, Pfugbeil and Oertel describe the results of compulsory inoculation of the inhabitants of Ostend in 1915 and 1916. Typhoid fever was endemic, and the number of cases in August, 1915, was 58. The population of the town in 1915 was 32,811, and 27,472 received three doses of vaccine. A similar procedure was repeated the following year. They express their results as follows:

> Consequences injurious to health were observed in no case. Two facts in particular speak for the excellent effect of vaccination: Before inoculation, typhoid fever occurred sporadically over the whole area. Its complete disappearance was afterwards directly proportional to the degree of inoculation in the various districts. It disappeared in the districts in the order in which they were inoculated, and did not show signs of abatement until inoculation had taken place. It ceased entirely with the completion of inoculation.

"In the area in question the results of inoculation can be tabulated thus:

	No. of Typhoid Cases.	Deaths.
Period before inoculation (Dec., 1914, to Nov., 1915)	213	18
Period after inoculation (Dec., 1915, to Nov., 1916)	6	0

Of the latter 6 cases of typhoid fever, 4 had not been inoculated, and the remaining 2 cases, who were inoculated, lived with a typhoid carrier."

This inoculation at Ostend was the first instance of compulsory inoculation applied to a large general community.

The object of this paper is to put on record another similar case of compulsory inoculation which occurred in the winter 1918–19, shortly after the Armistice. On the arrival of the British Army of Occupation in Germany it was found that at Euskirchen, a town of 13,000 inhabitants, situated about twenty miles west of Bonn, there was a considerable outbreak of typhoid fever. It will be remembered that the German army had, during November and December, been beating a hasty and more or less disorganized retreat across the Rhine. Euskirchen was situated on one of the main roads of the retreat, and had been largely used as a billeting town, and it will be understood how cases of typhoid fever could arise and be overlooked until there was quite an unsuspected epidemic in the community.

In addition to the outbreak in Euskirchen itself, there were two other minor outbreaks in groups of surrounding villages. The three epidemics were probably not all interdependent. The second outbreak in the village of Gross Vernich was probably spread by water from Euskirchen, the latter town being situated higher up the Erft stream and having no proper system of sewage disposal, and the former village being dependent to a certain extent for its water supply on this same stream.

The third epidemic, however, was probably of quite an independent origin, but is considered here because the three were all coincident and gave similar results.

It is unnecessary to detail all the inquiries which were made to trace the origin of the epidemic—the water supply, the milk supply, butter, etc. All these points were investigated by one of us (A. R.) in conjunction with a German Kreisassistantarzt, Dr. Josef Basten. The investigations led to no definite conclusion. Most of the cases were probably of contact nature, and the original source of infection was not discovered.

It should be pointed out that in the investigation and handling of the epidemic the closest co-operation took place betweeen the German civilian and the British military medical authorities. Conferences were held at frequent intervals by the D.D.M.S. of the corps whose headquarters was situated in Euskirchen, and they were attended by the Kreisarzt and the Burgomeister. The factors involved in the epidemic were considered, and instructions were issued to the civil authorities for the carrying out of certain measures of precaution.

A serious drawback in the early stages of the investigation was the fact that all samples requiring bacteriological and chemical examination had to be sent to laboratories in Cologne and Bonn, which involved considerable delay before the results could be communicated to us. Ten days after the presence of the disease in the town was notified a military bacteriologist began to assist in the examination, and four days later a British mobile bacteriological laboratory was stationed at Euskirchen and materially facilitated the work.

Although no definite source of infection could be discovered, investigations showed that the avenues for contact infection were many. The inhabitants were badly nourished, and in no fit state to resist disease. The schools were closed, the children played in the streets, consorted with German troops, visited one another's houses to an increased extent, and frequented the banks of the local stream, the Erft, and its branches, into which the untreated sewage of the town discharged. A lack of disinfectants at the hospital, and the fact that several privies in the poorer quarters discharged directly into the various tributaries of the stream, no doubt also conduced to widen the distribution.

Inoculation of Civilian Inhabitants.

Inoculation of the civil community was performed in each of the three districts where the outbreaks occurred, and this process can now be briefly described.

1. *Euskirchen.*

On January 7th, 1919, orders were issued by the British military authorities for the compulsory inoculation of the civilians with British T.A.B. vaccine. An attempt had been made previously by the Kreisarzt to obtain a supply of German antityphoid vaccine from Berlin for voluntary inoculation, but circumstances rendered its delivery impossible.

T.A.B. vaccine contains in 1 c.cm.—

B. typhosus	1,000 millions
B. paratyphosus A	500 ,,
B. paratyphosus B	500 ,,

The routine method in the British Army is to give two doses at intervals of ten days. It was decided that all persons between the ages of 6 and 45 years should be inoculated, with the exception of those certified by a doctor to be suffering from an ailment which contraindicated such treatment and of women three months before and two months after childbirth. The limit of 45 years was afterwards felt to be inadvisable, and when inoculation of the other districts was practised, it was raised to 55.

The doses were graduated according to age—the first dose being as follows:

For persons between 6 and 10 years	⅛ c.cm.
,, ,, 11 and 17 years	¼ c.cm.
,, ,, 18 and 45 years	½ c.cm.

Instructions to the above effect were issued to the Kreisarzt, and at a meeting of German doctors which he convened a detailed scheme was planned on the lines of that followed at Ostend in 1915, when the Germans inoculated the inhabitants of that town. On January 7th, 1919, the Kreisarzt contributed an article to the local press in which he pointed out the value of inoculation against typhoid, and urged the people to volunteer to be inoculated as soon as the necessary arrangements could be made. Three days later a further notice appeared in the same paper to the following effect:

> The British military authorities have ordered the inoculation of the inhabitants of the town between the ages of 6 and 45 years. The inoculation will be done in two doses, with an interval of ten days between them. The following are exempt:
>
> (1) All persons suffering from a fever.
> (2) All persons with serious lung disease.
>
> These are required to furnish a medical certificate to the police at 7, Bischofstrasse.
>
> Also exempted are women three months before and two months after childbirth. They will be required to show a medical or midwife's certificate.
>
> The inoculation will take place on the following days: (A list of centres follows at which dwellers in specified streets had to present themselves on particular days.)
>
> Everybody must be inoculated on the day ordered.
>
> The dates for the second inoculation will be published later.

The inoculation was carried out by German doctors at six public centres and also in private. T.A.B. vaccine, hypodermic needles, and methylated spirit were supplied by the British medical authorities. The staff at each centre consisted of:

1. A German doctor.
2. A clerk who took down the name, age, address, etc., of each person inoculated.
3. A female attendant who prepared the site of injection with iodine.
4. An attendant to sterilize the needles.
5. A policeman.

Members of the Administrative Medical Service visited the centres daily.

The population of Euskirchen was 13,010, of whom 8,385 were between the ages of 6 and 45. About 1,200 people were inoculated each day until 8,339 cases had been dealt with.

The first inoculation began on January 11th and ended on January 17th. The second doses were begun on January 21st, and by January 28th 8,076 had been done. On February 4th an additional 112 absentees were done, the number thus being brought up to 8,198. It is apparent, then, that about 62 per cent. of the population had been vaccinated.

2. *Weilerswist and Gross Vernich.*

The combined population of these two villages was estimated at 2,492. The villagers were informed by proclamation by the Burgomeister of the arrangements made for inoculation. They were similar to those adopted at Euskirchen.

The numbers receiving first and second doses were 1,763 and 1,738 respectively, thus over 70 per cent. of the population of the villages were protected by two doses. The age limits were fixed at 6 and 55 years.

3. *Sechtem, Merten, Tripplesdorf, and Walberberg.*

These four villages were very closely adjacent, and their total population was given as 5,010. Similar orders were issued, and the numbers inoculated at the first and second period were respectively 3,314 and 3,417. Between 65 and 70 per cent., then, had received the two doses.

CASES OF TYPHOID FEVER.

There were 199 cases of typhoid fever in the three epidemics in the town and villages of a combined population of about 20,000, and of these cases 34 died—approximately 17 per cent.

Four of these deaths occurred in people who had been recently inoculated twice. The onset of the disease began within the first twenty-four hours after the second inoculation (2 cases), on the eighth day after, and on the nineteenth day after the second dose. Two other deaths occurred in cases after the first inoculation, and in each case the symptoms began within the first twenty-four hours.

There were altogether thirty-eight cases of typhoid following inoculation, and amongst them there were six deaths—that is, mortality = 15.7 per cent. With the exception of these six deaths practically all these cases were of a light nature.

SUMMARY.

It is hardly justifiable to arrive at any definite conclusion from the above figures. The daily numbers of onset were very much on the decrease before the inoculation was begun, but it must be remembered that some cases were not removed at once to the hospitals for isolation and they were acting as sources of infection for some time afterwards. During the early period of inoculation there were probably more sources of infection "at large" than appear at first sight, and one would be inclined to imagine more people, as a result, incubating the disease. The fact that there was in each epidemic a recrudescence of cases immediately after inoculation tends to support this theory.

The arguments against inoculation during an epidemic do not appear to be supported by facts, and it is claimed that additional evidence has been brought to light in favour of inoculation under these circumstances. The advantageous effects of the inoculation may for convenience be described under three heads—(*a*) direct, (*b*) indirect, (*c*) remote.

(*a*) *Direct.*—One of the most difficult problems in dealing with an epidemic of this type is the notification and consequent isolation of light cases in which no medical aid has been sought. It is apparent that the inoculation brought some of these to notice so that they could be removed and isolated more quickly. It is also suggested that some cases incubating the disease developed symptoms more rapidly than they would otherwise have done, and these again were more quickly found out and removed as sources of danger. The sudden cessation of the epidemic after inoculation is very striking.

(*b*) *Indirect.*—The indirect advantage lies in the necessary administrative handling of the epidemic. Undoubtedly much good was done by the issue of orders to the effect that exemption could only be allowed by medical certificate. This, accompanied by an energetic house to house inquiry, in the case of defaulters, brought several cases to light which would otherwise have lingered on in their own homes.

(*c*) *Remote.*—There can be no doubt that many cases were saved by the fact that contacts of some of the later cases had been inoculated. The almost dramatic termination of the epidemic gave a feeling of satisfaction and security to the inhabitants, and the precautionary orders regarding water and dairy supplies, etc., which were issued were withdrawn or modified at an earlier date and with more confidence than could otherwise have been the case.

It is regrettable that the incidence and mortality amongst the inoculated were so high, but it may perhaps be added that in the neighbouring Kreis of Rheinbach, where immediate inoculation of all contacts of all new cases occurring in the area was ordered, there were practically no secondary cases of the disease and no deaths.

In conclusion, therefore, the opinion is put forward that an extensive inoculation during an epidemic of typhoid fever is beneficial, probably to the individual in particular and almost certainly so to the community as a whole.

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IMMEDIATE SURGICAL COMPLICATIONS OF DYSENTERY.

BY

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"DYSENTERY" is a general term applied to conditions characterized by passage of blood and mucus in the stools. In amoebic dysentery the mucosa and submucosa of the colon is invaded by *Entamoeba histolytica*, which can ingest red corpuscles; this property is employed in the recognition of its vegetative form in microscopic preparations. Other manifestations of this infection are acute hepatitis or acute liver abscess. The majority of cases of these conditions fail to give a history of dysentery, although in all there has been possible exposure to infection by *E. histolytica*.

Bacillary dysentery is due to infection of the wall of the colon with a variety of organisms distinguished from one another by fermentation and serological reactions. The two chief groups are:

1. The *B. dysenteriae* (Shiga) group, which give rise to an intensely acute and severe form, and
2. The *B. dysenteriae* (Flexner) group (the chief perhaps being Flexner's Y bacillus), which give rise to a milder clinical type.

Both of these subgroups include a very large number of organisms which have the common group fermentation reaction, but in other respects have been shown to be distinct and separate entities.

The immediate complications of dysentery may be given in a comprehensive way as:

A. Acute hepatitis.
B. Acute liver abscess.
C. Perforation of the colon (gangrenous colitis).
D. Gangrenous proctitis.
E. Synovitis with effusion into the larger joints.

A. and B. are due to infection by *E. histolytica*, and, amoeba having been found in the portal capillaries, this may well be the path by which it reaches the liver from the intestine. C. and D. are due either to infection by amoeba or bacilli, *plus* a secondary infection with intestinal organisms. E. is a complication of bacillary dysentery only.

A. *Acute Hepatitis.*

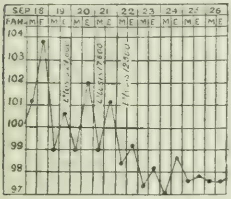
Acute hepatitis is often difficult to diagnose from liver abscess. After a period of malaise the liver is found to be enlarged and tender. Pyrexia is present, but is not so remittent as in liver abscess. Evening temperature may reach 103° F. Leucocytosis is generally present, varying from 10,000 to 20,000 per c.mm. The patient is sallow and the conjunctivae are icteroid.

One of us (B. H.) operated on two cases of acute amoebic hepatitis in which liver abscess had been diagnosed. In both the enlarged liver presented the same very characteristic appearance, the colour resembling that of a ripe damson. An exploratory needle thrust into the organ failed to find pus, and a syringeful of blood was withdrawn.

In case of doubt as to the diagnosis, we think it justifiable to give the patient a course of emetine before undertaking any operation. If the condition be one of pure amoebic hepatitis, improvement will show itself within three or four days, and the whole of the symptoms will soon subside. The following case is typical of this condition:

Captain W. was admitted to hospital in Salonica in May, 1916, suffering from diarrhoea. He was evacuated to Malta, and while on the ship developed acute hepatitis. In Malta an operation was about to be performed when, at the last moment, it was decided to try emetine, of which he had two seven-day courses of gr. 1 daily. He recovered without operation.

In September, 1917, a second attack occurred. He was admitted to the 28th General Hospital, Salonica. Temperature 101: liver enlarged and tender; leucocytosis 21,800. Emetine 1½ grains daily, was given for seven days, and repeated after an interval of seven days. The pyrexia and leucocytosis subsided in five days and all hepatic and other symptoms disappeared. The temperature chart is appended.



B. *Acute Liver Abscess.*

This is a very serious condition, because the abscesses are so often multiple. Acute liver abscesses, as we saw them, differed somewhat from textbook descriptions. An exploratory puncture with a needle in the sites recommended was useless, and in no case were we able to withdraw any of the abscess contents, since the pus was too thick to be drawn into the syringe. Successful aspiration of the contents of these abscesses has been reported from China, but we are informed that the instrument used there resembles what we employ for removing the core from an apple.

The most common site for liver abscess is in the upper and posterior aspect of the right lobe, although, as mentioned before, secondary abscesses often exist. The left lobe, though not a common site, is not exempt.

Most noticeable in our cases that came to autopsy was the extreme destruction of liver tissue—a destruction not confined to the abscess cavity only. Immediately adjacent to the main abscess cavity was a zone of ragged and destroyed liver substance; next to this was a zone of acutely inflamed liver tissue, and again outside this was a zone of liver tissue that had undergone extreme fatty degeneration. The remainder of the liver substance was in a state of acute hepatitis, and resembled that already mentioned.

The symptoms of acute liver abscess are fairly definite. The liver is enlarged and tender, the liver dullness may extend high up on the right side behind, and friction sounds may be heard at the right base; there may also be some fluid in the right pleural cavity. These last two signs are important. Pyrexia is present, the temperature reaching 103° and remitting. Leucocytosis from 10,000 to 20,000 is almost invariable, and the patient presents both an icteroid tinge and a characteristic facies. There may be, but often there is not, a previous history of diarrhoea with blood and mucus in the stools. When the negative history was given in our Salonica cases it was usually found that the patient had been in Egypt (where *E. histolytica* infection is rife).

The treatment that gave the best results was an anterior incision about two inches in length through the right rectus muscle. The liver was exposed and packed off with dry sterile gauze from the general peritoneal cavity. A long pair of sinus forceps was introduced into the right lobe in an upward and backward direction, and it was readily felt to enter the main abscess cavity. The thick contents, which resembled anchovy sauce, were evacuated, and a large tube was introduced. The patient was nursed in the sitting position, and drainage by these means was excellent. Into the abscess cavity, through the tube, was introduced quinine bihydrochloride three times daily, and the patient was lowered for half an hour to prevent its immediate escape. In addition emetine (1 grain) was administered hypodermically daily for the first ten days. At first we instilled eusol through Carrel's tube placed inside the large drainage tube. This was not successful, the liver being found *post mortem* to be acutely autolysed. Twort has shown that eusol inhibits the movements of *E. histolytica* but does not kill it. The quinine solution, on the other hand, has an excellent effect. In making the daily dressings the strictest aseptic precautions should be observed. We found the track very apt to become infected with anaerobic bacilli, although we saw no actual gangrene.

Microscopic examination of the contents of an abscess cavity showed masses of liver cells, connective tissue liver cells, red and white blood corpuscles, granules of pigment, casts of bile capillaries, and tissue debris; the leucocytes were not in great excess. The amoeba was not found in the pus as a rule, although in one case, after an hour's search, it was discovered in very active movement. The amoeba was constantly found in scrapings from the wall of the abscess. Cultures made from the pus were in all cases sterile.

Macroscopically, the pus in the fresh state was accurately described as resembling anchovy sauce. After standing for a day or two it separated into three layers—a transparent zone of haemolysed blood above, a dark red intermediate layer, and a lower buff-coloured zone of solid matter.

In none of our cases did we employ the transpleural route for approaching and draining the abscess, because in the experience of our colleagues this route, in the case of acute abscess, did not give satisfaction. Out of nine cases operated upon by one of us (B. H.) there were five recoveries and four deaths. The prognosis was good so long as the abscess was single and was thoroughly evacuated and treated by quinine solution locally and emetine administered hypodermically. All such cases recovered. In cases of multiple abscess with very great destruction of liver tissue, and also in cases complicated by severe recurrent malaria, the prognosis was very bad.

C. *Perforation of the Colon: Gangrenous Colitis.*

This complication was notoriously fatal; it presented symptoms and pathological changes that were wholly new to us, and afforded ground for speculation. The usual history was as follows:

A patient, apparently convalescing satisfactorily from a chronic recurrent dysentery, exhibits abdominal distension. The pulse remains good, the patient is conscious and not apparently distressed. Within a very short time, often a few hours from this period, the pulse becomes rapid and thready. The patient breaks out into a cold perspiration, and dies within a few hours or so.

Operation was undertaken on three patients whose condition at the time seemed to justify its performance, whereas others were left, as their condition was hopeless. At operation it was found that the colon, especially in the region of the sigmoid flexure, was greatly thickened and gangrenous, and any attempt at handling it only resulted in tearing the gut, so friable was its condition. In one case that was operated upon before perforation had occurred, a colostomy was performed in the transverse colon, and the distal limb of the bowel, which appeared to be the main site of infection, was washed with warm Dakin's solution. At autopsy the same gangrenous condition of the gut was found.

Gangrenous colitis occurred mainly in cases of long-standing chronic dysentery, of both bacillary and amoebic types. The wall of the colon became ulcerated, infiltrated, and enormously thickened. Healing might occur at this stage after repeated acute attacks, and the typical thickened colon of the chronic dysenteric patient remained. If, however, healing did not occur gangrene and perforation were apt to set in suddenly. Most of the cases in which this occurred were complicated by frequently recurring malaria, and we think that this was a definite if not the determining factor in bringing about the lowered vitality of the wall of the bowel which led to the gangrene.

We never saw or heard of a case that recovered. The onset of the abdominal distension is so rapid that when once it has occurred operation seems hopeless. The toxaemia is so intense that these patients die within a very short time, and operation only hastens their end.

D. *Gangrenous Proctitis.*

This condition may be due to an extension downwards of the process in gangrenous colitis or may arise primarily. The pathological condition appears to be the same as that occurring in the colon. Painful haemorrhoids at first appear which rapidly become thrombosed. This is followed by a varying degree of rectal prolapse, the prolapsed portion rapidly becoming gangrenous. The degree of toxaemia varies. It is usually very severe, depending upon the extent to which the rectum is affected. In one case the portion of prolapsed rectum sloughed away and recovery followed, but in three other cases death rapidly ensued, the degree of toxaemia being intense. Colotomy seems to be the only possible treatment, but, speaking from what we saw of this condition, the patients are too ill to stand any surgical interference.

E. *Synovitis with Effusion into the Larger Joints.*

This complication is usually the result of bacillary dysentery, and occurs from the eighteenth day after the infection first manifests itself. Any of the larger joints may be affected, but in our cases most commonly the knee-joint. Very rarely were two joints involved simultaneously. The joint becomes distended with fluid, hot, tender, and painful. The fluid shows little tendency to become absorbed when the joint is put at rest. If left alone the condition gradually passes into a chronic state, leaving a thickened synovial membrane which shows very little tendency to resolve. The synovial fluid from these joints is straw-coloured and not turbid; repeated examination has shown it to be sterile.

By far the most satisfactory treatment is early aspiration of the contents and the injection of 5 c.cm. of ether into the joint cavity during the acute stage. A general anaesthetic is usually required. The joint should be kept absolutely at rest, and as soon as the acute stage has passed firm strapping with Scott's dressing is employed. With this must be conjoined suitable treatment for the bowel. This treatment certainly gave most satisfactory results, in that the patients were able subsequently to use the joints without pain, thickening of the synovial membrane was avoided, and the wasting of the muscles around the joint, which was so extreme in cases that had passed on to a subacute or chronic stage, was in great part avoided. Subsequent recovery of the muscles was rapid.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PLACENTA ABLATA TREATED BY PITUITRIN WITH OBSTETRIC ANAESTHESIA.

THE following case, which occurred recently in my experience, may be of interest. The patient, aged 35, has had eleven children, born at full term; her twelfth conception resulted in miscarriage with persisting endometritis. She became pregnant again in March of this year. Throughout the pregnancy she suffered from severe pain—more or less continuous—in the left iliac region.

Labour commenced at 10 p.m. and continued normally until midnight when excruciating pain suddenly developed in the left side, accompanied by severe external haemorrhage. The patient felt sick and faint and commenced to vomit. As the haemorrhage continued a midwife was summoned. She in turn sent for medical aid. On arrival I found the patient practically pulseless, blanched, and collapsed. The uterine tumour was the size of a full-time enlargement with a somewhat ligneous consistence. Internally, the os permitted the entry of two fingers and was dilatable, the membranes were tense between the pains, while the head engaged the brim in the L.O.A. position. The external haemorrhage had stopped between the pains, but recurred in small measure with each pain. Under obstetric anaesthesia, ½ c.cm. pituitrin was injected intramuscularly, followed by another ½ c.cm. in half an hour. Immediately after the first injection, as there was evidence of hydramnios, I ruptured the membranes; the external haemorrhage ceased.

Ten minutes after the second injection a seven months foetus, partially macerated, was expelled, followed immediately by the placenta and membranes, which were complete. There was no evidence of retroplacental clot nor placenta succenturiata. The uterine tumour was doughy in consistence and extended beyond the umbilicus. Vigorous kneading and expression promptly stimulated the uterus to expel a clot equal in size to a foetal head, after which satisfactory contraction and retraction occurred. The convalescence of the patient has been very satisfactory.

With regard to some of the points that have been raised in discussion of the etiology of this condition, the following may be mentioned: (1) There was no history of trauma; (2) there was distinct albuminuria; (3) there was moderate hydramnios; (4) the umbilical cord was of normal length; (5) there was a history of endometritis preceding this pregnancy; (6) this was the thirteenth pregnancy.

With regard to the treatment, the use of pituitrin with obstetric anaesthesia gave good results in this case and obviated the use of forceps. In my experience, the action of pituitrin given, in suitable cases, in doses of ½ c.cm., repeated in half an hour and modified by obstetric anaesthesia, gives far better results than if the action is not so modified.

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SURGICAL EMPHYSEMA AFTER A BLOW ON THE NECK.

THE following case seems worthy of record. A girl aged 10 years was playing in the garden on the morning of October 10th. At about 10.30 she placed a short ladder against the fence, which was between 4 and 5 ft. high. She climbed to the top of the ladder, which then gave way so that in falling she struck the front of her neck against the top of the fence. Within a quarter of an hour the neck began to swell and she became breathless. The doctor who attended her sent her to the hospital. I saw the patient at 11 45 a.m.

On examination there was a red mark on the skin over the trachea but no bruising. There was no visible bruise on any part of her body, the whole of which, from her head to her toes, was ballooned out with surgical emphysema. The skin was the colour of a boiled lobster, and one could indent one's finger into the trunk to a depth of almost two inches. The eyeballs were occluded on account of emphysematous eyelids, and the tongue was swollen. The patient was extremely dyspnoeic and cyanosed. It was obvious that she was being asphyxiated, and I decided to do a tracheotomy at once. After a few whiffs of chloroform the cyanosis increased and the patient stopped breathing. On cutting into the tissues of the neck the emphysema was so intense that the depth of the trachea from the skin was nearly 3 inches. The operation gave immediate relief. The next morning the patient could see a little with both eyes, and her general condition was better. She said she felt no pain, and was quite comfortable. During the next day or two a little more air escaped into the tissues of the upper part of the chest. The tracheotomy tube was removed on the fourth day. The surgical emphysema gradually disappeared, beginning at the extremities. The girl made an uneventful recovery, and was discharged from the hospital on October 31st.

The house-surgeon, Mr. Landells, and I examined her chest repeatedly and could find no evidence whatsoever of fracture. She gave no sign at any time of pneumothorax or collapsed lung. At the time of operation it was impossible to examine very closely the portion of trachea exposed, but there appeared to be no injury. The patient was a very intelligent little girl and described her accident minutely. She was emphatic in saying that she felt no pain anywhere else but at the point of impaction, the front of her neck. The most curious feature of the whole affair was the complete absence of any physical sign, fracture, bruise, or wound, which could explain the enormous amount of surgical emphysema present.

The only explanation which the house surgeon and I can suggest is that the impact on falling suddenly dragged up the trachea and tore a hole either in one of the bronchi or possibly in the trachea itself. The patient immediately began to expire air into her neck and face, and then, when the swelling in her neck became sufficiently great, it partially occluded entry of air through the larynx, so that the patient would go on pumping air into her tissues through the hole caused by the injury. Tracheotomy immediately relieved the obstruction and gave the hole time to heal.

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PLEURAL REFLEX.

THE following case, which presents unusual features, is, I consider, worthy of notice:

Two years ago the patient, a married woman, aged 29, had a right-sided pneumonia, followed by empyema. The empyema was drained after resection of rib, but the cavity continued to discharge for six months. An Estlander's operation was then performed and was successful except for the persistence of a small sinus, communicating with the pleural cavity and leading up to the root of the lung. Eight months ago, on syringing the sinus, the patient collapsed, and had to be restored with brandy and oxygen. Since then she has been dressed daily; the sinus still discharges a thin sero-pus which the bacteriologists report as containing less and less bacteria on each examination.

Five days ago the sinus was again syringed with Dakin's solution, and the patient was unaffected on this occasion and on the three succeeding days on which she was syringed. On the fifth day she suddenly collapsed during the injection of Dakin's solution and was put to bed pulseless and with a feeble respiration. Brandy, oxygen, strychnine $\frac{1}{30}$ gr., and raising of the foot of the bed were resorted to, and the patient gradually recovered. On recovery she found she was completely blind and unable to distinguish between light and darkness. Her pupillary light reflexes were present and her discs were normal. Two hours after the "faint" she began vomiting. This continued for twelve hours. She was repeatedly assured that her sight would return. For twenty-five hours after the loss of consciousness, however, she remained completely blind. After this the return of sight was gradual, and it was two hours before it was completely restored.

The probable explanation is an anaemia of the occipital lobes, but why the return of vision took so long is not clear.

London Hospital, E. W. F. CASTLE, M.B., B.Ch.Camb.

Reports of Societies.

FILARIASIS IN BRITISH GUIANA.

AT a meeting of the newly formed Section of Tropical Medicine of the Royal Society of Medicine, held on November 30th, Sir LEONARD ROGERS presided, and Dr. J. B. CHRISTOPHERSON gave a practical demonstration on a patient of the technique of intravenous injection of tartar emetic in bilharziasis, and a number of exhibits were also shown.

Dr. F. G. ROSE read a communication on "Filariasis in British Guiana," based on the results of his five years' work in that colony, where infection with *Filaria bancrofti* is very common.

Liability to infection, he said, varied in different areas, being far greater in the more densely populated parts, such as Georgetown; it was chiefly from such areas that the cases discussed were drawn—hence the high index of incidence. The concentration method of Smith and Rivas showed that infection was often present in the blood even when no actual embryos were detectable in it; and the method enabled embryos of nocturnal habit to be detected in the peripheral blood during the day. The percentage incidence he found was 19.5 for males, 23.3 for females. Elephantiasis incidence was 5.3. Putting together all factors, the speaker estimated that at least 40 per cent. of the population had been at some time infected with the parasite. In Georgetown Public Hospital 5 per cent. of the patients suffered from elephantiasis, and 20 per cent. showed the clinical manifestations of filariasis; of the school children 25 per cent. revealed filaria in the blood. The infantile death rate was over 200 per 1,000, and the proportion of stillbirths was very high. Not usually a fatal disease, filariasis did not figure largely in death returns, but it showed itself in recurrent attacks of lymphangitis and lymphadenitis, and in symptoms resulting from the absorption of toxic products from the bowel, as well as in the crippling results of elephantiasis affecting the limbs, scrotum, and breasts; the accompanying sepsis might lead directly to a fatal termination. In the absence of a necropsy the impression might be formed that the case was one of pernicious malaria. The speaker believed filariasis to be a factor in the production of the large number of stillbirths. Certainly it was responsible for large financial loss owing to the amount of sickness.

In the author's investigations, *Culex fatigans* and *Stegomyia fasciata* were the most frequent potential carriers in the colony. The sanitary conditions in the island were bad, and among the general populace the use of mosquito nets was practically unknown. Of the mosquitos examined only 7.4 per cent. were found to be infected with filariasis, so that a vigorous preventive campaign seemed to promise well. With regard to the causation of filarial periodicity, no theory yet propounded fitted in with the known facts, but in this communication an explanation, as yet unverified, was submitted for criticism and debate. The significant fact was that the periodicity of the embryo was the periodicity of the mosquito host, and the explanation seemed to lie in the habits of that host. He believed that there was an essential connexion between the sheath of the embryo and its periodicity (the non-periodic embryos had no sheath). Both forms of embryo were found in greater numbers in the lung capillaries than elsewhere. The tension of the blood certainly played a part in hindering the passage of the embryos, which were swept with the lymph into the thoracic duct. In the circuit there were two potential seats of obstruction—namely, the pulmonary and visceral capillary systems. While mosquitos were about, however, there seemed to be some agency which released the embryos temporarily; the intensity of this influence increased as feeding time approached, waning after repletion.

Sir PATRICK MANSON expressed himself as much interested in the paper, especially that part which dealt with periodicity. This subject offered problems the solution of which was beyond his ingenuity. Filariasis was more important than was usually apprehended, and, in view of Dr. Rose's estimate that 40 per cent. of the population of British Guiana were or had been affected by it, it was relevant to ask why the sanitary authorities in the colony had not done something to prevent this definitely preventable disease.

Colonel JAMES asked if any system of notification was in force. To get rid of the *Culex fatigans* would not be a very difficult problem if the money were forthcoming, especially if a proper water supply were provided. In infected houses a 7.4 per cent. infection rate of *Culex fatigans* seemed low; the argument might be advanced that in the presence of such a rate there was little need for special precautionary measures.

Major BLACK raised the question why so many thousands who had the filaria in their blood did not show symptoms of the disease; he knew many who had survived the invasion of their blood and were still alive and apparently well. There was need for much research and study on this subject, especially in regard to the differences in the varieties of the parasite and their habits. He believed the subject was about to be taken up in Australia, and he suggested that the researches might be co-ordinated.

Dr. MANSON-BAHR believed that the non-periodic *Microfilaria bancrofti* had a wide geographical range, but that its limits were clearly demarcated.

Dr. R. T. LEIPER said that Dr. Rose had brought out the importance of the bacterial infections which previous observers had overlooked. He did not think the death of the parent worm or abortion by the female worms was a cause of the lesions which followed filarial infection. He did not believe that the filarial periodicity was an adaptation to the habits of the mosquito; that periodicity was, in his view, a biochemical reaction.

The PRESIDENT emphasized the great importance of secondary infections; he had used streptococcal vaccines, which had given promising results and lessened the number of attacks.

PHYSICAL THERAPEUTICS.

AT a meeting of the Medico-Chirurgical Society of Edinburgh on December 1st, Emeritus Professor F. M. CAIRD presiding, a discussion on physical therapeutics was opened by Dr. J. STUART ROSS. His remarks dealt especially with disabled pensioners and with results obtained at the Orthopaedic Annexe at Tynecastle, Edinburgh. Four main conditions presented themselves: fibrositis in its many forms in muscles, ligaments, skin; varieties of muscular lesions; nerve injuries; and persistent sinuses or unhealed open wounds. The question of operative treatment having been settled, it remained to apply remedial treatment. The great importance of intelligent co-operation on the part of masseuse and patient was emphasized. Massage stood first in remedial treatments, the effect of which was to remove the products of inflammation, to improve the circulation, to relax muscular spasm, relieve nerve pain, mobilize scars, and develop muscles. A séance of massage was usually completed by passive movement, though this had limited uses. Movements and exercises, supervised and graduated, were valuable in restoring recently paralysed muscles, and in such exercises the posture of the enfeebled muscle and the necessity of relaxing its opponent were important. Under this heading the speaker dealt with curative workshops, where, on the whole, his experience had been disappointing because of the tendency, often unconscious, of men to "dodge their deformity." He spoke briefly of muscular re-education in tabes, disseminated sclerosis, and poliomyelitis. *Electrical treatment* was then taken up in its various forms. The sinusoidal current was the sovereign remedy for chilblains. As to galvanism, ionization was indicated in scars and chronic synovial conditions; in rheumatic pains, with salicylate at the positive pole, and sulphur at the negative; and in closing sinuses with brilliant green (+) and ichthyol (−). Galvanic limb-baths for conditions of paralysis were sometimes useful, if the limb were carefully placed in the bath. Lastly, in eliciting the first muscular movement after paralysis, the galvanic current was of value. Faradism was indicated generally for conditions in which muscular movement was defective and not absent. He advocated the use of shallow faradic foot-baths for five to ten minutes in early flat-foot, where the results were very good. He dealt lastly with the use of graduated splintage—that is, the use of retentive apparatus which applied steady and continuous traction. This was indicated in many forms of contracture and stiffness of limbs, exclusive of articular conditions. Various examples of retentive apparatus and graduated splints were shown, and their effects upon conditions of contracture demonstrated by lantern slides.

Dr. Luke cited a case of paresis of the deltoid after chorea where massage and electricity had done some good, but where further substantial benefit was effected by six weeks' rest. As to ionization, the results were good but were only obtained slowly, and the treatment required both patience and faith on the part of the patient. Dr. Edwin Bramwell spoke of the functional element associated with many organic conditions and the importance of assessing the amount of this functional factor in such cases. The presence of this functional element and its curability must be pointed out to the patient. The oldest functional cases were hardest to cure, because there the confidence and co-operation of the patient were more difficult to secure, and the demonstration to the patient of any muscular movement was of great importance. The value of electricity was largely hypothetical; it was difficult to prove by animal experiment, and the benefit which sometimes resulted was largely due to suggestion and the personal influence of the physician. Dr. A. Goodall quoted an experiment by Sherrington on the decerebrate animal, in which extensor spasm was inhibited by stimulation of the flexor muscles; he advised the application of the principle to cases of contracture.

Dr. R. Fleming defended the use of electricity in conditions of paralysis; massage was good, but it was better still if supplemented by electricity. He also emphasized the value of re-education in disseminated sclerosis. As an instance of the value of pulmonary gymnastics he quoted a case of tuberculous pleurisy in which the friction was demonstrated to a class of students, and was heard by about a dozen, and then became no longer audible. Dr. [illegible] said that the effects of massage and electricity could be increased by preliminary treatment of the paralysed limb or part. This was cold and stiff, and by bathing and various forms of light irradiation it could be softened and flushed with blood. The subsequent treatment then became more effective.

Mr. J. W. Dowden maintained that many of these post-war cases of contracture were the result of bad treatment. The principles of correct treatment of cases of wounds and fractures were early active movement, and the less splints the better. He gave his own experience of this method in fractures of the upper arm and clavicle. Such treatment lessened the formation of scar tissue, and pumped the pus out of septic wounds, and would prevent many of these cases of contracture. Nerve injuries could not be treated in this way, but they were very few. Dr. Murray Lyon made some remarks from the point of view of the taxpayer. In many cases pensioners found treatment more pleasant than work, and did not want to return to work, and in this way introduced a functional element which was against recovery. But it should be the prime object to get them back to work as soon as possible. Mr. J. W. Struthers spoke of the need in civil practice of such methods of physical treatment. Every large civil hospital required an orthopaedic department of this kind, where sprains, fractures, wounds, and whitlows could be dealt with both in their early and late conditions.

CHORION-EPITHELIOMA.

At a meeting, held at Sheffield on November 19th, of the North of England Obstetrical and Gynaecological Society, the President, Mr. Miles H. Phillips, described a case of chorion-epithelioma of the ovary in a woman aged 25.

The patient had had one child two years previously, but no miscarriages; she was first seen in May, 1920. Menstruation was regular till January, 1920, when, after six weeks' amenorrhoea, she had a "flooding attack" lasting fourteen days. Severe pain accompanied this attack, but only lasted half an hour; a similar attack of pain occurred five weeks later. In March, 1920, there was another loss, which the patient regarded as an ordinary period; from this time until May there was amenorrhoea. An abdominal swelling had been noticed by the patient for a month, and she had also suffered from daily nausea and vomiting and occasional frequency of micturition. On examination she did not look ill, and there were no breast changes; a central elastic tumour occupied the abdomen and reached nearly to the umbilicus; no souffle or foetal heart sounds were audible. On vaginal examination the uterus was of normal size and pushed forward by a nodular mass continuous with the abdominal tumour.

As the history suggested an ectopic gestation, and the tumour was apparently an ovarian one, a provisional diagnosis of ovarian pregnancy was made and the patient admitted for operation.

On opening the abdomen, an irregular haemorrhagic tumour was found rising up from the pelvis behind the uterus and covered by adherent omentum. The tumour occupied the position of the right ovary, the right tube being stretched over its anterior surface; there was considerable infiltration of neighbouring structures, and the growth was separated from these with great difficulty. The appearances were so strongly suggestive of chorion-epithelioma that it was considered advisable to remove the body of the uterus and the left appendage, although they were apparently healthy. No metastatic growths were found in the liver or other parts of the abdomen. The tumour was ovoid in shape and measured 8 by 5 by 5 in. On section it was dark and haemorrhagic in appearance, and microscopically showed all the characteristic cells of chorion-epithelioma.

The patient made a good recovery, leaving hospital at the end of the fourth week, but she had recently developed a rapid recurrence in the pelvis. Mr. Phillips had only been able to trace five other recorded cases of chorion-epithelioma of ovary.

Dr. J. Chisholm read a paper reviewing thirteen cases of chorion-epithelioma admitted to the Jessop Hospital, Sheffield, since 1908; of these, four had occurred during the present year. The primary growth was uterine in ten cases, tubal in two, and ovarian in one. The age incidence varied from 21 to 43 years; half the cases occurred before the 35th year. The tubal and ovarian cases being excluded, vesicular mole had preceded the chorion-epithelioma in 50 per cent. of the cases. The interval between the last pregnancy and the first observed symptom of chorion-epithelioma was variable, but in the cases following vesicular mole no interval occurred, the haemorrhage being continuous. Where the growth was tubal or ovarian the symptoms closely resembled those of ectopic pregnancy. In uterine cases bleeding was always the first symptom. Pain, when present, occurred later, and was usually of no great severity. Vomiting sometimes occurred and was severe in a case in which free blood was present in the abdomen, from perforation of the uterine wall by growth. Haemoptysis was present in two cases, in one being slight and disappearing after operation, in the other more severe and due to secondary deposits in the lungs. In ten cases a tumour of varying size was noted on abdominal examination. This was median in position, soft and tender, closely simulating the pregnant uterus. Twelve patients were operated on, the remaining one being too advanced. The after-history of those submitted to operation was:

Died: 2 cases (one shortly after operation from bronchial trouble, one in a year from recurrence).

Alive and in good health: 7 cases (operation over ten years ago in 2, over three years ago in 5).

Alive but growth had recurred: 1 case (ovarian).

Not traced: 2 cases.

EYE STRAIN.

At a meeting of the West London Medico-Chirurgical Society, held on December 3rd, Dr. H. A. Des Vœux read a paper on "Blepsopathia or eye strain," a subject in which he had taken particular interest for over twenty years. It was fairly generally recognized that minor degrees of refractive error were of no significance as far as vision was concerned, but the speaker was convinced that they often led to other baneful effects. The strain of constant adjustment told in the main on the nervous system. Headache was a frequent symptom in eye-strain—perhaps the most frequent; but absence of headache by no means negatived eye-strain, and this in many cases led to the true cause of the symptoms being missed.

The two commonest symptoms for which this group of patients sought treatment were fatigue and exhaustion; they tired readily, and suffered from lack of power to concentrate. Faintness and giddiness were also not infrequent symptoms, and actual loss of consciousness might occur. These attacks closely resembled petit mal, and, in the speaker's opinion, many cases of true epilepsy might be due to refractive error. Migraine was another symptom often associated with eye-strain, and was sometimes relieved by suitable glasses; he could not, however, go so far as to say these circumstances were always in the relation of cause and effect. In children, otherwise-unexplained dislike for games or for cinema shows, as well as bilious attacks and other minor troubles, could be traced to the refractive error and cured by glasses. The patients were frequently of the "nervous" type, and suffered from depression, pessimism, fears, and panics. A history of train sickness in childhood could in some cases be elicited. If unrelieved the patients might become mental wrecks.

Blepsopathia was essentially a disease of town-dwellers and those whose eyes were incessantly being used—for example, munition workers. The condition was often accompanied by other diseases, and the speaker emphasized the importance of considering eye-strain in any case in which the symptoms could not be accounted for by other and perhaps more obvious causes. It was often a matter of great difficulty to get these patients to have their eyes tested, both on account of their dislike for wearing glasses, and because they said that their eyesight was excellent.

AT a laboratory meeting of the Pathological Society of Manchester held in the Department of Pathology, Manchester University, on December 8th, Mr. J. P. BUCKLEY demonstrated specimens of (1) chronic intussusception of the ileo-caecal region; (2) a peculiar gall stone formed in the cystic duct; and (3) an epithelial odontome. Dr. J. H. DIBLE demonstrated the histology of brain changes in two cases of encephalitis lethargica. Mr. H. PLATT discussed endosteal tumours, and showed specimens of myeloma, endosteal sarcoma, and osteitis fibrosa. Mr. C. ROBERTS demonstrated specimens of (1) renal sarcoma, and (2) traumatic rupture of the spleen. Dr. A. SELLERS, the President, described the histological appearances in Mr. Roberts's case of renal sarcoma, and demonstrated specimens from a case of purulent meningitis due to the meningococcus.

Reviews.

FRACTURES OF THE NECK OF THE FEMUR.

THE seventh fasciculus of the *Annales de la Clinique Chirurgicale du Professeur Pierre Delbet*,[1] is wholly given to an account by Professor ANTOINE BASSET of fractures of the neck of the femur; it contains 22 plates, and a number of other illustrations, and includes a description of the architecture and vascular supply of the upper part of the femur, together with observations on more than 100 cases and specimens. Upon these points the statements correspond with those contained in English textbooks. The interest belonging to the treatise lies in M. Delbet's proposal to fix by a peg the fracture of the neck in old people. Although advocated for years before the war, the application of the procedure to old people has found few imitators in France. A decision on the question can only be formed by considering the history of the cases in which the treatment has been adopted; a number had already been collected by 1914; in an addendum in the place of a preface recent cases are noted which are quoted below. Delbet terms "cervico-trochantériennes" the extracapsular fractures of Astley Cooper, and the latter's intracapsular fractures he names "fractures cervicales," subdivided into "transcervicales," and "décapitations," in which the head is separated at the anatomical neck. It may be objected that these names involve distinctions too precise for the purposes of classification in practice. Moreover, Delbet fully maintains the differences between the extracapsular and intracapsular fracture. The extracapsular fracture unites by bone when properly set and cared for subsequently under the control of examinations by the *x* rays. There is indeed a special objection to fixing this fracture by a screw or other foreign body, for this aggravates the tendency to the formation of an excess of external callus by which the movements of the joint may subsequently be restricted.

Much attention has been given of late years to the cases in young people in which there is separation at the epiphyseal line, or a fracture through the neck near the head. In such cases there are special reasons for fixing the fracture, and there are not the objections which apply to old people. Probably a more open operation is indicated than that employed by Delbet, and there is more need for the abduction recommended by Whitman, always under the guidance of the *x* rays. Delbet simply makes a linear vertical incision on the outer side down to the bone, the middle of the incision being at the junction between the great trochanter and shaft, midway between the anterior and posterior borders. Then, in a recent case, he bores and inserts a screw up the long axis of the neck into the head; in an ununited fracture of long standing he substitutes a bone peg for the screw. Before the operation the patient is examined by using both the *x*-ray screen and taking a photograph, after which marks may be made on the skin over the fracture. Delbet has not actually operated on an *x*-ray table under the guidance of the screen, but adopts a special pointer as a guide. This consists of an upright fixed into a broad stand which rests on the operating table beside the patient's limb, and at the top of the upright is an arm which is fixed after the *x*-ray examination so as to serve as a director for the long axis of the neck. It is obvious that the least roll of the patient's pelvis, or of his thigh, also the smallest displacement of the stand, must greatly alter the direction of the pointer. This may explain why the pointer has not succeeded so well in the hands of others. It would seem far better after a preliminary *x* ray examination to operate on an *x*-ray table supplemented by touch.

Cases of Recent Fracture in Old People. (a) Extracapsular.

Obs. 108.—M., 56. "Fracture trochantéro-diaphysaire." Screw, 8 cm. in length, inserted, which afterwards had to be removed. Eleven months later the man wrote that he could walk without a stick and go upstairs, but had a difficulty in descending and in sitting down; he still had some pain, especially at night.

Obs. 109.—M., 62. "Fracture cervico-trochantérienne." Screw 9 cm. inserted. Afterwards complicated by phlebitis and pulmonary emboli, and shortening 2.5 cm. Five and a half months later the man wrote that he could get about for three or four hours, but had to use crutches on account of the oedema and stiffness of the knee following the phlebitis. He could go downstairs more easily than he could go up.

Obs. 112.—F., 77. "Fracture cervico-trochantérienne." Out of bed after five days. Walked with two sticks after six weeks; four months after walked very easily; very good result.

Obs. 116.—M., 75. "Fracture cervico-trochantérienne." Screw 9 cm. inserted thirteen days after injury. A month later the man could walk bearing easily on his leg.

(*b*) *Intracapsular.*

Obs. 110.—F., 73. Screw 8 cm. Five months after used one stick in the house and two sticks outdoors. No shortening. Mounted three stories to her rooms and descended by the help of one person and the handrail.

Obs. 111.—M., 74. "Fracture par décapitation." Screw 9 cm. Death thirty days after.

Obs. 113.—F., 59. Screw 8 cm. Three months later moved with short steps by aid of a stick. Failure to do better ascribed to timidity.

Obs. 114.—F., 62. "Fracture transcervicale." Screw 9 cm. After a month up on crutches; after six weeks began to walk unassisted, but weak from age; after two months was able to get about with a stick, put her foot up on a chair, and resume occupation as a *concierge*.

Obs. 115.—F., 58. "Fracture transcervicale." Screw 9 cm. Senile, fat, and quite deaf. In ten weeks could move about by pushing forwards a chair. The progress was slow owing to muscular atrophy and the general condition.

Obs. 117.—F., 76. "Fracture transcervicale." Eight days after injury, shortening 3 cm.; screw inserted. Out of bed in a week; nineteen days after walked round the ward with two sticks, and improvement continued.

Obs. 118.—F., 57. "Fracture transcervicale." After eight days, shortening 2.5 cm. Screw 9 cm. inserted, a little too long, so that it projected some millimetres through the head, and the fragments only partly in apposition. Complicated by phlebitis. After fourteen months began to move supported by a chair, and afterwards to bend the hip up to 45 degrees.

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[1] *Annales de la Clinique Chirurgicale du Professeur Pierre Delbet.* No. 7: *Les Fractures du Col du Fémur.* Par Antoine Basset, Professeur agrégé à la Faculté de Médecine de Paris. Paris: Félix Alcan. 1920. (Imp. 8vo, pp. 402, 22 plates. 40 fr. net.)

Cases of Ununited Fracture.

Obs. 120.—F., 65. "Intracapsular." Got up five days after the accident and walked without support, but gradually increasing inability until after ten weeks had no power in limb. Nine months after the accident an attempt was made to fix the ununited fracture by means of a 10 cm. peg from the fibula, but this proved too soft. A year after the accident there was a refracture, and the patient refused further treatment.

Obs. 122.—M., 48. Ununited fracture pegged by 10 cm. of bone taken from the fibula. Six weeks later he left the hospital walking well. Three months later he wrote that he had been subsequently confined to bed owing to pleurisy.

Obs. 126.—F., 75. "Fracture cervico-trochantérienne" seven months before, ununited, unable to walk. Peg of dry ox bone, length 7 cm., diameter 1.2 cm. Got up and walked on twelfth day.

Obs. 127.—F., 66. "Fracture transcervicale." No union after six weeks. A 9 cm. peg from fibula inserted. A month later upon crutches; three months later able to go up and down to her rooms on the first story, and to walk about.

Obs. 128.—F., 60. Ununited fracture for three years; shortening 4 cm.; only able to move about on two sticks aided by a high boot and leather case. Bone peg 9 cm. in length and 1.2 cm. in diameter inserted. Two and a half months later walked with two sticks, without the high boot and case; could sit down and easily go up several stairs. All pain had quite gone and progress was continuing.

TREATMENT OF SYPHILIS.

Dr. H. S. Baketel's new work on *The Treatment of Syphilis*[2] has many merits. The subject is presented under well-arranged headings, and the style is clear and emphatic. The author states that he has written, not for the skilled syphilologist, but rather for the practitioner who is unfamiliar with the "whys, wheres, and hows" of intravenous medication. Yet the book discusses the treatment of syphilis with a fullness that is in excess of that required by the general physician. It is, in fact, a book that will appeal particularly to those who have devoted special attention to the subject of syphilology.

The first few chapters contain a brief account of the history and chemiotherapy of arsenic compounds. The later chapters deal with the indications for the use of such compounds, the technique of administration, and the question of reaction and toxic effects. The author utters a very clear warning against the employment of any but the most scrupulously careful technique when administering "arsphenamine" or its derivative. The ease with which the soluble arsenical preparations may be given has tended to encourage the adoption of slovenly and careless methods, against which the author lodges an emphatic protest.

Amongst the methods of administering mercury the author is inclined to favour the use of the bichloride in $\frac{1}{4}$ to $\frac{1}{2}$ grain doses. This salt can be conveniently put up in ampoules of gelatine ready for use. The injection is given intramuscularly and repeated every other day, a very careful look-out being kept on the urine. In discussing the use of iodides Dr. Baketel urges that heroic doses can alone produce results. When dealing with gummata as much as 100 grains daily may be required.

The pros and cons of intrathecal injections are carefully weighed, the opinions held by both partisan and opponent of the method being clearly stated. Although the reader is finally left in some doubt as to the attitude he should adopt towards this question, he has undoubtedly been given sufficient indication as to the direction in which salvation lies. Greater efforts must be made to distinguish between the various subtypes of nervous lesion—that is to say, to distinguish the type of case that has been proved by experience to respond to intrathecal injection from that which is known to be refractory. The careful and [illegible] manner in which such a thorny subject as the use of intrathecal injection has been handled is typical of the spirit in which the work has been written. [illegible]

MEDICAL ELECTRICITY.

If the [illegible] of any textbook can be judged from the number of editions demanded, then that on *Medical Electricity*, by the late Lewis Jones, has established its claim beyond any doubt. It has run through seven editions since its first publication, and has now been revised and brought up to date by Dr. L. Wood Bathurst in an eighth. Substantially it retains its original form, but many valuable additions have been made as a result of the discovery of new methods of electrical treatment, and of the increased knowledge of these, and older methods, brought about by the experience of the war and the treatment of our wounded and disabled soldiers. Great opportunities for advancing and putting on a more sound basis electrical methods have arisen during the past six years; full advantage has been taken of them, and the results are to be seen throughout the present edition.

The original chapter on the apparatus and technique of *x* rays has been dropped. Since *x*-ray work can hardly at the present time be considered as a branch of electrotherapeutics, and as it cannot be discussed with any value within the pages of a short chapter, this became necessary. This does not mean, however, that the effects of irradiation by *x* rays are not alluded to, for there are many references to its value in the treatment of various conditions. A chapter on ultra-violet radiation is new. In it the various types of lamps are described, the action of these radiations is discussed, and the scope of this method of treatment, as regards the diseases it influences and the methods of its application, is pointed out.

With these exceptions the book remains in exactly the same form as before, with the same chapters and headings, and with the same general arrangement; but all the chapters show the hand of revision and the addition of the new material of the past three years. This more especially applies to the addition of much that is new relating to ionization, diathermy, and the electrical testing of muscles, garnered chiefly from the large number of papers published as the result of work carried out in the numerous military hospitals.

WOUNDS OF THE LIVER AND BILIARY TRACT.

Professor P. Soubeyran's monograph on wounds of the liver and the biliary apparatus[4] is a product of the war and is largely based on an analysis of 297 collected cases; it deals only with wounds of the organ and does not include rupture of the liver without obvious perforation of the body wall. In peace wounds of the liver are more often due to weapons, such as knives and daggers, than to firearms; whereas in war the reverse holds good; thus among 239 cases in which the nature of the wound was recorded, all but two were the result of shells, bullets, shrapnel, bomb, etc. Shell wounds are nearly twice as frequent as bullet wounds of the liver and their effects are, of course, much more severe. The chapter on the morbid anatomy contains a number of illustrations, including two of President Carnot's liver. In 174, or more than half the 297 cases, organs in addition to the liver, particularly the right lung and the stomach, shared in the wound, a point naturally of the greatest prognostic importance, for the mortality was 26 and 71 per cent. in the contrasted groups. This monograph is divided into three parts—dealing with wounds of the liver, wounds of the biliary tract, and a tabulated list of the cases of these conditions published between 1915 and May 1st, 1918. The total mortality of the 297 cases worked out at a little over 50 per cent. The surgical treatment is fully described and well illustrated by figures, and there is a useful bibliography.

NOTES ON BOOKS.

The new edition of the *Medical Directory*[5] for 1921 follows in every respect the precedent of its recent predecessors. It is the seventy-seventh edition, and since the beginning has grown very much in size and completeness. The variations, however, from year to year are not conspicuous, and the profession has become so habituated to its form and arrangement that no change is desired. It contains [illegible] names of members of the medical profession; this is an increase of 666 on the number in the previous issue. The numbers in Great Britain, however, appear to be nearly stationary; there is an increase of 4[illegible] in London, 86 in the provinces, 29 in Scotland, and 65 in Ireland, and a decrease of 18 in Wales; the military services, rather unexpectedly, show an increase of 78. More than half (328) of the added names appear in the list of practitioners resident abroad, chiefly, apparently, in Australia, South Africa, and the Crown Colonies. In this office the occasions for consulting the *Medical Directory* are many on every working day, and we gladly bear testimony to the accuracy of the information given. So high a standard can only be attained by the most painstaking work on the part of the editors.

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[2] *The Treatment of Syphilis.* By H. S. Baketel, A.M., M.D. New York: The Macmillan Co. 1920. (Med. 8vo, pp. [illegible]; [illegible] illustrations. [illegible])

[3] *Medical Electricity: A Practical Handbook for Students and Practitioners.* By H. Lewis Jones, M.A., M.D., F.R.C.P. Eighth edition, revised and edited by L. Wood Bathurst, M.D. London: H. K. Lewis and Co., Ltd. [illegible] pp. [illegible]; [illegible] figures. [illegible] net.)

[4] *Les Blessures du Foie et des voies biliaires.* Par P. Soubeyran, Professeur agrégé à la Faculté de Médecine de Montpellier. Paris: [illegible] 1919. (Roy. 8vo, pp. [illegible]; 75 figures. [illegible] francs.)

[5] *The Medical Directory, 1921.* London: J. and A. Churchill. 1921. [illegible] net.

Burdett's Hospitals and Charities for 1920, being the thirty-first edition of this valuable work of reference, has now appeared.[6] It was in preparation when Sir HENRY BURDETT, the founder and editor, died at the end of April. For thirty years he had been responsible for the work, and to the last took the active interest in statistics which had marked his life. The opening chapter contains tables showing the income and expenditure for the years 1917–18 of the hospitals, dispensaries, homes, charities, and institutions of a like character in the British Isles, of which particulars are given in subsequent sections of the volume. In 1896 the total income of the voluntary charities of which particulars were given amounted to just over £8,000,000; in 1918 the income of those under review was £19,235,000. During the same period the expenditure increased from £7,464,000 to £17,475,000. The future of the voluntary hospital system is one of the most pressing topics of the day, and in the coming year it is probable that many who never consulted it before will have occasion to turn to "Burdett" for information regarding hospital finance. This subject occupies nearly 100 pages of the book; the remainder, containing about 800 pages, gives the customary detailed directory of charitable institutions, both at home and abroad.

The Immortal Caravel,[7] a book of thoughts and aphorisms, by Colonel ARTHUR LYNCH, a former pupil of the late Sir William Gowers (as is mentioned in the *obiter dictum* on "Life") and a man of many and varied experiences, is the third of "The Pilgrim's Books," which are intended to slip into the pocket of the walker or bicyclist, and are for the most part selections from classical writers; thus the second volume contains extracts from Sir Richard Steele and Joseph Addison, and the fourth is "The Noble Tale of the Sangreal," by Sir Thomas Malory. The reader's curiosity as to the meaning of the title is at once satisfied on opening the volume by the inscription, "The Immortal Caravel is Life; its freight—Emotions, Thoughts, Ideals." The text consists of jottings and reflections made by the author on his pilgrimage through this vale of tears. Not that he takes a narrow or depressed view of existence; he is all for a vigorous development of all our faculties and powers and falls foul of John Stuart Mill's advocacy of the superiority of intellectual pleasures, and dubs him a dry academic man with the defects of the "sexual invalid." While recognizing that science is the great directing line of a nation's advance, he insists that it is not all, and that it must be combined with a broad outlook and activity in all respects.

Professor PADDOCK of Chicago has written a small book concerning the care of the prospective mother and her child to which he has given the title of *Maternitas*.[8] He explains that it is not intended in any sense as a medical guide, but rather as a supplement to the advice and instruction which the prospective mother will or ought to receive from her own medical attendant. The advice given is eminently sound and clearly expressed, and it cannot fail to be of use to any woman who is expecting or has just achieved her first child. The book is attractively printed and is illustrated by a number of illustrations worthy of any high-class fashion magazine. Such matters as the mother's clothing and the child's clothing, baths, chairs, and playground, should, no doubt, be dealt with, for correct action in regard to them does not come by instinct; it is a great matter to find an experienced obstetrician who will take the trouble to condescend to simple teaching on such details. This little book may be thoroughly recommended for its purpose.

In *Les Antigènes et les Anticorps*, M. NICOLLE,[9] the well known bacteriologist of the Pasteur Institute, has published the substance of the three Harben lectures at the Royal Institute of Public Health. The brochure contains three chapters, dealing respectively with the general characters of the antigens and antibodies, the diagnostic applications of this knowledge, and the therapeutic uses of serums and vaccines. Animal, vegetable, and microbic cells, fluids, toxins, and ferments, have the power of stimulating the production of specific antibodies, and in this connexion are therefore commonly spoken of as antigens. Antibodies which, like the antigens, are colloidal in nature, fall into two groups—namely, the coagulins, such as agglutinins, precipitins, and antitoxins, and the lysins—for example, cytolysins, albuminolysins, and toxinolysins. In the section on the diagnostic application of a knowledge of these bodies, the principles and limitations of agglutination, fixation of the complement and other tests in enteric fever, Malta fever, bacillary dysentery, and so forth, are passed in rapid review. On serological observations the first three of the four types of pneumococci described by the American bacteriologists are accepted, and a fourth type isolated from black troops by Borrel and Kerandel is added. In the concluding chapter, occupying some twenty pages, a summary is given of the therapeutic uses of serums and vaccines.

The health visitor, as we know her in this country, is called in the United States a public health nurse, but may, however, be something more than our health visitor; she may be a district nurse, a school nurse, a tuberculosis nurse, a factory nurse, a visiting nurse, a baby welfare nurse, or, in fact, any kind of social service nurse. With us these are usually officials of a municipality, but in America there is a national organization for public health nursing which works in conjunction with the public authorities. An account of this organization and of various methods of forming a satisfactory service is the subject of Miss ANNIE M. BRAINARD'S book, *Organization of Public Health Nursing*,[10] in which she lays down the general principles that should be followed. These are well considered and the opinions expressed are evidently those of one with considerable experience in the working of a nursing service. Social welfare workers will learn a great deal from this work and, not least, what pitfalls should be avoided and how.

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[6] *Burdett's Hospitals and Charities, 1920*. Founded by Sir Henry Burdett, K.C.B., K.C.V.O. Thirty-first year. London: The Scientific Press, Ltd. 1920. (Cr. 8vo, pp. 1038. 17s. 6d. net.)

[7] *The Immortal Caravel*. A Book of Thoughts and Aphorisms. By Arthur Lynch. London: Philip Allan and Co. 1920. (Fcap. 8vo, pp 204. 5s. net.)

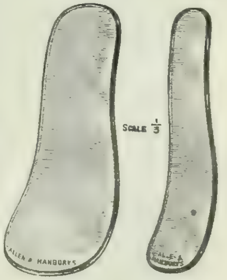
[8] *Maternitas*. By Chas. E. Paddock, Professor of Obstetrics, Chicago Post Graduate Medical School etc. Third edition. Chicago: Cloyd J. Head and Co. (Cr. 8vo, pp. 210; illustrated.)

[9] *Les Antigènes et les Anticorps: Caractères général, applications diagnostiques applications thérapeutiques.* Par M. Nicolle, de l'Institut Pasteur. Paris: Masson et Cie 1920. (Cr. 8vo, pp. 80. Fr 4.50.)

[10] *Organization of Public Health Nursing*. By Miss Annie M. Brainard. New York: The Macmillan Company. 1919. (Post 8vo, pp. xii + 144; 11 charts. 7s. 6d. net.)

APPLIANCES AND PREPARATIONS.

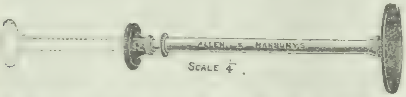
Glass Retractors for Cerebral Surgery.



MR. PERCY SARGENT (London, W.) writes: The accompanying illustration depicts a set of glass retractors, of the sizes I have found to be most generally useful, for employment in place of metal retractors in cerebral work. The principal advantages of glass over metal for this purpose are: (1) The brain beneath the retractor is kept under observation all the time the instrument is being used; (2) the blunt edges of the glass retractors are not so liable to inflict injury as the edges of the ordinary metal spatulae hitherto employed. The retractors have been made to my suggestions by Messrs. Allen and Hanburys, Ltd., 48, Wigmore Street, London, W.

An Adjustable Stethoscope.

DR. NOEL ALDER (Hove) writes: The "telescopic" stethoscope which I have devised is simply a straight monaural stethoscope capable of adjustment to various lengths by means of two metal tubes which are telescoped in one another. The outer tube carries the ear-piece, the inner terminates in the chest-piece; a screw on the distal end of the outer tube makes it possible to fix the tubes in any position. The idea of an adjustable stethoscope occurred to me after I had seen Dr. W. Gordon's article on the "Differences in Value of Different Methods of Auscultation" in the *Practitioner* of August, 1920. The author draws attention to the curious fact that with the straight wooden stethoscope aortic regurgitant murmurs are better heard than murmurs of mitral regurgitation, and that the latter, "even when very slight, are more easily perceived with the double instrument." The reason for this apparent paradox must lie in the different properties of the instruments. It appears to me that the rigid monaural stethoscope acts as a resonator, and therefore increases the sound which has the same pitch as the stethoscope. If the wooden or metal straight stethoscope is lightly held at one end between finger and thumb, and gently struck with a pencil, it will give a sound of definite musical pitch. When the "tone" of the stethoscope happens to correspond with the tone produced by the vibrating cardiac valves or by the contraction of the muscles, we can reasonably expect to obtain the maximum auscultatory effect. In the normal heart the semilunar valves are shorter than the bicuspid flaps; hence the former when vibrating will produce a tone of higher pitch than the latter. By examining the healthy heart with the "adjustable stethoscope" at various lengths of extension, I find that the mitral sounds—especially the second—are more clearly and loudly heard with the extended than with the closed instrument, but that the reverse holds good for the aortic sounds.



Under pathological conditions, when the valves are considerably deformed, we cannot expect to gather evidence from the resonatory effect of the rigid stethoscope; hence, as Dr. Gordon points out, loud murmurs are better heard with the binaural instrument. But when the lesions are slight and the valves still preserve a degree of elasticity and vibration, the monaural resonating stethoscope gives better results. By virtue of its adaptability for resonance, it can also be used as a differential stethoscope. I was astonished to find how very much more distinct both pulmonary and cardiac sounds grow when the instrument is extended to varying degrees. To obtain the best acoustic effect it is advisable to allow a certain amount of play before fixing the tubes in one position, in the same way as an object is focussed with the screw of the microscope. If the stethoscope were made of sufficiently long tubes, and tuned and marked at appropriate intervals, I think it might be possible to register definite relations between the sounds of the heart. Lack of material and leisure prevents me from going into the matter more fully at present. I therefore venture to submit the "telescopic stethoscope" to the trial and judgement of others who perhaps will establish definite laws concerning the harmonies of the heart.

The instrument has been made for me by Messrs. Allen and Hanburys, Ltd., 48, Wigmore Street, London, W.

Ampoule Syringes.

The Hoffmann La Roche Chemical Works, Ltd., have sent us specimens of their "Tubunic" ampoule-syringes for hypodermic medication. Each outfit contains a given dose of the drug in a collapsible tin ampoule hermetically sealed on to a hollow needle, the latter being protected from contamination by a glass cap. The whole appliance is less than three inches long, and it should prove a handy means of giving hypodermic injections in times of emergency. A considerable number of drugs, in solutions of varying strength, are made up in this form; for example, morphine, atropine, ergot, and the Hoffmann-La Roche preparations, digalen, omnopon, etc.

BEIT FELLOWSHIPS.

The trustees of the Beit Memorial Fellowships for medical research have recently elected seven Fellows, of whom two are women. The trustees decided that the increase in the value of the Fellowships from £300 to £400 per annum, which comes into operation on January 1st, 1921, shall apply both to the newly elected Fellows and to those already holding Fellowships. The usual period of tenure is three years, and research work must be carried on at one of the institutions recognized by the trustees. The Fellowship of Dr. E. P. Poulton has been extended to a fourth year. The following are the new Fellows, and, briefly stated, the research they propose to carry out.

[illegible], M.D., M.R.C.P., Assistant Physician, [illegible] Hospital, who will investigate in the Department [illegible] London School [illegible] Medicine, [illegible] by the [illegible] method [illegible].

[illegible], B.A., M.D., Fellow in Pathology, Medical [illegible], University of Toronto, who will make a study of [illegible]; this research will be carried out at the [illegible] Institute.

KATHARINE HOPE COWARD, M.Sc., Assistant in the Institute of Physiology, University College, London, who will make a biochemical investigation into the metabolism, nutrition, and growth of young animals with particular reference to the so-called deficiency diseases.

FRANCIS WILLIAM FOX, M.Sc., who will investigate the sterol metabolism in diseases involving malnutrition, this research being undertaken in the chemical laboratory at St. George's Hospital and the Physiological Laboratory at South Kensington.

DANIEL THOMAS HARRIS, M.B., Ch.B., B.Sc., Assistant in the Institute of Physiology, University College, London, who will investigate "tonus," with special reference to the vascular system.

WILDER GRAVES PENFIELD, M.A., M.D., who proposes to study microscopically, in the pathological laboratory of the National Hospital for Paralysed and Epileptic, the nervous paths which undergo degeneration after the removal of brain tissue.

HOWARD WILLIAM COPLAND VINES, M.A., M.B., B.Ch., Fellow and Director of Medical Studies, Christ's College, Cambridge, who will carry out researches on the blood, in the Medical Schools, Cambridge.

VENEREAL DISEASE PROPHYLAXIS.

THE Medical Women's Federation (9, Clifford Street, New Bond Street, London, W.1) has issued the following note on immediate self-disinfection as a method for preventing the spread of venereal disease among the civil population:

"This method has recently been brought to the notice of the public. It is considered by some persons as capable of practically exterminating venereal disease and it has been very pertinently pointed out that if the medical profession really does possess knowledge capable of doing away with this scourge, it is bound to disseminate such knowledge as widely and as efficiently as it can. A society has been formed, one of whose objects is the widespread dissemination of careful and minute instruction for self-disinfection before and after sex intercourse.

"The Medical Women's Federation has carefully considered this question in all its bearings, and, apart from the serious moral responsibility involved, is of opinion that on purely physical grounds there are very serious objections to this method, and to teaching its use to the public.

> (*a*) It would be most undesirable to teach young boys and girls to tamper with their own sex organs, yet, if it were efficient, the method would have to be carefully and minutely taught to quite young boys and girls, even before puberty.
>
> (*b*) It would not be desirable to teach every married woman to regard her husband as possibly suffering from venereal disease and to take precautions accordingly; nor would it be possible for every bride to carry out the instructions given, yet disease among married women forms a large percentage of the whole.
>
> (*c*) The Medical Women's Federation believes that these methods are impossible for the majority of women to practise as recommended. Though a woman may be told to lubricate the vulva, in very few instances would the vagina and cervix be effectively treated. As is well known, infection, both in the case of gonorrhoea and syphilis, may take place at the cervix. The young are the most sought after, and the most readily infected, and hence they are the most dangerous as regards the further spread of infection, and they are the people who would find it most difficult to carry out the method.
>
> (*d*) The means advocated, if properly carried out, are contraceptive. The Federation is not prepared to endorse the introduction of contraceptives broadcast to the public or to recommend contraceptives for 'self-disinfection' when the action of such substances may not even be known to the user.

"These methods are by no means certain to prevent infection in any given individual, especially as it would be impossible to ensure that they were really efficiently applied. We can refer our readers to cases in which the most careful following of this method failed to protect. We therefore regard it as unfair to convey the impression of safety where real safety does not exist. Promiscuous intercourse cannot be made safe, and anything that tends to assume its safety may tend to increase it, and may thereby increase the incidence of the disease."

UNDER the will of the late Mr. Peter Williams the Hospital for Consumption, Brompton, receives £2,000 and St. Mary's Hospital and the North London Hospital receive £1,000 each.

DR. A. J. McCLOSKY, acting principal medical officer in the Federated Malay States, reports a striking diminution in the number of cases of beri-beri treated during the past twelve months. In corresponding periods the total numbers of hospital cases treated in Perak, Selangor, and Negri Sembilan were 1,850 and 585 in 1919 and 1920 respectively. These figures may be correlated with recent food control and rationing, more particularly of rice. Rangoon rice has been substituted for the more highly polished Siam variety, and a reduced rice ration has been supplemented by other articles of diet, such as sweet potatoes and wheat flour.

British Medical Journal.

SATURDAY, DECEMBER 18TH, 1920.

PLAGUE, CHOLERA, AND YELLOW FEVER.

THE Ministry of Health has just published a report on the Progress and Diffusion of Plague, Cholera, and Yellow Fever throughout the World, 1914–1917, by Dr. R. Bruce Low,[1] who for twenty-three years has furnished similar reports to the Medical Department of the Local Government Board. Formerly these valuable summaries were published annually in the Reports of the Local Government Board, but war conditions rendered this impossible by interfering with the collection of data and in other ways, and accordingly the present report covers the events of, roughly, the first four years of the war. Although the progress made in public health during the last half-century makes it improbable that any of these three diseases will ever seriously menace the health of Great Britain, the accumulation of knowledge thus provided is of the greatest value to those responsible for the well-being of the Empire, for plague and cholera still cause an enormous loss of life in our dominions overseas; and, as Sir George Newman remarks in his introduction, of all means of prevention the spread of knowledge and education in hygiene is the most effective. These summaries not only enable comparisons to be made between the behaviour of disease in the past and at the present time, but they supply material for the future study of the epidemiology, etiology, and prevention of disease. As no other central health authority in Europe or elsewhere has provided such a systematic compilation of data arranged on a uniform plan for such a long period of years, and as in all probabilty this is Dr. Bruce Low's last contribution to the series, it is only right to emphasize his services to the health of the Empire.

Although the statistics in Dr. Bruce Low's report do not profess to go beyond the end of 1917, there are incidental references to events since that date, such as Noguchi's researches on *Leptospira icteroides* as the cause of yellow fever, the incidence of plague in India up to the end of the first half of 1919, and the occurrence of cholera in Palestine early in 1918. The records of the prevention of cholera, and especially of yellow fever, are more encouraging than those of plague; in fact, the well-marked diminution of yellow fever during recent years affords reasonable grounds for thinking that it may now be included among the diseases that are disappearing as a result of medical science and the advance of civilization. Considerably more than half of the volume is devoted to plague, and, as in former reports, its incidence in each country, with the attendant circumstances and, when possible, the preventive measures adopted, are described in detail. In India, the chief reservoir of the infection, 9,841,896 deaths from plague were reported in the twenty-two years ended 1917; and, in spite of all the work that has been done, there is little or no evidence that its ravages will cease; indeed, the plague year July, 1917, to June, 1918, with a mortality of 820,292, was one of the worst experienced for ten years. It should, however, be remembered that 1917 had the highest rainfall on record, and that excessive humidity with a certain range of temperature favours the prevalence of fleas. It is noticeable that the districts of India most subject to plague are the least ravaged by cholera, and that Ceylon escaped any outbreak of plague until it appeared in 1914 in Colombo, the reported cases for the four years under review being 413, 139, 291, and 227.

Cholera, which accounted for 8,247,846 deaths in India in the twenty-two years ended 1917, has become less prevalent than formerly, and this reduction is to some extent due to measures taken to prevent contamination of the water supplies. Human cholera-carriers, especially in connexion with fairs and pilgrimages, play an important part in the spread of the disease, and accordingly special precautions are now taken at nearly all the greater festivals and at most of the frequented shrines to prevent excremental pollution of water supplies, bathing places and the surface soil, as well as to avoid contamination of food by flies. The greatly diminished number of yellow fever outbreaks during the years 1914–17 is due to several factors: in addition to the eradication of the disease from the chief endemic centres, such as Havana, Rio Janeiro, Vera Cruz, and Panama, by the antimosquito campaign, attention is directed to two other causes. War conditions exerted a favourable influence by interfering with the transport of visitors to endemic areas, and so restricted the supply of non-immune persons who, by contracting the disease, would serve to infect successive generations of stegomyia; thus yellow fever would tend to disappear spontaneously from failure of the human host. A third factor is the substitution of steamships for the old sailing vessels, which were suitable breeding places for mosquitos. The fear that the opening of the Panama Canal would be followed by a spread of the disease has not been justified.

ARTIFICIAL LEGS.

IT is not, perhaps, to be expected that any article for personal use supplied by a Government department will be accepted by retired officers and pensioners universally without grumbling; it may be assumed also that those who are well satisfied will keep quiet, while those who are dissatisfied, even if they represent only a small minority, may create an effect on the mind of the public quite out of proportion to the extent of the grievance. The correspondence on artificial limbs which has recently appeared in the *Times* is a case in point. It is certain that a very large number, and probable that an overwhelming majority, of pensioners are well satisfied with the limbs supplied by the Ministry of Pensions, but they do not feel called upon to write to the daily papers and say so. Those who are dissatisfied and have constituted themselves the mouthpieces of the dissatisfied do, on the other hand, make themselves heard.

The complaints of the writers of these letters appear to fall under one or more of three heads: (1) That the limbs supplied by the Ministry of Pensions are needlessly heavy; (2) that consequently they will produce curvature of the spine; and (3) that the metal leg which is made and sold by one particular firm at a high price is not supplied to every pensioner who asks for it.

The second complaint may, we think, be dismissed at once as of little importance. "Curvature of the spine" may sound terrible in lay ears, but experience of such inequalities of limbs as result from hip disease and paralysis has taught the medical profession that such secondary curvatures are of little importance in themselves. More or less lateral curvature is probably inevitable when—as, for instance, after a high thigh amputation—great inequality of muscles and of weight is a permanent result, no matter what artificial limb be worn.

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[1] The Progress and Diffusion of Plague, Cholera, and Yellow Fever, throughout the World, 1914-1917. Reports on Public Health and Medical Subjects, No. 3. Ministry of Health. Published by His Majesty's Stationery Office. 1920. (Pages 276. 7s. 6d. net.)

The first complaint—that the limbs supplied are too heavy—is more serious. We suppose there can be no question that for amputations above the knee, at any rate, an artificial limb cannot be too light, provided it is strong enough; but we must guard against exaggeration, and we feel bound to remark that the figures quoted by Mr. Ponsonby, one of the correspondents, are misleading. It is easy to ascertain what is the weight of each type of limb supplied by the Ministry of Pensions, and we have made it our business to do so. We have satisfied ourselves that the only type which approaches in weight to 9 lb. is that made for exarticulation at the hip, and, so far as our information goes, this amputation has not yet been successfully fitted by the makers so warmly advocated by Captain Baird and Mr. Ponsonby. For amputations below the knee no light metal limb has yet been put forward which has any advantage in weight or otherwise over those of wood, leather, and steel.

The difference in weight between the lightest metal limb and the wooden limb for the same amputation does not amount on the average to more than 1½ lb. To compare limbs weighing respectively 10 lb. and 5 lb. shows a disregard of accuracy which must cause hesitation in accepting all Mr. Ponsonby's conclusions. Nevertheless, there are cases of amputations high in the thigh, and cases of longer stumps complicated by other disabilities, in which the diminution of weight by only a pound or two may make all the difference. These patients should, we think, have the lightest possible limbs, notwithstanding the undoubted fact that others with equal disability may, after trial of both, prefer the rather heavier wooden limb to that so much praised in the *Times* correspondence.

Bearing in mind, then, that the counsel for the plaintiff has much overstated his case and that counsel for the defence has not yet been heard, are we to consider that a prima facie case against the Ministry has been established on the third head? We understand that supplies of a light metal limb which has been designed in the experimental workshop of the Ministry will shortly be forthcoming, and that, in addition, other light limbs are being tried, so that it may be hoped that the problem is in a fair way of solution.

It is easy to imagine that the Ministry of Pensions may have experienced insuperable difficulty in any attempt to persuade the Treasury to approve the expenditure of nearly £100 for each of a large number of limbs, and also that the Ministry may have been properly reluctant to place itself in the hands of any one firm; but, making every allowance for difficulties during the war and for the extent of the artificial limb problem generally, we cannot but feel that much valuable time has been lost and a situation allowed to grow up which might have been prevented by more business-like methods in the Artificial Limb Department of the Ministry of Pensions.

THE STATISTICS OF FOOD PRODUCTION AND CONSUMPTION.

THE importance of the United States of America as producers and exporters of foodstuffs has been for many years capital, and during the war our success, perhaps our national existence, depended upon the capacity of the United States to provide us with food. In the year 1911–12, 1,791,483 metric tons of grains and grain-products were exported, in 1913–14 more than 3½ million metric tons, while in 1916–17 the total reached 4,762,348, and in 1917–18, when the reduction of and demands upon shipping had nearly reached a maximum, the total exceeded 2½ million tons. A study of the details is therefore interesting, and, in view of the grave outlook, practically valuable. Professor Raymond Pearl's reputation as a scientific statistician and the exceptional facilities he enjoyed during the war as Chief of the Statistical Division of the United States Food Administration, guarantee the accuracy of his work,[1] which should appeal to a wide circle of readers.

Professor Pearl deals with three pre-war years and four years of war. He classifies human foodstuffs as (*a*) primary, plant materials and animal products other than those from animals fed on primary stuffs and fodders; and (*b*) secondary—that is, edible products of animals used for human food which have been nourished on primaries. American production of primary foods increased up to 1915–16, then declined, and by 1917–18 had again reached the pre-war level. The production of secondary foods increased throughout the war years. A few large items account for the bulk of the food values: grains account for nearly 42 per cent. of the average annual total calorie production, meats for 24.5 per cent., and dairy products for 14.7 per cent.

Although we are rightly accustomed to look upon the United States as a food-exporting nation, the imports of primary foods amounted before the war to as much as 20 per cent. of the calorie value; a large item is of course that of saccharine materials, reaching, in 1917–18, more than 3 million metric tons and more than 12 billion calories. Food exports in 1914–15 were about double the pre-war quantity. Thereafter the exports of primaries declined, approximating to the pre-war level by 1917–18; exports of secondaries, however, rose so that the average of total food exports over the war years was in excess of the pre-war mean. Taking the annual average of the three pre-war years as 16½ billions of calories, we have for each war year 33, 30, 26, 22, approximately.

The figures of consumption show little change in the *per capita* rates over the period, the increase in the consumption of calories running nearly parallel with the increase of population. The presumed effects of the Food Administration's campaign on the consumption in 1917–18 are interesting. Little or no change was effected in the calorie use, but a large reduction (in the case of wheat nearly 11 per cent.) in the use of articles which the Administration desired to economize, the required balance of energy being made up by the employment of recommended substitutes. The daily consumption per "man" averaged 4,288 calories (derived from 120 grams protein, 169 grams fat, 511 grams carbohydrate), but this calculation covers not only the food eaten but also that wasted by loss in cooking, garbage, and so on. Upon this point Professor Pearl justly remarks that "to make these gross consumption figures materially less would require a profound readjustment of the dietary and culinary habits of the people, fixed by centuries of usage." A book such as this, containing large numbers of statistical tables, is not precisely light reading, but it is a valuable contribution to knowledge, and we should like to see a similarly documented and authoritative study of food production and consumption here.

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[1] *The Nation's Food. A Statistical Study.* By Raymond Pearl, Ph.D., Sc.D., LL.D. Philadelphia and London: W. B. Saunders Co., Ltd. 1920. (Med. 8vo, pp 274, 42 figures. 16s. net.)

THE TOXIC EFFECT OF SALVARSAN.

DURING and as a direct effect of the war toxic jaundice became unduly prominent in this country. In the first instance the varnish or "dope" used for covering the wings of aeroplanes, on account of the contained tetrachlorethane, caused the grave jaundice and hepatic lesions described by Drs. Willcox, Spilsbury and Legge; but directly this was recognized, preventive measures were successfully adopted. The same satisfactory result was obtained in the case of the more widespread toxic jaundice among workers in trinitrotoluene, a subject on which Dr. B. Moore did such yeoman service. The toxic effects of salvarsan, on the other hand, continue to attract attention and present problems on which the Medical Research Committee, in February, 1918, set up a special committee. The first report (1920) of this Salvarsan Committee, which was mainly devoted to the methods of manufacture, biological testing and clinical administration of salvarsan and its substitutes, referred to outbreaks of toxic jaundice attended by a high fatality in certain military hospitals in this country. Two explanations of this salvarsan jaundice may be mentioned: The first, put forward by Professor S. MacDonald of Newcastle-on-Tyne, invokes microbic intervention, and is to the effect that either the drug renders the tissues, and particularly the liver, unduly liable to bacterial invasion, or alternatively, that bacterial infection of the tissues makes them specially vulnerable to salvarsan. The other hypothesis attributes the acute hepatic changes solely to the arsenical preparation, and the occurrence of localized outbreaks of fatal jaundice to circumstances attending the administration of the drug and possibly to lack of due precautions in size and spacing of the dosage. The Salvarsan Committee of the Medical Research Council has just issued two reports[1] bearing on the solution of this question. Dr. Ainley Walker, Lecturer on Pathology in the University of Oxford, carried out a careful research in order to determine what influence, if any, the administration of neosalvarsan and novarsenobillon has on the development and persistence of immunity in rabbits, as indicated by measurements of agglutinins. The rabbits were generally immunized by single small intravenous injections of standard cultures (dead bacilli) of one or other of the enteric group, and the salvarsan was in different instances given at different times—namely, before the inoculation of the bacterial cultures, during the period of rapid rise in agglutinin production, during the period of sharp fall, and during the later period of (expected) gradual fall in the agglutinin curve. Dr. Ainley Walker finds that in rabbits the administration of salvarsan does not prevent response to infection of the normal type, as measured by agglutinin production; on the contrary, it commonly appears to induce fresh, and sometimes prolonged, activity in the agglutinin-forming mechanism at a time when the normal response would otherwise be on the wane. As far as these results go—and, of course, they only deal with a single kind of response—they do not support the hypothesis that infection plays a part in the production of salvarsan jaundice. The other report is of the thorough and elaborate nature characteristic of Professor H. M. Turnbull's work, and deals with the minute morbid changes found in eight cases of fatal salvarsan jaundice. Each case is described in detail and then the collected data are summarized. In all the cases the liver was much more affected than the rest of the body by severe degenerative and necrotic changes, which are admirably shown in the successful plates; in one case only were bacteria found, and these were Gram-positive bacilli with the appearance and distribution of the micro-organisms often present in tissues that have not been removed and fixed without delay; spirochaetes and evidence of malaria were absent. There is an interesting comparison between the hepatic lesions found and those produced by spirochaetes (*pallida* and *icterohaemorrhagiae*), yellow fever, phosphorus, trinitrotoluene, and tetrachlorethane; and it is shown that the changes in the eight fatal cases resemble those induced by the chemical poisons and differ from those due to infection. There is a close similarity between the effects of salvarsan and trinitrotoluene, but there are differences which, however, are adequately explained by the assumption that in the salvarsan cases the poison was constantly of greater virulence or administered in greater dosage. Though expressed with wise caution, these results are also adverse to the hypothesis that infection is concerned in the hepatic changes.

CENTENARY OF THE ACADÉMIE DE MÉDECINE.

THE Académie de Médecine was founded by Louis XVIII on December 20th, 1820, as the Académie Royal de Médecine, mainly at the instance of Baron A. Portel. It is celebrating its centenary next week from December 20th to December 23rd. It succeeded the Royal Society of Medicine and the Royal Academy of Surgery; it was instituted to advise the Government on all matters relating to the public health, and was directed to concern itself in the investigation of every subject which could contribute to the progress of the different branches of the healing art. It has one hundred ordinary members divided into eleven sections, but the sections do not meet separately. It has also national and foreign correspondents. Among the foreign associates, who number twenty, are Sir Patrick Manson and Sir Almroth Wright. The President this year is M. Laveran, the discoverer of the malarial parasite. In response to invitations issued to this country the Royal Society of Medicine has nominated Sir A. E. Wright, the Royal College of Physicians of London Sir Humphry Rolleston and Dr. R. O. Moon, and the Royal College of Surgeons of England Sir J. Lynn-Thomas, Sir D'Arcy Power, and Mr. Charles Ryall. Edinburgh is sending a strong contingent: the Royal College of Physicians is represented by Sir Robert W. Philip (president) and Dr. J. Stewart Fowler (secretary); the Royal College of Surgeons by Dr. George Mackay (president) and Dr. Alexander Miles (secretary); the University of Edinburgh by Professor Lorrain Smith, dean of the faculty of medicine, and Professor Alexis Thomson.

THE MIDDLESEX HOSPITAL CHAIRS.

THE remarkable developments which have taken place during the last year or two in the arrangements at the Middlesex Hospital Medical School for teaching the preliminary and intermediate sciences have naturally excited a good deal of attention and roused interest in the further development of the school on the clinical side. A gift of £20,000 from an anonymous donor to endow a university chair of physiology at the school has just been announced; it follows on the gift by Mr. S. B. and Mr. J. B. Joel at the beginning of this year for the endowment of a chair of physics. Professor Russ was appointed to this chair, and a little later Professor McIntosh was appointed to the chair of pathology, Professor Swale Vincent to that of physiology, and Professor Lazarus-Barlow to that of experimental pathology. Further, the title of university professor of anatomy has been conferred on Mr. T. Yeates, Dr. W. B. Tuck has been appointed lecturer in chemistry, and Professor Ainsworth-Davis lecturer in biology. A university chair of radiology has also been established. These developments have been carried out in close consultation with the University of London authorities, and it may be taken that the policy of the school has the approval of the University. In the past medical schools have in many instances been able to carry on their work only through the self-sacrifice of members of the staffs, who have received totally inadequate remuneration. The need for whole-time officers in the various scientific departments has long been recognized, and the increase in the cost of living has made it essential that salaries should be increased. Medical education and research stand in need of financial aid by way of endowment, and the maintenance of university chairs in the scientific departments gives promise of growth on sound foundations. The chairs already instituted show that the authorities of the Middlesex Hospital Medical School are determined that it shall be a complete school, and in view of the line taken by the University Grants Committee this is a significant circumstance. An intimate relation of the scientific departments to the whole school will stimulate workers in them to search out the application of the lessons of pure science to medicine, and will constantly remind the student and his teacher of the relation between the various sciences and medicine. The physicist already co-operates in the treatment of patients, and two hospitals in London—the Middlesex and St. Bartholomew's—have appointed a physicist on the hospital staff. The importance of chemistry to medicine has long been recognized, and the importance of linking up the departments of physiology and anatomy with clinical medicine is now more generally appreciated. The policy to be adopted by the Middlesex Hospital Medical School with regard to clinical teaching does not seem yet to be clearly defined, but the question will probably be attacked from a somewhat different point of view from that which has led to the establishment of clinical units with whole-time officers. We are told that at the Middlesex Hospital the opinion is that the best men for clinical work and teaching can be obtained only if the duties of their offices do not debar them from private practice. It is, however, to be hoped that the medical schools will receive grants to enable them to give remuneration for clinical teaching and research on a scale sufficient to make it unnecessary for the junior members of the staff to seek other hospital or paid public appointments to enable them to make both ends meet. It is urged also that if these junior members received adequate remuneration they would be able to devote more time to investigation and teaching. It would be necessary to have funds also for the payment of whole-time juniors to carry out thoroughly the pathological investigations required by the various hospital "firms," which would be the equivalent of "units." An application is, we understand, to be made to the University Grants Committee to recognize the system worked out at the Middlesex Hospital; it does not conform completely with the unit system as outlined in the committee's memorandum, but it seems to us that at the present time, when clinical units are still in an experimental stage, other lines of development might well be encouraged.

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[1] Privy Council: Medical Research Council. Special report series, No. 55. Reports to the Salvarsan Committee. I. Results of the Examination of Tissues from Eight Cases of Death following Injections of Salvarsan. II The Influence of Salvarsan Treatment on the Development and Persistence of Immunity, as Indicated by Measurements of Agglutinins. Pages 69, plates 6 (2 coloured), charts 6. (Published by H.M. Stationery Office. London, 1920. 3s.)

MEDICINE AND LAW.

The annual dinner of the Medico-Legal Society was held at the Holborn Restaurant on December 10th, under the chairmanship of Lord Justice Atkin, president of the society. Lord Russell, in proposing the toast of "Medicine and Law," said he noticed from the daily press that Mr. Justice Darling and Sir Robert Armstrong-Jones lately came into conflict at the Old Bailey with reference to the state of mind of a prisoner charged with murder. The case illustrated one of the very important matters with which the Medico-Legal Society was formed to deal. A joint committee of lawyers and doctors, of which he was a member, sat a few years ago, when an endeavour was made to lay down some kind of new or modern ruling instead of the ruling in McNaghten's case, but it was not adopted by the law. Sir William Hale-White responded for the medical profession, and the President of the Law Society responded for the Bar. Sir Henry Duke, in proposing the toast of the Medico-Legal Society, said that though the administration of justice was great the realization of justice to be administered was greater. The controversy as to whether His Majesty's judges in the Strand or the medical profession in their centres of thought should decide what was the governing principle in criminology with regard to lunacy had itself to be decided in other places. If there was to be a new rule in such a matter it would have to be decided in a higher forum, and that was in the minds of the people and in the Legislature, which ought to give it strength. There should be no doubt upon a rule affecting matters of life and death. The members of the society, with the co-operation of its legal and medical members, could so influence the public mind that if the matter was as vital as many believed it to be they would without difficulty bring it to an issue and to a settlement. He urged the co-operation of the legal and medical professions in matters of common interest. The President, in the course of his reply, said there could be no two more important factors in the well-being of the State than justice and health; they were both doing their best in their respective professions to promote the one and the other, and the Society was endeavouring to serve both.

LEFT RECURRENT LARYNGEAL PARALYSIS IN MITRAL STENOSIS.

Among the less familiar signs of mitral stenosis are two closely associated with the enlargement of the left auricle—namely, compression of and resulting stridor over the left bronchus, which must be looked for to be detected, and paralysis of the left recurrent laryngeal nerve, which may become obvious from alterations in the voice. The occurrence of paralysis of the left recurrent laryngeal nerve in association with mitral stenosis was first reported by Ortner in 1897, and in a recent paper on the subject Garland and White[1] have collected 61 recorded cases, and in addition tabulate 9 cases detected during eight years at the Massachusetts General Hospital, Boston. It is probably, like many other unobtrusive signs, more frequent than is generally recognized. There are at least two points of interest about it: in the first place, the diagnosis from other causes of paralysis of the left recurrent laryngeal nerve, such as an aneurysm, often a small or even a latent one, of the aorta near the entrance of the ductus arteriosus, enlarged tracheobronchial glands, carcinoma of the oesophagus, syphilitic mediastinitis, and infective and toxic neuritis of the left inferior laryngeal nerve, must be considered, and for this distinction skiagraphy is of course invaluable. In the second place, the mechanism by which the paralysis is brought about has given rise to some discussion; the obvious and therefore general explanation that the dilated left auricle exerts direct pressure on the nerve which is thus destroyed has been controverted by Fetterolf and Norris, who argue that the nerve is squeezed between the left branch of the pulmonary artery and either the aorta or the ductus arteriosus, and that a pressure neuritis, not destruction, is produced. Garland and White accept this interpretation, and also agree with Lian and Marcorelles that mediastinitis or the formation of a thrombus in the left auricle or its appendix may occasionally be responsible. Auricular fibrillation, which was present in four out of their nine cases, is also regarded as an important factor, both because the auricle is thus permanently ballooned out and because thrombosis readily occurs in a fibrillating auricle.

INSURANCE FOR MEDICAL MEN.

At the meeting of the Committee of the Medical Insurance Agency on December 2nd, the chairman, Dr. G. E. Haslip, reported that the business done during the nine months ending September 30th, 1920, showed satisfactory progress in practically all classes of insurance, in so much that the increased revenue from new business had more than compensated for the increase which had been inevitable in the expenses of the Agency. In arranging life policies the Agency deals only with offices of high standing, and is able to advise applicants as to the adjustment of the terms of its policy to meet any special conditions of the insurer. The number of new life policies negotiated in the nine months was 86, as compared with 41 in the corresponding period of 1919. At the meeting of the Committee last May the chairman had to report that there had been a general increase in the rates for motor car insurances, but in spite of this the Agency well maintained renewals and new business continued to be steady. The income from accident and miscellaneous insurances showed an increase. As the Agency works on a 5 per cent. basis it will not be affected should the Government take over insurances under the Workmen's Compensation Acts, but in that event it would not be able to make any returns to the insured. The Agency was founded in the hope that, after making a rebate on premiums, and after paying all expenses, it would have a surplus to devote to medical charities. This hope has been fulfilled. At this meeting it was able to allot £557 10s. out of the surplus in hand, making a total for 1920 of £1,015. This sum was divided as follows: To the Royal Medical Benevolent Fund and the Royal Medical Benevolent Fund Guild £175 each, to Epsom College Benevolent Fund £157 10s., to the Royal Medical Benevolent Fund Society of Ireland and the Birmingham Medical Benevolent Society £25 each. As a result of this, the total sum allocated by the Agency to medical charities since its foundation has reached £6,435. The grants made to the funds of Epsom College entitle the Agency to a certain number of votes at each election to foundation scholarships. If medical men know of boy candidates whose cases deserve special consideration they are asked to communicate with the Treasurer of the Medical Insurance Agency, 429, Strand. Dr. Squire Sprigge, Editor of the *Lancet*, has kindly undertaken to forward any applications which might reach him.

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[1] J. Garland and P. D. White, *Arch. Int. Med.*, Chicago, 1920, xxvi, [illegible].

CHARMS.

THE belief in the efficacy of charms not only to ward off the evil eye and prevent ill health and other misfortunes, but also for the cure of disease, is very old and still very widespread, evidences of its existence cropping up not very infrequently in this country. In the current number of *Blackwood*, Mr. Walter Harris gives a very interesting example of its survival in Morocco in an extreme form. He is writing of the "good old days" before the French occupation, when the people were ignorant and the Sultan tyrannous, and he says that even then the Moor was often ready to accept the assistance of European doctors; but his faith was half-hearted, sufficient to accept medicines if given free, but rarely of the kind to pay a fee. Often the medicine was not taken, and in his inmost heart the patient had sometimes far more faith in the good that might accrue from the presence of the doctor than from the remedies he recommended. As one woman said, when caught in the act of throwing away the medicine ordered for her husband: "The doctor's presence is sufficient without his drugs. His knowledge is what is useful—who knows what his drugs contain?" He gives one striking instance of belief in charms in which he was an actor. He met an old native who had a terrible sore on the calf of one of his legs, and asked him whether he would not go to the hospital to be treated. The man willingly assented, and Mr. Harris wrote a line on a visiting card to the doctor in charge. Two days later he met the patient again, his leg bound up with a filthy rag: he had not, he said, been to the hospital; there was no need as the leg was already better. Mr. Harris insisted on seeing the sore, and, bound across the open wound, under the reeking bandage, was his visiting card. Asked to explain why he put it there, the man said, "Your kindness and the knowledge of the doctor to whom it was addressed is sufficient to cure, so I applied the card to the sore; it is already better." It was, in fact, worse, so Mr. Harris took the man to the hospital. There he was at once relieved, and continued to attend until his leg was healed. But he adhered to his belief in the charm—"Your card was sufficient. It would have got well just the same if you had allowed me to leave it there." The Moor, however, can take a very practical view, and Mr. Harris describes, as we judge from personal observation, the way in which the large red ant is used for closing skin wounds. Holding the two edges of the skin together, so as to leave a little of both lips protruding, a living red ant is applied to the wound. The ant closes his strong mandibles on the skin, and is promptly decapitated with a pair of scissors; four or five are applied to a wound "of a few inches in length." By the time the ant's head falls away the wound has closed. The Governor of Marrakesh told Mr. Harris that he insisted on his men using this method in preference to stitching, as he had found that with the latter method the stitches, not being disinfected, formed sores. To-day, says Mr. Harris, the people flock in thousands to the hospitals and dispensaries which the French have opened throughout the length and breadth of their protectorate.

DR. FRANCIS R. FRASER has been appointed Physician to St. Bartholomew's Hospital, Director of the Medical Professorial Clinic at that hospital, and Professor of Medicine in the University of London. The appointment is for four years in the first instance. Dr. Fraser succeeds Sir Archibald Garrod, now Regius Professor of Medicine in the University of Oxford.

AT a meeting of the General Council of King Edward's Hospital Fund for London held on December 14th, with the President, H.R.H. the Prince of Wales, in the chair, grants amounting to £190,000 were awarded to hospitals, convalescent homes, and sanatoriums for the present year. This is the third distribution made by the Fund in 1920. On June 22nd an emergency distribution of £250,000 was made out of the accumulated funds in order to assist the London hospitals, having regard to their pressing maintenance needs. On July 23rd another sum of £250,000, entrusted to the Fund by the British Red Cross Society and the Order of St. John, was distributed in aid of schemes of extension or improvement at hospitals able and willing to treat ex-service men.

Medical Notes in Parliament.

MINISTRY OF HEALTH BILL.

THIRD READING IN THE COMMONS: REJECTION BY THE LORDS.

IN an all-night sitting which lasted from 3 p.m. on Wednesday, December 8th, until nearly 7 next morning, the Report and Third Reading stages of the Ministry of Health (Miscellaneous Provisions) Bill were taken in the Commons. Protests that this should be the sole opportunity for detailed consideration by the whole House of such a large measure, involving housing, financial, and hospital proposals, were met by Dr. Addison with the regretful reply that circumstances compelled this course. The attendance as the hours wore on declined to about 100 members. As a test of sustained mental power the discussion reflected credit on those legislators who joined in the controversy, and, as might be expected, medical men, with their experience of night work, gave a good account of themselves. It should be pointed out, moreover, that the bill had been closely debated and relieved of many of its features in Grand Committee so as to make it more easily acceptable, and therefore the grievance of dealing with it at such a time was not so serious as it otherwise would have been.

The first matter was the question of new clauses. The Solicitor-General for Ireland (Mr. D. M. Wilson) submitted a lengthy addition to harmonize the working of the bill in Ireland. Curiously enough, the measure was so framed that by the statement that it did not include Scotland it carried application to Ireland, but, as it stood, all the machinery would have had to be directed by the Minister of Health for England, and therefore a number of variations were necessary in order to put things straight.

In regard to the clause to enable county councils to take over existing workhouse infirmaries, Mr. Wilson said that under an old Act of 1838 the surgeons of Irish county infirmaries were paid a salary of £75 a year, and it was necessary to insert a subsection to provide that they could increase this amount. Instead of the references to the Lunacy Acts, 1890–1911, it was agreed that those for Irish purposes should be to the Lunacy (Ireland) Acts 1821–1901. Complaint was made, however, as to the increasing habit of legislating by reference to Acts of Parliament about which members of Parliament knew nothing. The new clause was agreed to.

Another clause, moved by Dr. Fremantle, to enable the Minister of Health to advance money on loan to public utility societies, with security against charge on the rates, brought from Dr. Addison the reminder that in order to reduce the proportions of the bill a large number of clauses had been cut out in Committee by him and that in the circumstances he could not see his way to accept this or any other new clauses, although he thought this particular proposal was excellent. After considerable discussion the clause was rejected by 208 votes to 58, and on the Speaker's advice other projected new clauses were not submitted. The bill was then taken as amended in Committee upstairs.

Incipient Mental Disorder Clause.

On Clause 8 (formerly Clause 10) for the treatment of incipient mental disorder, Mr. Myers made a motion for rejection. He said that in the opinion of the Labour party the only way of dealing with cases of this kind was for the State to take over the responsibility for giving the treatment needed. The proposal did not admit a farthing of financial responsibility on the part of the State. It said: "Some other persons may undertake this responsibility. We give them no backing, no support in any direction whatever." Colonel Wilson, replying for the Government, briefly repeated what Dr. Addison said in Committee as to the benefits which it was hoped would accrue, and said that although the clause would not go so far as was wished he was convinced that it would be of great benefit. Mr. Rawlinson strongly objected to the clause, insisting that it would allow certain people who were wholly outside the control of the Lunacy Acts to receive lunatics.

Dr. Fremantle supported the clause as giving a prospect that persons suffering from mental disorder but not insane could be dealt with in private houses in family life. His regret was that what was contemplated was inadequate. Nevertheless, he regarded it as offering a good beginning. Dr. Elliot asked the House to remember that this would not be an untried experiment. The system had been in operation in Scotland for fifty four years without, so far as he knew, any abuse being reported. In the case of soldiers, funds would be available from the Ministry of Pensions. Dr. Raw, speaking with wide experience of lunacy work, supported the clause for two reasons: because it would tend to prevent mental diseases becoming hopeless and incurable, and because it would prevent those cases going into the lunatic asylums. He urged the importance of giving to everybody attacked with incipient mental disorder a chance to get well. The clause was retained by 88 votes to 24.

At the instance of Colonel Wilson for the Government, the provision under which any person under treatment can leave on giving notice was altered to read as follows:

> Provided that nothing in this section shall authorize any person who has been received into any institution, home, or house, under this section to be detained therein if he delivers to the superintendent or other person, by whatever name called, having charge of the institution, home, or house, or sends by post to the Minister, notice in writing that he desires to leave, except that a person who, in the opinion of the superintendent or other person aforesaid, is not in a fit state to leave, may be detained for a period not exceeding forty-eight hours from the date of the notice.

As the subsection was originally framed it provided for a notice of forty-eight hours. By removing the words "forty-eight hours" and by making detention for that period after notice the exception, it was claimed that patients would be ensured freedom to leave at any time save in peculiar cases.

Major Entwistle moved that no member of the Board of Control nor any official of the Board should be appointed an inspection officer. He reiterated the importance of keeping the homes or hostels entirely free from any association with lunacy administration. Dr. Addison said he entirely agreed as to the necessity of keeping these homes apart from the ordinary lunatic asylums, but it would be very unwise to debar by statute the appointment of any official of the Board of Control, however subordinate. He or any future Minister could be called to account if the regulation to keep the matter separate from the work of the Lunacy Board were not observed. He reminded the House that if any member of the Board of Control felt it necessary in the discharge of his duty to inspect any of these homes he would be fully entitled to do so at any time. After further discussion the amendment was negatived. Another amendment, moved by Mr. Myers, for the imposition of penalties in cases where a superintendent or other person in charge of a home neglected or ill treated anyone received, was, by leave, withdrawn, Colonel Wilson explaining that this matter would be dealt with in regulations to be issued by the Minister and approved by Parliament.

Major Entwistle proposed a new subsection to provide that, except in case of homicidal mania, no person should be certified a lunatic while retained in any of these homes. He said he was prepared to substitute for "cases of homicidal mania" "dangerous cases." His anxiety was that the homes should not become half-way houses to lunatic asylums. Dr. Addison pointed out that the amendment would effect an alteration in the existing lunacy law. The people in these homes ought to have safeguards just as the ordinary person would have elsewhere. The amendment was rejected by 81 votes to 23.

The Hospital Clause.

Clause 9 (formerly Clause 11), to enable county councils to acquire existing Poor Law hospitals or infirmaries, was then considered.

Mr. Ormsby-Gore moved its rejection. He particularly objected to the provision under which, in default of an agreement with the county council and the Poor Law guardians, the Minister might, on the application of the county council, make an order for transfer after hearing the guardians. He said that since the introduction of the bill the Poor Law guardians' representatives had held their meeting in London and had strongly denounced the clause. He challenged the figures which Dr. Addison had given of the number of vacant beds. Mr. Lorden, seconding the amendment, favoured the alternative plan of giving legal sanction to the reception of paying patients by boards of guardians.

Dr. Addison reminded the House that no Poor Law infirmary could be taken over without the sanction by a Provisional Order of both Houses of Parliament, and this, he submitted, was an effective safeguard; moreover, the Minister would act only on the application of a county council. He emphasized how exceedingly important it was that the unit of area for such purposes should be a county, and referred also to the inherent obstinate objection which people had, rightly or wrongly, to going into Poor Law infirmaries. It was useless for critics of his proposal to pretend that this objection did not exist. Even if his figures of 30,000 vacant beds were wrong—he had had them reinvestigated and saw no reason to correct them—still, if there were 20,000 vacant beds, it would be a pitiable thing if they were not to be used to relieve the waiting list.

Dr. Raw strongly supported the clause, recalling that there were some fifty separate Poor Law infirmaries quite dissociated from workhouse infirmaries and workhouse administration. Dr. Elliot, who also supported the clause, said that he had before him the waiting list of a hospital within a stone's throw of the House of Commons. It had 388 beds and a waiting list of 701. He knew of another hospital with 600 beds which had 100 extra beds planted up and down the wards.

After further discussion, Mr. Ormsby-Gore's motion was rejected by 70 votes to 28.

Mr. Myers moved the omission of the subsection under which an expense incurred by a local authority in maintaining a patient in a hospital might be recovered where the patient was not a pauper. Dr. Addison said that unless the provision were included in the bill, it would mean that in the event of the county councils taking over Poor Law infirmaries and using them as hospitals, no charge at all could be made for anybody who came in, and that would be very wrong. The amendment was negatived by 76 votes to 18.

Mr. Myers moved to substitute the word "shall" for "may" in reference to the authority of the Minister to order that compensation shall be given to Poor Law officials. Dr. Addison said that the wording of the clause had been agreed on by the Poor Law Officers' Association. It was very difficult to say "shall," because in some cases people would not be entitled to compensation. The amendment was withdrawn.

On the clause for the sale of clinical thermometers, the rejection of which was moved by Mr. Lorden, Mr. Ormesby-Gore hoped it would be retained. It was, he said, quite the most useful clause in the whole bill—the only clause really worth having. A doctor had told him that before the war 40 per cent. of the clinical thermometers manufactured in this country were unreliable and inaccurate. The amendment was rejected.

Third Reading of the Bill.

The third reading of the bill was afterwards taken.

Dr. Elliot congratulated the Minister on the courage he had shown in pressing forward the urgent proposals contained in the bill.

Dr. Fremantle, while not blaming the Minister or the Government, held that the bill was a very poor vindication of the great pronouncements made when the Ministry of Health was formed. He referred to various commitments overdue, mentioning the better provision of sanatoriums, the Milk and Dairies (Prevention) Bill, and the reorganization of the Poor Law.

The bill was read a third time.

The Lords Reject the Measure.

In the House of Lords, on December 14th, the second reading of the bill was moved by Lord Sandhurst, who, speaking of the different proposals generally, said that they involved no charge on the Exchequer and that many of the clauses had been designed to lighten the burden on the rates.

Lord Strachie moved the rejection of the measure on various grounds, but chiefly because it had not, in his opinion, been given adequate consideration elsewhere, and the Peers also were asked to pass it without due consideration. Lord Strachie's particular criticism was directed against one of the housing clauses, to which he referred to support his contention that the bill should not be hastily approved. Lord Gainford said he had been authorized by Lord Crewe to state that the Opposition did not regard the bill in a hostile spirit, but were rather anxious to help the Government to make it a more workable and practicable measure. But they thought that the demand for it to be dealt with at this period of the session was unfair. Lord Salisbury regretted that the proposals contained in the bill were brought forward in an omnibus measure, for some of them were good, and he should be sorry to see them lost; but many of them were objectionable. He also thought it unfair that the House should be called upon to consider such very important provisions at so late a period in the session. Lord Selborne described the bill as the most remarkable he had known in the course of thirty years' experience of Parliament, and joined in objecting to its rapid passage. Lord Curzon, speaking in a very conciliatory manner, showed his desire to meet the wishes of the House. He said he would be willing, if the bill were given a second reading, to postpone the Committee stage until after Christmas.

On the previous day, Lord Curzon had stated that if the Government were unable to get through all the business of the session by Thursday, December 23rd, there would be an adjournment on that day until the following Tuesday (December 28th). It is quite possible that the shortness of this interval for a Christmas vacation being in the minds of the Lords increased their unwillingness to agree to the proposal. Anyway, on a division, the bill was rejected by 57 votes to 41. The opinion in the parliamentary lobbies was that if Lord Curzon had apprehended the danger and had made clear that some little interval of time would be given before the bill was again taken, the second reading would have been secured.

Criminal Law Amendment Bill.

Although the Joint Committee of Lords and Commons accelerated their report on the Criminal Law Amendment Bill (1 and 2) and the Sexual Offences Bill, with the object, if possible, of enabling one of these measures as amended to be passed into law this session, that hope had to be abandoned. A measure embodying the changes recommended may, however, be expected in the Upper House early in the new session. The main features of the report were remarked upon in an article in the BRITISH MEDICAL JOURNAL of December 11th (p. 908). It may be added that Clause V of the Criminal Law Amendment Bill (No. 2)—in regard to the communication and prevention of disease—was adopted by the Committee only on a division, by 7 votes to 4, and the report states that the Committee were impressed by the evidence of several witnesses that communication and prevention should be dealt with by a measure for the protection of Public Health and not under the Criminal Law. It was further stated by a representative of the Ministry of Health that the question whether it was advisable to invoke the Criminal Law in the campaign against venereal diseases was really one for the Home Secretary. This is taken to mean that the operation of the clause, if included in an Act, would be at his discretion. The real problem, of course, is whether the penal provision would be a deterrent to attendance at a clinic. If the matter were dealt with under a Public Health Act on the lines under which the notification of various infectious diseases is now required the objection would not apply to the same degree. Lord Gorell's view was that it was better to retain the clause unless there were assurance that the subject would be taken up in some other bill, and so the decision to include it was reached by a majority as already intimated.

The Patent Medicines Bill.

Sir Philip Magnus asked, on December 8th, whether, having regard to the importance of the subject, in the interests of public health and the delay that has occurred in dealing with it, the Government will arrange for the introduction early next session of a bill to give effect to the recommendation, or to some of the recommendations, of the Select Committee on Patent Medicines. Dr. Addison replied that it was proposed to introduce next session a bill giving effect to the proposals which had now been agreed upon by the parties concerned. This, of course, is another way of saying that the bill which has been carried in the House of Lords is not to be proceeded with this session.

The Remuneration of Insurance Practitioners in London.—Lieut.-Colonel Burgoyne asked, on December 13th, whether in a number of instances the panel doctors in London under the London Insurance Committee were still unpaid for their services to the State. Dr. Addison replied that the method of calculating the remuneration of insurance practitioners in force for 1920 enabled a prompt settlement to be paid, quarter by quarter, of the sum agreed to be paid, and he was informed that these payments had been made. There were certain balances outstanding in London for 1919 which, under the old system of calculating remuneration, could not be finally completed until recently, but they were paid last week, except in cases where particulars were still awaited from individual practitioners.

Coroners' Inquests.—Mr. Finney asked, on December 13th, whether the Juries Act, 1918, was still in operation, and, if so, when it would terminate; whether the Act authorized a coroner to inquire into the causes of death of workmen employed in collieries, without a jury; and whether the terms of contract with the national or local authorities under which the coroner held office empowered him to conduct cases in court in which questions of workmen's compensation for injuries or prosecutions for breach of regulations were involved. Sir John Baird replied that the Act was remaining in operation until the end of six months after the official termination of the war. The circumstances which made it necessary to hold an inquest were set out in Section 3 of the Coroners Act, 1887, and not by any contract which coroners entered into on taking office. The Juries Act, 1918, allowed a coroner to hold an inquest without a jury if he thought proper to do so in the cases referred to. The question what, if any, amendment of the law as to inquests were desirable was under consideration.

Uncertified Deaths: Inquests.—In answer to Sir F. Blake, on December 8th, Dr. Addison said that the number of uncertified deaths reported in 1919, by registrars of births and deaths to coroners which were not the subject of inquests, was 6,698. The total number of inquests held in that year was 31,488, but no figures were available as to how many of these related respectively to certified and to uncertified deaths. He understood that in all cases the coroner was governed by the provisions of Section 3 (1) of the Coroners Act, 1887, which set forth the circumstances in which he was obliged to hold an inquest. Sir F. Blake asked if a medical man was asked by a coroner to give a certificate, had he, before doing so, to view the body of the person the cause of whose death had to be certified. Dr. Addison replied he had better have notice of that question.

Sanatorium Benefit.—Mr. Broomfield asked, on December 8th, whether in view of the discontinuance of sanatorium benefits from the scope of the National Insurance Acts at the end of the current calendar year, the Minister of Health was prepared to provide for the compulsory transfer to the new authority of the members of the staffs on Insurance Committees engaged in sanatorium work, or to provide adequate compensation for all officers displaced by reason of administrative changes, on the same lines as for other public servants whose duties were abolished by statute. Dr. Addison said (as announced in this column last week) that the discontinuance of sanatorium benefit was being postponed until April 30th. He was not satisfied there was any case for action on the line suggested in the question, but would examine carefully any representations made to him on the subject.

Small-pox in Scotland.—On inquiry by Mr. Waterson, on December 9th, Mr. Munro said that the outbreak of small-pox in Scotland this year began in Glasgow at the end of February. Cases had since occurred in the areas of thirty-three other local authorities in Scotland. Up to December 8th the number of cases in Glasgow was 516, and the number of deaths 107. Of these cases, the number previously vaccinated was 394, of whom 61 died; the number unvaccinated was 115, of whom 43 died. The number of cases in which vaccination was doubtful was 7, of whom 3 died. Only 13 cases remain in hospital in Glasgow. The number of cases outside Glasgow was 180, of whom 137 were previously vaccinated and 42 unvaccinated. In one case vaccination was doubtful. He was taking steps to obtain further particulars of these cases.

Dentists Act Amending Bill.—Replying to half a dozen members who recalled pledges made that a bill to carry out the recommendation of the Departmental Committee on the Dentists Act, 1878, would be introduced this session, Dr. Addison said, on December 8th, that in accordance with the promise made by him, with the concurrence of Mr. Bonar Law, to a deputation representing a large body of members, the bill dealing with this subject would be introduced so as to enable it to be printed before the recess, in order that those interested might have an opportunity of examining the proposals.

Central Liquor Control Board.—In reply to Sir James Remnant, who asked on December 13th as to the changes that had taken place in the Central Control Board for Liquor Traffic, Sir James Baird stated that the present members are: Mr. W. Waters Butler, the Rev. Henry Carter, Dr. H. H. Dale, F.R.S., Colonel J. M. Denny, C.B., the Hon. Hugh Godley, Lord Leverhulme, Mr. R. S. Meiklejohn, C.B., Mr. Sydney O. Nevile, Sir John Pedder, K.B.E., C.B., Mr. J. H. Thomas, M.P., Mr. Will Thorne, M.P., and Sir William Towle. Of these members, two are representative of the brewing interests, one is a leader of the temperance party, two are large employers of labour, two are Labour members of the House of Commons, one is a distinguished scientist, one is a man of great experience in the catering business, and three are civil servants. Sir John Pedder is the chairman.

Scotland.

REGISTRAR GENERAL'S REPORT.

THE recent sixty-fifth annual report of the Registrar-General for Scotland estimates that the population at the middle of the year 1919 was 4,894,077, being 133,173 more than the population of the country as ascertained by the census of 1911.

The births registered during the year numbered 106,268, being 2,542 less than the mean of the previous five years. This gives an annual birth rate of 21.71 per 1,000; this is 1.54 more than that of the previous year, but 0.89 less than the mean of those of the previous five years, and 2.64 less than the mean of those of the previous ten years. The number of marriages was 44,137, or 9,508 more than in the previous year, and the highest on record. The death rate for the year was 15.35 per 1 000; this is 0.69 less than that of 1918, but closely approximates the mean of those of the previous five years.

The infantile death rate was 101.6 per 1,000, which is 1.8 more than that of 1918, but less than the mean of the preceding five years, and 6.9 less than the mean of the preceding ten years. The deaths of twelve reported centenarians were registered during the year. Attempts were made in each case to verify the age at death, with the result that in five instances proof of the attainment of the age of 100 was obtained, and in two instances proof of not having attained that age was found, while in the remaining instances proof of age could not be got. During the last ten years careful inquiries were made as to the age of 134 reported centenarians, with the result that in fifty instances the attainment of the age of 100 was proved and in 12 instances disproved, while in 72 instances no satisfactory evidence was available.

Attention is directed to the very small mortality from enteric fever, to the unusually low phthisis death rate, and to the continued rise in the cancer death rate. Deaths from enteric fever during the year under review numbered only 83. This compares with more than 1,400 such cases in each of the years 1866, 1868, 1873, 1874, 1875, 1876, 1877, and 1878. The death rate from phthisis, which was 88 per 100,000, was 19 less than that of the previous year, 18 less than the mean of those of the five preceding years, and 23 less than the mean of the ten preceding years. The cancer death rate shows a rise to 116 per 100,000. It is the highest yet recorded, and is 17 more than the mean of those of the preceding ten years. Up to 1913 the phthisis death rate was constantly more than the cancer death rate, but the reverse is now the case.

THE VOLUNTARY HOSPITAL PRINCIPLE.

At the annual meeting of contributors to the Glasgow Western Infirmary, held on December 8th, a suggestion was discussed that patients who could afford it should be asked to contribute towards their treatment. Principal Sir Donald MacAlister observed that the infirmaries were said to be in a position of difficulty and even of danger. He, however put his trust in the enlightened self interest and goodwill of the community to prevent the abandonment of the voluntary principle and the taking over of the hospitals by the State or the municipality. The infirmary was not merely an outlet for the charitable feelings of subscribers, it directly concerned everybody, because the infirmary was a great teaching institution, and from such institutions went forth the energy, skill, and experience in medicine, surgery, and nursing which were of vital interest to every member of the community and every subscriber. Without them the whole framework of medicine and the public health of the community would break down. He was not sanguine that a municipal hospital, run as a sister department to the tramways, water, and gas, and officered by paid civil servants, would produce a body of professional men capable of taking charge as the present body of the medical profession were of the health of the people. The Lord Provost, in urging subscribers to greater effort in the future, said it would be a great pity if the beneficent work of the infirmary were in any way to be curtailed or hampered by the want of sufficient funds. The annual report, however, showed a deficit of more than £55,000. He thought additional revenue might be secured by asking those patients who had benefited from the skill and nursing they had received, and who were able to do so, to make a contribution to the infirmary when they left. Everyone wanted to see the voluntary hospitals carried on on their present basis, but unless additional support was forthcoming, the only alternative would be to put them on the rates. Lord Glenarthur spoke of the critical financial position of the infirmary; he hoped some solution of the problem would be found in the report promised by the Minister of Health upon the financial position of voluntary hospitals throughout the country.

THE SCOTTISH CONSULTATIVE COUNCIL'S REPORT.

Professor William Russell contributed to the *Scotsman*, on December 9th, an article on the interim report of the Scottish Consultative Council on Medical and Allied Services on "a scheme of medical service for Scotland," of which a summary appeared in the JOURNAL last week (p. 900). He thinks the report admirable from a literary standpoint, but in other respects he finds difficulty in treating it seriously. The Scottish Secretary, he says, must be gratified by the whole-hearted approval given by his Consultative Council to the visionary schemes shadowed forth in the official documents. He criticizes in vigorous language the proposal made in the report that the National Insurance Act ("this inefficient and injurious measure") should be extended to include wives, children, and other dependants of all persons of the same economic status as the present insured class. The common sense of the people and of Parliament, Professor Russell concludes, will decide whether or not they want to hand over their family doctoring to State officials by an extension of the Insurance Acts at a time when national finances and overtaxed pockets are clamouring for retrenchment and relief.

NEW PRINCIPAL OF ST. ANDREWS.

The King, on the recommendation of the Secretary for Scotland, has approved of the appointment of James Colquhoun Irvine, C.B.E., D.Sc., Professor of Chemistry in the University of St. Andrews, to be Principal of that University. Professor Irvine's connexion with St. Andrews began in 1895, when he became lecture assistant to the professor of chemistry. He was awarded one of the scholarships given by the Royal Commissioners for the Exhibition of 1851, and during its tenure studied at Leipzig, from which university he received the degree of Ph.D. In 1901 he returned to St. Andrews as a teacher, and has not only done important scientific work himself, but has fostered a spirit of investigation among his students.

Ireland.

FEES FOR MEDICAL WITNESSES AT ASSIZES.

LORD CHIEF JUSTICE MOLONEY has recently sent the following reply to a letter addressed to him by the Irish Medical Secretary in connexion with fees for medical witnesses at Assizes:

> In reference to previous correspondence regarding the inadequacy of the fees allowed to medical witnesses at Assizes, I am directed by the Lord Chief Justice to inform you that in Crown cases the Treasury have increased the allowance to 1½ guineas for one case, and £3 3s. if outside the town in which the doctor resides, or if the number of cases exceeds one; in addition to 10s. per night personal allowance, and also travelling expenses. As regards cases on the civil side, the judges have approved a new rule which makes the fee for a medical witness if resident within five miles of the place of trial, or ten miles if there is a railway for three fourths of the distance, £1 11s. 6d. per day, if beyond that distance £4 14s. 6d. per day.

POOR LAW MEDICAL OFFICERS' SALARIES.

The Mullingar (Westmeath) and Gorey (Wexford) boards of guardians have granted scales of salaries for Poor Law medical officers, reaching a maximum of £350 and £300 a year respectively. Owing to the stoppage of grants from the Treasury there is at present no money in the hands of the guardians' treasurers to pay the doctors' salaries, and both boards agreed that the revised scales should not become operative until next March when a new rate would be struck to meet the increased salaries. The Irish Medical Secretary attended both meetings of guardians and stated the case for the doctors.

Australia.

INFLUENZA IN MELBOURNE IN 1919.

In his report for 1919 Dr. T. W. Sinclair, the health officer for Melbourne City, records a corrected death rate of 16.30 per thousand, the highest since 1898. The total deaths registered were 1,682; this increase of nearly 500 on the figure for 1918 was due almost entirely to deaths from influenza, which has never before been so fatal in the city. The epidemic of influenza, which was accompanied in a large proportion of cases by lung complications, began abruptly on January 24th, and showed three waves, which were at their height in the middle of February, at the end of April, and in the middle of June respectively. With the onset of mild weather the disease practically disappeared in October. The total number of notifications was 8,678, equivalent to an attack rate of 81.83 per thousand, but these figures, Dr. Sinclair believes, represent a proportion only of the cases which actually occurred. Both in males and females deaths were most frequent at the age-period 25–35. The number of patients treated in emergency and other hospitals was 3,772. Four public dépôts for inoculations with vaccine against influenza were opened, and nearly 23,000 inoculations were performed in sixty-two days; an inhaling station was also provided for disinfection, and during five weeks was used daily by thirty-two of the Council's employees. A system of home visitation, carried out by nurse inspectors, obviated the removal to hospital of many of the less severe cases. The inspectors made 1,758 visits in order to report on the destitution caused by the epidemic; 529 families were relieved by the Council.

Correspondence.

VITAMINE IN MARGARINES.

SIR,—I do not think that the letter in your last issue by Mr. Stammers should be allowed to pass without a few words of comment. Its slipshod heading (Fat-soluble content of oils) to those unaccustomed to the jargon of the specialist may not be intelligible to the majority of your readers, but the question he raises is one of great practical importance. A glance at the address from which he dates his letter (Port Sunlight) will, however, show that he is dealing with the margarine problem.

For some years past the margarine makers and those whom your correspondent dubs "scientists" have been at variance. Physiological workers have insisted on the necessity of including in butter substitutes a certain amount of the vitamine, so necessary for growth, which is present in real butter and which it is now usual to speak of as vitamine A or the fat-soluble accessory factor. For many reasons—the most important of which is price—the margarine of the present day is mainly made from vegetable oils which undergo during manufacture a process known as hardening or hydrogenation—a process which, as your correspondent rightly says, destroys any vitamine A, even if any were present in the original oil. What the physiologists have done is to point out the danger to the community which would ensue if such margarines were to become the main source of fat supply, and that this danger is especially great to the growing section of the population. They would have a difficulty in tracing the history of every sample of fat which came before them, and this difficulty would be insuperable for the ordinary purchaser of margarine. The practical point is that commercial samples of the vegetable oils so far tested and of the margarines made from them are destitute of this important antirachitic factor.

The Medical Research Council's report on the subject, which Mr. Stammers speaks of as worthless, has done yeoman service in bringing this indisputable fact before the public. The seriousness of the question is being realized by Messrs. Lever Bros., who have taken the important step of establishing a laboratory at Port Sunlight to investigate it, and one hopes that the result will be a product which will be not merely a commercial and palatable success, but one which will satisfy nutritive needs on physiological principles. Dr. Drummond's investigations on lard, which Mr. Stammers refers to but has misunderstood, have shown that pig's fat in the natural state contains the vitamine, but the absence of the latter in the finished product (lard) is due to its destruction by the high temperature and other drastic treatment employed in the manufacture. Whether the same is true for vegetable fats is at present largely an academic question, but one which is full of interest; it may possibly be in the future of practical importance also.

What the public buys, and what presumably the margarine maker uses, is not the crude oil, but the more or less refined article from which any vitamine, if present in the crude oil, has been removed. At present also, so far as can be ascertained, the margarine maker, by the process of hardening, ensures the final disappearance of the vitamine.

One welcomes Mr. Stammers as a recruit in the ranks of those working at vitamines, and trusts he may be successful in helping in the elucidation of this and other doubtful points. But until he has a little more experience and has won his spurs in the race for knowledge he is hardly in the position to lecture his fellow "scientists" on their failings.—I am, etc.,

King's College, London, Dec. 12th. W. D. HALLIBURTON.

HYPNOTISM AND SUGGESTION.

SIR,—In reply to Dr. R. MacD. Ladell's letter of criticism, I would ask him to re-read my article in your issue of December 4th, when he will perhaps realize that the question of the nature of hypnotism is one of fact. By saying "there is general agreement that when we speak of hypnotism we mean a state of increased suggestibility," he is begging the whole question. I have found, as the result of hypnotizing many hundreds of patients, both soldiers and civilians, and giving suggestion treatment to still more, that hypnotizability and suggestibility do not vary in complete direct proportion to one another. On the other hand, hypnotizability and degree of mental dissociation (breaks in the memory continuum) do vary directly with one another. There is a close relation between hypnotism and suggestion, of course, but I venture to hold that we are still far from knowing everything about this relation, and we shall only know more by making more observations. Surely we should not be surprised to find that the concentrated experience of the past six years throws doubt on some of our earlier generalizations.—I am, etc.,

WILLIAM BROWN.
University of London, King's College, Dec. 15th.

THE RISKS AFTER OPERATION FOR TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

SIR,—The comment of Dr. Waldo, the City coroner, on the death of a child after operation for tonsils and adenoids, namely, that the child ought to have been detained in hospital for a day or two, emphasizes the importance of the subject of the communication on the risks after such operations in outdoor clinics by Mr. E. Watson-Williams, although he dwells particularly on the increased percentage of serious morbidity of cases operated on and sent home the same day, as compared with children who are detained in hospital for a few days. I have long felt that a grave responsibility rests on those in charge of throat and ear clinics to protest against the conditions under which we are compelled to operate for lack of adequate provision for such cases, and, at my invitation, Mr. E. Watson-Williams made the investigation in the series of cases he cites. We do not suggest that the relative percentages afforded by the comparatively small numbers investigated can be regarded as exact, except in so far as the cases in the series are concerned, but they are sufficient to illustrate the dangers incurred in operating and sending children straight back to homes which are often very crowded, dirty, and without the possibility of careful supervision. For instance, I find a child was operated on and sent back to a home of three rooms for the father, wife, and four children, one a boy of 16; within two days the child developed scarlatina, other cases of scarlatina developed in the sisters; a month or two later a case of diphtheria occurred in one of the children, and the first mentioned child contracted diphtheria also. This was not a case in which the operation for tonsils and adenoids had any untoward effect, but the home conditions were a fair example of those to which we send these poor children to run grave risks to which the well-to-do would never consent. Surely, despite the financial stress, something better ought to be devised than the slipshod methods which we have been compelled to accept, as though they were unavoidable.

If beds cannot be provided in the voluntary hospitals, it is a question whether the Education Committees which provide medical inspectors, who inform the parents that they must have their children's throats operated on, should take some steps to see that adequate provision is made for such operations being done under fair conditions. Furthermore, I would suggest that, where possible, boards of guardians should be empowered to provide hospital accommodation for such cases, the costs of maintenance being borne by the municipality or education boards. If general hospitals and children's hospitals cannot provide for such children, the public purse must not be tightened against the children's necessities, and surely the question raised is a matter of urgent necessity.—I am, etc.,

P. Watson-Williams,
President, Bath and Bristol Branch of British Medical Association.

Bristol, Dec. 11th.

Sir,—I am fully in agreement with Mr. E. Watson-Williams's excellent article in the Journal of December 11th, p. 887. For many years I have been more and more impressed with the imperfection of our treatment of these cases, and it has been my custom during these years not to operate between the months of October and late April unless patients could be admitted to hospital. About a year ago I wrote strongly to the committee of the Portsmouth and Southern Counties Eye and Ear Hospital on this subject, with the result that a certain number of special beds were set apart for these cases in children for forty-eight hours' detention in hospital, thus enabling several batches to be operated upon every week.

I quite agree with Mr. Watson-Williams as to some of the sequelae of operation in these cases—acute otitis media, bronchopneumonia, and acute sepsis; and it was the occurrence of these sequelae, with more than one fatality, which made me form a very strong opinion on this subject. I think, however, that we ought to go further. No case is now done at my clinic without previous examination of the teeth and removal of any dental sepsis, and after operation the throat is sprayed at intervals with mild antiseptic, such as weak peroxide of hydrogen, 1 per cent. carbolic, in the ordinary collinarium alkalinum. I also think we should go still further (and in particularly infected throats or discharging noses this is now done) and practise pre-operative cleansing, the obvious difficulty being the lack of assistance for the large number of cases.

The operation for removal of tonsils and adenoids is still regarded far too lightly. If well done, and if all goes well, the results, as regards benefit in the development of the child, are admirable; if not done well, or if all does not go well, the results in many cases are deplorable. There is no other region in the body where a septic mass, teeming with many varieties of organisms, is removed, leaving a considerable wound exposed to septic secretions, without post operative treatment, and often in such unhygienic surroundings as some of the homes where these children live. Is it any wonder that in some cases the sequelae are severe? There is also the question of post-operative haemorrhage; though this is in my experience comparatively rare, it still does occur, and sometimes to an alarming degree, and the difficulty of dealing with this mishap in a private house, unless under the best surroundings, is very considerable and the risks obvious.

I therefore strongly support the conclusions of Mr. Watson-Williams, namely, that this operation should be treated more seriously and the patients admitted to hospital. I refer to the hospital class of patients until it is seen that the wound is healing without undue risk of complication, post-operative treatment being carried out in every case both by throat spray and nasal irrigation, where possible, and the patient seen at least a week subsequently by the surgeon.—I am, etc.,

C. A. Scott Ridout, M.S., F.R.C.S.,
Surgeon to the Ear, Throat, and Nose Department, Portsmouth and Southern Counties Eye and Ear Hospital; Senior Assistant Surgeon, Royal Portsmouth Hospital.

Southsea, Dec. 12th.

GLOUCESTERSHIRE SCHEME FOR EXTENSION OF MEDICAL SERVICES.

Sir,—Dr. Middleton Martin, in your issue of December 11th, says: "To correct any misapprehension which might result from Dr. Todd-White's letter in your issue of November 27th . . ."

Unfortunately for me, Dr. Martin omitted to point out that the scheme I objected to was the very extravagant one of the Ministry of Health, and not the excellent one which the medical men of Gloucestershire have drawn up, and are, I believe, carrying out with satisfactory results.

The Ministry of Health used Gloucestershire to illustrate their proposed scheme of primary health centres, and therefore in my letter I dealt with that county. The point of difference is that the primary health centres are nothing more or less than elaborate hospitals, which I contend are unnecessary, whereas the Gloucestershire scheme proposes "out-stations," which are, I conclude, consulting rooms, with special apparatus for dealing with school children, pensioners, tuberculosis, and the like.

The Gloucestershire scheme proposes "out stations" for Cinderford, Newnham, and Coleford; the Ministry of Health proposes primary health centres for all these three. The towns are quite near each other, and yet a primary health centre of Type 3 is suggested for Cinderford and Type 2 for Newnham and Coleford. Type 3 is a young hospital with nearly 100 rooms in it. Type 2 is a smaller building—so small that it only has *sixty windows* shown on the "south elevation."

I contend that the primary health centre at Cinderford would cost more to keep up than the estimate in the Gloucestershire scheme for all the thirty out-stations. If the Ministry of Health proposes putting up primary health centres all over England on this scale the nation will be bankrupt; it cannot now, and it never will be able to, raise the money for their upkeep. The scheme reminds me of the patient with general paralysis of the insane who goes about buying dozens of watches, which he cannot possibly use and which he cannot pay for.—I am, etc.,

Leytonstone, E., Dec. 11th. Arthur T. Todd-White.

NYSTAGMUS.

Sir,—Nystagmus is associated with conditions that produce imperfect retinal images, but only a small percentage of these conditions is due to coal-mining. In all these conditions the impulses that normally pass to the visual centre are reduced or are practically absent. The visual centre is probably part of the cortical mechanism that directs and controls ocular movements, and if this mechanism is deprived of its normal stimuli then it may be reduced through lessened activity to abeyance of function. The lower centres would then be uncontrolled. The movements of the eyeballs—rhythmic and irregular—manifest the absence of the orderly cortical quality.

The exclusion from coal mines of men with defective vision from any cause would greatly reduce the number of cases of nystagmus found in that industry.

May I invite those who may have seen nystagmus produced in non-miners by shell-shock, with or without obvious trauma, to report their observations? No one, as far as I know, has recorded nystagmus associated with injury of the visual centre. I have seen one case associated with gunshot injury of the left ear, and I have reported a case of left convergent squint with diplopia and small central scotoma, in a case of gunshot injury of the right half of the cortical visual area.—I am, etc.,

Glasgow, Dec. 15th. J. Alex. Wilson.

THERAPEUTICS OF NORMAL HORSE SERUM.

Sir,—Your leading article in the issue of the Journal of December 4th on "The treatment of anthrax with normal ox serum" moves me to sent a few rough notes of various cases in which normal horse serum has proved beneficial, in the hope that some experimenters with facilities which are denied to a country practitioner may investigate the action of normal serums when administered to the human subject (*a*) hypodermically, (*b*) by the mouth; also determine the minimum and maximum doses, and, incidentally, furnish a scientific explanation of the results obtained.

It would be too long a story to enter fully into the reasons which have led me to the conclusions—

(1) That normal horse serum is in itself an "anti" to a very large number of infective organisms;

(2) That a specific serum is also an "anti" to very many infective organisms, though possibly it is more "anti" to its own specific organism;

(3) That administration by the mouth does not destroy its "anti" properties, though its action is probably slower and larger doses are required than when given hypodermically.

It is now some fifteen years since I first began to give normal horse serum by the mouth in infective diseases, with encouraging results in such cases as infective affections of the throat; infective abscess formations, boils, carbuncles; infective fevers, mumps, measles, scarlet fever; pneumonia; influenza and catarrhal affections; erythema nodosum; gastric and duodenal ulcer; basal meningitis; encephalitis lethargica, etc.

A dose of 10 c.cm. given by the mouth at the commencement of the illness, and repeated on the second and third days, if required, will abort and clear up most cases of septic throat; will hasten resolution of local inflammations—that is, boils, carbuncles, multiple abscesses, erysipelas; will ensure a case of one of the infective fevers running a mild and uneventful course; will generally ensure a crisis in pneumonia on the third day; will frequently abort an influenzal cold; seems sometimes to act as a specific in erythema nodosum; materially assists the cure of gastric and duodenal ulcers; will generally reduce to normal the third day temperature sometimes met with during childbirth; has cured at least one seemingly hopeless case of basal meningitis under my care; and was, I believe, the determining factor in the recovery of a case of encephalitis lethargica.

That better and more constant results might be obtained with larger doses is my firm opinion, but cost prohibits experiment beyond early response in private practice.

That other serums, such as ox serum or possibly goat serum, would be equally valuable I have little doubt, but here again facilities are lacking to the general practitioner to obtain supplies.

I plead for further investigation and research into the preventive and curative properties of various serums, especially when administered by the mouth, as I believe we have at hand Nature's own supplies of "antibodies," wellnigh inexhaustible, can we but tap and administer them in adequate doses.

May not this bare recital of results obtained stir the imagination to see a reason underlying the value that has been attached to "blood" through all ages as a curative and cleansing agent, especially in the history of medicine and theology?—I am, etc.,

Bratton, near Westbury, Wilts, Dec. 10th. T. Wood Locket.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

Sir,—Dr. Cyriax's further letter in your issue of December 11th on this subject contains a most important admission regarding the methods of the Swedish school in the treatment of infantile paralysis. It also embodies such a fundamental difference of opinion with myself as almost to exclude any basis for further discussion.

The question of the necessity for accurate splinting and scientific resting of paralysed muscles in this disease resolves itself, as concerns Dr. Cyriax and myself, into one of personal opinion, and we are as far apart as the poles.

Dr. Cyriax says in his letter:

> ". . . splinting is not essential in the treatment of infantile paralysis. During the last seventy years the Swedish school have treated this disease without splinting—a method which I have always adopted—and have obtained very good results."

I emphatically disagree with this doctrine; I regard it as a dangerous retrogression, and if tolerated calculated to have a very pernicious influence on all future treatment of paralyses. It seems to me almost incredible that there should be any possibility of controversy on this subject, after the world-wide acceptance of the views evolved and so ably advocated for many years by Sir Robert Jones,[1] as to the value of splinting in cases of paralysis.

Dr. Cyriax desires to divorce splinting and anatomical rest treatment from early attempts at movement in infantile paralysis; in my opinion the two are inseparable, and this was the conception which I endeavoured to make clear in my recent article. To state that physiological rest by splinting does not constitute a portion of muscular re-education is simply to make a direct negative statement, and I can only reiterate that I regard the one as a direct corollary of the other.

I refuse to believe, for example, that any treatment of a paralysed deltoid, persisted in with the arm left hanging by the side, could be productive of a satisfactory result. To take the weight of the arm off the injured muscle by some form of abduction arm splint seems to me such an obvious essential of correct treatment as to admit of no adverse criticism. Any method of treatment not based on these principles I regard as being mainly responsible for the helpless, wasted, and deformed limbs so frequently met with in old sufferers from infantile paralysis.

The wastage of human life and happiness caused by this disease arouses in me an anxiety to combat, on the one hand, the apathy which encases limbs in splints or plaster for indefinite periods, and on the other the recklessness which persists in attempting to obtain movement without paying attention to the great value of scientific muscle rest by splinting.

That splint treatment is only part of the story I would admit at once; but to neglect it is to court disaster, and to persist in it to the exclusion of all attempts at early movement is to overlook, on the other hand, golden opportunities of obtaining early recovery.—I am, etc.,

London, W.1, Dec. 12th. Charles Mackay.

THE METRIC SYSTEM.

Sir,—It is really depressing to see that in the report of the Inquiry Committee on the standardization of optical instruments it is recommended that the British inch, rather than the metric measure, should be retained as the unit of length in this department of manufacture. Nothing is more exasperating than this same British inch to those of us who, living abroad, have learned to appreciate the immense convenience of the metric system. From a medical point of view what can be said in favour of the British system of weights and measures in matters pharmaceutical? Here at any rate there are signs of a movement in the direction of the metric system. Allow me to quote a piece of arithmetic to show how infinitely superior this system is to our own complicated weights and measures.

Suppose I ask anyone to calculate for me the weight of water per square mile with one inch rainfall. The chances are a hundred to one that, even with a library at his back, he will be unable to give me an answer within half an hour. But in the metric system it is a matter of two minutes' calculation. This time I will ask the weight of water on one square kilometre with a one centimetre rainfall. Now a metre comprises one hundred centimetres, which, being squared, gives 10,000 square centimetres. If, then, each square centimetre is covered with a cubic centimetre of water (the rainfall being one centimetre) that gives us 10,000 c.cm.—for example, 10,000 grams of water (1 c.cm. water weighing 1 gram), that is to say, *ten kilograms* per square metre. Now for the kilometre. This comprises 1,000 metres, and 1,000 × 1,000 = 1,000,000 square metres. The weight of one centimetre depth of water on a square metre has been shown to be 10 K., and this, multiplied by the kilometre result = 10,000,000 kilograms, or—shall we say?—10,000 tons. And there you are! Simplicity itself!

Should this demonstration inspire a taste for arithmetic your reader might then try to work out the price of 1,000 cubic feet of coal-gas sold in Algiers at the present price of 1 fr. 69 c. per cubic *metre*. And the result will horrify him.—I am, etc.,

Algiers, Dec. 1st. Alfred S. Gubb, M.D.

THE NAVAL MEDICAL SERVICE.

Sir,—"Six Naval Medical Officers," writing in your issue of December 11th, have placed a few of the disabilities of our service before your readers, but they have not mentioned the most important.

Under present conditions, service for medical men in the navy is becoming a "blind alley," for the maximum pension to which an officer can hope to attain is, with a few exceptions, only £600 a year—a sum which I can vouch for is quite inadequate to bring up a family on in these days. At the present moment distracted officers at 55 years of age, recently retired, are trying to obtain or perform work in new walks of life when they might reasonably have hoped to have a well-earned rest after being at sea for the best part of their lives.

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[1] Sir Robert Jones: Treatment of Infantile Paralysis, British Medical Journal, 1914.

Gross inconsideration has ever, and will ever, mark the treatment meted out to the naval medical officer. The most glaring instance of this lately is the awarding of only a 10 per cent. increase of pension to surgeon commanders recently retired at 55, while all other officers get anything from 40 to 100 per cent. increase, and this in the face of the Halsey report, which recommended an all-round increase of 50 per cent. It should be noted that young commanders who have been passed over for promotion can secure the same pension at about 46 years of age.

If a private firm dared to treat its officials in a similar manner, such action would be called by a much harsher term than "inconsideration."—I am, etc.,

December 13th. LATELY A SURGEON COMMANDER.

TROPICAL FLEAS.

SIR,—With reference to Dr. Clarke's letter on tropical fleas, in the BRITISH MEDICAL JOURNAL for December 11th, I think I am correct in saying that *Pulex irritans* has never been found in the Anglo-Egyptian Sudan. It is at least very rare in that country, as noted on p. 148 of the *Second Review Supplement of the Wellcome Tropical Research Laboratories*, 1911, and I doubt if it has ever been discovered there.—I am, etc.,

London, N.W.1, Dec. 13th. ANDREW BALFOUR.

Obituary.

SIR FREDERICK TAYLOR, BT., M.D.,

Consulting Physician to Guy's Hospital; formerly President of the Royal College of Physicians of London.

SIR FREDERICK TAYLOR, whose death on December 2nd was briefly noted in our last issue, was elected President of the Royal College of Physicians in 1915, but was compelled not to seek re-election in 1918 owing to the onset of the illness which, after withdrawing him from all his customary activities, has now terminated his life.

Frederick Taylor was the son of Mr. David Taylor, M.R.C.S., of Kennington, and was born there in 1847. He received his early education at Epsom College, and in 1863 entered Guy's Hospital, where he had a brilliant career. He graduated M.B. in the University of London in 1868, taking the university scholarship in midwifery and forensic medicine. He took the M.D. degree in 1870, became M.R.C.P. in 1872, and was elected a Fellow in 1879. He held the usual junior appointments in Guy's Hospital, and in 1872 was elected assistant physician. He was also for a number of years physician to the Evelina Hospital for Sick Children; at various times he held a similar position at the Seamen's Hospital, the National Hospital for Diseases of the Heart, and the Royal School for Deaf Children.

After his election to be physician to Guy's Hospital in 1886 he devoted himself with increased zeal to his duties as a clinical teacher. In that capacity his extensive knowledge, sound judgement, and thoughtfulness for others made him very popular with students. The same qualities earned him a commanding position in consulting practice in London. His wide knowledge of the literature of medicine, tempered by immense practical experience, was displayed in his textbook, the *Practice of Medicine*, the first edition of which was issued in 1890, and obtained immediate success. Succeeding editions the eleventh appeared in 1918—were subjected to the most painstaking revision, so that the book still remains one of the most useful and popular of students' treatises.

Sir Frederick Taylor was long a member of the British Medical Association, and had held the office of President of the Metropolitan Counties Branch; he was Vice-President of the Section of Medicine when the annual meeting was held in Nottingham in 1892, and President of the Section of Diseases of Children when it met in Ipswich in 1900. He was a member also of the Central Medical War Committee, in the business of which he took great interest. He had held the offices of President of the Clinical Society and of the Medical Section of the Royal Society of Medicine. He retained his interest in Epsom College; for many years he was a member of the Council, and for some years chairman of the School Committee; he also held the position of honorary physician. He was a senator of the University of London and was its representative on the General Medical Council from 1909 to 1918. As has been said, Sir Frederick Taylor became a Fellow of the Royal College of Physicians in 1879; he was a councillor in 1897–99, and a censor 1904–5 and 1910. He delivered the Lumleian Lectures on Some Disorders of the Spleen in 1904, and was Harveian Orator in 1907, when he dealt with the need of research in medicine. As president, an office to which he was elected in 1915, he showed conscientious attention to the onerous duties of that post; but the anxieties of the war, aggravated by the loss of a son, at first reported missing, and afterwards by the death of his wife, led to a serious breakdown in health from which he never recovered. He was created a baronet in 1917, and is succeeded by his son, Dr. Eric Stewart Taylor, O.B.E., late captain R.A.M.C.(T.).

We are indebted to one of his colleagues at Guy's Hospital for the following tribute to his work there and to his attainments as a physician and his qualities as a man:

Frederick Taylor entered Guy's young, and as a student or teacher remained there until he became consulting physician at the retiring age of 60. The most striking things about him were his exceptional ability, his power of hard work, and his conscientious devotion to his duty. He never failed to attend his wards punctually, he never curtailed his rounds; indeed, they were sometimes too long for the less enthusiastic of his followers. The chief characteristic of his teaching was his insistence on accuracy in fundamentals, such as physical signs, and his trenchant criticism of inaccuracy in others. He was an observant, highly skilled, and far-seeing physician; his diagnosis was rarely at fault. His bedside demonstrations and his lectures were much to the taste of senior students, who always appreciated that what he told them was the truth of the matter, as far as it could be known, because, in addition to his critical mind, he possessed a marvellously retentive memory for even the smallest details of works he had read and cases he had seen. These same features appear in the papers he contributed to medical literature, and make his textbook one of the very best of recent years. He was, as might be expected, an excellent man of business, therefore he had much to do with the management of the Medical School, where for a long while he was dean, and where he served on all important committees. He was indefatigable in his labour for the school; he always remembered everything about it, and the way in which, years after a student had left, he could recall the date of his entry and the appointments he had held, was almost uncanny. He was a trifle austere, and students were inclined to feel a little afraid of him on first acquaintance, but this wore off when, as was always the case, they found he was anxious to do all he could to help them.

Throughout his life he upheld the best traditions of his predecessors, and by his example, his industry, and his teaching maintained the high ideals of the hospital and its medical school, which were fortunate in having in him a man who never sought popularity outside his profession, but who made it his life's occupation to strive hard for its good. Any hospital and medical school having on its staff such a man as Frederick Taylor must be under a deep debt of gratitude to him.

Sir CHARTERS SYMONDS has been good enough to send the following:

In reply to your request I will refer to the service Sir Frederick Taylor rendered to the medical school at Guy's Hospital, as it is but little known, and absorbed so large a part of his time as to interfere materially with strictly professional work. After a brilliant career at the University of London he was, at the age of 23, appointed a demonstrator of anatomy. In the following year, I think it was, he took over control of the office of the medical school at a ridiculously small remuneration. The business was in a state of chaos, as it had outgrown the capacities of the old apothecary, Mr. Stocker. Within a very short time Taylor had organized the office, and was soon after appointed the first dean of the medical school. He laid down the lines so well, and with such foresight, that further developments were easily carried out under his successors. Everything running smoothly, no one seemed to think that the work of the dean had increased enormously owing to the many changes in the curriculum. Yet no word of protest was ever heard from Dr. Taylor, though he recognized that the demand seriously interfered with professional work. At the conferences of the deans of the medical schools Taylor's keen insight proved of signal value in adjusting the many changes in the curriculum, and in bringing about co-operation. When he served on a committee it was seldom any aspect of a question was overlooked; but should he see any confusion or omission he was the first to open the question in the general meeting. As chairman of the staff meetings Taylor was at his best; he let others speak, only keeping them to the point. Should discussion become heated, he by some remark showed the humorous aspect or by some shrewd question switched the discussion on to a better line. Finally, his summary was always excellent, never using the authority of the chair unduly. I do not think Taylor ever said an unkind word of anyone. As a physician he was progressive, and, especially when abdominal surgery began in the eighties, I had frequent opportunities of consultation with him. While we were learning how to relieve the acute appendix cases, the intestinal obstructions, he was always present. He would come down at any time of the night in order that he might learn the actual conditions and become familiar with living pathology. Hence his opinion became most valuable in abdominal disease, especially in acute cases. In private he often assisted me, both in the technical work itself and in deciding what was best to be done. He was, in fact, an excellent assistant at an operation. When he was asked to write the *Manual of Medicine*, I remember he joined Goodhart and myself in a river excursion, and told us he had just signed the agreement. One knew that there would be no uncertain statement in that volume, for accuracy in all things was an essential part of his make-up. There has left us one who was a true friend, a single-minded gentleman, a man who devoted himself to the hospital and school he served so long and so well. In recognition of these services the governors and his colleagues presented him with his portrait, which now hangs in the Governor's house at Guy's Hospital.

WE have received through Dr. Arthur Latham a tribute by Mr. R. Wollheim, an American patient, to Dr. OTTO WALTHER, who founded, about 1889, the Nordrach tuberculosis colony in the Black Forest, Southern Germany. The site chosen had an elevation of 1,500 feet, was ten miles from a railway, and was remote from towns. It consisted of a number of small houses and cottages amidst flower gardens and meadows. Dr. Walther ruled with a rod of iron to ensure that his system should be carried out. One chief feature of it was a combination of rest and exercise; patients were required, under strict medical supervision, to walk uphill. A large number of English patients went to the Nordrach colony, and the advice to go there continued to be given until Dr. Walther retired from practice in 1908. Among the patients in the earlier days were some British medical men, who introduced the system into Great Britain, and when in 1910 Dr. Walther's own son contracted tuberculosis his father sent him for treatment to an English Nordrach sanatorium. Mr. Wollheim considers that the success of Dr. Walther's treatment was due to its inherent excellence, to the highly favourable situation of the sanatorium, and to the extremely rigorous individual supervision made possible by Dr. Walther's powerful and commanding personality. Dr. Walther died last year.

THE French Academy of Medicine has recently lost its permanent secretary. Professor G. M. DEBOVE, who died on November 19th, after a long illness. He was born in 1845, and graduated M.D.Paris in 1873. He became physician to the hospitals in 1877 and agrégé in the following year. He did not limit himself to any one department of medicine, but is best known for his writings on diseases of the stomach. He became a professor of pathology in 1890, and when he resigned that office taught clinical medicine at the Beaujon Hospital. He was elected a member of the Académie in 1893, and twenty years later was unanimously chosen to be permanent secretary.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examination indicated:

SECOND M.B.—*Materia Medica and Pharmacology*: J. H. Fletcher, E. H. Koerner, C. H. Laver, D. G. Leys, T. S. Nelson, H. D. Pavière, I. M. Sidley, C. H. Terry, C. J. L. Wells, Dorothy J. Collier, Dorothy W. Crook, Jean Orr-Ewing. *Pathology*: C. W. C. Bain, C. F. T. East, H. C. Hill, R. F. Johnstone, C. H. Laver, E. G. T. Liddell, D. B. Pauw, C. H. Terry, W. S. Tunbridge, C. J. L. Wells, W. A. Young, Jean Orr-Ewing. *Forensic Medicine and Public Health*: H. G Burford, C. C. H. Chavasse, D. G. T. K. Cross, C. F. T. East. *Medicine, Surgery, Midwifery*: C. K. J. Hamilton, I. Harris, J. T. S. Hoey, W. F. Skaife, C. H. Terry, C. J. L. Wells.

UNIVERSITY OF CAMBRIDGE.

AT the Congregation held on December 8th the proposals for the admission of women students to full membership of the University were rejected by the Senate. The Grace offered to the Senate was: "That the Statute for Women Students proposed in Report A of the Syndicate on the Relation of Women Students to the University be approved." The voting was as follows:

Non-placet	904
Placet	712
Majority against...	191

In consequence of the rejection of this Grace the recommendations contained in Report B of the Syndicate will be brought forward at a later Congregation. A summary of the two Reports, together with a summary of the various stages in the relationship of women to the University of Cambridge appeared in the JOURNAL of August 21st, 1920, p. 284. The Syndicate was appointed twelve months ago to consider the relation of women students to the University, its instruction being "to consider whether women students should be admitted to membership of the University, and if so, with what limitations, if any; and alternatively to consider, if women students are not admitted to membership, by what means the University could co-operate with the Women's Colleges or other bodies in the conferment of degrees on women students." The two reports, A and B, were presented in May last; each was signed by six out of the twelve members of the Syndicate. Report B recommends the creation at Cambridge of a separate university for women to be formed by the incorporation of Girton and Newnham Colleges, the facilities and privileges already conceded to women by the University being continued; this recommendation is not, however, acceptable to the authorities of the women's colleges. A proposal for the admission of women to titles of degrees was rejected by the Senate in 1879, and another in 1897, when 662 voted for and 1,713 against it.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—E. Ablett, Isabella Aitken, C. Brownlie, E. Byres, C. Calder, H. Chodak, E Connell, Mary Cripps, Elizabeth Critchley, Cornelia Cross, A. Cumming, A. Cuthbert, W Eadie, J. Eijkelenboom, Dorothea Gall, R. Galloway, S. Gasson, Isabella Gillespie, I. Goldberg, W. Grantham, W. Grassick, J. Grierson, E. Griffin, T. Hastings, H. Holden, W. Hunter, E. Isseron, R. Jackson, M. Jardine, J. Leckie, D. Lewis J. Liddell, J. MacBeth, Flora MacDonald, Isabella Macfie, R MacGarrol, *A. M'Gregor, F. Meine, P. Menon, J. Mill, Rosemary Morris, Deborah Morrison, H. Nichol, H Pierce, C. Pieters, J. Rebkin, Roberta Rankin, Marion Reid, F. H. Reynolds, J. Riesnik, D. Robertson, Helena Robertson, J. Robinson, G Rodriguez, Eileen Rowley, J. Scarff, J. Smith, Dorothy Somerville, Helen Spencer, Marguerite Stewart, S. Summer, J. T. Leslie, T. J. Thomson, Philippus Toit, O. Wild, Arma Williams, D. Williamson, Christine Willway.

* With distinction.

UNIVERSITY OF GLASGOW.

THE Senate of the University of Glasgow has awarded a Faulds Fellowship in the faculty of medicine, value £200 per annum for three years, to James L. Halliday, M.B. The Brunton Memorial Prize for the year 1920, awarded to the most distinguished graduate in medicine, was divided between John Wyllie, M.A., and John William Stewart Blacklock, who were bracketed equal. The Joseph Coats Memorial Scholarship (value £85), for the encouragement of original research in pathology, was awarded to Harold L. Coulthard, M.B., Ch.B.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on December 9th, when Sir Anthony Bowlby, President, was in the chair.

Twenty-four candidates passed the first Fellowship examination in anatomy and physiology, under the special war conditions, and 47 under the ordinary conditions.

Diplomas of Fellow were granted to the following 43 candidates found qualified at the recent examination for which there were 122 candidates:

A. L. Abel, E. M. Atkinson, H. H. Bailey, C. F. Beyers, A. H. F. [illegible], R. St. J. Brockman, C. L. Chapman, D. G. Churcher, Hetty E. Claremont, A. J. Cokkinis, L. P. Costobadie, C. H. Crawshaw, P. P. Debono, W. M. Dickson, L. A. Dingley, H. H. [illegible], G. E. [illegible], R. H. Fleming, P. K. Gilroy, F. K. Hayman, S. W. M. Jones, G. L. Keynes, E. A. Lindsay, R. J. M. Love, P. G. McEvedy, R. H. Maingot, C. D. Maitland, F. D. Marsh, H. H. Mathias, O. G. Morgan, J. E. Pearce, V. C. Pennell, R. L. Rea, N. L. M. Reader, Hilda N. Shufflebotham, T. H. Somervell, L. A. Spedding, R. F. Standage, J. B. Stanley, H. E. R. Stephens, J. W. Stretton, D. G. J. Tasker, D. Watson.

A Final Examination for the Fellowship will be held on February 15th, 1921, and following days; the written part will take place on February 11th.

The Licence in Dental Surgery was granted to thirty-two candidates found qualified at the recent examination.

Mr. E. H. Fagge was elected a member of the Court of Examiners in place of Mr. H. J. Waring, retired by rotation. Mr. Raymond Johnson was elected a member of the Court of Examiners in Dental Surgery.

Mr. F. F. Burghard was appointed representative of the College on the University of London for the period ending in May, 1923, in the vacancy occasioned by the resignation of Sir Charles Ballance. Sir Berkeley Moynihan was reappointed representative of the College on the Court of Governors of the University of Birmingham for three years from January 1st, 1921. Sir Anthony Bowlby and Sir John Bland-Sutton were appointed to represent the College on the Conjoint Board of Scientific Societies.

A bust (by Bailey) of the late Sir Richard Owen, offered through her executors by the late Mrs. Owen (his daughter-in-law), was accepted with thanks.

The following three members of Council were appointed delegates to represent the College at the centenary celebrations of the French Academy of Medicine, to be held in Paris from December 20th to 23rd, 1920: Sir d'Arcy Power, Mr. Charles Ryall, Sir John Lynn-Thomas. The delegates were requested to offer an address of congratulation which has been drawn up by the College.

In regard to the resolutions carried at the meeting of Fellows and Members, held November 28th, 1920, the following reply was adopted by the Council: "That, as the matters referred to in these resolutions were very fully considered by the Council so recently as June, as well as at previous meetings in this year, the Council see no advantage in reopening the discussion."

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following have, after examination, been admitted as Fellows of Faculty: Peter Hamilton Robertson, M.B., Ch.B., and John Noonan Meade, L.R.C.P. and S.Ed., L.R.F.P.S.G., D.P.H.

CONJOINT BOARD IN IRELAND.

AT the winter final and qualifying examinations the following candidates have been successful and have been admitted Licentiates:

J. V. [illegible], W. A. Bullen, W. E. Colahan, T. F. Connor, T. P. [illegible], L. A. G. [illegible], T. E. Kavanagh, P. Kelly, D. L. Kelly, H. J. [illegible], T. J. McCormack, H. O. Mackey, E. Mitchell, E. J. [illegible], Gladys C. J. O'Connor, P. J. Roddy, L. Scher, W. H. Sexton, J. W. Tighe, J. F. Webb.

The Services.

WAZIRISTAN DISPATCH.

GENERAL SIR CHARLES MONRO, Commander-in-Chief in India, in his report to the Government of India on the operations in Waziristan from November 3rd, 1919, to May 7th, 1920, refers to the [illegible] of the Army Bearer Corps, and in particular No. 1 Bearer Unit, No. 2 Indian Field Ambulance, and No. 42 Combined Field Ambulance. "The evacuation of the sick and wounded," he says, "was most efficiently performed, and in no single case throughout the operations did any delay occur in this most important service. At each stage along the lines of communication the wounded received all possible attention. Only the most serious cases were evacuated to India; other cases were treated locally and returned to their units. [illegible] the standard of comfort and efficiency which obtained in the hospitals could only have been achieved by administrative [illegible] and by minute attention to detail on the part of all ranks. My thanks are due to the Senior Medical Officer with the Force and to his subordinate officers for their devotion to duty and their solicitude for the sick and wounded." The dispatch concludes with an acknowledgement of the administrative ability and devotion to duty of the D.D.M.S., Colonel C. W. Profeit, and a tribute to the remarkable [illegible] of the medical service during this arduous frontier campaign.

DEATHS IN THE SERVICES.

Lieut.-Colonel Thomas Henry Pope, Madras Medical Service (retired), died at Margate on November 20th, after a short illness, aged 67. He was born on June 16th, 1853, and educated at Edinburgh University, where he graduated M.B. and C.M. in 1877, and B.Sc. and M.D. in 1888; he took the F.R.C.S.Edin. in 1896. He entered the I.M.S. as surgeon on March 30th, 1878, became lieutenant-colonel after twenty years' service, and retired on March 1st, 1904. He began his Indian career by two years' service in the second Afghan war, 1878–80, receiving the medal. In 1885 he took civil employment in Madras, and served successively as residency surgeon of Travancore, as district medical and sanitary officer of Negapatam, and, later, of South Arcot, and as assistant physician to the Madras General Hospital. In 1894 he was appointed surgeon to the Madras Ophthalmic Hospital, and subsequently professor of ophthalmic surgery in Madras Medical College. After his retirement he held the post of ophthalmic surgeon to the Margate Education Board.

Major Paul Conolly, R.A.M.C. (retired), died suddenly on November 29th. He was educated in Dublin, and after taking the L.R.C.S.I. in 1870 and the L.R.C.P.I. in 1871, entered the army as assistant surgeon on September 30th, 1871, becoming surgeon-major on September 30th, 1883, and retiring on October 1st, 1890. After his retirement he was employed as recruiting officer at Belfast from 1902 to 1909, and was also called to the Bar at the Inner Temple. He served in the Afghan war in 1878–80, receiving the medal.

Captain Kaikhosru Hormusji Contractor, I.M.S.(T.C.), whose death was briefly mentioned in the BRITISH MEDICAL JOURNAL of November 13th, was accidentally killed by the falling of a telegraph pole at Hillah, in Mesopotamia, on July 2[illegible]th. He was educated at Bombay, and after graduating there as M.B. and B.S., took a post as medical officer in a Chinese steamship company, with which he had visited China, Japan, and Australia. When the war began his ship was taken up as a transport, and conveyed troops to France, Malta, and the Dardanelles, for which services he received the Mercantile Marine medal. On completion of his contract with the steamship company, he took a temporary commission as lieutenant in the I.M.S. on September 22nd, 1916, and was promoted to captain after a year's service. He had served in East Africa, and latterly in Mesopotamia.

Captain Mervanji Dinshaw Printer, I.M.S.(T.C.), was drowned in the Suez Canal, near Ismailia, on October 2nd. He was educated at Bombay and became L.M.S. in 1905; subsequently he studied in Dublin and Edinburgh and took the Scottish triple qualification in 1906; afterwards he went into practice at Mandvi, Bombay. He took a temporary commission as lieutenant in the I.M.S. on February 25th, 1918, and was promoted to captain after a year's service. He served in Lord Allenby's force in Palestine and Syria, and, after the French took over Beirut, was transferred to the base hospital at Kantara, Egypt, and while stationed there came to his untimely end. He was 37 years of age.

Medical News.

THE house and library of the Royal Society of Medicine will be closed from Friday, December 24th, until Tuesday, December 28th, both days inclusive.

SIR DONALD MACALISTER, President of the General Medical Council, has been elected an honorary member of the Liverpool Medical Institution.

COLONEL SIR EDWARD WORTHINGTON is leaving for India at the close of this week to join the staff of the Duke of Connaught on his journey to India in H.M.S. *Malaya*.

A MEETING of the Council of the School Medical Group of the Society of Medical Officers of Health will be held on Saturday, December 18th, at 10.30 a.m., and of the Group at 11.0 a.m., at 1, Upper Montague Street, Russell Square, London, W.C. Members of the School Medical Service who are not members of the society will be welcome as visitors.

A GENERAL meeting of the Medical Officers of Schools Association will be held to-day (Friday, December 17th), at 4.30 p.m., at 2, Savoy Hill, Victoria Embankment, W.C.2, to elect officers for 1921. Mr. R. C. Elmslie has been nominated for the office of president.

DR. ROBERT JAMIESON of Broderick, Dr. James B. Lawson of Rothesay, and Dr. Thomas Rutherford of Arran, have been appointed justices of the peace for the County of Bute.

THE London County Council has decided to insert in all licences for establishments for massage and special treatment the condition that the establishment should be carried on only for the treatment or business and in the trade name specified in the licence and at that address; that all notices and advertisements should bear the style and title specified in the licence, and no names of individual assistants should be given; that any change of name, address, or treatment, or business should be immediately notified to the Council; and that, except by the written consent of the Council, the licensee should not employ in the conduct of the establishment any person whose licence had been revoked or to whom a licence had been refused on the ground of unsuitability.

PROFESSOR WEICHSELBAUM, the discoverer of the meningococcus and author of works on histology, epidemiology, and parasitology, died at Vienna on October 22nd.

THE well known anatomist and anthropologist, Professor Carl Toldt of Vienna, died last month of pneumonia at the age of 80.

AT a recent meeting of the Italian Paediatric Society at Trieste, Professor Comba of Florence was elected president and Professors Cattaneo of Bologna and Cozzolino of Genoa members of council. The next congress will be held at Milan.

THE matinée in aid of the Royal Medical Benevolent Fund Guild, given at His Majesty's Theatre last month, has enriched the guild by the sum of over £1,000. Among those who gave their services were Miss Winifred Emery, who, with Mr. Gerald du Maurier, appeared in a one-act play, *The Stepmother*, Miss Fay Compton and Mr. Basil Rathbone, and Mr. Leon M. Lion's company. Among those present in the royal box were the Queen of Spain and Princess Christian.

THE appeal for donations to secure the unique collection of nasal anatomy formed by the late Professor Onodi of Budapest (BRITISH MEDICAL JOURNAL, November 13th, p. 755) is meeting with a satisfactory response. We may feel assured that it will remain in this country, where it will be available for all students. A considerable sum is still required to prepare, mount, and catalogue the 700 specimens. The names of the subscribers will shortly be published, and those who have not already sent their donations are urged to communicate at once with the Honorary Secretary and Treasurer, Mr. Philip Franklin, 27, Wimpole Street, W.1. The committee is anxious to publish a full and representative list. As was previously pointed out, this remarkable collection is of scientific interest and great practical utility not only to rhinologists and otologists, but equally to ophthalmologists, dental surgeons, and general surgeons.

THE management committee of the Kidderminster Infirmary, on December 8th, passed a vote of condolence with the relatives of the late Dr. S. Stretton, who did much for the institution, and was instrumental in the erection of the present building. It is intended to perpetuate his memory by calling one of the wards by his name. At the same meeting the resignation of his son, Dr. J. Lionel Stretton, the senior honorary surgeon, who has been a member of the staff for thirty-eight years, was received with great regret, and he was appointed honorary consulting surgeon with the charge of ten beds.

A COURSE of lectures and practical instruction in mental diseases for a diploma of psychological medicine will be given at the Maudsley Hospital, beginning on January 3rd, 1921, and lasting until March 18th. In the lecture courses Sir Frederick Mott will deal with the pathology of mental diseases, including brain syphilis, its symptomatology and treatment, and secondary dementia from injury, tumours, abscess, syphilitic brain disease, parenchymatous syphilis, arterio-sclerosis, arteritis, alcoholic dementia, lead encephalitis, and deficiency diseases. Eight lectures on the psychoneuroses will be given by Dr. Bernard Hart, who will discuss, among other topics, the relationships of the various schools of treatment and the classification of the psychoneuroses. Dr. F. C. Shrubsall's course of instruction on the practical aspect of mental deficiency will include lectures on mental deficiency, the methods of testing mental capacity, and the laws of mental deficiency in relation to ascertainment and treatment. Six lectures on crime and insanity will be given by Dr. W. C. Sullivan and eight lectures on the symptoms of mental disease by Dr. E. Mapother. A series of clinical demonstrations in neurology will be given partly by Dr. F. Golla, at the Hospital for Paralysis and Epilepsy, Maida Vale, and partly by Sir Frederick Mott. Dr. C. Hubert Bond will give ten lectures or demonstrations on the differential diagnosis and treatment of mental disorders and the legal relationships of insanity; certain of these demonstrations will take place at Hanwell or Claybury. The full syllabus of the course may be obtained on application to the Maudsley Hospital, Denmark Hill, S.E.5.

A COMPLETE scheme for the establishment of a school of tropical medicine and research in Parel, Bombay, has been submitted for the sanction of the Secretary of State, and it is hoped that it will be opened at an early date and afford opportunities for post-graduate instruction to students from all parts of the world. A medical college will be established in association with King Edward's Memorial Hospital in Parel, the foundation stone of which will be laid this month.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"DIOGENES" asks if there is in existence any evidence in support of the statement that diseased tonsils and adenoids may be caused by dental trouble.

HYPERIDROSIS.

DR. ALEX. MACLENNAN (Glasgow) writes: In reply to the query by "Beaten" in the JOURNAL of November 27th, I would say that if accompanied by constipation it is probably reflex, not toxic, and that an *x*-ray examination of the intestinal tract should be made with special reference to the colon. In one similar case a "loop" of the descending colon, accompanied by hyperhidrosis of the hands and obstinate constipation, was cured by excision of this loop.

DYSIDROSIS.

"M. C. N." writes: I have a patient, aged 20, who, although in good health in every other respect, suffers from offensive perspiration, under her arms principally. I should be glad of suggestions for treatment. The only thing I find does any good is thyroid tablets (2½ grains), and this seems to lose its efficiency.

INCOME TAX.

"J. C. C." inquires as to the assessment of income, £800 from practice, £200 from dividends, and "depreciation of investments £1,000 during year."

*** The £200 pays tax at 6s., the £800 is subject to allowance of one-tenth for earned income and the usual personal and family allowances; of the balance £225 is chargeable at 3s. and the remainder at 6s. No deduction can be claimed in respect of depreciation of investments, as the loss was not incurred in our correspondent's profession; it might be otherwise if he were a professional dealer in stocks and shares.

"T. M. G.," who is retiring from his firm on December 31st, 1920, asks what is the position with regard to payments which the practice may make to him after that date.

*** In our view he is liable to pay tax for the current financial year on three-quarters of the amount on which he would have paid if he had not retired, and that terminates his liabilities in respect of the practice. Apparently the firm has paid income tax on a "cash basis," but—as has been explained on previous occasions—this is a basis of calculation only, and the payment of tax for any one year has discharged the liability to tax for the earnings *of that year*. Consequently our correspondent must be regarded as having paid income tax on his earnings for, say, 1919, and any fee relating to 1919 and received by him subsequent to his retirement must not be taxed again.

"L. M." inquires whether his army emoluments can be averaged with his earnings from his restarted private practice.

*** No; the two incomes fall into different categories of the Income Tax Acts and cannot be averaged together. "L. M." says that his practice was closed down entirely, as he had no partner, only a part-time secretary for correspondence, etc. If this implies that during that time his practice was being kept in being, as, for instance, if the work was being done by his medical colleagues on part-sharing terms, then we consider that he is entitled to average the income derived by him from the practice over the past three years and take the resulting figure as the basis of his liability for this year.

"J. I. S." asks for advice as to the extent to which the purchase of professional books and periodicals is a deductible expense for income tax purposes.

*** To the extent to which that expenditure is reasonably necessary to *maintain* the practitioner's knowledge at its existing level of efficiency, following, as seems proper, the analogy of a manufacturer incurring expense from time to time to maintain his machinery in its normal condition. This rule would exclude, for example, the original cost of a medical library or the purchase of special books on a branch of medical science in which the practitioner desires to extend his knowledge, but, in our opinion, it would not exclude the expense of keeping a medical library up to date by the purchase of new editions or periodicals.

"H. M." asks for advice in the following circumstances: A. and B. were in partnership. A. held various part-time public appointments—M.O.H., etc.—but all receipts were pooled for assessment under Schedule D. A. has now been appointed whole-time M.O.H. and terminated his connexion with the practice. The assessor contends that B. must now be assessed on the average earnings of the practice including those from the public appointments.

*** We do not agree, and for the following reasons:

(*a*) Because the pooling of public appointment receipts is a mode of procedure adopted for the convenience of the taxpayer and the revenue, but without legal justification. Now that the public appointment has been divorced from the general practice there is no reason either in law or common sense why the assessment on the latter should include any results of the appointments. (*b*) Apart from the above consideration, even if the two incomes are legally assessable together, they are now separable, the public appointment work being in some sort a branch taken over by A.; and (*c*) if the figures for the past three years are not separated, it is clear that both A. and B. are paying tax on one source of income.

It should be borne in mind that it is not the gross receipts from the appointments that require elimination, but that amount less a reasonable sum for the expenses applicable thereto.

Renewal of Motor Cars.

A correspondent raises again the question as to the income tax allowance due to him for replacing his motor car. In this instance the original car was apparently secondhand and has been replaced by a new car of another make.

*** Our correspondent can deduct the difference between what he paid for the original car and the cost as at the date of sale of a car of similar make and condition to the one he sold. He cannot deduct the cost—or at least the whole cost—of a new car, as that outlay represented an improvement of his professional equipment.

LETTERS, NOTES, ETC.

A Disclaimer.

We have received a letter from Dr. Francis H. Edwards (Medical Superintendent, Camberwell House, S.E.5) in the course of which he writes: My attention has been called to a highly eulogistic paragraph in the personal column of the advertisements in an issue of the *Times* of recent date. I am quite without information as to the origin of this unfortunate effusion, which, however, is an example of how much more easily one can be injured by one's friends than by one's enemies. I shall be much obliged if you will note my entire repudiation of any knowledge in the matter.

Disappearance of Radial Pulses during Deep Inspiration.

Dr. James Ritchie (Slateford, Midlothian, formerly of Edinburgh) writes: In the British Medical Journal of December 11th, 1920, p. 890, Dr. Edgecombe (Harrogate) records a case of disappearance of the radial pulse during deep inspiration. About thirty-five years ago, when examining a middle-aged gentleman, I found very marked intermissions of the right radial pulse; closer examination revealed the fact that the intermissions occurred only at the close of inspiration and also that the pulse on the left side was quite regular; further, that when the right elbow was supported the right radial pulse became regular. Examination of the neck revealed several deep cicatrices and also some thickening of the connective tissue behind the right clavicle. The patient then stated that when he was a young man he suffered for some years suppuration in that region. Some time afterwards I had the pleasure of meeting Professor (afterwards Sir) David Ferrier at dinner, when conversation happened to turn on irregularities of the pulse. The above case was described to him; he straightway demonstrated that he could at will extinguish the radial pulse by depressing the shoulder. The first case had a pathological contributing cause; in Sir David Ferrier's case there was none.

Dr. Carey Coombs (Clifton, Bristol) writes: A short note on this subject appeared in the *Berliner klinische Wochenschrift* for August 15th, 1910, by Dr. Georg Riebold. Here, as in Dr. Edgecombe's case, the pulse failure was due to compression of the subclavian artery between the clavicle and the first rib. I have seen the same phenomenon, more than once so far as my memory serves me, in the course of some investigations which I made into the causation of the loud systolic murmur often heard during inspiration, and also when the arms are raised, beneath the outer half of the clavicle. I found it impossible to associate this murmur with any morbid condition, and came to the conclusion that it also was due to pressure on the subclavian artery.

Dr. Ernest Kingscote (London, W.) writes: To those of us who have served as police surgeons the disappearance of the radial pulse is quite familiar. Malingerers effect it by taking a deep breath and holding it, thus nipping the subclavian artery between the first rib and the clavicle. Holding the breath after deep inspiration also tends to slow the heart's action in tachycardia.

The "Journal."

In an article last week on early medical journals we said that our forerunner, the *Provincial Medical Journal*, which was started in 1840, soon changed its name to the *Provincial Medical and Surgical Journal*, and that, following the change of title of the Association to that of the British Medical Association in 1856, the Journal adopted its present title. The Librarian reminds us that in 1853 and for the three following years the Journal was styled the *Association Medical Journal*. There were thus four phases in the evolution of the name. At some unknown date an unofficial phase occurred—the familiar contraction into the three initial letters of the *British Medical Journal*. This short title has long been current "on lips of living men," and will no doubt remain in common use, however disagreeably it may sound in the ears of those who deplore the modern habit of abbreviation.

A Dutch Medical Calendar.

This time last year we mentioned the issue for the Netherlands Medical Association of a medical wall calendar containing a series of reproductions of pictures of medical subjects. Encouraged by the interest shown by members of the profession in this country and America, the publisher, Mr. J. Philip Kruseman, 87, Prinsegracht, the Hague, Holland, has brought out an English edition of his medical calendar for this year. The pictures have been selected by Dr. J. G. de Lint of Gorinchem, with the exception of a number illustrating dentistry chosen by Dr. G. H. Bisseling of the Hague. Among the latter is the reproduction of an etching by Lucas van Leyden, said to be the first showing an operation on the teeth. Among others reproduced are a picture showing extraction of a tooth with the fingers, and a portrait of Fauchard, which served as a frontispiece to his book *Le Chirurgien Dentiste*, published in Paris in 1728. Not all the pictures chosen are Dutch; there is a reproduction of Titian's Doctor of Parma, a portrait of Edward Jenner after an engraving, and another of Dr. Joannes Wier of Arnhem, who wrote against witch hunting. Several of the best pictures reproduced are of water doctors, one of them by Gerard Dou. The title-page of a book on pharmacy gives a very vivid picture of an apothecary's shop in 1657; finally we may notice an engraving showing the capping of four candidates at the centenary celebrations of the University of Utrecht. The calendar can be obtained from the publisher at the address given, price 6s., post free.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 38, 40, 41, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 39 and 40.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

NEW SCALE.

The following new scale of charges for advertisements will come into force on January 1st, 1921:

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

An Address

ON

STASIS AND THE PREVENTION OF CANCER.

DELIVERED TO THE HUNTERIAN SOCIETY

BY

A. C. JORDAN, C.B.E., M.D., M.R.C.P.,
PRESIDENT OF THE SOCIETY.

IN considering the causes of cancer two factors present themselves—a known and an unknown factor. The latter is still elusive in spite of every investigation. I am not, however, concerned here with the actual causative agent of new growth—whether it be an infective organism, a parasite, or an acquired vicious function of cells. I am solely concerned with the known factor, the principle of which is universally recognized: that long-continued chronic irritation is apt to lead to the occurrence of cancerous change. The object of this paper is to draw attention to the various ways in which cancer is brought about by stasis.

Cancer due to Local Irritants.

Typical instances of this are chimney-sweeps' cancer (which affects the skin in certain situations), cancer of the lip from the constant irritation of the stem of a clay pipe, and cancer of the tongue from the local irritation of jagged or decayed teeth. Any chronic skin sore is apt to become cancerous. Well-known examples of this occur among workers in oil-fields, and in the cancer which appears in old *x*-ray dermatitis. In China men suffer from cancer of the posterior wall of the pharynx and upper gullet from the irritation set up by the constant eating of hot rice; and in Kashmir, where the natives carry a clay charcoal burner in a wicker basket across the lower abdomen, "Kangri burn," as it is called, sets up cancer of the skin of the lower abdomen and groins, and causes more than half the cancer from which this race suffers.[1]

This view is strikingly upheld in a recent paper by Dr. A. Paine,[2] who demonstrates conclusively, by observations based entirely on the histological changes found in early cases of cancer, that cancerous change follows directly upon a chronic inflammatory condition, which he traces to a microbic infection. He illustrates the histological changes which occur in the mammary gland as it passes from normal glandular structure through various stages until cancer is established. The October number of the *British Journal of Surgery* for 1920 contains further histological confirmation of the transition from simple cystic disease to cancer in the breast.

The Beginning of Stasis.

If careful inquiry be made into the history of patients with stasis, its commencement can usually be traced to the first years or even weeks of life. Many of the patients have been constipated and "bilious" since early childhood. In youth the tissues can resist disease. An *x*-ray examination of healthy young men (medical students, members of a hospital football team) was carried out some years ago, bismuth meals being given with the object of establishing the "normal." The investigation yielded the surprising result that many of these robust, healthy youths had the colon prolapsed, the transverse colon hanging below the pelvic brim.

Symptoms begin to make their unwelcome appearance when the young man embarks on a strenuous career with insufficient opportunity for rest; they begin to overcome him when, with advancing years, his recuperative powers wane.

Microbic Infection of the Intestines.

Before dealing with the changes that take place in the large intestine, I would emphasize the fact that in chronic intestinal stasis active pathogenic bacteria thrive in the bowel: these form poisonous products in the intestines, which are carried by way of the thoracic duct into the general circulation, and thus reach every living cell of the body. No tissue or organ can resist their baleful influence; every tissue attacked by them loses some of its power of resisting pathogenic influences, and this lowered resistance has a very potent influence in favouring the occurrence of cancer.

"Colitis" Leads to Cancer.

X-ray investigation shows that chronic catarrh of the large intestine is an extremely frequent condition in stasis. It occurs early in the course of the disease and is obstinate to treat. The mucous membrane is slow to recover and is apt to relapse under slight provocation. This catarrh is called "colitis" and is classified according to its severity as "mucous colitis," "membranous colitis," or "ulcerative colitis." In the more advanced and chronic stages, although there may be no definite ulceration, there is always erosion of the mucous membrane. In fact, the mucous membrane is in a condition which encourages the occurrence of malignant change.

Radiographically, the primary seat of stasis is in nearly all cases seen to be the large intestine, for solid faecal masses remain lodged in it, set up irritation, and give rise to local catarrh of the bowel wall. Stercoral ulcers of the caecum are sometimes discovered *post mortem*; these ulcers may give rise to cancer. Adventitious bands, which Sir Arbuthnot Lane has described as being formed along the alimentary tract as the result of stasis, are seen, on *x*-ray examination, most frequently in the iliac colon. These bands, and the consequent kinking which occurs when the patient is upright, set up active and constant local irritation. The iliac colon is apt to become catarrhal, with tonic constriction of the circular muscle, giving a characteristic *x*-ray picture, and this leads to great reduction in its lumen. The outer coats of the bowel, weak from chronic inflammation and from fatty change, give way in places owing to the abnormal pressure, and the condition known as "diverticulitis" is set up. This stage is recognized radiographically by the narrowed central lumen with small isolated pockets of bismuth on either side. "Diverticulitis" is one of the signposts that warn us of danger ahead. In other cases the splenic flexure is firmly fixed in a high position under the left diaphragm by adventitious bands. In the upright posture this flexure becomes sharply kinked, and its mucous membrane is subjected to abnormal friction from the force of the peristaltic waves in their effort to thrust the solid masses of faeces through the kinked flexure. This abnormal friction produces irritation and favours cancer.

The hepatic flexure does not often become kinked in the same way as the splenic flexure, but the transverse colon, near the hepatic flexure, is often held up by bands which descend from the lower border of the liver near the neck of the gall bladder, and spread, fanlike, over the pylorus, to end in a broad base which attaches itself to the first part of the transverse colon. This band supports the pylorus, and often causes definite obstruction to the transverse colon just beyond the hepatic flexure. At first the obstruction only occurs in the upright posture, but as the condition grows worse the bands take a firm hold of the transverse colon, and produce a partial mechanical obstruction independent of posture. When this band is divided the relief of the transverse colon from pressure is immediate. At the same time weight is taken off the pylorus. During one operation a distended gall bladder was seen to empty the moment this band (which was kinking the bile duct) was divided. If the irritation and obstruction produced by bands is neglected, cancer ensues.

The danger of cancer arising in the large intestine where bands and sharp angulations have formed is enhanced by peristaltic efforts to overcome the obstruction caused by these bands and kinks. Sir Arbuthnot Lane has pointed out that a feeble organism makes no attempt to resist the fall of the viscera, and makes little propulsive effort to thrust the faeces through the large intestine. To this extent, therefore, a robust person is more liable to suffer from cancer of the large intestine than a feeble one, for the robust man develops bands which form obstacles, and then his bowel makes strong propulsive efforts to overcome these obstacles. Thus the kinked portions of his bowel are subjected to a far greater mechanical strain than the mobile large intestine of a feeble woman.

The part played by mechanical strain in the large intestine is well illustrated in the case of a man of 57, in whom nine years ago Sir Arbuthnot Lane removed the caecum and ascending colon for a villous carcinoma of the lower part of the ascending colon. He implanted the small intestine into the middle of the transverse colon. The man made a good recovery, and lived in good health for more than eight years. Constipation then arose, and it was found that he had an independent cancerous growth in the lower part of the iliac colon, where the bowel was tied by old fibrous bands to the left iliac fossa, just above the pelvic brim—that is to say, in the position of Lane's "last kink." This is the point where the peristaltic waves had met with resistance owing to the bands which bound the bowel to the left iliac fossa. Occurrences of this kind have shown Sir Arbuthnot Lane the necessity of making his junction into the pelvic colon beyond the last kink, even for a growth limited to the proximal portion of the large intestine.

The Mobile Caecum.

Recently the idea has been revived in more than one quarter of operating for mobile caecum, with a view to fixing the caecum and ascending colon in the position in which they are found in the majority of healthy persons. In many cases I believe this operation is justified and successful. I have demonstrated the severe ileal torsion which occurs in the upright posture when the caecum is mobile, and this torsion is rectified by the operation in question.

Those who adopt this procedure, however, concentrate attention exclusively on the right side of the abdomen. This I deplore, since the study of stasis has shown the importance of taking a wide and comprehensive view. Undue attention to any one factor of stasis is disastrous to a clear conception of the subject.

An elongated pelvic colon may coexist with a mobile caecum, and may be so extreme as to render the operation of fixing the caecum and ascending colon almost useless, or bands may obstruct the splenic flexure or the iliac colon, and involve the left ovary. These bands and the disability they cause would remain unrelieved. I am aware that a careful surgeon would note these abnormalities when present, and deal with them as the occasion required. The fact, however, remains that the advocates of this operation make no reference to them in their writings, and their disciples are likely to fall into error.

Several writers of late have referred to the vertical position of the ascending colon as a serious obstacle to the progress of faeces through the large intestine. Had they watched the passage of a peristaltic wave through the large intestine (as I have on many occasions), they would realize that the force of a peristaltic wave of the big bowel is so great as to nullify the adverse effect of gravity on the faecal mass to be moved upward. In another way, however, the weight of the loaded caecum and ascending colon is a source of real difficulty when the caecum is mobile, for the dropped caecum exerts a pull on its mesentery, and produces torsion of the end of the ileum, as already stated.

The statement that gastric and duodenal ulcers only occur in the subjects of a mobile caecum is contrary to my records. Some of my worst cases of pyloric and duodenal ulcer have been in the subjects of fibrous bands, which descend from the lower border of the liver and support the first part of the transverse colon and the caecum or terminal ileum—subjects, therefore, in whom the caecum and ascending colon are held up well at the normal level.

Gastric and Duodenal Ulcer.

In the small intestine the conditions are different. The [illegible] occur in the small intestine (that is, Lane's ileal kink, the [illegible]

exertion, for the over-fatigued muscles of the abdominal wall fail to support the viscera. With rest and recumbency the condition is relieved. Even a duodenal ulcer is rarely persistent. It has been clearly shown that a duodenal ulcer only occurs when the duodenum has become distended and congested in consequence of kinking at the duodeno-jejunal junction. If ileal stasis exists pathogenic microbes invade the duodenum from the lower ileum, and the duodenal mucous membrane suffers. If a patient suffering from duodenal ulcer is confined to bed for two or three weeks, *x*-ray examination shows that the duodeno-jejunal kink is relieved, the duodenal distension has passed off, and the ulcer has healed. From these considerations we are led to expect that cancer is of unusual occurrence in the small intestine, and experience proves this to be true. When it does occur it is usually due to direct extension from the caecum through the ileo-caecal valve, or from the pylorus into the first part of the duodenum.

In the stomach the conditions are very different from those which exist in the duodenum. Duodenal distension causes spasmodic closure of the pylorus, which prevents the regurgitation of the contents of the distended duodenum, and keeps back the gastric contents, so that they shall not increase the duodenal distension. This pyloric spasm is found, from *x*-ray experience, to be very persistent. In the case of a patient with a distended duodenum, we have already stated that a short period of recumbency (two or three weeks) suffices to relieve the duodenal distension, but the pyloric spasm, which owed its occurrence in the first place to duodenal distension, is found to be present still, though diminishing in severity. The reason for this appears to be the state of the mucous membrane of the pyloric portion of the stomach, for the congestion of the mucous membrane of the duodenum is not limited to this organ but extends into the stomach, giving a narrowed conical pyloric portion of the stomach in the *x*-ray picture. Pyloric spasm produces certain changes in the stomach. There is an increase in the strength of the peristaltic waves; these waves are seen to be deeper than in the normal stomach, and the beginning of each wave can be traced to a position nearer the cardiac end of the stomach. These strong waves are seen beating up against the pylorus, which is kept closed against them by the spasm already described. The mucous membrane is congested; pathogenic microbes find their way in from the infected duodenum and set up ulceration of the mucous membrane of the pylorus. This takes one of two forms. Either it is a single chronic ulcer, with a depressed base and thickened infiltrated edges, or it is a widespread erosion of the pyloric mucous membrane, with general infiltration and microbic invasion of nearly the entire thickness of the wall of the stomach in this region. Both forms of ulceration are very rebellious to treatment and may persist for years, yielding only when strict measures of diet, régime, and treatment are employed. The essential factor in treatment is to cure the stasis which radiological investigation invariably reveals in the large intestine and in the ileum in these cases.

Cancer of the Stomach.

The stasis which has caused the ulcer must be treated, and then the damage created by the ulcer can be repaired. In cases which are not successfully treated the chronic ulceration at the pylorus is apt to undergo malignant change. Then we get either a cancerous patch at the pylorus, in the case of a single ulcer, or a widespread malignant infiltration of the pyloric portion of the stomach.

The stomach cannot always evacuate its contents in the normal time despite the abnormally strong gastric peristalsis, for the waves cannot overcome the pyloric spasm, [illegible]

[illegible]

malignant involvement of the chronic ulcer is so slight that it was not perceived, but an operation performed immediately after the investigation proved beyond doubt that malignant disease was present. The next slide shows a more decided deviation from the typical form of a chronic ulcer of the lesser curvature, but its origin can be recognized. In more advanced cases the position of the original chronic ulcer can still be made out, but in far advanced cases of cancer of the middle portion of the stomach the skiagrams show so irregular an outline that they no longer reveal the form of the chronic ulcer. When this advanced stage has been reached the cancerous growth probably occupies a large area of the stomach, and extends to the cardiac orifice, where it may give rise to oesophageal obstruction. Probably it has further extended through the walls of the lesser curvature and has involved one or more of the adjacent organs—the tail of the pancreas, the spleen, and the lower border of the liver. Keen discussion still rages round the question of the origin of gastric cancer on the site of chronic ulcers. I do not claim that it is possible to determine by radiological investigation the exact period of the appearance of malignancy. This is a question of a few cells, and can only be determined by careful microscopical examination of sections. It is sufficient to assert that the shape of a simple chronic ulcer of the lesser curvature is almost as typical and as constant, say, as the shape of a fiddle, and that a very slight deviation or irregularity of contour may be the only indication of a malignant change. The resemblance is no mere superficial one; both the simple and the malignant ulcers of the lesser curvature show the same enlargement and dropping of the pyloric portion of the stomach, the tight pyloric spasm, the distended, "writhing" duodenum. Both show pronounced ileal stasis, and exhibit the changes in the large intestine already described as resulting from stasis.

A well-known physician recently wrote in the journal of his hospital somewhat as follows: "Cancer of the stomach comes generally 'out of the blue,' with no preceding history of gastric trouble." I find myself in direct disagreement with this view, and have recently placed my conviction on record.[3] The subject is so apposite to the present discussion that I feel impelled to repeat my argument. I can scarcely recall or find notes of a single case which supports the notion that cancer ever comes "out of the blue." The patient may have become accustomed to his disorder, or make no complaint of it, but careful inquiry elicits, nearly in every case, a life-long history of constipation, flatulence, or biliousness. Radiological investigation reveals incontrovertible evidence of long-standing disorder. Here, for instance, is the case of a lady whose gastric cancer came to her "out of the blue." On careful questioning it transpired that she had always been inclined to biliousness and constipation. On radiological examination I found an enormously elongated pelvic colon rising into the right hypochondrium, where it came into contact with the hepatic flexure. I found, further, that her caecum was firmly impacted in the pelvis. When I made a digital examination of the rectum I found the caecum filled with hard faecal masses firmly pressed into the wall of the rectum. For years she must have tried to force her caecum through the wall of the rectum whenever she went to stool. This is the type of patient whose cancer is said to come "out of the blue."

Humoral Pathology.

Still more recently another physician, in despair of arriving at the truth regarding the cause of gastric and duodenal ulcer, took a plunge into the remote past, and found himself in a world of noxious humours. Out of this world he was thrust suddenly back into the light of to-day. So he greeted us with a postulate to the effect that certain men are born with a "diathesis," which makes them liable to suffer from gastric ulcers—others from duodenal ulcers.

Why stop there? Why not say there are among us some who are subject to a toothache diathesis. It is so simple; it abolishes the need for detailed study of pathology. Again, why restrict the idea to animal pathology? Why not apply it also to machinery. If an aeroplane crashes, obviously the machine is the subject of a "nose-diving diathesis." Here on the screen is one of the duodenal ulcer "diathesites": A medical man aged 46 is suffering from chronic ulcer of the duodenum. His caecum is impacted in the pelvis, and his terminal ileum is subject to so severe a degree of torsion that there is great difficulty in the passage of its contents into the caecum. The next slide shows a gastric ulcer "diathesite." She has her transverse colon down in the pelvis, an ileal kink, and a severe degree of chronic catarrh in the lower portions of the big bowel, with extreme stasis in its proximal portions.

These are, in my experience, typical instances of the subjects of the so-called gastric and duodenal ulcer "diathesis." In all cases of these ulcers I am able to show the cause clearly in the ileum and the large intestine.

Cancer of the Oesophagus.

In considering the oesophagus we must remember that a dropped stomach exerts tension upon the lower end of the oesophagus. This abnormal tension on the lower end of the oesophagus produces spasm of the cardiac orifice, and in cases of cardiospasm we find dropping of the stomach a constant phenomenon. With the spasm of the cardiac orifice there is congestion of the mucous membrane, and cancer of the oesophagus occurs at its lower end more frequently than at any other part. The only other situation in which oesophageal cancer is of frequent occurrence is at the point of bifurcation of the trachea where the right bronchus crosses the oesophagus and causes a deviation of its anterior wall. The impact of solid food boluses thrust against this prominent portion of the oesophageal mucous membrane furnishes a source of chronic irritation likely to produce cancer if the oesophageal mucous membrane becomes unhealthy from the toxaemia of stasis.

Cancer of the Liver, Gall Bladder, and Pancreas.

Opening into the upper end of the intestinal canal are the ducts of the pancreas and the liver. Stasis, as already shown, causes distension of the duodenum. As the stasis becomes more pronounced the congestion and infection of the duodenum extend into the orifices of the pancreatic duct and the bile ducts. Chronic pancreatitis results and may end in cancer. The gall bladder in its turn becomes distended from congestion of the mucous membrane of the bile ducts. Chronic catarrh of the gall bladder is set up, mucus is secreted, and in many cases gall stones are formed. As the result of infiltration and infection of the mucous membrane, or from erosion due to the long continued irritation of gall stones, cancer of the gall bladder or the bile ducts may occur.

The liver, through the portal system, receives toxins in large quantity from the infected intestines, and is bound to suffer like the pancreas. Wherever we look we see the havoc wrought by stasis and the damage done by circulating toxins.

The alimentary tract is doubly vulnerable, for not only is it exposed to direct attack by the pathogenic bacteria in the bowel, and the irritant contents of the intestines, but the bowel wall is a victim of the destructive action of the circulating poisons, and is abnormally vulnerable.

Cancer of the Breasts and Thyroid Glands.

The secretory glands are not immune, and the mammary glands are among the first to suffer. The first change in the mammary glands is the appearance of nodules, or chronic mastitis. If the stasis is corrected, either by operation on the intestines or by remedial measures, the mastitis passes off completely, and the breasts become smooth. If cases are unsuccessfully treated or neglected the nodules in the breasts become larger and firmer, and cysts appear. Later a cancerous change may supervene. It appears certain that cancer of the breast is, in nearly every case, preceded by chronic mastitis due to toxic absorption from the intestines.

The thyroid glands in many cases of stasis become atrophied. In other cases cysts form in the thyroid gland, in others morbid enlargement occurs and the clinical features of "exophthalmic goitre" appear. Occasionally cancerous change in the thyroid gland is the closing chapter of the disease.

Cancer in the Mouth and Throat.

In the mouth the circulating toxins render the mucous membrane of the gums vulnerable to infective microbes, and pyorrhoea occurs in a large proportion of stasis subjects. This unhealthy condition of the mucous membrane of the mouth is another potential source of cancer affecting the mouth or tongue. Chronic pharyngitis is of frequent occurrence in the subjects of stasis, and in older subjects may lead to cancer of the pharynx.

Cancer of the Uterus and Ovaries.

Many gynaecological complaints are due to stasis. In these sufferers we usually find the large intestine dropped so that the caecum and the transverse colon are in the pelvis. Associated with this dropping is retroversion of the uterus, and on making a digital examination of the rectum the finger encounters the fundus of the uterus resting upon the anterior wall of the rectum, often obstructing its lumen. During defaecation the fundus of the uterus is pressed firmly into the rectum in such a way as to render the passage of faeces very difficult. The uterus becomes engorged, and the menstrual losses are excessive. Leucorrhoea due to chronic endometritis ensues, fibroid disease of the uterus follows, and in others carcinoma appears as the culmination of the chronic inflammatory condition. The ovaries are not immune. The bands constituting the kink of the ileum and the iliac colon appear, in the first instance, in the iliac fossae; in some cases they reach into the pelvis, and become attached to one or other ovary. As the stasis advances the attachment becomes more extensive, till finally the ovary becomes gripped by newly formed fibrous bands. The Graafian follicles are prevented from rupturing as they ripen, and the ovary becomes cystic. Many cystic ovaries assume malignant change sooner or later.

In men the prostate gland suffers from fibrous change comparable to that which occurs in the uterus. Hypertrophy of the prostate gland frequently occurs, and occasionally malignant disease follows.

TREATMENT.

I have endeavoured to point out in this paper the dangers of neglected stasis and its far-reaching consequences, and shall conclude by outlining the means that should be taken to prevent the occurrence of cancer. They may be classified as follows:

I. Avoid stasis in general, with its attendant toxaemia; in other words, keep all the tissues healthy.

II. Avoid sources of local irritation in the alimentary tract.

(*a*) In the lips and mouth and tongue—avoid rough pipe stems, jagged teeth; abolish pyorrhoea.

(*b*) In the pharynx and larynx—eliminate chronic catarrh.

(*c*) In the oesophagus—swallow no large boluses of food; eat slowly; masticate thoroughly.

(*d*) In the oesophagus and stomach—avoid excess of strong irritant spices (for example, mustard, pepper) and avoid extremes of heat and cold, especially in drinks.

(*e*) In the stomach and duodenum—prevent duodenal distension, pyloric spasm, and duodenal and pyloric congestion, by abolishing the ileal stasis which causes them.

(*f*) In the small intestine—prevent bacterial decomposition of the contents of the jejunum and ileum due to ileal stasis, by the means shortly to be described.

(*g*) In the large intestine—prevent stagnation and decomposition of solid faeces in any part; combat catarrh by local and general means.

It is never too early in life to commence these measures. In infancy, even on the first day of life, see to proper feeding. If artificial feeding is necessary the milk should be given at regular intervals in measured amounts at the correct temperature; avoid overfilling the infant's stomach. Constipation in the infant is best combated by small doses of liquid paraffin.

In childhood provision should be made for warm clothing, good regular meals with vitamines in the diet, an active day with a midday rest, and a long, restful night. During school and college years the same conditions should be continued, with a regulated open-air life, avoiding extremes of exhausting effort, and insisting on an early hour for retiring and a minimum of eight hours in bed.

In patients who have not had the advantage of suitable conditions from infancy—that is, in whom stasis in a more or less severe degree is already present, the exact method to adopt must depend on the precise anatomical and pathological conditions which exist. If mechanical faults are present—for example, obstruction due to bands, or to cicatrices—these must be dealt with by surgical means. If the large intestine is already grievously damaged so that it is no longer capable of repair, nothing short of its removal will avail.

In less extreme cases much good may be done by careful attention to the details of hygienic living already described. In addition mechanical means should be taken of supporting unduly dependent portions of the bowel, and liquid paraffin given to ensure two or three soft evacuations daily, vaccines to overcome the toxaemia due to bacterial action in the large and small intestine, while medicines are useful to aid digestion, combat catarrh, and lessen spasm at the sphincters.

Cancer of the uterus and ovaries follows upon chronic inflammatory conditions of these organs. As already explained, stasis plays a very important rôle in bringing about these conditions of chronic inflammation. It is clear, therefore, that much can be done to prevent the occurrence of cancer in the pelvic organs by means which prevent or relieve chronic intestinal stasis.

To the genius of Sir Arbuthnot Lane we owe our understanding of the far-reaching effects of chronic intestinal stasis. Although we have not yet found the full solution of the cancer problem, may we not justly believe that we are at the dawn of a new era in the prevention of this dread disease?

The address was illustrated by lantern slides.

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[1] Mayo Clinic Papers, 1917. [2] *Lancet*, October 2nd, 1920. [3] Ibid., 1920, i, p. 756.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

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SECTION OF SURGERY.

INFLAMMATORY LESIONS OF THE NASAL ACCESSORY SINUSES

FROM THE POINT OF VIEW OF THE GENERAL PHYSICIAN AND SURGEON.

BY

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IT is unnecessary to dwell on the importance of recognizing that many conditions of ill health are caused by the absorption of poisons produced by morbid processes going on in one or more regions of the body. In proof of this I need only remind you of the pioneer work of William Hunter, who pointed out the relationship between oral sepsis and some of the graver types of anaemia, and their association with certain pathological conditions of the gastro-intestinal tract. In more recent times Poynton[1] has emphasized a similar connexion between infective foci and certain types of cardiac infection in childhood; Rows and Orr have brought forward evidence which seems to show that some diseases of the nervous system are caused by the absorption of toxins from a distant focus of infection, while McCarrison's work on the same lines with regard to the thyroid gland will be fresh in the memories of all who keep in touch with the daily progress of medicine.

When such sources of infection are situated in the teeth or in the crypts of the tonsils, it is easy for the general physician and surgeon to detect them because the diseased conditions are readily seen and the symptoms to which they give rise are liable to acute exacerbations which cannot fail to attract attention to the obvious source of trouble.

But it will be a more difficult problem when the infective elements are situated in the accessory sinuses of the nose. These complicated air cells are hidden away above, behind, and on the outer sides of the nasal cavities, and cannot be thoroughly investigated without powerful illumination by a narrow pencil of reflected light, and by other measures such as direct endorhinoscopy, transillumination and radiography. This examination must be supplemented by careful probing, catheterization, or exploration with suitable hollow needles or cannulae before an accurate diagnosis can be made.

Then again, more than one sinus is frequently affected and not uncommonly all the sinuses on one or both sides are simultaneously involved in an acute or chronic purulent inflammation. It will be obvious that considerable experience will be necessary to determine the share which each sinus may be taking in the morbid process.

The complicated anatomy of these regions may render difficult the establishment of an accurate diagnosis. Furthermore, the need for care and caution must be emphasized in the use of instruments when a suppurating and infective sinus is in close contiguity with the eye or with the meninges.

With regard to the frequency of suppuration in these localities, a study of many hospital statistics makes it fairly certain that at least 2 per cent. of the population are affected. Yet, in spite of this comparative frequency and the inherent evil possibilities of such conditions, it is to be regretted that until quite recently there have been few medical schools in the United Kingdom in which students were compelled to acquire even a superficial knowledge of diseases of the ear, throat, and nose before presenting themselves for their final qualifying examinations.

It follows, therefore, that when dealing with a patient suffering from chronic inflammation of a nasal accessory sinus the practitioner is, as a rule, only too ready to fall into the error of accepting without question or thought the sufferer's own diagnosis—namely, "chronic nasal catarrh," which both of them tacitly agree to be a more or less incurable inconvenience. In my own experience this "diagnosis" is responsible for the overlooking of by far the larger proportion of cases of chronic suppuration in the nasal accessory sinuses.

As a result it only too frequently happens that the patient drifts on with his so-called "catarrh," the frequently associated headache becomes an additional burden, and the general health suffers in a multitude of ways; on the other hand, to his laundry and to the purveyor of "catarrh cures" he is a perpetual source of income.

The Causes of Inflammation of the Nasal Accessory Sinuses.

Briefly stated, it may be said that the causes of inflammation of the nasal accessory sinuses fall into two main categories:

1. Infection by the organisms associated with acute specific fevers, and of these influenza is by far the most prolific. In one epidemic of influenza I saw 17 patients with acute inflammation of one or more of the sinuses in a period of three weeks.
2. Dental disease. Septic conditions of the pulp cavity of the second bicuspids, and of the first and second molar teeth, are very liable to infect the adjacent antrum, because the apices of the roots of those teeth often approach or even project into the floor of the antrum.

AGE INCIDENCE.

Suppuration of the nasal accessory sinuses is generally met with after the age of puberty. Nevertheless, I have seen several cases in children, especially as a complication of scarlet fever, measles, diphtheria, and enteric. I would also urge on you the importance of suspecting this condition in cases of obscure pyrexia in children, in multiple arthritis, and in those patients where a purulent nasal catarrh persists after adenoids have been thoroughly removed.

SIGNS AND SYMPTOMS.

Obviously it will be difficult for anyone who is not an expert to detect which sinus or combination of sinuses is the source of infection; nevertheless, there are certain signs and symptoms which should lead a thoughtful practitioner to suspect the general situation of an infective focus.

We need spend little time on acute inflammation of the sinuses, because:

1. The local manifestations of severe pain, nasal discharge, superficial swelling and tenderness to pressure will generally direct attention to the seat of inflammation.
2. It is the chronic inflammations which are so liable to be overlooked, and it is just these which are frequently the cause of systemic complications.

Let us, then, pass to the more general or distant and the local symptoms of a chronic sinus inflammation.

General.

Among the most common symptoms are general ill health, obscure attacks of pyrexia, grave types of anaemia, intractable headaches, "rheumatic pains" in the joints or limbs, disordered digestion, and affections of the nervous system.

Defects of general health may be caused by such a multitude of causes that I disclaim any intention of suggesting that the nasal sinuses should receive first consideration in the matter. It is nevertheless of importance that this source should not be forgotten when other possibilities have been exhausted, and more particularly if any nasal symptoms are present in the case under investigation.

Obscure attacks of pyrexia are most likely to occur in young patients, and if joint symptoms (multiple arthritis) are present, the throat, nasopharynx, and nasal sinuses should always be suspected. The graver types of anaemia are frequently the result of chronic toxaemia, and the focus of infection has often been discovered in one of the nasal accessory sinuses; the same fact has been fully established with regard to "rheumatism of the joints" and "muscular rheumatism" and in certain types of endocarditis.

Supraorbital headache is one of the commonest symptoms of the condition we are considering, and its periodicity is often very striking. During recent years it has been proved over and over again that most cases of orbital phlegmon, some intractable forms of conjunctivitis, recurrent attacks of iritis, optic neuritis, and atrophy, have resulted from infection from the nasal sinuses. Three years ago I cured the discharge from a patient's right antrum, ethmoid cells, and frontal sinus; since that date he has had no return of the recurrent attacks of iritis which for many years had rendered his life almost unbearable.

The *nervous system* is liable to be influenced, and the following sort of statements by the patient are not uncommon: "My brain seems in a fog," "I cannot concentrate on my work," "My memory is getting so bad." In other instances depression and symptoms of neurasthenia are predominant.

The *digestive tract* may be involved, and such complaints as loss of appetite, nausea, pain after food, may be the result of swallowing infective material from the nasal sinuses. William Hunter has demonstrated the minor as well as the more gross organic lesions of stomach and intestines due to this cause.

In the *lower respiratory tract* we may have to do with certain types of chronic laryngitis, bronchial catarrh and chronic bronchitis, and such conditions have been cured by removal of the inflammatory and toxic contents of the nasal sinuses. In a very striking and suggestive communication A. T. Darling[2] writes:

> It has been found that 92 per cent. of all pneumococcus infections coming to autopsy show in a very marked degree more or less typical pneumococcus inflammation of one or more of the accessory nasal sinuses . . . the age of the sinus affection has been appreciably greater than that of the lung or meningeal lesion: 91 per cent. of lobar pneumonic cases showed a sinusitis. All cases of acute pneumonic meningitis presented an inflammation of one or more of the sinuses.

Ocular Symptoms.—Christien P. Holmes[3] has proved (and many of us have verified his statement) that recurrent attacks of facial erysipelas are frequently caused by infection from a purulent discharge emanating from one of the nasal accessory sinuses.

Meningitis.—Finally, it has been amply demonstrated by *post-mortem* examination of cases of septic meningitis that in an increasing number of instances the original source of infection arose in the nasal sinuses, although that source was unsuspected during life. This point has been emphasized by Sir StClair Thomson in a paper read before the Medical Society of London.

Local.

A varying and intermittent degree of nasal obstruction and a chronic nasal or post nasal purulent or muco-purulent discharge are amongst the commonest complaints made by the patient. With these is frequently associated a unilateral supraorbital headache which is generally worse in the forenoon.

Such are some of the more general and local symptoms which inflammation in one or more of the accessory nasal sinuses may produce. They will probably appear to you as somewhat indefinite, diffuse, and far-reaching. Let me try to focus the matter a little more closely so that those of you who are engaged in the more general practice of medicine and surgery may have a fair mental picture of an average case. Take, for instance, an adult male or female, who has a chronic empyema or abscess of, say, the right maxillary antrum. The history will be somewhat as follows:

For some weeks, months, or possibly years, he has had what he terms a "chronic nasal catarrh," especially on the right side. The discharge is yellowish, and soils many handkerchiefs with stiff, yellowish-green patches. The discharge comes on after breakfast and is often freest when he stoops down to put on his boots, and on these occasions an unpleasant smell may be noticed. If he "sniffs" hard so that the discharge passes backwards into the throat, it has a "sickly" or "nutty" taste. The secretion often ceases or diminishes in the early afternoon. The right side seems more blocked than the left, and the symptom is aggravated on lying down. (This is due to the congested and irritated mucous membrane, or possibly to polypi caused by infection and inflammation of the ethmoidal cells.) He will probably tell you that he has headache over the right eye or right frontal region, and that this is also worse in the forenoon.

So that a *purulent nasal discharge, nasal obstruction and headache* are his chief complaints, and on these alone you will be rarely wrong in suspecting a sinus suppuration. Further questioning may elicit that he is "off his feed," does not "feel really well," cannot "fix his mind on his work," or may be he has "grumbling pains" in one or more joints or limbs, or that his sight "is not so good as it was," or that he is "depressed without reason," has a feeling of a "weight on his head," his friends tell him "he has lost his colour and looks seedy," and he may add that he gets attacks of "hoarseness" and "bronchial catarrh" which he cannot shake off, and so on.

All these are symptoms of a mild general toxaemia or of local irritation, and should put the doctor on the *qui vive* for a possible focus of chronic infection in the accessory sinuses. How are you to diagnose the antral empyema which we have assumed to be present?

1. Tell him to blow the right nasal cavity free from all discharge while you take note of the colour and odour of the secretion which he gets rid of.

2. Ask him to sit down and place the right cheek upwards facing the ceiling and to keep in that position for at least three minutes. Then let him blow out the right nasal cavity again, and often there will be expelled an extra quantity of foul yellow discharge which had leaked from the antrum into the nasal cavity while he was in the position indicated. This is a useful test when it succeeds, and generally indicates pus in the antrum rather than in the other sinuses.

3. Now place a small 4-volt electric bulb in the patient's closed mouth, having first removed any denture he may be wearing, darken the room thoroughly, or place a black cloth over your own and the patient's head. Then notice whether the right cheek below the infraorbital margin is much darker than on the left side. If it is, then your suspicion of antral empyema will be much strengthened. To clinch the diagnosis it will be necessary to examine the nasal cavity with a bright beam of light and to wash out or to aspirate the antrum by perforating its inner wall with a suitable trocar and cannula or curved hollow needle. This will need care and considerable practice, and hence I do not recommend you to try it unless you have had and will continue to have frequent opportunities for employing the method.

TREATMENT.

When the presence of an empyema has been established do not waste the patient's time with nasal washes, visits to the seaside, nor with vaccines, even though the latter may be polyvalent! There is only one cure for a suppurating cavity in bone, namely, to open it freely, remove the diseased pyogenic membrane and establish free, permanent and spontaneous drainage until the mucous membrane has returned to its normal condition. In the case of the antrum this can be done best by entering through the canine fossa, and establishing free drainage into the nasal cavity by removal of the greater part of the inner antral wall. It is one of the most successful surgical operations with which I am acquainted, because the cure is rapid and complete and the after-treatment is painless and of the simplest nature.

It would be out of place at this meeting to enter into details concerning the fallacies of this or that test in the establishment of a diagnosis, or to dwell on matters of surgical technique and treatment. These are of interest only to the expert, and for this same reason I shall say nothing concerning the ethmoid, frontal and sphenoidal sinuses. For although the subjective symptoms are very similar to those complained of in chronic antral inflammation, on the other hand the diagnosis and treatment demand an intimate knowledge of the complicated anatomy of the aforementioned sinuses.

In addition, the manipulations and technique necessary for examination and treatment are difficult and not without danger except when undertaken by those who have had considerable experience in this branch of surgery. Furthermore, the cost of a somewhat expensive armamentarium will be a matter of some consideration for those who will only occasionally make use of it.

It may be, from what I have been saying, you have come to the conclusion that it is only an obviously purulent discharge which is capable of producing local and systemic symptoms. In the main that would be a correct inference, especially if a film examination showed the presence of polynuclears, phagocytosis, and pus-producing organisms; but, as my friend Dr. Watson-Williams has remarked, "a very copious or thick purulent discharge may be sterile, whereas a thin, opalescent or almost colourless discharge may yield a free growth of pyogenic organisms on culture."[4]

It follows, therefore, that in all cases where an inflamed accessory nasal sinus is under suspicion, especially from the point of view of systemic symptoms, we should submit its contents to a skilled bacteriologist who would inform us as to the nature and virulence of the secretion.

In view of the importance of the whole subject it is regrettable that more attention is not given to it in the training years of the medical student, and that some knowledge of diseases of the ear, throat and nose is not compulsory for the final examinations. It is not asked that expert knowledge should be demanded from the already overburdened student, but at the least he should be compelled to attend for three months in a recognized clinic before he is permitted to enter for his qualifying examination. This would enable him to master general principles and obtain a large amount of useful information of practical value in his subsequent career. Surely it is of more importance that he should have a working knowledge of the very common diseases of the ear, throat and nose and their complications, which he will be confronted with every day in his practice, than that he should learn up details of rare diseases and complicated major operations which he will possibly never see again when he has once left his hospital. Fortunately there are indications that this view is now being adopted in many hospitals and universities, and that students will be allowed to choose this branch of work as a special subject for their higher degrees.

In conclusion, I feel I owe some apology for the very incomplete way in which I have touched the mere fringe of this large and fascinating subject, but it is difficult to compress an experience of twenty years into twenty minutes. My object will be fully attained if the time spent has stimulated your imagination, broadened your outlook, or given a clue to certain symptoms which, though they puzzled you in the past, will be regarded with clearer vision and a truer perspective in the future.

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NAVAL AND MILITARY SECTION.

THE ARMY MEDICAL SERVICE AND ITS RELATION TO THE TRAINING OF NEWLY QUALIFIED MEDICAL MEN.

BY
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WHEN a medical student passes a qualifying examination and becomes "competent" to practise, he, as a rule, takes up the duties of a doctor at once, either alone or in partnership with another. His guided education, all supervision, and his irresponsibility for the treatment of cases, which up to this time have been used in his training, cease. With the removal of control, supervision, and guidance, he is plunged into a new and wider arena in which are brought into play a mixture of commercialism and of self-education in human nature, whilst the knowledge and skill acquired during his student days now comes to be applied to the practical problems that arise in the treatment of the sick. He has to make a start and launch out in two new directions, in neither of which he has had any previous training or experience. He has to create and establish a business which the public expect to be carried on in accordance with the customs of the period, and he has to acquire a knowledge of human nature, much of which is new to him and difficult of access, nay, usually unobtainable without experience.

The young doctor when he enters upon practice does not of course cease to be a student, nor does he quit learning or relinquish the acquisition of further knowledge and skill in his profession. Indeed, if he is true to his professional ideals, he will, in spite of all difficulties, become of greater value to the community in which he lives as his knowledge and experience accumulate. Experience may come to him, knowledge and wisdom will linger unless he makes personal effort. Hitherto such personal effort has been made and had to be made unaided from without and while he was cut off from facilities or opportunities worthy of his efforts. Exceptions there are, of course, but for all practical purposes the only newly qualified doctors who enjoy the advantages of further study and training and continued facilities of self-education are those who, either in return for good work done or possessing both ability and private means, have been able to continue their studies and remain for a period of one or more years at one of the medical schools of this country or abroad. These fortunate youngsters are put to work congenial to them, and generally devote themselves to it assiduously in the hope of later reward and for the satisfaction in anticipation of making a contribution, small or large, trivial or important, to knowledge. The majority of newly qualified doctors about to undertake civil practice can enjoy no such advantages during the remainder of their career in spite of the many efforts that in recent years have been made to establish post-graduate courses of study in the large centres of medical education. In the army, however, this does not hold good. There, a machinery well adapted for the purpose exists for the further education and training of the medical officer who is accepted for a commission. The medical department of the army very rightly insists on the further education of the newly qualified doctor in all professional matters pertaining to the health and treatment of the soldier as well as in matters purely military. Moreover, in recent years added facilities have been afforded to enable the medical officers to make themselves more efficient, especially in their purely professional work—that is, in medicine in its many branches. Free education of a young medical officer in the army is continued as a matter of course, in order that he may be fitted for military service and to ensure his being professionally of greater use to the soldier and to the army.

A young doctor entering the Army Medical Service is taken in hand at once, is initiated into the new and varied duties he is to perform, thus enjoying a great advantage over the young doctor in civil life, who is, without further training, thrown at once on his own resources to do the best he can, often on his beam ends in a very troubled sea with many whirlpools and cross-currents.

The training for medical officers in the army is given with the object of ensuring for all:

(1) Acquaintance with and practical experience in administration of the special service.
(2) Special and technical professional knowledge.

In order that we may have a clear comprehension of what I am about to advocate it is important that we should realize the relative value of each of the above types of training to the medical officers. Proper administration is essential in the medical department as in any other branch of the army, for without effective administration the professional powers of the doctors lose a large portion of their value, and the service instead of being an aid to the army in its work might actually prove a drag upon it.

Thus it is that all the doctors in the Army Medical Service are obliged to master to a greater or less extent the routine of successful administration—an accomplishment which may and should prove of great advantage not only to the army medical officer but also to everyone in whatever line of work he may have to spend the greater portion of his active life. I am satisfied, therefore, that the training in and performance of administrative duties should be looked upon as of the utmost importance in the making of an ordinary doctor as well as of an army medical officer. Such training and experience would be of enormous value to the busy practitioner in helping him to determine the relative value of the many factors that enter into and control his daily life, and to mould his work on such lines as may be profitable to others as well as to himself. While I believe, however, that a training in administration is essential for a medical officer in the Service, I also hold that special professional training, medical and surgical, is equally important. Here the Army Medical Department gives with a free hand. The civilian scarcely realizes that the army medical officer is offered, after a period of service, training in almost any branch of medicine, free of charge, and with no deduction from the ever-incoming pay.

The army therefore undertakes to teach the newly qualified doctor the business as well as the professional side of his future work.

After reaching a certain stage a medical officer who has gone through the ordinary training in the army leaves all that concerns the purely professional part behind him.

Accordingly, in the earlier portion of his career he may, and usually does, combine professional and administrative work in more or less equal proportions, or he may be permitted to cultivate one more than the other, but when he reaches the stage where he is qualified to hold a purely administrative post he is obliged to take up administrative duties only, and duties without professional practice, if he is chosen for further promotion, or to leave the service and pass on to retirement. Under these conditions, if selected and he determines to remain in the army, he has to relinquish any ambitions he may have cherished in his own profession; if not selected, then he must retire and, if necessity drives, start afresh and make every endeavour to establish himself in a new career. His services in the army are dispensed with, and so far as one can judge, the army has obtained a *quid pro quo* for all that it has done for him, and the country is prepared to pay him off as in duty bound when he may be in his prime and with all before him, with a handsome life pension which he has earned and is entitled to. He has been given opportunities and trained professionally as have no other doctors, and at the age of between forty and fifty he may no longer be wanted. He draws his pension, and he himself is often content to make no further use of his knowledge and experience. The country offers him no opportunity to continue in the service of the State or to make use of the knowledge and experience he has gained for the advantage of the community.

It is obvious, then, that the doctor who is content to leave the specialities he has mastered in one or other branch of his profession and is fitted for promotion and given his choice is pretty safe to rise on the ladder of advancement, whereas he who makes up his mind to continue to devote himself to the specialities he has mastered during the earlier portion of his career must retire, even at an age when his power and skill have attained their maximum.

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[*] There is to-day, I am pleased to say, room for congratulation in so far as there is a Director of Hygiene and of Pathology at the War Office holding the rank of Brigadier-General and of Major-General respectively. An Inspector or Consultant in Surgery has also been appointed, but only with the rank of Colonel.

Now it is maintained by many that the career of a large proportion of the medical officers in the army is blighted because there is no place for those who specialize in purely professional subjects after reaching a certain rank, and therefore it is generally thought that the army favours the officer who looks ahead to the future, takes up the line that will help him most to remain in the army, and not the one that will certainly lead to his early retirement. The very man who is given every opportunity to qualify himself, and given special duty, say in surgery, must necessarily devote his energies wholly to those duties, and after being engaged for a long period finds there is no niche for him in the army medical machine at a time when he has become proficient. He has lost touch with administration, he has not fitted himself for it, and maybe he is loath to give up his speciality in order to perform administrative duties, even those of the highest order. He retires into obscurity.

To the State this involves a tremendous loss or waste of skill and energy; to the retired officer it means that the progressive growth of his professional life is effectually checked, and that his earlier labours bear no further fruit. The State has trained him to be an efficient officer in the Army Medical Service; it has given him opportunities to make himself a proficient doctor in one or many branches of his profession; and, having done this, turns him adrift and makes no further use of him, pensioning him just at a time of life when he should be entering upon the period that his knowledge and experience would attain about their highest value and are coming to full fruition.

Moreover, he is thrown on to the world as a pensioner because his services are no longer required, and he is led to consider, I have reason to believe, that he is no longer of use to the community and is without credit or recommendation. He has ceased to work not because he is incapable of work, but because in large measure he would not give up his specialities in order to devote himself to administrative duties. Here we have the State training a medical officer and affording him facilities and opportunities that are at the disposal of no ordinary civilian, yet when the training is complete and the man is in a position to utilize this training to the full and is ripe for his best work he is in many cases cast adrift, cut off from service in his prime, and made by the circumstances of early retirement to feel that it is almost impossible for him to start afresh and to make any headway, the State having no job for him, so compensating him with a pension.

Surely this is one of the most extravagant of the many extravagant vagaries of the State. Such an officer, unless rendered physically or mentally unfit by the performance of his duties, is just in his prime at the time of his retirement, and should at that time be given neither a gratuity nor a pension, but should be provided with a remunerative job in which his professional skill and experience may be utilized, a job which should carry with it reasonable prospects of promotion and advancement with age and length of service. Surely it is the duty of the State to devise some method of putting an end to this waste of brains and skill, some way of supporting the man and of making him feel that his usefulness in life has not been cut short in the midst of his active career simply because he has no special aptitude or desire for administrative work. The special services of these well trained professional men are, I venture to think, required in the community, and it is the duty of the nation to employ and remunerate liberally such of them as are physically and mentally fit instead of pensioning them off to lead a vegetative existence.

During peace the administrative side of the Army Medical Service tends to assume great but perhaps no undue importance, but this, I am convinced, is owing in the main to a defect in the organization for making the most of the purely professional side of the work of the army doctor and to the absence of an occupational outlet that leads to remunerative employment. The professional side of an army doctor's work should be the more attractive, and I believe it can be made the popular side. I am aware, of course, that the scarcity of severe cases for treatment in military hospitals militates against education and experience in doctoring, as also does the feeling that one day one's knowledge will be of little practical value, a feeling that is very apt to increase once it gets a grip of the mind.

It is obvious that if we are to obtain the best value for the State all the doctors entering the Army Medical Service should enjoy equal facilities for promotion whether they take up the administrative or the professional side of their work. For the earlier portion of an officer's career he may well serve in a dual capacity, doctor and administrator, but the officer who desires to continue to be a doctor should be assured that he may confidently look forward to promotion and to the attainment of the highest rank in the Army Medical Service, or given special facilities to enter the civil departments of State.

The present system in the Army Medical Service may possibly be quite satisfactory to the army during peace times, but I feel that as now organized it is not satisfactory either to the State or to the medical profession. In the first place, its scope is too narrow for the State, chiefly because existing limitations to the employment of the doctors for professional purpose in the highest ranks creates a great wastefulness, this arising from the necessity there is for the provision of a gratuity or pension to those who are almost compelled to retire from the Service in the zenith of their powers, when, too, their employment could be continued in some other department of State, in which the special professional training and knowledge and experience of the army medical officer should prove of the utmost value. On the other hand, it is detrimental to the interests of the profession of medicine from the fact that a young man entering upon the study of medicine does this, as a general rule, in order that he may devote his life to the task of dealing with the sick; but not unfrequently, however, he is obliged to divert his aims, and to become an administrator as well as a doctor during the first half of his career in the Service.

I have often put to myself the question, Is it possible to make the career of the doctor in the army such that at any time after a preliminary period of service, which each and every commissioned officer should pass through, he shall be at liberty to obtain a transference to a civil department of State or public service in civil life? As the army medical officer is trained in administrative duties, in business transactions, in the special doctoring of soldiers, in personal and general hygiene, and, from time to time, given facilities to continue his professional studies in one or more branches of medicine, he ought to be, and indeed is, one of the best trained doctors in the land. This elaborate training may, however, in great part be kept in abeyance and practically of no use, as it often serves a very restricted purpose—that is, that of doctoring the soldier and of maintaining and running in peace time the administrative machine of the Army Medical Service.

For the services of the army medical officer in early and mid career there should exist a great demand if the officer could be given opportunities to remove himself into other fields after he has been trained; and there can be no doubt if the Army Medical Service could be utilized in the manner to be sketched that the other State Medical Services, and the hospital services under the Ministry of Health, could then be supplied with doctors trained in special work by qualified teachers.

In order to accomplish this the Army Medical Service should add to its present function of supplying and maintaining an adequate personnel for the British army in peace times another function—namely, that of training an additional number of young officers to fit them not only for promotion in later years to the administrative posts in the Service but to be specialists in many directions, and specialists that are even now, and will in the future, be wanted by the various departments of State. The trained administrator is needed no less than the trained specialist in purely professional subjects. The Service would then be able at regular intervals to give up a proportion of its trained officers, and to increase that proportion should a real demand for specially qualified doctors arise. It will be observed that in such a scheme the proposed objects of the Army Medical Service would be:

1. To train the best newly qualified doctors of the country for professional as well as administrative duties.
2. To arrange for the placing of all surplus to the requirements of the Service in other spheres of usefulness.
3. To retain only those who give promise of becoming efficient administrators; and, lastly,
4. To provide teachers of the first order with all possible facilities in every speciality.

Is it, then, not time for us to recognize that the expensive and varied training given to the army doctor qualifies him for a great variety of offices—for example, those of medical officer under the Ministry of Health, the Education Office, the Home Office, etc.? Unfortunately, well disciplined and trained as he is, he is not a popular candidate for those posts; he is often out of the running, and is permitted to drift along, hoping against hope to fall by chance into a comfortable job when his services are no longer required in the army, or because pensioned he is supposed to be past work, or even to have failed in some way. As a profession it is, I believe, our duty to call attention to this waste of trained material, and to endeavour to secure for the army doctor facilities for the transference of his services from the army to some other sphere of usefulness to the State.

I would strongly advocate the principle that the Army Medical Services, with which the Indian Medical Service might perhaps co-operate, be made to serve the two purposes above referred to, and I believe the suggestion that I am about to put forward will suffice to give it new life and to extend its usefulness to the State.

The doctors, in spite of many vigorous efforts and the best intentions, up to the present have failed to form a satisfactory school for training doctors after they have gained a licence to practise their profession, whilst the State has utterly ignored the importance and value to the community of establishing well equipped schools and training centres for the higher walks of medicine, surgery, midwifery, and the various other branches of the art of healing. The medical schools and their staffs attached to voluntary hospitals have done a great and noble work in establishing and maintaining at their own expense centres for the education of young medical men. More they cannot do; indeed, there are signs and portents that the burden of educating the medical student in these days is proving too heavy to be borne by individual or small groups of teachers, even with the help of generous contributions from those interested and well disposed. The State must sooner or later undertake the whole of this duty. Then there will remain the training and education of the most promising of the newly qualified doctors coming year by year from the medical schools. The Army Medical Service has done this kind of work for many years, perhaps because the newly recruited army doctor needs further education and training to fit him for the special duties that lie before him. With a splendid organization for this work in being, the Army Medical Service is already, I think, in a position to develop into such a training school, to which the best graduates from the universities and hospital medical schools of the British Isles might, if they personally desired it, be passed. If this were undertaken, a careful selection of a proportional number from each first-class school should, I would suggest, be made by the authorities of the school, final approval for commissions in the King's Services being left in the hands of a special board or committee consisting of army medical officers, civil doctors of repute, and astute business men or proven administrators. This board should interview the selected candidates to ensure as far as may be the entry of those with character and personal ability essential to the making of a good specialist as well as a good officer—factors of the utmost importance and ones that should not be lost sight of.

This matter should, I am convinced, be taken in hand by the Army Medical Service without delay, for it is of the utmost importance to the profession of medicine, to the State, and for the welfare of the public; and it should be carried out with but little, if any, dislocation of the system now existing. Such an undertaking to be successful must provide for an adequate supply of officers for the Army Medical Service and for effective machinery for the disposal of the personnel to civil life or other departments of State.

Under such a system as I advocate there would, I believe, be no difficulty in obtaining a supply of first-class men for the Army Medical Service because the Service would come to be regarded as a training school for doctors as well as affording, for a comparatively small number, an honourable career of usefulness in the service of the country. The surplus above the needs of the army would be available for duty in other departments of State, and the constant renewal of personnel would lead, as experience ever teaches, to greater efficiency in the specialist division as well as in the administrative. Further, in the course of a few years a magnificent reserve of medical officers, made up of those who had left the Army Medical Service, would be created, and this reserve in all probability would suffice to meet a national emergency.

THE SUPPLY OF OFFICERS.

In order to secure an adequate supply of newly qualified doctors for service in the army under the conditions suggested, to my mind two conditions must be fulfilled: The *one* is that the medical schools should be kept informed of the educational advantages, of the technical training, and of the great opportunities offered in the Army Medical Service for the acquisition of professional knowledge and experience; the *other* is that after a certain period of service in the army each officer will be at liberty—barring special exigencies of the Service—to apply for transference for service in another department of State or to leave for civil employment, and thus effect a change in the direction of his choice.

It is now realized, and realized very fully, that the best students in the medical schools lose a great deal after qualification because their natural capabilities are deprived of the guidance and stimulus of the trained teacher and their minds are left to be moulded only by the experience of practice. These men, if medicine is to progress hand in hand with other sciences, must be sought, cared for, nurtured for the sake of the community, the efficiency of which largely depends upon the knowledge the doctors bring to their work. It is just when they qualify, having perhaps spent all the money their parents or guardians could spare, that the time is opportune to draw their thoughts towards the avenue for success commensurate with their ability. I have no doubt the medical teachers would do all the advertising of the opportunities, if the conditions proffered are made worthy of acceptance; and the supply I feel convinced will be forthcoming if the army undertakes this duty, as it can and, in my opinion, should. What a boon such a scheme as I have endeavoured to sketch, when in full working order, would prove to the man who has ability to profit by further study and who only desires to be relieved, for a time at any rate, of the necessity of seeking employment in order to earn a living.

THE TRAINING.

The training of the medical officers should be divided into two portions—the first common to every officer, and the second for specialists, administrative and professional.

The First Period.

The first period should extend for at least five years, because training to be effective at this period of life must be combined with practical experience carrying with it full responsibility for the work undertaken and performed. The teaching in this period should include the methods adopted in the administration of units in the Service economically and successfully, in handling minor problems of organization in medicine and surgery, in the supervision of personal and general hygiene, in the maintenance of proper physical strength in the soldier, and in the treatment of minor maladies such as those to which the physically fit soldier is liable. During the *first* period the training given should fit an officer for the innumerable posts which are now rapidly becoming available for doctors in connexion with the Ministry of Health and the Board of Education. At present schools or training centres for the proper preparation of men for these new duties do not exist.

The Second Period.

The second period should extend for an equal or longer time, because in it the specialist is to be trained and educated and given facilities to become master of the art into which he desires to devote his energy. During this period the complex organization of the Army Medical Service would form one big division and the various branches in medicine, surgery, and sanitation another. In each division the number trained must not exceed that which will suffice to provide adequate practical experience which is of the utmost value.

Only in some such way can men find the time to acquire the preliminary qualifications necessary to make first class administrators and well trained specialists in the several branches of medicine and surgery, and having received the training already sketched the officers would be ready for posting to important positions, for then they could undertake them with confidence and very great advantages to the public.

At the end of the *first* period of training a certain proportion of the officers would undoubtedly seek other appointments. and as far as the exigencies of the Service would permit they should be encouraged to do so and every effort made to find suitable jobs for them. At the end of the *second* period of training for the specialist a similar exodus would occur, and it is probable that the demand for well trained specialists would be far beyond the supply for several years.

Thus the army would be relieved of a definite proportion of its younger medical officers year by year, the greater number after completing the first period of training, and a smaller after the second, the Medical Service retaining only those needed to fill requirements at each stage. Those who remained in the Service after the second period would, being necessary for the Service, naturally and confidently look forward to promotion in rank and pay as long as they remained fit to perform the work allotted to them. The specialist, if retained, would also enjoy the same privileges and the same advantages as his brother administrator, and it would be possible for him to reach the top rungs, if not the topmost rung, of the ladder of progress and advancement.

The success of such a scheme, should it be favourably considered by the authorities concerned, would, I believe, depend largely, if not solely, upon the arrangements for the successful placing of those officers who desired to leave the Service, whether at the end of the first or the second period of training. Without effective machinery for this purpose disappointment would, of course, soon follow. I will next deal, therefore, with the organization for the disposal of such trained officers as would elect to transfer their services to other departments of State or to go into civil life to take up duties for which they have been specially trained.

Disposal of the Surplus Personnel.

With such a scheme in full working order the personnel of the Army Medical Service would increase and become in excess of requirements. During the initial stages it would be well to make provision for relief, to some extent at any rate, at the end of each year until such time as disposal equalled the entries. As the organization for training is, for all practical purposes, ready to be put into action it would be necessary to organize the needful machinery for dealing with the officers thus trained and to place them in positions which they would suitably fill. With the increased demand for specially trained doctors which has been going on for several years in foreign lands as well as in this country, there has been no organized effort made to help those who have taken the trouble and been at the expense of training themselves, to find them positions in which their additional knowledge would be of value. This lack of an organization for placing suitably trained men where their services are needed has hitherto militated against the success of any scheme for the education and training of doctors soon after qualifying for practice, and it is essential for the success of such a scheme as that which I advocate that machinery for this specific purpose should be brought into being simultaneously with the adoption of a scheme for teaching and training.

In the administrative offices of the Government there are many separate and distinct departments, a large proportion of which have a medical section, to which all matters pertaining to medicine are referred. There is, however, but little co-ordination between the various departments of State, and none between the medical sections attached to them. This state of affairs should not be permitted to continue. I must not, however, follow this matter any further.

To complete the scheme I am putting forward I advocate the establishment of a liaison department between the department in which medical officers would be specially trained and the several departments of State which require the services of such trained doctors. Many appointments become vacant in the different departments of State from time to time, and many new ones are being created with each new development, but there exists no machinery for securing the trained man most suitable for the work.

The existence of a liaison department would create confidence and, after a little experience and working, the various departments of State would realize that the inquiries for suitably qualified officers could be made at it and business would follow. After a short period such a department would be able to be informed of the needs of each department of State as they arose. If such a liaison department could be organized there would, I believe, be no difficulty in finding appointments for men as well trained as those in the Army Medical Service, and after a time there would be [illegible] a selection of medical men qualified in administrative work, in personal hygiene, in ordinary sanitation, and in the other branches of medicine and surgery. At present there may exist no demand for such trained doctors, but if the supply were to be created and its existence known to the market, I venture to think a new demand would arise for doctors, and a demand that would from the very first make itself felt, and would of course be met. Many will no doubt think the Army Medical Service should not undertake this further duty.

With the combination, on the one hand, of education and training, the acquisition of experience in medicine and in administrative duties, and on the other, opportunity for leaving the Service after a period of years for civil work, or for transference to another department of State, the army will, I believe, receive the best men from the medical schools, will be able to select those it requires for its own medical services, and permit a number to leave it every year to better themselves either in civil work or in another department of State.

If the army were to adopt such a proposal there is only one direction in which it would be necessary to expand. That direction is in hospitals. At present military hospitals, during peace times, are primarily quiet rest centres for the soldier, tired or out of sorts with trivial ailments, or waiting an Invaliding Board, and, secondarily, they are utilized for the treatment of serious cases. I put them in this order because the former largely predominate over the latter. Now if the general hospitals of the army be differentiated into two grades, one for the trivial and another for the serious cases, professional training may safely be undertaken.* It may be thought that even if the hospitals were available, cases would not be. If, however, the army itself could not provide sufficient numbers of serious cases, surely at the present time the Ministry of Pensions would be able to supply a full complement, in spite of the sentimental notion that a pensioner would not enter a military hospital. The sick pensioner, indeed, if he desires to be cured, would go to any place where he would be likely to be restored to health, just as he goes from doctor to quack and back again as circumstances dictate. Further, if the military hospitals are insufficient for this great purpose, and it can hardly be designated by another name, surely the magnificent Ministry of Health infirmaries of our large cities might be utilized not only for this purpose, but for the advantages which are by no means insignificant to the patients in them. At present these magnificent workshops for combating disease and for training the young and newly qualified doctor, are not available, and the material is lost, and, speaking generally, they are placed under the control of young untrained doctors of but little if any experience. Indeed, there is abundance of material if we can but agree to make the best use of it for the benefit of the sick as well as for the welfare of the State.

THE TEETH IN THE RECRUIT.

BY

MAJOR J. P. HELLIWELL, C.B.E., L.D.S.

I AM rather handicapped by not possessing data quite ample enough to allow me to deal with this subject as thoroughly as its importance demands. The dental service in the army was never well enough organized during the war to provide the records necessary for a paper of this description. It was not until early in 1918, when Sir John Goodwin vigorously took up the matter from a prophylactic as well as from a curative point of view, that the dental service became in any way systematically and adequately carried out. Previous to this the great shortage of dental surgeons in the army rendered impossible the carrying out of any systematic treatment.

It will be convenient to mention first the dental condition of the men in the regular army before the war. It was customary for a man with pronounced dental defects to be sent by his medical officer to a civilian dental surgeon for treatment, but as there were no systematic inspections by dental surgeons in the army at home the result was that practically only men who complained about their teeth were sent for treatment, and no appreciable effort was made to arrest dental disease in its early stages. I think it will be generally agreed by medical men that the person to examine teeth is the dentist, and that no one but a dentist can discover dental decay in its earliest form, especially small proximal cavities and early decay in the fissures of the teeth. The amount of money allowed to be spent on the dental treatment of any one man was limited to £1, whatever the requirements of the man might be. The only exception to this was that men with rank not less than that of sergeant could be supplied with artificial dentures when necessary. The absence of systematic inspections and treatment of the men resulted in a great loss of teeth through disease, and often in general disturbances of health due to septic absorption.

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* It is very satisfactory to know that this plan is being carried out, and will doubtless add materially to professional efficiency as well as interest in maintaining specialities.

An experimental scheme was commenced in India in 1910 for the treatment of British troops. One dental surgeon was appointed to each military division of approximately 12,000 men with their wives and families. It was possible here to get some idea of the extent of dental disease, and it was found that the average requirements of a man were the treatment of six teeth.

Generally speaking there was no evidence of dental treatment having been given previously. A man with well kept and well filled teeth was somewhat of a curiosity. Of the average six teeth requiring attention usually three or four had to be extracted. In nearly all cases the six-year molars were most affected, and in mouths where caries was pronounced these teeth were generally too broken down to be effectively restored. As would be expected, these six-year molars were the teeth which had most often been extracted from mouths where there was any deficiency of teeth. The percentage of men requiring treatment was 75; the remaining 25 per cent. had either sound teeth or they had had teeth extracted so that their mouths were in a fairly healthy condition. Those requiring treatment varied considerably in their dental defects. Although the average number of affected teeth was six, it was quite a common thing to find men with nearly all their teeth hopelessly decayed. On the other hand, it was possible to make some men dentally fit by a minimum of treatment, such as the extraction or treatment of one tooth. The average soldier at that time did not clean his teeth, although he was provided with a toothbrush in his kit; in fact, it is said that he sometimes bought another one in order that he could keep one clean for kit inspections and use the other for cleaning his buttons.

Comparing the different branches of the army—and it must be borne in mind that when men were recruited the condition of their teeth was taken into consideration and that those without sufficient masticating surface were rejected—it was found that the men with the best teeth were generally those with the best physical development. For example, the gunners and cavalrymen both had a much better dental condition than the infantrymen. Moreover, among the infantrymen the dental condition, and also apparently the general physical condition, varied in accordance with the locality from which the men were recruited. Regiments which recruited chiefly from large industrial towns showed usually a much worse state of teeth than those which recruited in the country.

The effect of the healthy army life showed itself very often by an improvement of the teeth, along with the rest of the tissues. This improvement was commonly observed by the greater tendency of the teeth to form secondary dentine. In some mouths quite a number of teeth would adopt this particular kind of regenerative tissue and completely recover from their carious condition. Of course, this would be only observed in teeth where the pulps were not infected. The type of food also tended to prevent any large accumulation of tartar, and generally kept the teeth cleaner than was common in civil life. The formation of secondary dentine, just referred to, also indicated an improved nourishment of the teeth, probably to some extent on account of the natural work they had to do in the mastication of what is perhaps considered a perfect diet, but I would imagine it was due more to the improved general resistance to disease of the body as a whole.

Dental treatment, after a short time, was readily accepted by the average man, although there were many refusals of it at first. After efficient treatment the men's teeth did not seem so liable to decay as was usual with the same class of man in civil life, and it was rare to find any work to be done when men were reinspected one year after treatment, but it was generally noted that there was a much greater keenness for treatment on the second visit of a dental surgeon.

Although it is difficult to prove the relation of dental disease to general health in such healthy people as pre-war soldiers, officers in medical charge of units very often pointed out the great improvement in the health of individual men after receiving dental treatment—men who were previously always reporting sick and always showed more than ordinary fatigue after long marches and other kinds of strenuous exercise. No records were kept, however, of such cases, and even among sick men systematic entries of dental treatment were not usually made on the medical history sheets, and so the effect of this treatment on the recovery of a man was usually missed. So much has been done in the past few years to improve the health of the troops by means of modern hygiene and protective measures against disease that it would appear the effect of dental treatment has been overshadowed and not given its proper place as one of the causes of the improvement in the health of the troops. At that time it was not often that one could find even a mention of dental disease in reports on the health of the army. The men themselves were not slow in showing their appreciation both of treatment and instruction in oral hygiene, and it was very gratifying to find a great improvement in the care of the teeth.

At the outbreak of war in 1914 the state of the teeth among the first men joining the army for the period of the war was very similar to that among men already serving on normal engagements, as during the first few months the men were selected and a number of dentally unfit were rejected. Later on, when a very good selection was no longer possible and men were classified in different categories in accordance with their physical condition, some useful figures showing the relation of dental disease to general health were obtained.

Examination of men classified as category A showed 68 per cent. requiring dental attention to fit them for army purposes. Men classified as category B showed 75 per cent. as requiring treatment, and those classified as category C showed 78 per cent.

Of the category A soldiers, those in young soldiers' battalions, who were chiefly aged about 18, showed the same percentage requiring treatment as the older men, but when the degree of dental disease was considered it was found that only 1 per cent. of these boys had lost teeth to such an extent that artificial dentures were necessary, whereas among the older men of the same category (average age 30) the proportion requiring artificial dentures was as high as 10 per cent. These figures are important, as they show how great the activity of dental disease is between the ages of 18 and 30.

The younger men had an average number of four teeth to be attended to. This number is somewhat less than that given previously with reference to the regular soldier inspected before the war, and as the latter usually served up to about the age of 25, it shows a progressive increase of dental disease, and emphasizes the need for the early dental treatment of recruits.

In the case of the young soldier enlisted for the war, the six-year molars were the teeth chiefly affected, and often diseased beyond repair; indeed, it was often only necessary to extract the whole four of these molars to clear up all the active disease in the mouth. A great asset in the condition of these men was that the wisdom teeth had generally not erupted, so there was reasonable hope of four more healthy teeth, and where the six-year molars had been extracted there was usually sufficient room made for them by the second molars moving forward. When one considers that school dental treatment had not been sufficient up to that time to conserve the six-year molars, it is almost unfortunate that these teeth, if badly decayed, had not been removed earlier, as there seems to be little doubt that caries generally commences first in these teeth.

The men of the lower categories showed a much worse condition, and the average number of teeth decayed per man was very much higher. So great was the dental deficiency and disease among these men that it was found impossible, even with the most elaborate scheme, to give them all the attention they required.

With an army of something like six million men it would not have been possible for the whole of the available dental surgeons in the country to have made them fit without considerable delay. An army dental scheme in peace time is a very different proposition from one in such a national upheaval as that through which we have just passed.

Criticism has been levelled from all sides at the army on account of the apparent apathy with regard to the dental condition of the troops. Probably the chief cause of this criticism was the fact that a number of qualified dental surgeons were serving in the army as combatants. Of course, this was a particularly bad kind of waste, and should never have been allowed to occur. There was more than enough work for all the dental surgeons eligible for military service if they were all employed in their professional capacity with the troops; but even so, with the men in the army representing practically all the young and middle-aged men of the country, the task of making them dentally fit in the time allowed for training would have been quite impossible. It was not simply a question of treating an army but of treating the manhood of the nation.

It is rather difficult to understand why the army should have been criticized so much for not being able to treat this accumulation of dental disease, which rightly should have been the task of an organized national service giving progressive dental attention from an early age.

Consequently, treatment in the army had to be graded in accordance with the degree of usefulness of the different classes of men. If every man had been required to stay in this country until his teeth had been put into perfect condition there is some chance that we would have lost the war.

I think the lesson taught by the dental condition of the troops is simply illustrative of the dental condition of the nation as a whole, as all classes were enlisted except those of such a poor condition of health that they were not even fit for category C 3.

The percentage of men requiring dental treatment is necessarily given, in all cases, from an army point of view, and it cannot be considered so high as a careful examination for civil purposes would produce. There were many men in the army who were excluded from dental treatment—and therefore not counted among the unfit—because though they had various dental defects these were not active, and there was not much chance of the general health deteriorating on account of the state of the teeth. These men were usually well nourished, generally over the age of 30, and their teeth had obviously been in the same condition for years. Attention to them could certainly not be considered so urgent, and as it would have usually entailed the provision of artificial dentures there would have been considerable delay. An example of the type I refer to can be seen in probably one out of every half-dozen men over the age of 35 who have not been in the habit of receiving regular dental treatment. These men very often have had several teeth extracted at different times, and consequently their remaining teeth have become more or less isolated and so less prone to decay.

I would estimate that there would be quite 90 per cent. of the men with dental defects if they were to be treated from an ideal standpoint. Even among the remaining 10 per cent. there was a number who had been made fit by previous treatment. It was usual to find a normal dental arch with no evidence of dental disease in 2 per cent. of the men in the highest category.

These figures I have given from the personal inspection of upwards of a hundred thousand men of all categories during the war, and I consider they might be taken as a fair sample of the army as a whole.

The question now arises of the influence of dental disease on the general health of the soldier. The rapidity of mobilization and the short period of training made observations among individual men impossible. No sooner had a man received treatment than he was included in a draft for service overseas.

As mentioned above, in India before the war I found that the men with the best physique, such as those in the cavalry and artillery, had a better dental condition than those in the infantry, who were generally of a somewhat lower physical standard. The same relation can be seen in civil life: the big strapping man has usually strong teeth; the navvy, as a class, shows this very well. Athletes and people with healthy outdoor occupations have a much higher dental standard than the sedentary worker.

All this tends to show that a strong body and healthy life are resistant to dental caries. There is conclusive proof of this in the very frequent occurrence of secondary dentine which, as I have stated, is so common in the army among men who are brought to improved conditions of life. Of course, this resistance to dental caries and the recovery of the teeth can only occur when disease has not reached the tooth pulp, and there we have a turning point which, if passed, can only result in the ill effects of chronic septic absorption. So long as the tooth pulp is not infected there is comparatively very little septic absorption from the teeth; indeed there is under certain conditions some chance of recovery of the affected teeth, as I have said before. If the pulp becomes infected the tooth soon becomes "dead," and if allowed to remain in that condition the septic absorption is continuous, and must tend to lower the general resistance to disease. The condition of the teeth of men in the medical wards of military hospitals during the war suggested that they were the direct cause of the majority of digestive disturbances.

When the teeth undergo beneficial change, as shown by the formation of secondary dentine, it is fairly obvious that the change is due to an improvement in the environment, mode of life, and type of food of the individual. A man coming from a very poor home in a congested part of a city, where he has received either inadequate or the wrong type of food, must show an improvement in general health when living the regular and healthy life of the army, and it is quite natural to expect that the dental tissues must share the general improvement.

From the foregoing observations it will follow that it is impossible to limit the subject under discussion to army dental treatment. We do not get recruits until they are about 18 years old, by which time most of the foundations of general physique have been firmly laid. There is no doubt that the men's health is considerably improved by giving them the right kind of dental treatment, but we are not able to lay the foundations of a healthy race by such late treatment.

So the whole question becomes one of the general improvement of national health, and embraces, so far as the dental branch is concerned, adequate treatment and instruction in oral hygiene in maternity and child welfare centres and the early treatment of school children, which should be continuous and not limited to age groups, as is generally the case. Dental treatment should also be available after school-leaving age in special clinics. Most important is the need for impressing on all the necessity of oral cleanliness. It is not sufficiently realized by the general public that the greatest share in the battle against dental disease lies with the individual, as the full benefit of even the most regular dental treatment cannot be obtained unless the patient does his best to minimize the immediate local cause.

With the material at our disposal during the war we are unfortunately not able to give evidence of any benefits derived from school dental treatment, on account of the very few school clinics established before the war. In 1908 Cambridge was the only place in which elementary school dental treatment had been taken seriously, and even if the treatment had been continuous up to the age of 10 it could not have been until 1916 that any of the boys who had received this treatment would be taken into the army. Other school dental clinics were eventually started, but I believe there were only about fifty dental surgeons doing whole or part time school work in 1914. Consequently, unless one had the opportunity of seeing, during the army dental inspections, boys who happened to come from Cambridge, it would not be possible for us to form an opinion as to the benefits of school treatment.

In 1916 over 5,000 young recruits were inspected in the London district, and only 11 of these had received any school treatment, chiefly at orphanages, etc. Frequently, however, boys are seen in the army who have been brought up in military schools, such as the Royal Hibernian Military School, Dublin. These boys now receive systematic dental treatment. Their teeth are good and their physical condition appears good.

Last year I was present at an inspection by the dental surgeon of the boys at the Royal Hibernian School, and was much impressed by the careful way in which the dental condition of each boy was recorded, and the efficient way in which treatment was carried out. The boys were inspected once each six months, and dental disease checked in its very early stages. Even the regulation of the abnormal position of teeth was carried out where necessary. The freedom of these boys from any chance of septic absorption from the mouth must result in a great benefit to their general health. It is noteworthy that every inspection was carried out by a dental surgeon, and too great importance cannot be attached to this. It is essentially dentist's work, as it is only by most careful inspection that early dental disease can be detected.

It is, I think, generally admitted that dental disease is one of the most important causes of ill health, and the findings of the Parliamentary Committee investigating the evils of unregistered dental practice should leave no doubt about that. In the big military hospitals at home during the war it was always found that the men in medical wards had much worse teeth and required much more attention than those in the surgical wards. The men in the surgical wards were those who, in the great majority of cases, were there for wounds, and could be considered as average individuals who had become patients by chance; whereas the medical ward patients were most often those in a lower condition of general health, with some definite superimposed illness, and considering the bad condition of their teeth, it is reasonable to conclude that this condition had a direct or indirect influence on the lowered general resistance of the men.

Of course, the bedrock of the whole question is to decide on the *causes* of dental caries. Various theories have been advanced regarding these, and such local causes as the direct effect of unsuitable food on the dental tissues must be considered of the utmost importance; but it is also fairly obvious from the observations made on the men in the army that a poor dental condition is, in the majority of cases, only part of a low, or indicative of a previously low, general condition of the individual, and that the better type of life and food very often produces an improvement in the resistance to dental caries, running *pari passu* with the improvement in general health.

So I have apparently come to two contradictory conclusions, one showing the teeth as a cause of ill health and the other showing ill health as the cause of bad teeth. The conditions, of course, act on each other and continue in a vicious circle. The actual commencement of the process of dental caries is probably an inherent lack of resistance on the part of the dental tissues to infection from the putrefaction of particles of food adhering to the teeth.

I want to emphasize once more that, in a normal mouth, it is not until the pulp is infected and the tooth "dies" that any great damage to the health occurs, and our aim must be—until some wonderful person can feed us with a hormone which will increase the resistance of the dental tissues to disease—to treat teeth early, and so prevent their getting into such a condition that health can be affected by septic absorption. It is certainly to be hoped that the future army dental service will be adequate enough to do this for the troops.

THE REGIMENTAL MEDICAL OFFICER:

HIS POWERS AND DUTIES.

BY

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[*Abridged.*]

> "The Royal Army Medical Corps is maintained, firstly, with a view to the prevention of disease; and, secondly, for the care and treatment of the sick and wounded" (*R.A.M.C. Training*, page 1, para. 1).

ONE of the greatest difficulties which confronted the medical officer serving with a unit in the Great War was the fact that he found himself called upon to discharge work which was of a miltary nature, and for which he had received no previous technical training. The officers of field ambulances had, of course, specialized duties to perform, but they served directly under field ambulance commanders who were experienced officers well qualified to instruct them.

Medical officers were detailed for duty with various military units such as battalions, brigades of artillery, divisional engineers and the like, and here the R.A.M.C. officer stood alone, and neither the commanding officer of his unit nor any of his comrade officers were capable of telling him what to do or how to do it. In this paper we will refer to these medical officers as the "regimental medical officer." The name is a misnomer, but it was used throughout the war, and it is honoured by usage if not by accuracy. These officers soon found out the fallacy of the popular impression that the possession of a medical degree qualified its holder for any medical post, and blundered hopelessly, until finally they worked out a daily and weekly routine for themselves. Realizing their difficulty, and having served with fighting formations throughout the war, we think it may be of interest to discuss briefly the position occupied by a medical officer in charge of a battalion or other military unit on active service, and then to pass on to consider various points and difficulties which arise in the carrying out of his duties under the following headings:

1. In camps and billets.
2. In ordinary trench warfare.
3. In active operations.
4. In relation to medical statistics and records.

Some notes, originally compiled in 1915 for the division one of us (Colonel Blackham) took to France, were rewritten years later with the assistance of Captain T. H. Blake, M.C., who had extensive experience with a battalion of our division in France.

Position Occupied by a Medical Officer in Charge of a Battalion.

The medical officer occupies an advisory position in his battalion or other unit. He is responsible for advising his commanding officer on all matters that concern the health, and even to a considerable extent the comfort, of the troops; but it also lies with him to see that the measures he suggests are carried out, and even to have them carried out himself by means of certain personnel of the battalion which are placed under his control and supervision—namely, the so-called "regimental" medical and sanitary establishment. Consequently his duties range over a wide area, and comprise not only such purely medical functions as attending the sick and wounded, but questions of sanitation, water supply, food, etc., and, last, but not least, the training and organization of the regimental stretcher-bearers, and the evacuation of the wounded from the front line to the aid post.

The medical officer with a unit in the field unquestionably requires to exercise considerable tact, patience, and discrimination if he is to carry out his duties successfully.

Tact is especially required in his relations with the other responsible officers of the battalion. If he is wise he will keep on good terms with the battalion quartermaster. He has to rely on the quartermaster to a large extent for supplies, and for getting carpentry for sanitary work, etc., done by the pioneers, and quartermasters often have ideas of their own as to how these things should be done. Here the exercise of tact comes in, and it is generally obvious to an inspecting officer whether the medical officer and the quartermaster are "hitting it off" or not.

The regimental medical officer requires also patience and insistence in again and again bringing to light and pointing out faults, bad sanitary points, etc., as well as discrimination in discerning when to put his foot down and take a firm stand, and, on the other hand, when to make allowances for the difficulties and exigencies of military service.

1. *Duties in Camps and Billets.*

Morning Sick Parade.—The time at which this is held is a matter of arrangement between the medical officer and the adjutant. It is usually some time between 7 and 8 a.m., so that company commanders may know how men reporting sick have been dealt with before the principal work of the day begins.

Disposal of Sick.—Men reporting sick are brought to the medical inspection room under the charge of a N.C.O., who has a roll of names in duplicate on the "sick report." The medical officer disposes of the sick in the following manner:

Cases needing hospital treatment are marked "hospital," and all further steps are taken by the N.C.O. i/c. Cases requiring medicine or a small dressing, but who are able to continue their work, are marked "M and D," or Medicine and Duty.

Men who are not well enough to drill, but who can do light work in the barrack room, are marked "L D" or Light Duty. Men reporting sick without a cause should be warned, and if they persist in reporting, their sick report should be marked "Duty." The medical officer must realize that if he marks a man's sick report "Duty," he is making a definite charge of malingering, and will have to substantiate his opinion before the commanding officer, who will charge the man under Army Act, Section 18. In doubtful cases a dose of castor oil or a No. 9 tablet sometimes works wonders in cooling a man's ardour for sick parade.

The following is a list of the duties of a unit medical officer:

(*a*) Sanitary inspection of camps and billets, huts, latrines, ablution places, rations, Q.M. stores, cook-houses, field kitchens, water carts, etc.
(*b*) Choosing and inspection of water supplies.
(*c*) Scabies inspections and inspection of men going on leave, or courses, or proposed for transfer to the base.
(*d*) Classes in first aid for stretcher-bearers, regular and reserve.
(*e*) Training of sanitary and water duty men and reserve men to replace casualties.
(*f*) Clerical work.

The medical officer with a fighting formation is up in the front trench, as it were, against the disease germ enemy. He is the first line of defence, so obviously an important part of his duties are concerned with sanitation and hygiene.

(*a*) *Sanitary Inspections.*—On occupying a new area, in addition to making out a report to the A.D.M.S., detailing his exact position on the map, the medical officer should write a short report to the commanding officer of his unit drawing his attention to any bad points, and making suggestions for improvements. In some cases very unsuitable places are chosen by billeting officers as medical inspection rooms, and it is advisable, if possible, to send on a medical orderly or corporal ahead with the billeting officer to look out for a suitable spot.

(*b*) *Water Supply.*—Immediately on arrival in a new area the medical officer personally should investigate and mark the sources of supply. All water for drinking and cooking must be drawn from these selected sources. All drinking water must be chlorinated, the amount of bleaching powder required being ascertained periodically by the iodine test. All water from rivers, streams, and ponds should be passed through the clarifier. No source is to be chosen which is liable to pollution by privies, cesspits, middens, or which is in close proximity to a cemetery. Water from a river source must be drawn as far as possible up-stream to prevent pollution from villages, etc.; horse troughs and ablution places must be down-stream. In an advance, owing to possibility of poisoning by the enemy, flowing water should be obtained in preference to stored, still water or wells. Dead fish and cases of poisoning among inhabitants should be looked for.

(c) *Scabies and Other Inspections.*—The unit is paraded a company at a time with shirt sleeves rolled up and shirts open at the chest. The medical officer then passes rapidly down the lines, the men holding out their hands and turning them over as he arrives in front of them. Any man who has suspicious looking spots either on his hands, arms, or chest, is told to fall out after the inspection, and go to the medical inspection room. There he is stripped and thoroughly examined. If the companies parade at twenty minute intervals, the inspection of an entire battalion can be got through in an hour and a half.

(d, and (e). *Training of Stretcher bearers, Water Duty Men, and Sanitary Men.*—It is well worth taking trouble to train stretcher-bearers thoroughly in first aid. The more they get to know of the work the more interest they take in it, and the more likely are they to do well when it comes to a "push," when the efficient performance of their duties becomes of paramount importance. It is advisable to have a lance-corporal in charge of each company squad. All experience goes to prove that in battle at the very least thirty-two stretcher-bearers per battalion are required. It is therefore not sufficient to train only the regular stretcher-bearers. Sixteen reserve men must be thoroughly trained to meet emergencies in addition, and also to fill up vacancies from casualties or sickness as they arise. Not less than two extra water duty and sanitary men should be trained as a reserve to fall back upon in the case of casualties.

2. *Duties in Trench Warfare.*

In the trenches the life of the unit medical officer centres largely in his aid post, to which are brought the wounded and sick for treatment and evacuation if necessary. The stretcher-bearers are with their companies, and they are informed of the situation of the aid post, which should be on the direct line of evacuation from the front line. If the carry is not too long everything works smoothly, and as a rule ordinary casualties can easily be dealt with by the sixteen regular stretcher bearers.

There is also a squad of R.A.M.C. bearers at close call for evacuating cases from the aid post. In addition to attending the sick and wounded at the aid post the regimental medical officer carries on, as far as he is able to do so, his sanitary and other duties, making from time to time a tour of the trenches in his battalion sector and inspecting latrines, dug-outs, etc. The corporal in charge of the stretcher-bearers should be stationed at or near the battalion aid post, and his duties are to go round daily to the stretcher-bearers, see that they are supplied with dressings, etc., and also to arrange under the direction of the medical officer additional help or relays of bearers in carrying cases down should occasion arise, and to give any other help which may be required in bringing down and dressing of cases.

Occasionally the placid course of trench life is interrupted by raids. A decision is taken to raid a portion of the enemy's trenches by a party which may consist of anything from 10 to 100 men or even more, and the medical officer is probably asked by the commanding officer to make special arrangements in view of a larger number of casualties than usual. The best procedure is to place all stretcher-bearers of the battalion at the disposal of the company or companies carrying out the raid. Only a very limited portion of the front is involved in these operations, and if there is a good dug-out available close to that portion of the line, it should be taken over and made into an advanced aid post, where the medical officer can collect the wounded, attend to them, and evacuate them when the operation is over. If no dug-out is available where the wounded can be collected, the medical officer must remain at his aid post and await developments. He must bear in mind that he may be cut off from the front line for a considerable time by the enemy's barrage, and that it may be impossible for him to reach the wounded, or the wounded to get to him.

It will be seen that the unit medical officer in ordinary trench warfare is rather a "passive" individual, who remains in or near his aid post and awaits for cases to be brought to him.

3. *Duties in Active Operations.*

The picture now undergoes a considerable change, and the activity with which his battalion is suddenly imbued spreads to the medical officer. First let us consider what regimental arrangements are usually made for dealing with casualties, bearing in mind that the battalion is responsible for the treatment and evacuation of its own wounded from the front line to the aid posts, at which point they are handed over to the R.A.M.C. bearers and the regimental responsibility ceases.

The unit medical officer will have at his disposal sixteen regular stretcher-bearers (including one N.C.O.) and sixteen reserve stretcher-bearers. If any difficulty is put in the way of having these latter men it is the duty of the regimental medical officer to insist very strongly on the absolute necessity of having them, and if the commanding officer still declines to supply them he should appeal to the A.D.M.S. of his division.

In a modern attack there is generally a rush of casualties at the beginning, and if there are not plenty of stretcher-bearers (and stretchers) available, cases may be left on the field for hours or even days before being removed to the rear, an occurrence which has a bad effect on the moral of the men and is contrary to all dictates of humanity and prospects of recovery for the patients concerned.

Stretcher-bearers may be distributed either (*a*) equally amongst the four companies, or (*b*) about half may be detained at the aid post for subsequent disposal by the medical officer, according to circumstances, and the remainder distributed with their companies. The corporal in charge should remain with the medical officer. The method adopted must necessarily be influenced by the nature of the operations to be undertaken, and therefore the unit medical officer should make himself familiar beforehand with all the essential details of the attack, so that he may make arrangements most suitable for the occasion. Generally speaking, the second of the two dispositions is best.

Before the attack begins the medical officer takes up his position at an aid post, which has been decided upon beforehand if possible. Reserve bearers will be at close call. He must let all the battalion stretcher-bearers know where his aid post is, either by messenger, or through battalion headquarters. In all probability casualties will begin to arrive at the aid post directly operations commence, or even before, and he will be kept busy attending to and evacuating cases for some hours.

On the medical officer lies the responsibility, not only of attending to the wounded of his battalion, but of satisfying himself, as far as it is possible to do so, that all wounded are brought in—a far more important responsibility than that of merely attending to the wounded. If what we have said above about training in first aid has been done satisfactorily, there will be less necessity for the medical officer to re-dress the cases himself, and many of them can remain as they are until the patient reaches the field ambulance, provided that haemorrhage is arrested and broken limbs are adequately supported in splints. Time will thus be saved, and the medical officer will be able to keep in touch with his battalion headquarters, which will in most cases have moved forward considerably, following the course of the attack.

He will from battalion headquarters gain information as to where most of the casualties have occurred, and will be able to organize and dispatch his reserve stretcher-bearers to any points where help is most urgently required. If the casualties should be exceptionally severe, he can request additional assistance either from brigade headquarters or from the field ambulance. He must then reconnoitre the ground for a more advanced aid post. As soon as he has established this he should inform his battalion headquarters of his new position and ask them to communicate the position by wire or runner to the several company commanders for the information of the stretcher-bearers. He must also inform the field ambulance commander of his change of position, in order that R.A.M.C. bearers can be sent up to him.

There is still one more "activity" to which he can apply himself, and that is the sending out of bearers to search the ground over which the attack has passed and bring in any cases which have been missed by the stretcher bearers.

4. *Duties in Relation to Medical Statistics and Records.*

The daily routine of a regimental medical officer entails a certain amount of clerical work. The objects of routine clerical work are:

1. *For Reference in the Event of Inquiries.* On account of the many duties and constant movements of the medical officer it is impossible for him to remember the details of the various incidents which may require investigation at a later period. By taking notes of any interesting case or incident he has a record to which he can refer if any inquiry is made.

2. *To keep a Record of Cases Passing through his Hands.* This is important from a professional point of view, as it stimulates clinical research and enables a medical officer or his successors to follow up a particular disease. One of our officers wrote the thesis for his M.D. from his records as a battalion medical officer.

3. *To Ensure Continuity of Work.* There is nothing more annoying for a medical officer than to take over medical charge of a unit and to find that his predecessor has left no records of any kind. In many cases the "Sick" Corporal can assist the new medical officer, but it may happen that the "Sick" Corporal has left the unit also, and there is no one to give the medical officer any information, and he has to find out everything for himself.

Clerical work may be classified as follows:

1. Correspondence with A.D.M.S.
2. Correspondence with field ambulance and battalion headquarters. This includes (a) sick report for every sick man sent to a field ambulance; (b) tallies for all wounded; (c) indents for stores.
3. The Regimental Aid Post Diary, recording the diagnosis, treatment, and disposal of sick men dealt with by the medical officer; and the Sanitary Diary, which should be handed in daily to the orderly room for inspection and initials of the commanding officer.
4. Other records include (a) nominal rolls of all officers and other ranks in the unit who have had dysentery or enterica, and of all cooks and men employed in the handling of the food supply. These are kept in order to trace "carriers." (b) Record of inoculations. (c) Notes of all self-inflicted and accidental wounds, which should be made at the time the medical officer sees the case.

The foregoing sketch should, we think, not only give the young surgeon a clear conception of his importance in the chain of medical responsibility in war, but demonstrate to other readers that the unit medical officer is the keystone of the arch on which was built up the finest service which ever served with an army in the field.

ON AUTO-HAEMAGGLUTINATION:

A CONTRIBUTION TO THE PHYSIOLOGY AND PATHOLOGY OF THE BLOOD.

BY

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Part II.—CLINICAL.

We have already seen in Part I that shed human red blood cells and those of the sheep, guinea-pig, and other animals when standing *in vitro* under suitable conditions pass through certain degenerative changes during which they form non-specific agglutinogens, and thus become agglutinable by their own native serum and by foreign serums with which they do not react when freshly shed.

We shall now proceed to consider certain tendencies on the part of the red cells to become more agglutinable during life as the result of disease. This change can be recognized in freshly shed blood by the same auto-agglutination reaction as that previously considered in Part I. (British Medical Journal, December 18th, 1920.)

The Wassermann Test in Relation to Auto-agglutination.

In order to test this point a routine examination was made of 500 samples of blood from 500 consecutive patients attending Dr. Mackarell's Pathological Department at the Leicester Royal Infirmary for the Wassermann test. The result from the haemagglutinative point of view is given in the following table:

No. of Cases, 500	Positive 231	+ auto-agglutination	30 = 13%
		Trace reversible auto-agglutination	51 = 22%
		− auto agglutination	150 = 65%
	Negative 269	+ auto-agglutination	16 = 7%
		Trace reversible auto agglutination	43 = 18.5%
		− auto-agglutination	210 = 91%

Thus we see that in 500 samples of blood taken from 500 different individuals, of which 231 were found to be positive and 269 negative to the Wassermann test, 13 per cent. of the positive cases showed well-marked auto-agglutination, as against 6 per cent. of the negative cases. A trace of auto-agglutination was present in 22 per cent. of the positive, as against 18.5 per cent. of the negative cases. On the other side 91 per cent. of the negative cases gave no evidence of auto-agglutination, as against 65 per cent. in the positive cases.

The clotted blood was used in each case. A drop of the clear serum was placed on a slide. A fine-pointed pipette was then thrust into the centre of the clot and, by gentle suction movements, a drop of the concentrated red cell suspension was withdrawn and added to the drop of serum. These were mixed together with a glass rod and allowed to stand for a few minutes, then gently agitated and examined with a hand lens. A well marked non-reversible agglutination of the red cells occurring within a quarter of an hour was recorded as a *plus* reaction. A slight degree of agglutination, which disappeared on agitation and reappeared after standing and renewed agitation, was recorded as a *reversible* trace of auto-agglutination. An entire absence of clumping was recorded as a *minus* reaction.

These results were controlled in some of the *plus* reaction samples by washing the red cells in normal saline before mixing them with the serum. The results were the same as in the unwashed cells. A review of these findings shows that although the proportion of cases which gave a marked auto-agglutination reaction was nearly double in the positive as compared with the negative cases, and the numbers in the "trace" heading and in the *minus* heading were in like proportion, there is no constant association between a syphilitic's blood serum and auto-agglutination of the red cells by that serum. On the other hand, a careful investigation into the history and other accessory factors in both negative and positive cases soon suggested that auto-agglutination of red cells by native serum occurred for the most part in those blood samples in which either the positive reaction was high (indicating a marked reaction), or in which some ulcerating secondary focus could be demonstrated which afforded a basis for infection by pathogenic organisms.

As we shall see later, it is this presence of an infective focus and the defensive reaction made by the organism to the bacterial toxins formed there which accounts for the auto-agglutination in those blood samples which gave a negative Wassermann test.

This examination of these 500 samples of blood from different individuals, all coming under medical observation for some form of ill health, showed that a well-marked auto-agglutination was present in about 9 per cent. of all the cases, and a slight degree or trace of the same reaction in nearly 19 per cent.

The marked auto-agglutination present in some of the syphilitic samples must therefore be regarded as an indication of a reaction by the body against invasion by the spirochaete of syphilis, in common with the reaction made to other forms of infection in negative as well as in positive cases.

A number of control observations carried out on the blood of presumably healthy individuals showed for the most part an absence of the auto-agglutination reaction in the freshly shed blood. In a few cases in which the reaction was present in slight degree and in the "reversible" form careful inquiry revealed a previously unrecognized focus of infection, such as the presence of oral, nasal, intestinal, or genito-urinary sepsis.

An examination of the blood of a large number of different samples of the population on these lines would, I feel sure, reveal facts as to the prevalence of infection and other forms of ill health which remain at present unrecognized.

Pneumonia.

A series of cases of acute lobar pneumonia of pneumococcal origin were next examined. A few drops of blood drawn from the finger into a small Wassermann tube were either defibrinated by whipping or, generally, allowed to clot. A drop of the serum so obtained was then placed on a slide and mixed with the red cells obtained from the clot by the method described in the case of the Wassermann test samples. In all the cases of acute pneumonia so far examined (generally about the fifth day of the disease) a well-marked auto-agglutination of the red cells by the native serum was obtained. This often amounted to + + degrees, and was non-reversible in character.

Although I cannot at present state at what period of the disease the reaction first becomes recognizable, repeated examinations of the blood of pneumonia patients at recurring intervals after the attack have shown that the blood condition does not return to the normal after the crisis has taken place and the temperature has become normal. The auto-agglutination reaction persists for two or three months in most cases. It gradually diminishes in intensity and passes in reverse order from the ++ through the "reversible" and "trace" stages to the "absent" stage.*

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* Since this was written I have had an opportunity of testing the blood in two of the pneumonia cases after an interval of nine months, both patients being now in good health, and in both the blood has lost the auto-agglutinable character present during and after the illness, though the power of specific agglutination of red cells from an individual of another blood group remains unimpaired. In another case of a patient with a positive Wassermann and a suppurating focus of secondary infection in the leg, three + + + degrees of auto-agglutination were present in January, and when examined in October auto-agglutination was absent, the blood had returned to normal, and the suppurating focus was healed.

This delay in the return of the red cells to a normal condition of stability, as shown by the absence of auto-agglutinability, may probably be associated with the duration of life of the individual red cells.

In young children the return to a normal blood condition after pneumonia is more rapid than in the adult, possibly because the renewal of the cellular elements in the blood is more active in early life.

The question also arises whether the rise and fall of this auto-agglutinative cycle in the red cells in certain diseases affords any indication of the duration of the immunity conferred by attacks of those diseases. The facts do not seem to be sufficiently definite to warrant any conclusion on this head at present.

The reaction has also been obtained from the freshly drawn blood in cases of pneumococcal empyema. Also in a patient with typhoid fever on the fifteenth day of the disease. A month later, when the temperature was normal, the reaction was still present, but in the reversible form, and a month later still, when the patient was convalescent, it had disappeared.

It has been obtained in cases of cancer of the uterus, in which a secondary infection of the ulcerating surface with offensive discharge was present, and also in a number of cases of infective endocarditis. It was demonstrated in a marked degree in one fatal case of cancrum oris, also in a case of septic abscess of the neck. The most marked reaction occurred in a man suffering from purpura, the end stage of mediastinal growth with liver metastases and secondary infection.

The essential factor in all these cases seems to have been microbic infection in some form or other.

The following record illustrates the sequence of events in a patient with a chancre and suppurating buboes, the result of a secondary infection:

When examined at the beginning of the illness the blood of the patient gave a positive Wassermann reaction and + + auto-agglutination in the freshly drawn clotted blood. The blood serum gave [illegible] degrees specific agglutination with human (C. J. B.) red cells, and the red cells were agglutinated + + with the same human (C. J. B.) blood serum.

Five months later, when the buboes were soundly healed and the blood, after antisyphilitic treatment, gave a negative Wassermann test, auto-agglutination of the patient's red cells was only present in the reversible form, and a trace only of agglutination was produced by C. J. B. blood serum, while the specific agglutination of C. J. B. red cells by the patient's blood serum remained [illegible] as before.

In simple anaemia from haemorrhage no increased auto-agglutinability of the red cells has been observed. This fact is of interest in connexion with the results obtained by Warburg and Morawitz (quoted by Bancroft, *The Respiratory Function of the Blood*). These observers found that in phenylhydrazine and in haemorrhagic anaemia the metabolism of the blood was increased as compared with the blood of normal animals. They attributed the increased oxygen exchange to the large number of young erythrocytes present in the blood under these conditions.

We have already seen in Part I that an increase in the agglutinability of the red cells is an indication of age rather than youth in these cells; hence we should not expect to find it in cases of anaemia due to haemorrhage, in which the relative proportion of young to old red cells would be high. On the other hand, where the anaemia is the result of red cell destruction from septic poisoning, and where bacterial toxins are circulating in the blood, in such cases increased agglutinability of red cells, as shown by the occurrence of the auto-agglutination reaction in the shed blood, is also found. It may happen that in patients profoundly ill from anaemia of septic origin the auto-agglutination reaction may be absent in the blood shortly before death.

Difference in the Agglutinative Reaction in the Blood from Different Parts of the Body.

A sample of blood was tested from a ligatured portion of a tumour removed by operation. The blood was allowed to remain in the [illegible] of the vein for [illegible] hours, and [illegible] removed, but [illegible] with [illegible]. The red cells with the [illegible] serum gave a definite auto-agglutinative reaction. This was absent in the blood from the general circulation of the same patient.

Samples of blood taken immediately after operation from veins leading from the growth in cancer and fibroids of the uterus have also been tested for the agglutinative reaction in comparison with samples from the general circulation of the same patients. In many of the cases examined blood taken from a vein after circulating through the tissues of the growth showed a definite auto-agglutinative reaction. This was absent, or present only in the reversible form, in blood drawn from the finger of the same patient.

When a cross test is made between the washed red cells from the general circulation and serum from the blood which has circulated in the tumour and vice versa, it is found that the increased auto-agglutination is due to an increase in the agglutinin content of the serum, and not to an increased agglutinability of the red cells in the tumour blood. This is shown in the following scheme:

Auto-agglutinative Reaction.

Systemic blood – auto-agglutinative.	Tumour blood + auto-agglutinative.
Systemic washed red cells with Tumour blood serum + agglutinative.	Tumour washed red cells with Systemic blood serum – agglutinative.

Thus the red cells of the blood which has circulated in the tumour are not agglutinated by blood serum from the general circulation, but they are agglutinated by serum from the tumour blood. In the same way red cells from the blood from the general circulation are agglutinated by tumour blood serum but not by systemic blood serum.

Blood serum from the general circulation and blood serum from the tumour were also tested with the same sample of sheep's washed red cells. The systemic blood serum failed to agglutinate these while the tumour blood serum gave a definite agglutination.

It is clear from this experiment (which has been repeated in several cases) that blood which remains for some time in stationary contact with tissue cells, and especially tumour cells, undergoes some change, which can be recognized in the shed blood as an increase in the haemagglutinative capacity of the blood serum. This change takes place more rapidly and more completely in blood which has been in intimate contact with the cells of a new growth. The increase in agglutinative capacity is due to an increase in the amount or activity of the non-specific auto-agglutinin A and not to increased activity of the specific agglutinins B, C, D, etc., previously present in the blood.

The fact that blood serum after prolonged contact with tissue cells undergoes a change whereby the agglutinin content of the blood (when shed) is increased, would seem to be a matter of some physiological importance. It may be asked, If contact with the tissue cells has this effect on the blood, why does it not happen that the whole volume of blood in the circulation becomes increasingly charged with haemagglutinin? It must be remembered, however, that under normal conditions the blood is not in stationary contact with the tissues, but that any given volume of blood is in fairly rapid movement.

Whether anti-haemagglutinins are present in the living circulating blood, or whether the renewal changes which take place when the circulating blood is exposed to the oxygen of the air in its passage through the lung capillaries, or whether other influences exerted on the blood by organs like the liver and spleen prevent this overloading with haemagglutinin—these are matters for further inquiry. The fact, however, remains that blood which has remained in prolonged contact with the tissues does show this change, while blood from the general circulation, which has passed through the lungs, liver, spleen, and other organs, does not show it.

We have seen that the effect of stasis and contact with tissue cells is to increase the haemagglutinin in the blood serum rather than the haemagglutinogen in the red cells. There is reason to think, however, that, if the stasis and contact with the tissue cells is prolonged for some hours, then the red cells also become more agglutinable, because red cells exposed to such conditions are, even when washed, more readily agglutinated by foreign blood serums with which, when freshly drawn from the general circulation, they give no reaction.

It would seem that a lapse of time is necessary both for stasis and contact in order that increased agglutinability of the red cells may take place, whereas an increase in the haemagglutinin content of the blood serum can [illegible] rapidly as the result of shorter contact with tissue cells. This increase in agglutinin content affects the non-specific auto-agglutinin A, and not the specific agglutinins naturally present in the blood serum. This suggests that the liquid portion of the circulating blood obtains from the body cells (or from some of them) its charge of non-specific agglutinin capable of reacting with the agglutinogen A formed by the red cells, and it would seem that this reaction may represent an attempt at some adjustment between the red cells and their fluid environment, the blood plasma. Hence, both on its own account and as an indication of other collateral blood changes which occur in disease, it deserves further and closer study.

Lymph and other Transudates in Relation to the Haemagglutination Reaction.

I have already shown (see BRITISH MEDICAL JOURNAL, June 14th, 1919: "The physical state of the blood serum in relation to its agglutinin and antibody content") that certain transudates, especially tissue lymph, contain less specific haemagglutinins than the blood serum of the same patient. This is also true of the non-specific agglutinin A. An examination of the lymph flowing from a Southey's tube introduced into the subcutaneous tissue of the leg in a case of cardiac dropsy showed that this fluid gave no auto-agglutinative reaction with washed native cells, while the blood serum from the same patient gave a marked reaction with these cells.

We have already seen in Part I that blood serum is deprived of both its non-specific and its specific haemagglutinins by passage through a porcelain earth filter. It is interesting to find that blood which has filtered through the capillary wall and blood which has filtered through an earth filter candle both provide a good medium in which red cells can develop agglutinogen. There is, however, this curious difference, that whereas blood plasma which has percolated through the capillary wall loses its specific and its non-specific haemagglutinin (as it does also when filtered through an earth filter), blood plasma which has remained in contact with tissue or tumour cells—provided that it has not left the blood vessels—gains in non-specific haemagglutinin content. Can these facts be harmonized?

In the first case the transuded blood plasma or lymph has actually passed through the capillary wall and then lies in the intercellular spaces, in direct contact with the tissue cells. We do not know the relative share taken by the endothelial cells and the tissue cells in the reduction of the agglutinin content of the lymph. On the other hand, while blood obtained from a vein leading from a tumour has not passed through the capillary wall, it has remained in prolonged physiological contact with the tumour cells, separated only from them by the endothelial cells of the capillary wall. Some interchange takes place between the blood and the tumour cells, the result being that the blood serum gains in non-specific agglutinin, and, later still, if the stasis is prolonged, the red cells increase in agglutinability.

The stasis and the prolonged contact between blood and tumour cells brought about by the clamping of the blood vessels during the operation for the removal of the tumour accentuates the interaction which goes on under normal conditions between the circulating blood and the tissues. Under normal conditions we do not discover any haemagglutinative indication of this interchange in blood drawn from the general circulation, possibly because this systemic blood has passed through the lungs, liver, spleen, and other organs.

An examination of the haemagglutinin content of the venous blood flowing from each organ of the body might provide valuable information as to the qualitative and quantitative nature of the interchange between the blood and the tissues in so far as the auto-haemagglutization reaction is concerned. The fact, however, would now seem to be established that blood which leaks through a capillary wall loses in haemagglutinin content, while blood which does not pass out of the vessels, but which remains in sufficiently prolonged physiological contact with tissue and tumour cells to allow of the interchange taking place, gains in haemagglutinin content.

The Age Period at which Haemagglutinins appear in the Blood Serum and Haemagglutinogens in the Red Cells.

In 1918 I was able to trace the development of haemagglutinin in the blood serum of a full-term infant (removed from the womb by Caesarean section) at recurring intervals up to 12 months of age. The blood serum from the umbilical cord (that is, on the foetal side of the placenta) did not agglutinate my own washed red cells. The mother's blood serum and the liquor amnii strongly agglutinated these cells. The infant's red cells were not agglutinated by my blood serum, but were agglutinated by the blood serum of another individual belonging to another blood group. Thus the red cells of this infant at birth already possessed some capacity to form specific agglutinogens. They were not agglutinated by the mother's blood serum, neither did the infant's blood serum agglutinate the mother's red cells. The infant was breast-fed by the mother. At the age of 6 months the baby's blood serum gave a trace of agglutinization with my red cells, a + agglutination with sheep's red cells, and a trace with the mother's red cells. Thus the infant's blood serum at 6 months had developed some agglutinins of a specific kind. At the age of 12 months the baby's blood serum strongly agglutinated my red cells, also the mother's red cells.

In animals, as in the human infant, the blood serum at birth is deficient in specific agglutinins. An examination of the blood serum of a number of lambs up to the age of 3 months showed a marked absence of agglutination when tested with human and guinea-pig's washed red cells. Thus of fourteen lambs only two of the older ones gave any agglutination with guinea-pig's red cells, although, as we have previously seen (Part I), the blood serum of all full-grown sheep agglutinates these cells. The washed red cells of all the fourteen lambs, on the other hand, gave some degree of agglutination with human (C. J. B.) blood serum. Thus, as in the case of the human infant, the red corpuscles of the blood of the lamb elaborate agglutinogen before the blood serum contains agglutinin.

The age at which the red cells of different animals and birds develop non-specific auto-agglutinogen and the blood serum forms non-specific auto-agglutinin is a problem which requires further investigation. The presence of the auto-agglutination reaction in disease in animals in which the conditions can be controlled will probably shed light on the same problem in the human subject.

W. M. Happ (*Journ. Exper. Med.*, March, 1920) has made an exhaustive inquiry into the iso-agglutination reaction in the blood of a large number of infants, from which he concludes that the blood group to which different infants belong is not established till 12 months, and is not finally determined till two years of age. He also finds that the blood grouping is established in the red cells before the serum—that is to say, the red corpuscles acquire agglutinophilic receptors before the serum acquires agglutinin. Happ also concludes, as I have also found, that iso-agglutinins are present in the mother's milk in harmony with the blood group to which the mother belongs.

Do Haemagglutinogens and Haemagglutinins Exist in the Living Circulating Blood?

One important problem still remains for discussion. Up to the present we have only described the occurrence of the haemagglutination reaction in shed blood—that is, in blood plasma which has passed through the coagulation phase and has been converted into blood serum. The following observations show, however, that the haemagglutination reaction may occur with blood plasma before it has been changed by coagulation.

First, in regard to the specific agglutinins and agglutinogens. Two samples of blood from a human individual whose blood serum was known to agglutinate with my own red cells were taken. Sample (*a*) was received direct into a paraffin coated tube, standing in ice-cold water; this was rapidly centrifuged and the plasma immediately tested with my own (C. J. B.) washed red cells: ++ degrees of agglutination were recorded. Sample (*b*) was allowed to clot, and the serum from this sample gave a like amount (++ agglutination) with the same (C. J. B.) red cells.

This comparative test between plasma and serum was repeated with sheep's washed cells, previously ascertained not to agglutinate with this particular blood serum. No agglutination occurred with plasma or serum.

This experiment shows that plasma and serum both contain the same kinds and amount of specific haemagglutinins, and that the change brought about in the blood by coagulation does not apparently affect the specific haemagglutinin content.

In order to ascertain whether the same is true in the case of the non-specific auto-agglutinin—agglutinin A—the blood from a patient known to be strongly auto-agglutinative, as the result of infection, was drawn into a cold paraffin tube, rapidly centrifuged, and the plasma tested with the native red cells. Auto-agglutination occurred with the same rapidity and nearly, if not quite, to the same degree with the plasma as when the blood serum of the same patient was added to the same native red cells.

Although the occurrence of specific and non-specific haemagglutinin in the blood serum is thus evidently not the result of coagulation changes in the blood plasma, since they are present in the plasma before coagulation takes place, the question still remains whether haemagglutinins exist as such in the living uninjured blood while it is still circulating in the body.

It is difficult to believe that non-specific auto-agglutinin is present in the free state in the circulating blood (even in disease), for if so, unless some mechanism exists by which the agglutinating effect of this substance on the native red cells is prevented, clumping of the red corpuscles would occur during life. We must remember, however, that the blood is a fluid of which the physical and chemical equilibrium is easily upset, and that the mere withdrawal of the blood from the blood vessels may injure it sufficiently to bring about a regrouping of its chemical and physical aggregates, and other changes which may be recognized as an alteration in the haemagglutinative reactions in the blood when shed.

The subject is one of fundamental importance, because that which is true of haemagglutinogens and haemagglutinins may probably be also true of other bodies in the blood stream which play important parts in the immunity reaction, and in the defence of the body against infection.

I am hopeful that a future investigation into the behaviour of haemagglutinins in the living blood may throw further light on immunity problems.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF IDIOSYNCRASY TO NOVARSENOBILLON.

The following case of idiosyncrasy to novarsenobillon seems worthy of record.

The patient, a youth of 18, of moderately good physique, but somewhat anaemic, was admitted into hospital for treatment [illegible] on May 12th, 1920. Four small ulcers were present on the glans penis and skin of the prepuce; there were condylomata around the anus; inguinal and cervical adenitis were present, as well as ulceration of the tonsils. The organs appeared healthy, but the urine contained a trace of albumin. *Spirochaeta pallida* was recovered from the sores by the dark-ground illumination method, and the Wassermann test was positive. On May 14th 0.15 gram of [illegible] freshly distilled water [illegible] 1 gram of [illegible] These doses were repeated [illegible] were [illegible] He continued [illegible] 27th, when [illegible] [illegible] On May [illegible] improved [illegible]

was no paralysis, but about midday he had a slight convulsion rather like an epileptic fit. The adrenalin was stopped and 160 c.cm. of blood was withdrawn by venipuncture. On May 28th the patient was much improved; the eyes were opened and the pupils were normal. He seemed to take notice, but did not speak until the next day, when the temperature was normal, the incontinence ceased, and he took his food well. On the night of May 30th he was restless and delirious. Subsequently continued progress was made; headache, paralysis, and other residual complications were absent. The blood pressure was not ascertained.

Fifteen other men were injected intravenously, on the morning of May 22nd, with novarsenobillon in doses varying from 0.45 gram to 0.75 gram; the conditions were precisely similar, yet none of these fifteen showed the slightest trace of reaction. The case recorded was the first reaction which caused me anxiety in over 5,000 injections of salvarsan and its compounds.

Pierce Power, Major R.A.M.C.,
Specialist in Dermatology, Western Command.

CAESAREAN SECTION FOR ECLAMPSIA: MOTHER AND CHILD SAVED.

In November, 1920, there was admitted to St. Mary's Hostel, Croydon, a young primipara, who expected to be delivered early in January of the new year. She had had a fit and did not feel well. I saw her about half an hour afterwards; she had a violent convulsion as I examined her, and became unconscious and continued convulsed until the time of operation about an hour and a half later. The urine was loaded with albumin, there was no sign of labour, the foetal heart could be heard. I feared that both mother and child were doomed unless Caesarean section was at once performed. I sought out my colleague, Dr. E. M. Cowell, who quickly and brilliantly operated. I anaesthetized with open ether, and after that the mother had no other convulsion; she made a quick recovery, although some albumin continued in the urine. The child, though small, did well.

If done in time, Caesarean section is a dramatic and successful way of dealing with eclampsia.

Croydon. G. Gilbert Genge, M.D.Lond.

Reports of Societies.

TOXAEMIAS OF PREGNANCY.

At a meeting, held on December 2nd, of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, the President, Professor **Henry Briggs**, being in the chair, Mr. **Clifford White** read a paper on sodium bicarbonate tolerance in the toxaemias of pregnancy. He reviewed Sellards's work on bicarbonate tolerance as a proof of the presence of acidosis, and pointed out the simplicity of this compared with other means of demonstrating the condition.

The patient had 1 drachm of sodium bicarbonate by mouth every three hours, the urine being tested by litmus before each dose. The number of drachms administered before the urine became alkaline was noted; if more than 2 drachms (8 grams) of bicarbonate were required, the existence of some degree of acidosis was indicated. The greater the quantity required, the greater the degree of acidosis. The test was simple, harmless, and apparently reliable.

In a series of patients tested in this way Mr. White had found that cases of pregnancy toxaemia that were clinically severe had a larger tolerance than the mild cases. In a severe case of eclampsia 20 drachms might be required before the urine became alkaline. A series of normal puerperal cases were tested as controls.

Dr. **Lapthorn Smith** was sure that the value of sodium bicarbonate in the treatment of the toxaemias of pregnancy was underestimated. The urine of every pregnant woman should be examined at intervals, and if any albumin were found a large dose of bicarbonate should be prescribed, and the patient put temporarily on a vegetarian diet; she should also be instructed to drink at least six glasses of water a day. This simple plan would lead to a great diminution in the death rate from eclampsia.

Pathology of Eclampsia and the Pre-eclamptic State.

Dr. **James Young** and Dr. **D. A. Miller** read a paper in confirmation of the explanation of eclamptic toxaemia advanced by Dr. Young in 1914. It was then suggested that the poison was elaborated during the early disintegration of a piece of placenta whose blood supply had been cut off. The present paper was based on a study of 29 fresh cases of toxaemia and associated conditions. Infarction of the placenta, it was stated, was common in long-standing pregnancy albuminuria, but in many cases of acute eclampsia there was no visible degeneration in the placenta—placental disease was always present, but some time was required for it to become visible.

Infarction in the recent stage consisted of red or purple blocks of solid tissue; in the later stages the infarcted areas became paler. In such conditions as accidental haemorrhage due to trauma, and in placenta praevia, the cause of the impaired blood supply was easy to recognize; in other cases it was often more difficult. In accidental haemorrhage, if the blood was concealed for some time within the uterus, infarction of the placenta over an area subtending the retroplacental separation was invariable. Such cases of concealed haemorrhage were invariably associated with toxaemia; in 5 such cases investigated by the authors there was actually eclampsia. In slight accidental haemorrhage, or in a haemorrhage so severe as to lead to complete detachment of the placenta, there was no toxaemia; toxaemia only occurred when time was allowed for the elaboration, in sufficient quantity, of toxic products from the affected part of the placenta. Of a series of 7 cases of placenta praevia they had found toxaemia present in 3. Probably in the past the toxic symptoms present in a large number of cases had been erroneously attributed to anaemia. In a clinical study of *ante-partum* bleeding the authors found that in 4 cases the albuminuria developed after the haemorrhage; this, taken in conjunction with their other observations, disposed of the view which regarded accidental haemorrhage as a result of the toxaemia. It was not always possible to account on simple mechanical grounds for the interference with the placental circulation; in many cases of eclampsia thrombosis of the retroplacental vessels was the effective factor. Increased intra-abdominal pressure accompanying pregnancy probably predisposed to venous stasis.

It was suggested that the major symptoms of eclampsia—convulsions, coma, etc.—were due, not to the placental poison itself, but to the flooding of the maternal vessels with the breaking-down products of the cells of the liver (and perhaps of other tissues), which were damaged some hours or days previously by the placental poison. In this way the occasional occurrence of *post-partum* seizures would be accounted for. Comparison might be made with the delay in the manifestation of toxaemia found in phosphorus poisoning and in some cases of chloroform poisoning. With regard to the varied results obtained by emptying the uterus, it was possible that at the time of the operation the patient's condition might be due to poisoning sustained some days before, the placental danger having subsided or disappeared.

Dr. **LAPTHORN SMITH**, while admiring the manner in which Dr. Young had presented his argument, was unable to admit that accidental haemorrhage into the placenta could furnish the abundant and powerful toxins of eclampsia. Accidents to the placenta would be much more likely to affect the child than the mother, but numbers of healthy children were removed from eclamptic mothers by Caesarean section.

Dr. **R. H. PARAMORE** (Rugby) said that he interpreted differently the phenomena which Dr. Young had so ably displayed. Acute yellow atrophy—a disease indistinguishable pathologically from the toxaemia of pregnancy, though more common in pregnant women, occurred in non-pregnant people; if the conditions were identical the placental hypothesis fell to the ground. Dr. Paramore thought the time had come when the section might with advantage consider the conception that the lesions pathognomonic in eclampsia—the necrosis of the liver and kidney cells—were primary to the toxaemia; he discredited entirely the prevailing view that the toxaemia of pregnancy existed before the maternal visceral lesions. The seat of the poison had been regarded as located in the intestinal tract, or in some part of the developing ovum. Although he agreed with Professor Hastings Tweedy's opinion, that milk was ill-borne by toxaemic and eclamptic patients, Dr. Paramore believed this was because the liver and kidney cells were already diseased.

Mr. **GORDON LEY** congratulated Dr. James Young on his paper, but with regard to the suggestion that the many manifestations of toxaemia of pregnancy were produced by placental autolysis, considered that the cause was confused with the effect; the changes in the placenta were secondary to haemorrhage produced by focal necroses in the wall of the uterus and in the decidua. In only one of his 125 cases of placenta praevia had there been toxaemia of pregnancy, and that was a primigravida. If Dr. Young's theory was correct, one would expect to find toxaemia of pregnancy in association with threatened miscarriage or carneous and vesicular moles; further, placental changes should always be found in long-standing albuminurias.

Dr. **MACKENZIE WALLIS** had observed haemorrhages and necrotic areas in the placenta in a variety of conditions, but had not considered them to be the primary causative factor. He had commenced his researches on the assumption that the toxaemias of pregnancy were in some way related to changes in the placenta, but all his work had tended to show that the placenta played little if any part. The haemorrhages and subsequent necrosis in the placenta were, in his opinion, due to the same conditions as those observed in the kidneys, liver, and other organs. The toxin or toxins elaborated in the body of the pregnant woman exerted their action primarily on the maternal blood vessels.

The first change observed in the kidneys in eclampsia was a thickening and inflammatory fibrosis of the capillary tufts of the glomeruli. The result of this change was the appearance of protein in the urine, and since it was an arterial change both albumin and globulin appeared. In other words, the condition resembled a true exudate into the glomeruli (exactly similar changes were observed as the result of poisoning by metallic salts, etc., and the urinary changes were similar). This thickening of the vessels could be produced in a very short time—witness the profound change in the kidney after acute arsenical poisoning. The same changes probably occurred in the cerebral vessels, producing cerebral oedema and the characteristic eclamptic fits. Following upon these changes in the circulation one found necrotic changes in the liver and kidneys; changes so induced might also be responsible for the placental haemorrhages and necrotic areas observed by Dr. Young in his cases of eclampsia. This view of the action of the toxin or toxins on the circulatory system explained many of the signs and symptoms of eclampsia — namely, the fits, albuminuria, high blood pressure — also the late onset of eclampsia in some cases after the placenta has been removed. The removal of cerebro-spinal fluid frequently resulted in the subsidence of the fits.

Dr. **JAMES YOUNG**, in reply, stated his belief that for an eclamptic seizure it was necessary that one-third or one-half of the placenta should be infarcted. The small infarctions were only important in so far as they explained cases of albuminuria in which the toxaemia was never sufficiently great to cause a cessation of the pregnancy. It was, in fact, the small size of the infarction that allowed the pregnancy to continue. He had found necrotic changes in the muscular wall of the uterus in cases of uterine "apoplexy"; these he regarded as secondary to the damage caused by the extravasation. Local necrosis in the uterine wall did not account for the widespread bleeding in the broad ligaments, tubes, and ovaries. The objection (raised by Dr. Gordon Ley) that toxaemia was not present in ordinary abortion was countered by the fact that separation of the ovum was usually complete at an early stage. Dr. Young and Dr. Miller had found albuminuria with partial separation. Possibly Dr. Mackenzie Wallis, who had not obtained toxic effects from the autolysis of placenta, had continued the autolysis too long; the most toxic ingredients were produced within a few hours, and later became split up into less poisonous elements.

High Blood Pressure in Eclampsia.

In a paper on the necessity for the reduction of blood pressure in eclampsia, Major C. A. F. **HINGSTON**, I.M.S., said that three years ago, from work in the Government Maternity Hospital in Madras, Colonel Giffard, I.M.S., and himself had reached the following conclusions:

(1) That high blood pressure in eclampsia was a most serious complication, and that it occurred in most cases of eclampsia. (2) That the blood pressure must be kept down to 120 mm. or less in all cases of eclampsia, whether the patient was in a conscious or unconscious state, and in all cases of labour with premonitory symptoms of eclampsia. (3) That the blood pressure rose after delivery in a certain number of cases in patients who had shown symptoms of eclampsia up to the time of or during delivery, and in cases where no signs or symptoms had manifested themselves before and during delivery. (4) That it was most necessary to watch all cases after delivery, and reduce the blood pressure to 120 mm. whenever it rose above that, after delivery. (5) That the best way to reduce high blood pressure in patients in labour with premonitory symptoms of eclampsia was venesection. (6) That when called to see a case of eclampsia with high blood pressure,

if the patient was in labour but the os was less than four-fifths dilated, one should reduce the blood pressure to 120 mm. by venesection, and keep it down by repeated venesection, if necessary, until the soft parts were sufficiently dilated for instrumental delivery. (7) In cases where the blood pressure was above 120 mm. with the os four-fifths dilated, immediate instrumental delivery would reduce the blood pressure. (8) In cases after delivery where the blood pressure rose above 120 mm. one should reduce it at once by venesection.

All eclampsia cases in the hospital from October, 1917, to October, 1919, were treated on those lines. They were able to say without hesitation that the results obtained during this period were far better than in previous years, when other methods of treatment were adopted. In the majority of the eclampsia cases the blood pressure was very high, the highest being 170 mm.; 2½ pints of blood was drawn from one woman, whose blood pressure was 140 mm., before it was possible to reduce the pressure to 120 mm. Thirty-nine cases were bled once, eleven twice (all these recovered), and one three times (she also recovered). The speaker did not recommend *accouchement forcé*, or Caesarean section; the advocates of these methods had, no doubt, saved the lives of women who might have died, because by the haemorrhage and shock resulting from their treatment they had reduced the blood pressure of their patients and prevented lung complications. The risk of death could not conceivably be increased by venesection. Heart failure in eclampsia was due to high and not low blood pressure; the heart in every case was relieved when the high blood pressure fell owing to venesection. Major Hingston also summarized the auxiliary methods of treatment employed by him.

Dr. M. **Donaldson** held the view that the high blood pressure in eclampsia and other toxaemias of pregnancy was a protective mechanism, helping secretion from the kidneys; he could not therefore agree with the principle of lowering it by venesection, etc. If the origin of the toxaemia was the placenta, the logical treatment was to get rid of this source as quickly as possible; the best way of doing this in the later months of pregnancy was Caesarean section.

Mr. **Gordon Luker** was entirely in agreement with Major Hingston as to the value of venesection in the treatment of eclampsia, especially if followed by intravenous infusion of saline, which caused only a temporary rise of blood pressure, followed by diuresis, diaphoresis, and a fall of blood pressure. He also believed in expeditious delivery—by Caesarean section if necessary.

MEASURES AGAINST VENEREAL DISEASE.

At a meeting of the Liverpool Medical Institution, held on December 9th, with Dr. J. E. **Gemmell** (President) in the chair, Dr. E. W. **Hope** read a note on the "Development of the scheme for the diagnosis and treatment of venereal disease in Liverpool." He pointed out that in 1919, 5,929 new cases, of whom 918 were females, were treated at the Liverpool V.D. clinics. In 1920 up to date, and with a proportionate allowance until December 31st, the figures were: male new cases 5,476, with 1,071 females. The great disparity in the number of patients of the different sexes was very significant. He further stated that some 60 per cent. of all cases discontinued treatment while still suffering from the disease; at present there was no legal power of controlling these people, who could communicate venereal disease to others unchecked and unpunished; moreover, patients might leave hospitals or workhouses while in an infective state. He then proceeded to discuss what further measures may be adopted to control the spread of the disease, and intimated that the following proposals were taken from a bill to be submitted to Parliament by the Corporation for the furtherance of the public health.

1. To impose a penalty on any infected person knowingly imparting venereal disease to any other person, or knowingly committing any act likely to cause the infection of any other person.
2. To require persons suffering from venereal disease to consult a registered medical practitioner, and to require the infected person to continue treatment until, in the view of the practitioner, he or she requires no further treatment.
3. To empower the magistrates, upon evidence provided by the Corporation, that any person undergoing treatment for venereal disease is about to leave any gaol, asylum, hospital, reformatory, workhouse, or other kindred institution, and to detain such person so long as such person is suffering from venereal disease in a communicable form.
4. To provide that parents and guardians shall obtain treatment for children or mentally defectives who are infected with venereal diseases.
5. To enable the Corporation, with the approval of the Ministry of Health, to supply all forms and certificates required by registered medical practitioners, and define fees payable for services rendered.
6. To confer on registered medical practitioners certain powers and duties, subject to the approval of the Ministry of Health, such as, to inform the patient of the nature of his illness (see Clause 2), and to enable the Corporation to make such arrangements as will allow treatment to be free of charge to the infected person.

Dr. Hope invited discussion of these proposals and the support of the Medical Institution, pointing out that, though legislation as to venereal disease might be difficult, reasonable and real attempts should be made to safeguard the innocent and control the sufferer.

The following resolution was moved by Dr. **MacKenna**, seconded by Miss **Ivens**, and carried with only one dissentient:

> That this meeting of the Liverpool Medical Institution supports the proposals submitted to obtain further parliamentary powers with a view to ensure continuity of treatment and the prevention of venereal disease.

Congenital Syphilis.

Dr. **Edmund Hughes** read a paper on "Some characters associated with congenital syphilis," derived from personal clinical study over eighteen years. He said the search after phenomena of congenital syphilis could be carried on either statically, by attempting to determine whether the subject of a given sign or symptom was syphilitic, or dynamically, by studying the after-history of known syphilitic individuals. The latter method, though more laborious, he considered more instructive. First, the typical Hutchinsonian deformity was rare in the temporary set, but a less rare occurrence was an even crescentic erosion starting and progressing in the free edge of the normally shaped upper central incisor, one or both, and later implicating the upper laterals. It might begin three months after eruption of the former, or later on, and required two years for its completion. This type of erosion furnished corroborative evidence in doubtful cases. With regard to the scalp veins in cranial syphilis of infants, the coming into view of the vein in connexion with the posterior fontanelle, seldom visible on healthy scalps, was liable to precede definite evidence of raised intracranial tension. While the greatly distended veins of the scalp commonly disappeared by the time the skull closed, the longer radicles of the superficial temporals were occasionally visible and dilated into the third year—a clue liable to be missed through concealment under the hair.

With regard to craniotabes, this was almost universally regarded as restricted to infancy, but in sixty-eight instances out of 148 cases he had found it in the foetus near or at term, vertex presenting. As this congenital condition was commonly, though erroneously, ascribed to immaturity, the proofs of its identity with craniotabes had to be offered. He then gave these seriatim, showing the correspondence in physical characters, mechanical causation, and clinical course in absolute incidence. Moreover, in thirty-two out of thirty-six instances craniotabes had recurred in infancy; among 113 born without it, it had recurred later in ten. Craniotabes was more often than not a foetal event, with a later infantile recurrence, probably made possible by a degree of prenatal atrophy in the posterior parietal segment, unrecognizable at birth. Infantile craniotabes was not separable into two varieties, as these forms could pass one into the other in the same individual. Discussing causation, the close association of syphilis with craniotabes as with rickets might be deceptive. Craniotabes followed its own course, with indifference both to the severity and to the treatment of an accompanying syphilis, which might be supposed to act non-specifically by impairing the biochemical mechanism serving ossification. The inference followed that craniotabes was a mono-sign of rickets, and he suggested that the comparative immunity from stresses and strains in the long bones enjoyed by the foetus might explain the rarity of other rachitic changes at this early period.

PATENT DUCTUS ARTERIOSUS.

AT a meeting of the Bristol Medico-Chirurgical Society, held on December 8th, Dr. CAREY COOMBS read a paper on Patency of the ductus arteriosus, with notes of four cases, in one of which the diagnosis was confirmed by autopsy. In this case death was due to an intercurrent endocarditis spreading from the pulmonary artery to the aortic and pulmonary and mitral valves. This had manifested itself in life by a hectic fever, wasting, splenomegaly, petechiae, and haematuria. The ductus was found to be a short wide channel opening from the pulmonary artery at its bifurcation into the origin of the descending aorta. In all the cases the most striking physical sign was the characteristic bruit heard over the left upper chest and left upper back. It began with the onset of ventricular systole and ran on to the middle of diastole. This was illustrated by a phono-cardiographic record from one of the cases. Another fact observed in three of the cases was that this murmur was accompanied by a thrill the systolic part of which could be felt in the arteries of the neck. Skiagraphy showed the shadow which had been described by Gerhardt extending up from the normal cardiac shadow along the left border of the manubrium, but this was to be regarded as of less diagnostic value than the murmur. Electro-cardiographic and other evidence was brought to show that, even in the presumed absence of any pulmonary stenosis, this anomaly might be accompanied by a small degree of right ventricular hypertrophy. The absence of cyanosis and of definite polycythaemia, and the relatively favourable character of the prognosis, were alluded to. The average age of the four patients when last heard of was 27.

Causation of Appendicitis.

Mr. RENDLE SHORT read a paper on the causation of appendicitis. He began by quoting figures from the Bristol Royal Infirmary to show that in recent decades there had been a sharp rise in the incidence of the disease. The reality of this rise, which was most apparent in the years 1895–1905, was then examined, and it was shown by reference to autopsy records of the years preceding the rise that there had been no overlooking of the disease. It was also argued from the available facts that in these earlier years the absence of cases of appendicitis could not be ascribed to failure on the part of the family practitioner to admit the cases to hospital. The rise in incidence was therefore a real one. The distribution of the disease in the human community was next examined and a number of interesting data adduced in favour of the view that its incidence was lower in communities that lived on a relatively simple diet. This view was supported by a further comparison of its occurrence in wild animals in captivity with the apparent freedom of similar animals when living in a wild state. Having argued that the increase in the disease was due to dietetic changes, Mr. Short proceeded to analyse a large amount of statistical evidence by way of discovering the particular dietetic change that should be held responsible. The fact which showed the closest parallelism to the curve of appendicitis incidence was the increase in the importation of meat. This fact was examined at length and explained, not as proving a direct relation between the amount of meat consumed and the liability to appendicitis, but as suggesting that a diet comparatively rich in meat, and therefore comparatively poor in cellulose, did probably predispose to the disease.

Periodic Jaundice. Purpura Haemorrhagica.

Dr. CECIL WILLIAMS showed:

(1) A case of periodic jaundice in a child aged 5½ years. The attacks occurred about once a year and lasted several months. The present attack began two months ago with deep jaundice. The stools were putty-coloured and contained an excess of bile. The skin was very irritable. The liver was definitely enlarged, but the spleen was not. The red corpuscles were 4,500,000 per cubic millimetre, the leucocytes 15,000, the small lymphocytes constituting 57 per cent. The Wassermann reaction was negative. The child was beginning to improve.

(2) A case of purpura haemorrhagica. The boy, aged 12½ years, had never been strong since diphtheria at 5. The family history was negative. All over the body there were purpuric spots of various sizes. He had well marked pyorrhoea alveolaris, but a swab from the gums was sterile. Neither spleen nor liver could be felt. The blood film was not abnormal. The coagulation time was 7½ minutes. After a rectal injection of 10 c.cm. of antistreptococcus serum there was a fresh outcrop of spots and sharp abdominal pain. The boy then developed peculiar mental delusions. This was succeeded in a fortnight's time by another crop of spots; 40 c.cm. of the mother's serum was then given subcutaneously. Since then the boy had improved, and no further spots had been seen. Three weeks afterwards 4 c.cm. of the father's serum was injected, and the improvement had been maintained.

EYE INJURIES.

AT a meeting of the London Association of the Medical Women's Federation, held on December 7th at the School of Medicine for Women, Dr. MARGARET DOBSON showed slides of drawings from cases of diseases and injuries of the eye. These drawings were made by herself when working in Malta and Egypt during the war. The series included drawings of encapsuled foreign body in eye, detachment of retina, rupture of choroid, retinal and subhyaloid haemorrhages, syphilitic retinitis, disseminated choroiditis, and senile macular atrophy. Dr. Dobson contrasted two cases of injury to the eye:

In the one case the patient received a gunshot wound of the eye; the *x* rays showed the presence of two air-gun pellets lodged in the upper inner part of the orbital cavity, and fundal examination showed two linear sacs in the macular region. In the second case the cause of injury was concussion of air from explosion of a bomb at a quarter mile distance; this led to retinal and vitreous haemorrhages. In the first case vision was [illegible]; in the second the eye was blind.

In a case of subhyaloid haemorrhage the drawing was made within half an hour of the onset of blurring of vision. A vessel in the centre of the macular region could be seen bleeding, and below it a half-moon shaped collection of blood effused between retina and hyaloid membrane of vitreous. This haemorrhage occurred in the course of a recurrent attack of benign tertian malaria; complete recovery of vision followed.

Dr. Dobson also demonstrated four cases of progressive myopia. In the discussion which followed much appreciation was expressed of the skill and energy shown by Dr. Dobson in her careful records.

AT a meeting of the Manchester Medical Society, held on December 1st at the Manchester University, with Professor R. B. WILD in the chair, Dr. ALAN MCDOUGALL read a paper on the diagnosis of fits from the point of view of treatment. Epilepsy, he said, depended upon some brain state; the mind might be affected by that brain state, but the source of epilepsy was the brain, not the mind. Hysteria and malingering sprang from states of the mind; those mind states might be based upon states of the brain, nevertheless for the production of hysteria or malingering the mind must be active. If the brain could be set right epilepsy could be cured; when the mind was set right hysteria was cured. In people familiar with the clinical appearances of epileptic fits hysteria could set up fits that were epileptic in form but hysterical from the point of view of treatment. The important thing in diagnosing fits was to decide whether they were neuric or psychic in origin.

A MEETING of the Nottingham Medico-Chirurgical Society was held at the Society's Rooms, 64, St. James Street, on December 8th, with Dr. BLURTON, president, in the chair. Dr. J. C. BUCKLEY gave an address on syphilis. After a brief and interesting history of the disease, the lecturer dealt with the differential diagnosis of the varieties of primary sores, and finally described the treatment carried out at the local venereal clinic.

A CLINICAL meeting of the Hunterian Society was held at Guy's Hospital on November 24th, when cases were shown and demonstrations given by members of the hospital staff. These included an account by Dr. J. A. RYLE of the fractional method of gastric analysis, and a demonstration of Einhorn's tube and his own modification thereof; the method allows of a graphic presentation of the chemical phenomena during the whole cycle of gastric digestion, and of the action of drugs on the secretory function of the stomach. Mr. ALAN H. TODD showed splints and appliances that had been made in the orthopaedic workshops of Guy's Hospital, and demonstrated the taking of plaster casts and the stages in the manufacture of blocked-leather and celluloid apparatus. He showed a new shoulder-abduction appliance with a metal arm "trough" hinged to a forearm trough supported by an adjustable upright, which took a bearing from the bony pelvis. This splint was useful in the treatment of fractures and dislocations about the upper end of the humerus and in paralysis of the deltoid. Among other splints shown was an aluminium splint for the treatment of Colles's fracture in the fully supinated position.

Reviews.

DISEASES OF THE RECTUM.

It is a little difficult to understand why Dr. Louis J. Hirschman should have dignified his work with the title *Handbook of Diseases of the Rectum*,[1] for in it so many non-rectal conditions are described and so much of importance in diseases of the rectum is omitted. The book is written primarily for the general practitioner, who is to be encouraged to study and to treat rectal diseases as thoroughly and efficiently as he does diseases of other regions, so long as these rectal diseases are amenable to treatment in his "office" by local anaesthesia. Evidently the book has been well received in America, for this is the third edition; but we doubt if British practitioners will find much use for it. The introductory chapters deal with anatomy, symptomatology, and the examination of the patient. Then comes a long chapter on constipation and obstipation—the definition of the latter is exceedingly obscure—adorned with some most beautiful *x*-ray pictures of various conditions of the colon and sigmoid, most of which have no direct connexion with the rectum. Pruritus ani, anal fissure and ulcer, ano-rectal abscess, fistula, proctitis, and sigmoiditis may all lend themselves properly enough to "office" methods of treatment, and the practitioner will find plenty of help and sound direction in his work in this chapter. But we feel that the operations for haemorrhoids, the dissection of a fistulous track, the removal of a rectal polypus, are all beyond the scope of local anaesthesia in an "office." The great omission in a book with this title is with regard to rectal cancer: it is dealt with in five pages, cut into by as many pictures. Of course it is not a disease to be dealt with in the "office" by local anaesthesia; but then neither is dysentery, which has a forty-page chapter to itself. We find some things described that, frankly, we have never heard of: one such is hypertrophy of Houston's valves, for which the operation of valvotomy is gravely described.

The text is written in diffuse style. One long incomprehensible sentence on page 78 begins by stating what bile is and what it does not do, and wanders on to summarize the functions of the liver.

The really valuable part of the work is the section dealing with local anaesthesia. The practitioner and the surgeon alike will find full directions for the application of local anaesthetics in conditions almost invariably operated on under general anaesthesia in this country.

The publishers' share in the work is most excellent, the paper is highly glazed, the illustrations are first class; but 227 are far too many pictures, 50 of them are full-page and over 100 half-page; they are out of all proportion to the 378 pages of letterpress. There are three indexes: a symptom index, an author index, and a subject matter index.

FOOD INSPECTION.

A second edition of Dr. William Robertson's manual on *Meat and Food Inspection*[2] was quite due if the work is to maintain its popularity as a reliable textbook. It deals principally with meat and milk supplies, and is concerned not only with these articles of food as they may be presented to the inspector of foods, but contains detailed and accurate information as to the conditions under which they should be produced. The structure of cowsheds, piggeries, slaughterhouses, and food shops is discussed in an informing manner, the text being assisted by illustrations and plans. Special mention may be made of the chapter dealing with fried fish shops, premises which always present difficulties to medical officers of health. Dr. Robertson considers that where well-designed frying ranges of modern type are in use there ought not to be any nuisance associated with fish frying. Quite justifiable criticism is levied against the lack of uniformity in the inspection of meat in this country and with the anomalous methods of dealing with tuberculous meat. The suggested remedy is the establishment of a system on the lines of the German *Freibank*, under which meat of inferior quality is clearly stamped as such. The author is very definite in his condemnation of private slaughterhouses, which he maintains should be abolished. He refers to the difficulties of inspection in rural districts, but makes no mention of the astounding fact that a rural district council has no control over slaughterhouses within its area unless urban powers are obtained, and it is not always an easy matter for a medical officer of health to persuade a rural council that supervision of slaughterhouses is necessary. On page 85 it is stated that in this country pigs are usually stunned before their throats are cut. This is not quite correct, though in at least two towns—Liverpool and Croydon—there are by-laws making the practice compulsory. In the chapter on methods of slaughtering there is no reference to the humane killer of the Royal Society for the Prevention of Cruelty to Animals, or to the captive-bolt pistol of Mr. Cash. These omissions do not, however, affect materially the usefulness and general accuracy of the work.

The fourth edition of *Leach's Food Inspection and Analysis*[3] fully sustains the reputation it has achieved in the United States and in all English-speaking countries since the first edition appeared in 1904. This edition, like its immediate predecessor, is edited by Dr. A. L. Winton, who brings to his task long experience in the Department of Agriculture of the United States of America. The volume is bulky, and although the blue pencil has not been spared it contains some eighty pages more than the third edition. Amongst other matter omitted is the list of references at the end of each chapter dealing with the subject matter under discussion. This list has been replaced by a series of footnotes. The chapter on milk is very complete, and deals in detail with the detection of preservatives used in milk. For the detection of formaldehyde the ferric chloride test is recommended, the contention of the author being that one part in 250,000 parts of milk is readily detected by this method if it is applied before the milk sours. Reference is freely made to food substitutes and to methods of examining them. Several instances of fraud in this connexion are recorded. One of the most noticeable is that of a product advertised to contain the nutritive equivalent of the whites and yolks of a dozen eggs, "their composition being based on careful scientific analysis of natural eggs." It was put up in two small boxes, one containing a white, the other a yellow powder. Both were entirely devoid of nitrogen, and consisted of nearly pure tapioca starch with a little common salt, the "yolk" being coloured yellow. Polished rice in the United States is stated to be commonly coated with glucose and talc, ostensibly as a protection against dust and the ravages of insects. It appears that such coating is allowed if declared on the label, and directions for its removal are also given. The estimation of acidity is becoming of increasing importance in the examination of certain foodstuffs, more especially of fruits, and some more accurate method than that associated with colour indicators is necessary. The inclusion is therefore well timed in this edition of a chapter describing in some detail the process of determining acidity by means of the hydrogen electrode, contributed by Professor Gerald L. Wendt, of the University of Chicago. The drawings of apparatus, which have been a special feature in former editions, reappear in the present one. It may be presumed, therefore, that the author considers they serve some useful purpose. They unquestionably add to the completeness of the volume.

SIGHT SAVING CLASSES.

The Secretary of the American National Committee for the Prevention of Blindness has produced a very complete guide to the present practice of American school authorities in the education of children with defective sight.[4] In the initial chapter, on the "History of sight-saving classes in America," after some account of the provision for the sighted and the blind, there follows: "In 1909 Mr. Robert B. Irwin, a man of unusual breadth of mental vision, opened a class for the blind in the public school system of Cleveland, Ohio. A year later he was asked to accept in this class two children who were unable to keep up with the regular grade of work because of defective vision. At first he used the same methods and equipment for the blind and the partially-sighted children, but soon found the results unsatisfactory; a child with any vision would depend upon that rather than upon his fingers, and in consequence might injure what little sight he had. At this time there came to the attention of Mr. Irwin the work being carried on in England by Mr. N. Bishop Harman, who had established classes for myopes (near-sighted children), arranging special equipment for their needs." This scheme of myope classes—or sight-saving classes, as the Americans prefer to call them—has now become an established part of the school system of many of the States of the Union. The manual gives a detailed account of the work of these schools, the method of medical examination, the categories of defective vision admitted, the general arrangements and equipment in use in the schools, and also a very full account of the curriculum. The evolution of these schools must naturally be influenced by the conditions of American school life; but as yet there is no material difference in their working, as set out in this manual, and that of the myope classes in London and in other British cities. One difference is, however, to be noted: Much is made of the typewriter in the American schools, an instrument which, so far as we know, is never seen in a British myope class. It appears from the statement of the manual, and from a private letter received from the author of the book, that the typewriter is so ubiquitous in the States that it is used by all and sundry, so that the learning of its use is no longer considered to be the preliminary to a life of perpetual typewriting and office work, but merely the introduction to a manner of writing admittedly easier than penmanship. The manual is exceptionally well illustrated with photographic reproductions.

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[1] *Handbook of Diseases of the Rectum.* By Louis J. Hirschman, M.D., F.A.C.S., Professor of Proctology, Detroit College of Medicine, etc. Third edition, revised and rewritten. London: Henry Kimpton. 1920. (Med. 8vo, pp. 378; 227 figures, 4 coloured plates. 30s. net.)

[2] *Meat and Food Inspection.* By William Robertson, M.D.Glasg., D.P.H. Second edition. London: Baillière, Tindall, and Cox. 1920. (Demy 8vo, pp. 291; 49 figures. 18s. net.)

[3] *Food Inspection and Analysis.* By Albert E. Leach. Revised and enlarged by Andrew L. Winton, Ph.D. Fourth edition. New York: John Wiley and Sons; London: Chapman and Hall, Ltd. 1920. (Double roy. 16mo, pp. 1201; 120 figures, 41 plates. 42s. net.)

[4] *Manual for Conservation of Vision Classes.* A Manual to assist in the establishing and conduct of classes for conservation of vision. By Winifred Hathaway, Secretary of the National Committee. New York: National Committee for the Prevention of Blindness. 1919. (Pp. 108.)

SURGEON-GENERAL STERNBERG.

THE life of *George Miller Sternberg*, by his widow MARTHA L. STERNBERG,[5] has been written in the hope that it may inspire generations of American medical men to work at the science of preventive medicine in which he and his successor, the late Surgeon-General Sir W. C. Gorgas, K.C.M.G.—whose recent death in this country when on his way to complete his labours in connexion with yellow fever is so fresh in our minds—did so much. Born in 1838 as the eldest son of a clergyman, and descended from one of the oldest Lutheran families of the Palatinate that had been settled in America for more than a century, Sternberg had the stimulus of *res angusta domi*, and started at the early age of 16 to earn his living as a school teacher. With the sinews of war thus obtained and with help from an uncle, he then entered medicine, becoming M.D. in 1860, and was in private practice until the outbreak of the Civil War the following year. After two months as assistant surgeon he was taken prisoner by the Confederate Army at the battle of Bull Run, but escaped shortly afterwards and served with distinction throughout the war. He probably saw more active service in the field and in Indian campaigns than any other medical officer of his time.

Soon after the war he lost his first wife in an epidemic of cholera, and worked through several outbreaks of yellow fever, suffering severely from the disease himself. In 1879 he was detailed for duty with the Havana Yellow Fever Commission of the National Board of Health, and by self-instruction became the pioneer bacteriologist in America; Koch, indeed, spoke of him as the father of American bacteriology. In 1881 he found the pneumococcus in his sputum, calling it the *Micrococcus pasteuri*, but did not at the time appreciate its relation to pneumonia. In the same year he was the first in America to confirm the discovery of the tubercle bacillus, and subsequently performed the same service as regards the malarial parasite and the cholera vibrio. The Lomb prize was awarded to him in 1886 for work begun eight years before in connexion with disinfectants; in the following year he was again engaged in the investigation of yellow fever, and disproved the claims of some reputed causal micro-organisms. In 1900, having in the meanwhile been appointed Surgeon-General in 1893, he organized the Yellow Fever Board under Walter Reed, which established that the infection is carried by *Stegomyia fasciata*, and thus paved the way for the extirpation of the disease. Though his retirement took place in 1902, he remained a busy man, occupying the chair of preventive medicine in the graduate school of George Washington University, and taking an active part in the antituberculosis campaign and other philanthropic and social schemes. He did a great work, and, as was said by Colonel F. F. Russell at the dedication of General Sternberg's monument in 1919, "the renaissance of scientific medicine in the army dates from the beginning of his administration."

HUMAN EMBRYOLOGY.

PROFESSOR MCMURRICH'S convenient presentation in his book, *Human Embryology*,[6] of the present state of knowledge concerning the development of the human body needs no commendation from us. For twenty years it has been widely used in American and British medical schools, and the new edition is sure to be received with the same favour as its predecessors. Like most technical textbooks appearing at the present time, paper, printing, and reproduction of illustrations are not so good as in previous editions. As regards the text itself, which after all is the main thing, there is no falling off; Professor McMurrich has woven the latest discoveries very deftly into a text which has always been clear.

NOTES ON BOOKS.

THE seventh edition of the late Dr. LEFTWICH'S *Index of Symptoms*[7] shows a growth of some thirty pages when compared with its predecessor. It has been brought up to date and amplified, and may certainly be said to contain a vast amount of well-classified diagnostic information. Dr. Leftwich wrote the book on the principle that patients commonly present themselves complaining of symptoms rather than diseases; he accordingly constructed his *Index* on the principle of enumerating all the diseases in which each symptom catalogued was likely to occur. In addition to a singularly complete list of symptoms the volume contains a very sensible and short introduction pointing out a number of the commonest pitfalls into which the medical practitioner may be led in his search for a diagnosis, and several miscellaneous tables at the end of the text dealing with such things as clinical tests, symptom complexes, synonyms, eponymous signs, and others of the many varieties of incubus under which descriptive medicine labours. The *Index* has a well established reputation and the new edition edited by Dr. Warner Collins may be cordially recommended to medical practitioners.

THE eighth edition of GOULD'S *Pocket Medical Dictionary*[8] contains some 5,000 more words than its predecessor, which was published five years ago and was reprinted no fewer than eight times. The pronunciation of every word is indicated, and there are a number of useful tables, including a posological table of the commoner drugs and a list of veterinary doses, printed at the end of the volume. The print and paper are satisfactory, and (as we said in reviewing the last edition) the book contains a vast amount of information. The author begins his preface to the new edition with an apposite quotation from our own columns, and he refers with justifiable pride to the fact that, notwithstanding keen competition, more than half a million of his medical dictionaries have been sold.

GUSTAV BUNGE, professor of physiological chemistry at Bâle, and writer of a well-known textbook, has recently died.

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[5] *George Miller Sternberg: A Biography.* By his wife, Martha L. Sternberg. Chicago: American Medical Association. 1920. (Roy. 8vo, pp. 331; 10 illustrations. 5 dols.)

[6] *The Development of the Human Body: A Manual of Human Embryology.* By J. Playfair McMurrich, Professor of Anatomy, University of Toronto. Sixth edition, revised and enlarged. London: H. Kimpton. 1920. (Demy 8vo, pp. [illegible]; [illegible] figures. [illegible] net.)

[7] *An Index of Symptoms. With Diagnostic Methods.* By Ralph Winnington Leftwich, M.D. Seventh edition revised by R. W. Warner Collins, B.Sc., M.R.C.S., L.R.C.P. London: John Murray. 1920 (Cr. 8vo, pp. xii+595; 14 figures. 15s. net.)

[8] *A Pocket Medical Dictionary.* By George M. Gould, A.M., M.D. Eighth edition. London: H. K. Lewis and Co., Ltd. 1920. (32mo, pp. 1034. 9s. net.)

British Medical Journal.

SATURDAY, DECEMBER 25TH, 1920.

VOLUNTARY AND MUNICIPAL HOSPITALS.

WHETHER the Miscellaneous Bill of the Ministry of Health is to be considered dead since its rejection by the House of Lords, or whether (as our lobby correspondent suggests elsewhere) it is merely in a state of suspended animation, awaiting resuscitation next session, there can be no doubt that the subject dealt with in the hospital clause is exciting a great deal of interest, both within and without the profession. The conference of representatives of the staffs of voluntary hospitals called by the British Medical Association this week takes place too late for us to publish a report of the proceedings in this issue, as the holidays compel us to go to press earlier than usual, but we are able to give a full report of the discussion on "The future of the Poor Law infirmary," which was begun at a meeting of the Harveian Society last week.

Dr. C. M. Wilson, who spoke from experience of the arrangements between St. Mary's Hospital and the Paddington guardians for the use of the Paddington Infirmary, expressed the opinion that it was inconceivable that the beds in Poor Law infirmaries should not be used in future to meet the needs of the general community for hospital accommodation. Nobody, so far as the discussion has gone, dissented from this proposition. Indeed, to an extent varying in different parts of the country Poor Law infirmaries are already used for the general community, and especially for the relief of the voluntary hospitals.

All the three speakers who opened the discussion made it a reproach to the voluntary hospitals that they had not found a means of utilizing the services of general practitioners. This, again, is rather an overstatement, for the staffs of the majority of the smaller voluntary hospitals in the provinces are, or were, mainly composed of general practitioners. The ideal put forward by Mr. Morris, the house governor of the London Hospital, is that general practitioners should have a right to admit their own cases to municipal hospital beds, and to treat them in the hospital, where specialist assistance would be available. Administrative difficulties in the way of this plan will occur to everyone, and other means of enlisting the help of the general practitioner were suggested: for Dr. Wilson the link should be a follow-up system when the patient leaves the hospital; Dr. Buttar would bring the practitioner in at the other end—in the casualty (or out-patient) department, where he would see all patients, treating some himself, referring those in need of indoor treatment to the medical superintendent or the physician or surgeon on duty in the wards, and sending other patients useful for educational purposes or needing special treatment to a specialist department.

We seem, then, to come to this, that these three speakers, looking at the matter from different points of view, agree that Poor Law infirmaries should be linked with voluntary hospitals, having a common staff but different administration. If Dr. Addison's scheme is approved next session Poor Law infirmaries, or some of them, will pass to the municipal and county authorities, and Mr. Morris imagines for London a system not unlike that in force in Paris, by which the hospital service would be administered by the county council, through a committee, with central headquarters and a permanent administrative staff, buying for all hospitals. This committee or council of medical service would consist as to one-half of medical practitioners and would in some way superintend medical education and nurses' training. The hospitals and infirmaries in London would form a unit group under its jurisdiction. He infers that the plan would be applicable to other areas.

The Minister of Health has, under pressure from a body of members of Parliament, agreed to appoint a committee to inquire into the financial position of the voluntary hospitals, and to make recommendations. The scheme of the Ministry seems, however, to depend upon the assumption that there are all the year round a sufficient number of empty beds in the Poor Law infirmaries materially to relieve the pressure on the voluntary hospitals. But it is doubtful whether, during the winter, there is any such surplus, and if there be not, the municipalities may find themselves committed to heavy expenditure in providing municipal hospitals. It was this fear, no doubt, that led to the opposition which culminated in the House of Lords. We still think that Dr. Addison would be well advised to bring in a separate bill dealing with the hospitals.

THE BEGINNINGS OF LIFE.

THE nature of life remains a mystery; much knowledge has been gained as to the mechanism of life and as to the wonder of growth—how the egg gives origin to the perfect individual—but, as Professor Stanley Gardiner said in his address to the Section of Zoology of the British Association, "We may not know in our generation, or in many generations, what life is, but we can know enough to control that life." It has been shown that the orderly development of the brain, the skeleton, the genital organs, and sexual characters depend on the internal secretions of the thyroid, the pituitary body, and the testicles and ovaries. These observations are of extraordinary scientific interest, and of considerable therapeutic importance; they have opened a new domain to physiology; they show how in the being endowed with life growth in the later stages of development is directed and regulated, so that it shall conform accurately and precisely to type, but they do not explain life, nor the process of growth, which begins and proceeds along definite unchanging lines before the regulating organs are formed. Professor Gardiner went on to say that "the probability of dissolved food material in sea and river water, independent of organized organic life and absorbable over the whole surfaces of animals, is clearly before us," and asked, "Is it possible that that dissolved material may be even now being created in Nature without the assistance of organic life?"

Half a century ago the doctrine of spontaneous generation had many adherents; reliance was placed chiefly on experiments in which bacteria were observed to appear in organic fluids, usually infusions, which had been boiled. The conditions of the experiments implied the existence of organic matter, so that even if it were admitted that bacteria did appear, that could not be held to explain how life first originated. The controversy, which was conducted with much energy at meetings of scientific societies and overflowed into the monthly magazines and the newspapers, turned on the question whether or not bacteria were newly formed in organic solutions. The ranks of the defenders of the doctrine of spontaneous generation were thinned by the great advances made in bacteriology by the discovery of spores and through the use of more accurate methods of research. At the International Congress of Medicine in London in 1881 Dr. Charlton Bastian, the chief defender of the doctrine in this country, made one more attempt to convince scientific opinion; he failed, and for more than a generation the theory fell almost out of recollection. Bastian himself never lost interest, and, after his retirement from consulting practice as a neurologist in London, took up the inquiry again and made a very long series of experiments with certain sterile colloid solutions exposed to diffused sunlight for long periods; in a certain proportion he observed bodies which he considered to be living organisms. He described his experiments and defended his conclusions in many papers, including one published in our columns of November 30th, 1912, and in a book, *The Origin of Life*, of which a second edition appeared in 1913. Biologists as a body, however, refused to be interested, holding that his arguments and experiments did not present a case for further research along his lines.

Interest in the problem how life originated cannot, however, cease, and it has recently been attacked from a new direction by Professor Benjamin Moore and his co-workers. In a paper read to the Royal Society last spring Professor Moore and Mr. T. A. Webster, one of his colleagues in the research, began by laying it down that the most primitive and fundamental chemical processes for living organisms are the two by which their living substance is synthetized from inorganic sources with uptake of energy, namely, that by which, starting from the carbon dioxide of the atmosphere or of water, carbon is built into organic compounds by absorption of the energy of sunlight, and that by which nitrogen is built in: how this last was effected has been in dispute for a century and a half. The experiments of Jamieson for the Aberdeen Agricultural Research Association seem finally to have proved that the higher plants do obtain nitrogen from the atmosphere, and Blackman has shown that this can take place in the absence of green matter. The recent experiments of Moore and Webster prove that fresh water and marine algae derive the nitrogen they require from the atmosphere, and that the combination of atmospheric nitrogen and oxygen, with the production of nitrites in the green cell, is due to absorption and conversion of the energy of sunlight. They point out that the minutest micrococcus contains organic nitrogenous compounds in the form of proteins, and that probably the ultra-microscopic particles, called filter passers, which can reproduce themselves in organic media and transmit diseases, also contain organic nitrogenous substances. Their very specific reactions show that they are highly organized systems. It is therefore considered to be futile to seek at the level of bacteria for the origin of the organic; the first stage must have been an inorganic colloidal solution aggregate, capable of utilizing sunlight and of building up on its surface or in its meshes organic substances; it must have been able to fix nitrogen as well as carbon, and the earliest organisms must have possessed this dual function united in a single cell, or solution aggregate. Their experiments established the fact that in the absence of all other sources of nitrogen save the elemental nitrogen of the atmosphere, but with abundance of carbon dioxide, the unicellular algae can fix nitrogen, grow, and form proteins. The rate of fixation and growth is accelerated if nitrites or oxides of nitrogen are present in the atmosphere, as they are in pure country air, especially in spring and summer. As has been said, the presence of chlorophyl is not necessary; photosynthesis can be achieved by the uncoloured protoplasm, but it is to be assumed that as complexity increased during evolution more and more rapid transformers for the capture of the energy of sunlight came into existence; such transformers for fixation of both carbon and nitrogen are found in the green cell.

Evidence of the importance of photosynthesis in Nature of a different but very striking kind is afforded in a later paper by Moore, Whitley, and Webster, on sunlight and the life of the sea. The great outburst of green life in the sea which occurs at the spring equinox is independent of the temperature of the water, for it may begin before the temperature of the water moves from its winter level. The longer, brighter day, with increased altitude of the sun, must be the primary factor in this sudden spring outburst of life in the sea. There is a sudden enormous rise of radiant energy in March, and growing diatoms capture this increase and utilize it for building both carbon and nitrogen into their organic substances; the nitrogen they draw from the dissolved element in the sea water, and the carbon from the bicarbonates of calcium and magnesium dissolved in the sea water. It would seem that inquiries conducted along these lines into the functions of marine and fresh-water algae are more likely to bring us towards a solution of the origin of life than investigations directed to bacteria and fungi, which can exist only upon organic matter, whereas the primordial world could contain no such matter before the advent of life.

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MEMORIAL TO THE LATE GUY ELLISTON.

THE stained-glass window erected by the British Medical Association in memory of its late Financial Secretary, Mr. Guy Elliston, was dedicated on Saturday, December 18th, in the Church of St. John, Felixstowe, by the Rev. A. E. Stantial, vicar of the parish, assisted by the Rev. H. M. Porter. There were present Mrs. Guy Elliston (Mr. Elliston's widow) and her four daughters, Mrs. W. A. Elliston, Colonel G. S. Elliston, C.B., Major Rowley Elliston, and Captain G. S. Elliston, M.C., together with several friends of the family, including Dr. C. G. Havell of Felixstowe. Dr. P. L. Giuseppi (Felixstowe), Honorary Secretary of the Suffolk Branch, and Dr. Alfred Cox, Medical Secretary, represented the Association officially. The window, made by Messrs. Powell of Blackfriars, London, consists of two lights, and represents Noah and Abraham, to conform to a series of windows in the church representing the patriarchs. The inscription on the window is: "To the memory of Guy Elliston, who died April 13th, 1918, aged 46. This window was erected by the British Medical Association, to which he was Financial Secretary for 18 years, A.D. 1920." The church is a large and handsome one, and was already associated with the Elliston family by reason of the fact that the east window is dedicated to the memory of Mr. Guy Elliston's father, William Alfred Elliston, M.D., who was president of the Association in 1900 when it met at Ipswich. Dr. Elliston was born at Ipswich in 1840, and died at Felixstowe in 1908.

CHRONIC ARTHRITIS IN THE UNITED STATES ARMY.

DR. RALPH PEMBERTON, who, as the result of metabolic and clinical work in 1912 and 1914, struck out a definite line in the treatment of obstinate cases of chronic arthritis by a restricted diet, especially as regards the carbohydrates, and particularly the starches, has now in collaboration with others[1] published the results of the observation of [illegible] cases of arthritis, other than tuberculous and gonococcic, admitted to the United States Army General Hospital, No. 9, Lakewood, New Jersey. As it is estimated that in an army of four million men there would be 35,000 cases of chronic arthritis yearly, it is obviously desirable to take measures to diminish the incidence of this disabling affection; of the 400 patients, 37 per cent. had had arthritic trouble before the war, as compared with 7 per cent. among surgical and orthopaedic patients and less than 6 per cent. among patients with functional disorder of the heart; it follows, then, that on enlisting men selection based on attention to the past history might diminish the incidence of arthritis; and as focal infections of a surgical nature were found in 73 per cent. of the cases, their removal in recruits would be another step in the same direction. Of the focal infections the tonsils were affected in 71 per cent., the teeth in 46 per cent. (19.5 per cent. being combined), and the genito-urinary tract in 12.5 per cent. The exciting cause ascribed was exposure in 58 per cent., then dysentery in 8 per cent., trauma in 7.5, and influenza in 7 per cent. The knees were the articulation most often (62 per cent.) attacked, the ankle, hip and shoulder coming next in about 30 per cent. each, but in 57 per cent. of the cases two or more joints were affected. As compared with civil life involvement of the jaw was strikingly rare, and *x* rays showed bony changes in only about 15 per cent.; the contrasting frequency of these changes in civil life is evidence of chronicity, and it appears that a distinction between arthritis with bony growths and that in which atrophy of cartilage and bone predominates is not justified as a means of classification, for sooner or later both these processes occur in the majority of cases. Military cases also differ from those in ordinary practice in the earlier age incidence (average 28.3 years), the nature of immediately exciting factors, and the greater tendency to improve. Morphological examination of the blood did not bring out any points of interest, but it may be noted that a leucocytosis above 13,000 was found in only 7 per cent, of the 400 cases analysed. As improvement may follow forms of treatment—such as by thyroid, radium, and *x* rays—that increase metabolism, it has been thought that in chronic arthritis there may be a lowering of the body metabolism, especially as this view is compatible with the beneficial effects of a restricted diet. This question was fully examined, and, though the basal metabolism was within normal limits in 80 per cent. of 29 cases, investigation of the blood sugar in 60 patients by the Lewis-Benedict method showed in a large proportion a lowered sugar tolerance, which is roughly proportional to the activity of the arthritic process, and tends to return to the normal with convalescence or recovery. This return to normal is most abrupt after removal of an infective focus: the infective focus by lowering the sugar tolerance diminishes the general resistance of the body. A lowered sugar tolerance appears to be commoner than is generally recognized, and in the face of its proved relation to focal infections it seems necessary to modify the view that, next to pancreatic disease, the commonest cause of altered carbohydrate tolerance is disordered function of the thyroid. Treatment by removal of infective foci and a restriction of carbohydrates is thus indicated, and the results justified the reasoning. Non-specific protein injections into the veins were employed in 19 chronic cases with definite benefit in 7, the army typhoid vaccine being used. As some of the patients had received as many as fifteen injections of typhoid vaccine before the onset of arthritis, it may be concluded that no protection against arthritis is conferred by non-specific protein given subcutaneously, even in repeated doses. Probably on account of their youth and tendency to improve, the patients showed a surprising response to local and external measures, such as baking, massage, hydrotherapy, and electricity. By raising the body temperature or local temperature metabolism is increased or local hyperaemia is induced as the case may be. Sweating was highly beneficial, and local whirlpool baths were preferable to hot packs in bed. The caution is thrown out that probably one of the commonest errors is to apply massage to a chronically but actively inflamed joint, thereby adding mechanical injury. Lastly, stress is laid on the importance of combining the various forms of treatment, for the tendency to concentrate on one measure often results in failure, whereas the subsequent coincident use of several methods is successful.

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[1] *Studies on Arthritis in the Army based on* [illegible]. By Ralph Pemberton, M.D., in collaboration with [illegible], M.D., G. L. Foster, M.D., J. W. Robertson, M.D., and [illegible] Tompkins. Reprinted from *Archives of Internal Medicine*, [illegible], 1920, xxv, 231-[illegible].

ANIMAL EXPERIMENT AND TROPICAL MEDICINE.

To the valuable series of memoranda issued by the Research Defence Society, and contributed by Sir Walter Fletcher, Colonel McCarrison, Sir David Bruce, and Dr. Mary Scharlieb respectively, a fifth pamphlet has been added.[1] In this Sir Leonard Rogers describes the part played by experiments on animals in his researches into the causation and treatment of tropical maladies. In connexion with diseases of animals, experimental infection of cattle led to the successful use of preventive inoculations against rinderpest; and experiments on dogs, rabbits, and rats proved that the *Trypanosoma evansi*, the cause of surra in horses, was transmitted by the bite of horse-flies; valuable aid was obtained towards the prevention of this disease. Researches on the physiological action and antidote of snake venom, commenced in India and continued under Professor Waller at the physiological laboratory of the University of London, led to the production of an effective antivenine, which has since been made and used in India. Of equal practical importance was the proof that after lethal doses of snake venom had been injected into cats, in the absence of an antidotal serum, the lives of the animals could be saved by incising the site of injection and rubbing in potassium permanganate crystals; in this way an effective first-aid treatment was established. As far back as 1874 Sir Lauder Brunton and Sir Joseph Fayrer had demonstrated that potassium permanganate solutions rapidly destroyed the activity of snake venoms *in vitro;* Sir Leonard Rogers observes that the next step—testing the practical efficiency of the method in animals—was prevented by the passage of the bill controlling experiments on animals. "Thus the antivivisectionists, at whose request this bill was passed, are directly responsible for lives lost in India and elsewhere during thirty years—lost for want of knowledge which could only be obtained by experiments on animals." Sir Leonard Rogers points to the production, as the result of animal experiment, of a modified vaccine giving favourable results in chronic cases of bacillary dysentery, and to the advances introduced in recent years in the treatment of amoebic dysentery by drugs the value of which has been established by tests conducted in animals. The discovery of a cure for kala-azar followed experiments on rats infected with sleeping sickness trypanosomes. By the antimony treatment the mortality of sporadic kala-azar, if the cases have not reached an extreme stage before coming under treatment, has been reduced from not less than 75 per cent. almost to vanishing point; in Assam the mortality (formerly over 90 per cent. in the epidemic form) has been greatly reduced, and a recent extension of the disease is being rapidly controlled by this treatment combined with measures of segregation. Thus animal experiment on a few rats in England has solved the problems of the appalling kala-azar epidemic of Assam as well as the more widely spread form of the disease in India and Northern Africa. Another section describes the therapeutical experiments which have led to the improved treatment of leprosy. The different derivatives of chaulmoogra oil, and of other vegetable oils and cod-liver oil, which have recently given such promising results in the treatment of advanced leprosy, had to be tested, before their intravenous injection in men, by similar administrations to animals; that this precaution is necessary was shown by the fact that one compound, regarded as (chemically) the most suitable, proved too toxic, when tested on animals, to be of value in man. From cod-liver oil similar preparations, proved by experiments on animals to be innocuous, have been made and tried, with promising results, in pulmonary and other forms of tuberculosis; in this way, both in tuberculosis and in leprosy, a wide field has been opened out for further research, in which recourse must of necessity be had to animal experimentation.

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[1] *The Value of Experiments on Animals: Notes of Personal Experience.* By Sir Leonard Rogers, M.D., F.R.S., I.M.S. Published by the Research Defence Society, 11, Chandos Street, London, W.1.

THE PUBLIC AND TUBERCULOSIS.

IN his report on the work of the Tuberculosis Department for the past year, the chief tuberculosis officer of the Borough of Belfast raises the question of the relative value of such reports. He concludes that on statistical, medical, and general grounds they fully justify their cost. This view, however, does not seem to be shared by all tuberculosis officers nor by the municipalities employing them. In the great majority of cases the information gained in the course of a year's work at a tuberculosis dispensary is summed up in a short statistical report, which satisfies the local committee, and is then pigeon-holed, without any attempt being made to let the facts which it discloses be known to the inhabitants of the area with which it deals. The routine work goes on, a small proportion of the patients obtain some real benefit, others are relieved for a time, only to relapse sooner or later, whilst the advanced case continues to spread infection in the household. No real progress in the work of prevention can be hoped for until the general public have had the facts so drummed into them that it will be no longer possible to ignore them, and legislation will then become imperative. It is only by study of such excellent reports as the one recently issued from Belfast that the public can learn the truth as to the influence of overcrowding and neglect of hygienic precautions in the spread of the disease. More fatal in its ultimate results than small-pox or scarlet fever, tuberculosis is allowed to remain uncontrolled in households where young children occupy the same room and often the same bed with an infective case. So long as such conditions are tolerated there can be no hope of checking the incidence of the disease in crowded areas.

ANTENATAL DEATH.

THE Sir John Struthers lecture of the Royal College of Surgeons of Edinburgh was delivered in the hall of the College on December 17th by Dr. Arthur Robinson, Professor of Anatomy in the University, the subject being "Antenatal Death." The lecturer referred to the "normal" high prenatal mortality rate in animals, particularly horses, and in human beings, and to the fact that the prenatal mortality rate in the latter is necessarily understated, as no account is taken of death of the zygote or morula before differentiation takes place between the embryo proper and its membranes, since none of the ordinary signs of abortion are present in these cases. The current view is that monstrosities, abortions, and antenatal death are due to abnormal environment, or to the action upon the developing ovum of such agents as bacteria, toxins, and more especially of an unhealthy endometrium; a primary abnormality of the unfertilized ovum, or of the spermatozoon, rendering it inevitably incapable of development beyond a certain period of gestation is held to be of secondary importance, or is ignored altogether. Prenatal death may occur before the ovum (gamete) is fertilized, even before its extrusion from the ovarian follicle within the peritoneal cavity, during its course through the oviducts to the uterus, and also after it has been fertilized and become the zygote; in all of these stages it is independent of the mother in regard to nutrition. Professor Robinson has investigated the subject chiefly in healthy ferrets kept in an environment normal to them for generations. These animals were particularly useful for the investigation, as they only ovulate after successful insemination. The females were killed at varying periods after insemination and the conditions observed. In all cases the uterine tissues and oviducts were perfectly healthy to the naked eye and microscopically; no micro-organisms were present nor inflammatory lesions, and the blood supply was perfectly normal; and yet, notwithstanding this fact, degenerate or dead gametes, zygotes, and embryos could in almost every case be demonstrated microscopically in serial sections. The dead or abnormal embryos could often be found lying between healthy ones, thus proving conclusively that the cause must reside within the ovum itself. In single pregnancy the dead ovum is expelled and the decidua undergoes regressive changes. In multiple pregnancy the dead ovum is absorbed by the decidua, and the changes the decidua undergoes as a result of either process are curative and non-inflammatory. There is among gynaecologists too great a tendency to remove such decidua by curettage on the supposition that the cause of ovular death is environmental. Regarding the causes of degeneracy of the ovum the lecturer did not express a decided opinion. It was not, he pointed out, due to animals in captivity or human beings living under conditions different from those to which their ancestors had been accustomed, as the prenatal mortality rate was as high amongst wild animals living in their natural environment. It was true, however, that alcohol (inhaled by guinea-pigs), lead, and high velocity rays were capable of injuring the gametes to the third generation.

THE OMNIPRESENT B. TETANI.

ANOTHER instance of the ubiquity of the tetanus bacillus is afforded by a case which occurred recently in Portsmouth, when a child 5 days old died of tetanus following the application of vaseline. It appeared that the vaseline itself was free from contamination, but that a paper disc separating the stopper from the contents contained the tetanus bacillus. Some time ago it was shown in Kansas that certain specimens of court plaster contained virulent tetanus bacilli; the matter was taken up by the laboratory of the United States Public Health Service, and of thirteen samples there examined two contained bacilli. Shortly after this piece of news was published Sir James Barr informed us that a good many years ago he ascertained that many specimens of gelatine contained the tetanus bacillus, and that, as gelatine is used in the making of court plaster, the risk of using this old-fashioned remedy must be recognized. In August, 1918 (p. 189), Dr. Parkes Weber described a case of tetanus following the subcutaneous injection of gelatine as a haemostatic.

HOSPITAL AND POOR LAW INFIRMARY.

REFERENCES have appeared lately in several newspapers to the proposal for co-operation between King's College Hospital and the Camberwell Infirmary. We understand that the suggestion came originally from members of the medical committee of the hospital, the idea being to link up the two institutions for the double purpose of specialized treatment of patients and the better teaching of students. This would be more or less along the lines followed in the arrangement between St. Mary's Hospital and the Paddington Infirmary and sanctioned by the Ministry of Health for a limited period of time. The scheme of co-operation between St. Mary's Hospital and the Paddington Infirmary was approved by the Paddington board of guardians on the following conditions: (1) That the ordinary work of the infirmary is not interfered with in any way; (2) that the working conditions are under the control of the medical superintendent of the infirmary; and (3) that the scheme is subject to termination when so decided by the guardians. Apart from the question of teaching students, the guardians agreed to appoint consultants for the infirmary from the members of St. Mary's Hospital staff, and a scale of fees was drawn up. In addition to these consultants, certain other members of the hospital staff will visit the infirmary primarily for teaching purposes without payment. It is further to be noted that St. Mary's Hospital has adopted a scheme of medical and surgical units, with paid staffs, and the consultants of the Paddington Infirmary in those branches belong to the respective units. The proposal for co-operation between King's College Hospital and the Camberwell Infirmary was put before Dr. E. W. G. Masterman, medical superintendent of the infirmary, who drafted a memorandum laying down the lines on which such co-operation seemed feasible, and afterwards prepared a further detailed memorandum. As a result of preliminary conversations a letter was sent in June from the Secretary of King's College Hospital stating that the hospital authorities were prepared to negotiate with the Camberwell guardians on the basis of the arrangements that had been made between Paddington Infirmary and St. Mary's Hospital. This proposal was looked upon with favour by the guardians and a deputation from the guardians, including the medical superintendent, was appointed to meet a deputation from King's College Hospital authorities to discuss the matter. When, however, representatives of the two bodies met, on November 1st, the King's College Hospital authorities submitted through their chairman a report by the Medical Board unanimously recommending that co-operation should be "on the basis of full professional control," and advising that the hospital and the infirmary should be worked as two branches of the same medical unit under the direction and responsibility of the honorary staff of the hospital. This proposal differed radically from the plan put forward by Dr. Masterman in his report of June 12th, and we gather that the conference came to an end without reaching any agreement.

Medical Notes in Parliament.

The Ministry of Health Bill.

OUR lobby correspondent learns that the Cabinet has given Dr. Addison authority that next session he shall reintroduce the Ministry of Health Bill in the form in which it left the Commons. In addressing a meeting of members of Parliament mainly concerned in the housing provisions, Dr. Addison last week intimated that his intention was to do this if the Cabinet concurred in his wish. Since then the matter has been considered in Council, with the result stated.

The Dentists Bill.

Dr. Addison formally introduced on December 20th the Dentists Bill, in order that it should be printed for consideration before the new session. It is a regulation measure based upon the recommendations of the Departmental Select Committee. It provides for a register to be set up to contain the names of men who have been in bona-fide practice for some years past, and that thereafter no person shall practise who is not duly qualified, and who is not on the register. No question of the provision of dental treatment arises in the bill, and it involves no charge on the Exchequer or on the rates. The hope is that in the recess the bill may by negotiation be made an agreed matter, and thus quickly passed through Parliament.

Tuberculosis: Administrative Changes.—Mr. Munro (Secretary for Scotland), in reply to Mr. Cowan, on December 7th, said that the administrative changes in Scotland arising out of the cessation of sanatorium benefit would result in the transfer of the supervision of certain duties from Insurance Committees to local authorities. As the officials of the latter authorities had been acting as medical advisers to Insurance Committees there would not, in substance, be any loss of office. He saw no reason to doubt that local authorities would give fair consideration to the interests of those officials on the readjustment of their duties.

Tuberculosis Officers' Fees.—Mr. Cowan asked the Secretary for Scotland, on December 7th, whether the Scottish Board of Health had issued a circular in which they proposed to supersede the system of payment of fees, &c., per case to tuberculosis officers for the examination and certification of discharged naval and army men under the Ministry of Pensions by a system of lump sum payments to local authorities, and whether he would take steps to secure that tuberculosis officers were not called upon to perform this difficult and responsible work without adequate remuneration. Mr. Munro replied he did not anticipate that any officer would be called upon to render service in this connexion without adequate remuneration.

Appointment of Medical Officers.—Dr. Molson asked, on December 15th, whether Dr. Addison was aware of the promise given by the Local Government Board that all public medical appointments becoming vacant during the war should be temporarily filled until those serving should come home, and, if so, whether he could explain the reply sent to the clerk of a board of guardians, who asked if these appointments were to be thrown out, to the effect that the war was not over and that the Ministry would let him know when it was over. Dr. Addison replied that if he were furnished with particulars of the case mentioned he would have it investigated. He was advised that the policy of the Local Government Board in filling appointments during the war was as stated.

Smoke and Noxious Vapours in Sheffield.—Lieut.-Colonel Stephenson asked, on December 16th, regarding the inquiry then being held in Sheffield by the Departmental Committee on Smoke and Noxious Vapours Abatement, whether the Minister of Health was aware it was conclusively shown at previous inquiries the large proportion of the smoke in Sheffield was due to the exigencies of special manufactures, and that any restrictive legislation was liable to endanger the high grade steel industry of the city and increase lack of employment; and whether in the circumstances he would take steps to prevent the inquiry as a waste of public money. Dr. Addison replied that the view expressed by Lieut.-Colonel Stephenson would doubtless be fully considered by the Committee. The inquiry was already in progress, and he could not therefore accept the suggestion that it should be "prevented."

Pension Reassessment.—In reply to Sir S. Roberts, Mr. Macpherson stated, on December 15th, that during the months of September, October, and November there had been 283,000 pension cases examined for reassessment. During this period the number of cases whose assessment of disability was confirmed or altered as the result of medical examination was 268,900, of which 124,500 were unaltered, 21,000 were raised, 105,800 were lowered, and 17,600 ceased; of the last named, 11,700 received gratuities. The reduction in the average degree of disablement by these alterations was 5.7.

Disability Pensions.—Sir H. Harris asked, on December 16th, whether the Minister of Pensions was aware that in a number of cases recently his department had decided that a man's disablement, which had previously (sometimes for years) been accepted as attributable to service, was to be treated as only aggravated by service; whether this action was part of any general policy of revising decisions already given, with regard to the attributability of disablements. Mr. Macpherson replied that Article 1 (2) of the Royal Warrant made periodical review of temporary pension obligatory, and Article 5 (2) provided for review of any pension granted by error. It was clearly the duty of the Ministry to ensure that entitlement had been properly admitted, and this aspect of review was specially necessary in dealing with the very large number of provisional awards which, owing to the heavy pressure of work consequent on demobilization, had to be made on the report of a single medical officer. When subsequent examination by a properly constituted medical board, followed by full and expert consideration of all the relevant circumstances, revealed an incorrect decision on entitlement, he should not be justified in neglecting to make the necessary correction. In all such cases the man was informed of the alteration and advised of his right of appeal to the Pensions Appeal Tribunal. The Local Committee Handbook contained a statement of the powers and practice of the Ministry as regards review of pension, and gave full instruction on the steps to be taken if a man was dissatisfied with the decision of the Ministry.

Treatment of Mental Ex-Service Cases.—Mr. Myers, on December 14th, asked the Minister of Pensions whether it was "still the practice" of his department "to compel nerve-strained uncertifiable ex-service men to enter, as in-patients, institutions for border-line mental cases under threat of the loss in some cases of half their allowance should they refuse." Mr. Macpherson replied that Article 4 of the Royal Warrant provided that half the pension and allowance awarded to any disabled man should be subject to his acceptance of such treatment as might be found necessary in his interest. This was rarely put into operation, and never until the man had been given an opportunity of stating his objections and these had been fully considered. Mr. Macpherson added that he was satisfied that this power was necessary, and that in practice it was exercised with great discretion, and solely for the good of the pensioner.

New Artificial Limbs.—In reply to Major Boyd Carpenter, on December 7th, Major Tryon said he was glad to be able to announce that the first supply of the light metal limbs provided by the Ministry of Pensions was now available, and was being distributed. They had so far fully justified the high opinion of their merits formed by the Ministry's experts. The supplies at Roehampton embraced over twelve different makes of artificial limbs, which had on the whole proved successful for different types of amputation. From the information in his possession they did not in any way merit the description of them given by Major Boyd Carpenter, namely, that they "were rather an impediment than a help."

THE FUTURE OF THE POOR LAW INFIRMARY.

Discussion at the Harveian Society.

A discussion on "The future of the Poor Law infirmary" took place at the meeting of the Harveian Society on December 16th. Dr. William Hill (the President) was in the chair. After a discussion lasting more than two hours, when it was evident that many more wished to speak, it was decided to adjourn the further consideration of the subject to a special meeting to be held on January 27th.

The Relation of Voluntary to Municipal Hospitals.

Dr. C. M. Wilson (St. Mary's Hospital), who dealt in particular with the need for such a linkage of service as had been effected between his hospital and the Paddington Infirmary, said that, amid much that was nebulous, there were two factors in connexion with Poor Law infirmaries which had an air of permanence. In the first place, it was inconceivable that the beds in these institutions should not be used in future to meet the needs of the general community for hospital accommodation; and, in the second place, it appeared extremely likely that their educational facilities would be developed. The bed question, of course, could not be disposed of by the purely statistical method. Such a statement as that there were 90,000 Poor Law beds, one-third of which were empty in summer, was useful for political debate, but did not convey much to the critical medical mind, which required further data (as to turnover, for instance) before arriving at a judgement. As for the educational question, it would not be possible to provide teaching facilities in these institutions until they were converted into modern hospitals with a consulting staff attending for special consultations, an adequate resident staff, and the provision of auxiliary services, such as pathology, bacteriology, and x rays. From St. Mary's Hospital a consulting staff, not only in medicine and surgery, but in diseases of the skin, the eye, and so forth, had been provided for the Paddington Infirmary. On the whole, the fabric of the infirmaries was admirable, but the vital matter was classification of material, which must be achieved before teaching could be done. "At present a surgical case is next to a medical, or a squalling infant next to a case of pneumonia. There is within the buildings clinical material to illustrate a subject for students, but you cannot lay your hand on it."

Can Voluntary and Municipal Hospitals exist Side by Side?

When the infirmaries were converted into modern hospitals one of two possibilities would have to be faced. Either the voluntary hospitals and these new municipal hospitals would exist independently side by side, or the one would swallow the other. As for the first, was it likely that, at Bradford for instance, with a voluntary hospital of 200 beds and a municipal hospital of more than 1,000, the two institutions would continue to exist separately? Which of them would be the goal of the younger consultants—the municipal hospital with its paid part-time service (£500 a year as a retaining fee was mentioned at Bradford), or the voluntary hospital with one-fifth of the number of beds and paying nothing? In the north, moreover, workmen's subscriptions greatly helped to finance the hospitals, but if St. Luke's Infirmary at Bradford were put on the rates, it was hardly likely that workmen would contribute to a voluntary hospital in addition to bearing the increased rating burden. It seemed as though, in default of some mutual arrangement, the municipal hospital must triumph and the other be starved out. If, on the other hand, one swallowed the other, either the municipal hospital would absorb the voluntary hospital, develop its resources free from financial worry, and become the chief centre in the locality; or the voluntary hospital would be the predominant partner by entering into some arrangement, such as St. Mary's had done at Paddington. In that case the voluntary hospital would become the secondary centre and the municipal hospital the primary centre of the Dawson Report.

The Nearness of State Medicine.

"State medicine," Dr. Wilson went on to say, "which in the south of England is rather a remote contingency, in the north is knocking at the door. It is the settled policy of a great party in the State—a party which has taken more interest in national health than its older rivals—a deliberate and thought-out policy, not a hasty movement, nor a concession to opportunism." Admittedly the voluntary system had some grave defects. No attempt had been made to bring the general practitioner into the voluntary hospitals. There was no follow-up system such as obtained in America. With shining exceptions the voluntary hospitals had displayed a singular apathy towards medical education. ("No.") There was also a certain lack of driving organization about them. On the other hand, he would say to the apostles of State medicine that they had not got the root of the matter in them. The very basis of efficiency in medicine was the competitive stimulus. He would ask his audience to weigh the arguments for and against and see whether the merits of both systems could not be conserved. The conscription analogy necessarily suggested itself.

A time came in the war when the voluntary system would not meet the requirements of the nation, and individualism with all its merits had to be superseded. It might be so in medicine. If in the view of those to whom he spoke a State system was inevitable, then let them turn their attention to removing the gravest defects of that system. Now was the opportunity for those who believed in a part-time as against a whole-time service to make their voices heard. But if they believed that the voluntary hospital was not doomed, then there was the same urgent need for action. In Bradford, despite a temporary check, St. Luke's would become virtually a State hospital; but Bradford was not representative, at any rate of the south, where the political complexion was softer. Still, the day was coming when money would be less scarce, when the whole atmosphere would be more congenial to political experiment, when the cry of economy would have died down, and when the Labour party might be in power. If they desired to see the voluntary institution in the position of parent in the hospital family, they should be looking to the nearest infirmary with a view to some possible arrangement.

The Administration of a Municipal Hospital.

Dr. C. Buttar sketched certain lines upon which the Poor Law infirmaries might become an essential factor in medical education and in the medical and surgical treatment of the community. It seemed evident that the infirmaries would become municipal hospitals supported out of the rates, that they would have consulting staffs in addition to resident staffs, and that they would be under public control and the staffs paid out of public money. Dealing first with administration, Dr. Buttar said that he felt strongly "that when Poor Law infirmaries become municipal hospitals a modification of administration will be rendered necessary, owing to the introduction of a consulting staff" (by which, he explained, he did not mean necessarily a staff of consultants). "It is probably wise that a medical superintendent should continue to administer the equipment and provisioning of the hospital. I am certain that on the professional side the voluntary hospital system is preferable. There should be a committee of the staff responsible for professional administration, with direct access to the supervising authority."

The Consulting Staff.

With regard to the consulting staff, he held that, generally speaking, the appointments in the case of the municipal hospitals should be regarded as stepping-stones to appointment on the staffs of voluntary hospitals, wherever these could be linked on to the other institutions. Salaried posts at the municipal hospitals would be distinctly advantageous to the younger men. "Where there is no voluntary hospital in the neighbourhood, and the kind of medical practitioner whom we are accustomed to call a consultant is not available, it will be necessary, of course, to use general practitioners in forming the consulting staff of the municipal hospital. Even where so-called consultants are available it may still be possible to make some appointments from amongst the local general practitioners. But in my experience a public hospital, in London, staffed by general practitioners, is not a success: a condition of affairs is likely, sooner or later, to arise when there will be a demand for a staff of consultants, and in any case there is a tendency for the general practitioners appointed to the hospitals in the more populous areas to gravitate towards the position of consultant." As for the resident staff, Dr. Buttar considered that these officers should be under the general supervision of the medical superintendent, but responsible directly to the members of the consulting staff for the cases under their charge. Their possible tenure of office should be longer than in the case of the resident staff at voluntary hospitals in order that the supply of medical superintendents might be kept up; but, on the other hand, an unlimited supply of would-be medical superintendents should be checked. With these resident posts available, far more men than at present would be able to enter general practice with the experience that only hospital appointments could give.

The General Practitioner and the Municipal Hospital Scheme.

After glancing at the problem of the nursing staff, Dr. Buttar entered upon a consideration of the general practitioner in relation to the municipal hospital scheme. If the general practitioner could be linked up with the scheme it would interest him in what might become a unified service; it would afford him facilities for post-graduate study; it would benefit the patient by preserving continuity in treatment; and it would help to eliminate that stupid sense of opposition between consultant and general practitioner. The speaker could not subscribe to all the laudation of the general practitioner so common nowadays. He did not observe that the average general practitioner was keenly interested in following his cases into hospital. Nevertheless, he was convinced that posts should be found for some general practitioners in Poor Law infirmaries or municipal hospitals, and that these posts should be prizes to be competed for. If the out-patient departments—or, as he preferred to call them, the casualty departments—were maintained as departments to which a hotchpotch of patients came, some slightly and some gravely ill, these might be under the charge of the general practitioners, with, if necessary, one of the resident staff detailed to attend as house physician or surgeon. "The general practitioner chosen for such a post would act as a filter. Patients suitable for admission would be referred to the medical superintendent or to the physician or surgeon on duty in the wards. Patients useful for educational purposes or needing special treatment would be sent to a specialist department (the true out-patient department), and the other cases would be treated by the general practitioner on duty." The arrangement would have the further advantage that the clerks and dressers attached to the clinic would learn through their association with the general practitioner something of the routine and etiquette of general practice. The British Medical Association had decided against what it called out-patient departments, but that decision might be due to some lack of appreciation of the problem as a whole. He argued that, at least in the case of dependants of insured persons, this "casualty work" of the hospitals could not yet be scrapped. The numbers might be limited, every possible consideration might be shown to the medical attendant of these people, a service of almoners might be provided to check abuse, but the fabric of "casualty departments" should not be destroyed until a satisfactory substitute was found, or the profession might encounter public distrust.

The Supervising Authority.

Dr. Buttar spoke finally of the supervising authority. "This will have to be the public health committee of the local authority, and therefore mainly a lay body. On to the committee medical practitioners may be co-opted. But I am no great believer in such co-option as likely to be of much value to the profession. Nor do I think much of the medical advisory committees. They always become part of the machinery of the bureaucracy. More is to be expected from the professional committee of the staff. But the main safeguard of professional interests must always be a strong, independent, voluntary body, entirely outside the machine, and able to make its criticism felt. As bureaucracy increases, I have become more and more certain that such a body is essential. The trouble is that medical men seem to have neither the time nor the energy to establish and maintain such bodies."

The Point of View of the General Hospital.

Mr. E. W. **MORRIS** (House Governor, London Hospital) spoke on the future of the Poor Law infirmary from the point of view of the general hospital. The most apparent failings of the average Poor Law infirmary were that it carried the Poor Law stigma, that it was understaffed medically and without consultants, that the nursing requirements were below standard, that the guardians did not as a rule take a broad outlook in health matters, that the general equipment was poor, that only chronic and incurable cases were treated, and that the stimulating effect of the presence of students was withheld. In London, on the whole, the voluntary hospitals had the advantage of specialist service and good equipment, while the infirmaries had the advantage of bed accommodation. "The first of all things to be done is to cut the infirmary beds away from the Poor Law taint. The infirmaries must be hospitals to which it is no indignity to go. This change is already beginning, and the infirmaries are changing their names and becoming hospitals. But, of course, much more than that must be done. They must become in some way linked up with the hospitals; a consultant staff must be available and all necessary equipment for high-class work must be provided." He could think of no better scheme than that outlined in the Dawson Report, with the infirmaries as primary health centres, the hospitals, with or without schools, as secondary centres, all linked up with the teaching schools. For his part he believed that "the medical service of London should be administered by the County Council through a committee, a Council of Medical Service, appointed *ad hoc*, at least half of whose members would be medical men, and whose membership would also include women. Such a council would have a central headquarters, with a permanent staff, would be in communication with all institutions having beds for the sick, and would know and could advise the general practitioner as to the existence of empty beds of all kinds in all areas. Communal services would also be under its care." Later on Mr. Morris sketched other functions of this Central Council: it would be an agent for making grants and collecting payments; it would be the finance committee of the service, the central buying, storing, and distributing committee, the hospital labour exchange, an authority on medical education and nurses' training, a bureau of information on all matters relating to health, and would collaborate with the Medical Research Council, the Consultative Council, the College of Nursing, and other bodies. Under its jurisdiction the hospitals and infirmaries in any area should form a unit group, free to work out details and carry out improvements. The infirmaries, called by another name, should cease to be under the control of the guardians; they should be, together with the existing hospitals, under the control of a group managing committee, which would be subject to the Central Council.

Financial Arrangements.

Through this Central Council money grants should be made, both from the national exchequer and the county rates. The teaching hospitals should obtain grants in aid entirely from the national exchequer; the non-teaching hospitals from both sources; and the infirmaries or municipal hospitals from the municipal rates for upkeep and from the national exchequer for capital expenditure.

Mr. Morris was emphatic in declaring that all traces of social grading as between different institutions ought to be eradicated. The beds in hospital or infirmary should be of the same standing and efficiency. The infirmary should be visited by consultants, and surgeons operate in its theatres. Paupers should be admitted to either class of institution and the guardians pay the cost of their upkeep. All other patients should contribute, either through national or private insurance or by private payment. General practitioners should have a right to admit their own cases to municipal hospital beds and treat them when admitted, and to find there the assistance of specialists on terms to be arranged, free for certain classes of cases and not for others. The voluntary hospitals should remain voluntary be voluntarily managed and draw their support largely from voluntary subscriptions; such subscriptions should not be used for the simple treatment of patients, which would be defrayed by State or personal insurance, but for investigation, experiment, and the advance of medical knowledge.

Payment of Medical Staffs.

Payment of medical staffs both at hospitals and infirmaries must come into force. It "would include payment for services rendered to all who would have a right to claim free institutional treatment—the State insured, for instance—while for those not insured or privately insured extra payment should be received." The payment of the staffs of all hospitals should be by salary for insured patients and by fees for paying patients. The idea that a higher grade of service was given in one hospital than in another must be dispelled, and if it was eventually decided to open beds for patients paying full cost or to establish a system of graded payments, it should be understood that the differences in payment made no difference in essential treatment, but only in amenities.

General Discussion.

Dr. G. E. HASLIP said that the voluntary hospitals were instituted for the poor and distressed, but those classes were no longer found in the wards. The patients consisted of insured persons, or of workmen suffering from accidents for which they received compensation under the Act. Out of every hundred surgical operations performed in this country ninety were done free by the profession. That was wrong economically; it meant that in the remaining 10 per cent. of cases the surgeon had to charge a fee beyond the range of middle-class capacity. With regard to the Poor Law infirmaries there had always been a slur upon them, for the reason that when the Poor Law régime began the medical appointments were not given to the best men, but to men willing to accept the posts at the lowest remuneration. What he understood by a municipal hospital was a hospital open only to the people within the area of the municipality. At Bradford the municipal hospital should be available only for people living in the town, whereas the Royal Infirmary should be open for severe cases from the surrounding districts, where it would surely find plenty of scope. The municipal hospital should be open for free treatment to the millionaire, if he wished it, as well as to the pauper. That principle was accepted already in the venereal disease clinics. He did not believe that free medicine would ruin the private practitioner any more than free education had eliminated the private school. The voluntary hospital should be quite apart from administration by the local authority, its guarantee coming direct from the State exchequer, while the municipal hospital should be on the rates. Dr. Haslip declared himself a supporter of the part-time principle, and also of the general practitioner clinic, which he believed would ameliorate the hard conditions of industrial practice.

Sir JAMES GALLOWAY said that in London they hardly appreciated the great change which was taking place in the hospitals in industrial England, but before they were aware of it the storm would burst in the metropolis. He agreed with the developments so ably pioneered at St. Mary's. He forecasted a future in which the working classes, no longer poor, but better able to pay fees than the people from whom fees were exacted in the past, would demand admission to these hospitals through various forms of insurance, not necessarily national. It was on that matter that the profession must be prepared with a considered policy. He believed that the services must be available for all who wanted them—alike the indigent, those able to pay on some contributory system, and those able to afford full fees.

Dr. W. W. STOCKER said that in Willesden, where the medical officer of health had turned the fever hospital building into a municipal hospital, the fight was already upon them. It had been found there that the various clinics were eating into the practices of some general practitioners, but the local profession had induced the medical officer to see that there was a place for the general practitioner as a part-time officer in those clinics. In Willesden, by the way, the Labour party—nearly a majority on the council—supported the voluntary hospital principle, and was not in favour of a projected large extension of the municipal hospital, which would add new burdens to the rates.

It was agreed to adjourn the discussion, and Dr. A. G. STEWART, Medical Superintendent of the Paddington Infirmary, in responding to the request of the PRESIDENT to reopen the discussion on the next occasion, mentioned that 69 per cent. of the patients in the infirmary were fee-paying patients.

HOSPITAL TREATMENT FOR PENSIONERS.

WE have received for publication the following statement by the Ministry of Pensions:

Wide publicity was given during last week to a report that at the half yearly conference of the Lancashire and Cheshire Discharged Sailors' and Soldiers' Association it was stated that the Regional Pensions Committee had discovered 7,000 men who were slowly dying while awaiting hospital treatment, because there were no beds.

The Minister of Pensions, who has personally investigated the matter, is satisfied that the allegation is without foundation. The waiting list for beds in the North-Western Region, which comprises the counties of Lancashire, Cheshire, Westmorland, and the Isle of Man, has never at any one time exceeded 1,544. At the present time only 600 cases are on the waiting list, 330 being neurasthenic. As regards the other types of case, the majority will, in the ordinary course, be admitted within a few days, as the total number is little in excess of the hospital vacancies arising during such a period.

Owing to fluctuations in the number of hospital inmates there must be, at any given moment, a certain number of cases awaiting admission, but the average time of waiting for in-patient treatment in the Ministry of Pensions hospitals does not exceed a fortnight, special arrangements being made to accommodate urgent cases without delay. As regards neurasthenic cases, there has been some difficulty owing to a shortage of skilled neurologists, to meet which special training arrangements have been made by the Ministry. A new hospital for the treatment of neurasthenics will shortly be opened at Mossley Hill.

In view of these facts the statement that 7,000 men are dying owing to the lack of beds is a mischievous misrepresentation of the actual position.

England and Wales.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Lecture on Experimental Rickets.

AT a meeting of the Sheffield Medico-Chirurgical Society, held on November 25th, with the president, Dr. F. J. Sadler, in the chair, Professor Mellanby gave an address on experimental rickets. At the outset a brief outline of the distribution and properties of the vitamines at present recognized — antiscorbutic, water-soluble B, and fat-soluble A—was given. Experimental evidence was then offered that the antirachitic action of fats was not due to the fats *per se* but to something they contained of the nature of a vitamine. Cod-liver oil, butter, and suet had a greater antirachitic action than lard and the vegetable oils. There was also a wide difference in action among the vegetable oils, some, like peanut and cocoanut oils, having a much greater antagonistic effect to the development of rickets than olive and linseed oils. The action of the energy-bearing elements of the diet in regard to rickets was then discussed. Meat was found to have a definite antirachitic effect. On the other hand, bread was rickets-producing, and results of quantitative experiments were given where the amount of bread only varied, and it was definitely shown that, other things being equal, the greater the amount of bread consumed the more intense was the rickets produced. The addition of carbohydrates (glucose) to standard diets was also shown to produce greater rickets. The lecturer then dealt with the relative effects of diet and lack of exercise as factors in the etiology of rickets, and it was shown that whereas the latter was of importance, its place was quite secondary to diet. Instances were given of (1) puppies developing rickets when allowed great freedom but eating a rickets-producing diet; (2) puppies remaining in normal health when confined but receiving a full diet; (3) puppies with rickets cured during confinement when allowed to eat a suitable diet. The lecture was illustrated by many lantern slides, including a number of radiographs, photographs, and microphotographs showing the effects of diet on the formation of the teeth and jaws obtained in Mrs. Mellanby's investigations.

Sheffield's New Chair of Pharmacology.

Dr. Arthur Hall, in thanking Professor Mellanby for his interesting paper, offered on behalf of the medical profession of the city and district a hearty welcome to him as the first occupant of the new chair of pharmacology in the University of Sheffield. Dr. Hall praised the far-seeing and progressive policy of the board of the Sheffield Royal Infirmary in electing the new professor as one of its honorary physicians. In no other centre of medical education in the kingdom, he said, was there such a direct combination of laboratory worker and clinician dealing with this subject, and only in one or two places was there anything of the kind. The value of it to students, to post-graduate workers, to brother clinicians, and last but not least to the community, must grow rapidly in the near future. Professor Mellanby's dual appointment was but one link in the chain which the Faculty of Medicine was forging to bind together the pure laboratory worker and the clinician. Other links were the appointment of Professor Leathes as honorary physiologist to the Royal Infirmary and the Royal Hospital, and the interweaving during the middle years of the students' curriculum of laboratory work in anatomy and in physiology with elementary clinical hospital practice. By those means it was hoped that the object at which the larger metropolitan schools of medicine were aiming by means of the "unit" system might be reached by a slightly different procedure, less disturbing to existing conditions, and—in the eyes of some—not less effective. Dr. Hall also welcomed Mrs. Mellanby, some of whose work on the influence of diet in producing defective teeth had been referred to in the lecture.

Ireland.

The Commandeering of the Dublin Public Health Offices.

In connexion with the commandeering of the offices of the Dublin Public Health Department by the military authorities the Lord Mayor has addressed a letter to the competent military authority. He writes:

> The Public Health Department deals with the activities of the corporation under the various Public Health Acts, and, as you are aware, is vital to the well-being of the city. Medical practitioners and public hospitals in the city are accustomed to and require to be in constant communication with this department day and night in connexion with the notification of infectious diseases, removals to hospitals, disinfectants, etc. This department has been particularly busy during the past five or six weeks, as the officials thereof were dealing with a serious outbreak of typhus in the city. The gravity of any interruption in dealing with this formidable epidemic can be easily understood, and such an interruption will certainly occur if any dislocation of the existing means of communication were to take place. In this connexion I may add that this department is in constant communication with the military medical officers, a fact which, if not already known to you, may be verified by reference to the R.A.M.C. Department, Dublin Castle. Having given their most careful consideration to the question the Joint Committee decided that occupation of these buildings is vitally necessary for the work of the city as no alternative accommodation exists, and to vacate them would be to jeopardize the public health of the city and dislocate its internal arrangements. I have been requested by the Committee to place these facts before you, and they are satisfied that on consideration of same you will see the impossibility of your order being complied with.

The Major General Commanding the Dublin District replied that he was unable to change his decision regarding the commandeering of the public health department, and requested to be informed of the earliest possible date on which these offices could be handed over to him. It is believed that this decision will seriously interfere with the efficient administration of the public health in the city of Dublin.

Royal Victoria Hospital, Belfast.

The board of management of this institution has elected Colonel John V. Forrest, C.B., C.M.G., M.B., medical superintendent, in the room of Colonel A. Deane, resigned owing to ill health. Colonel Forrest is A.D.M.S. for Belfast District, but has nearly completed his period of service; he has had wide experience of military hospital administration. During the first three years of the war he was attached to the D.D.M.S., Boulogne base, and was three times mentioned in dispatches and awarded the C.M.G. In December, 1917, he was transferred to the Italian Expeditionary Force as D.D.M.S. and was responsible for the medical arrangements on the lines of communication; he was again three times mentioned in dispatches and awarded the C.B.

Correspondence.

THE RISKS AFTER OPERATION FOR TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

Sir,—The interesting and instructive article by Mr E. Watson-Williams upon the above subject, published in your issue of December 11th, raises once again the important question as to how the very large number of hospital patients suffering from tonsils and adenoids are to be safely and efficiently treated, considering the present acute shortage of hospital bed accommodation.

Theoretically, hospital patients should be treated on the same lines and with the same precautions as are observed when dealing with private patients, but, from the practical point of view, is this possible under existing circumstances? Until members of the profession arrive at unanimity as to the best method of dealing with children operated upon, can we reasonably expect hospital authorities or boards of guardians to provide the accommodation which most, if not all, laryngologists consider essential? My own practice in dealing with private patients is to insist upon two days in bed and two days in the house following operation, but in my hospital clinic the great majority of the children operated upon have to be sent home after a few hours' stay in the out-patient department—a highly unsatisfactory but under existing circumstances necessary procedure. Yet even to-day, to my personal knowledge, these operations are still performed upon private patients at consulting-rooms, the patient being sent home by train or taxi within a few hours. To my mind the operation is far too lightly regarded by most parents and by many members of the profession. Deaths from the anaesthetic are still too frequent, while complications—for example, acute otitis media, acute mastoiditis, glandular infection, haemorrhage, etc.—are practically unknown if the child is kept in bed and properly nursed for two or three days subsequent to operation.

To expect hospital authorities to provide the accommodation necessary for the ideal treatment of these very numerous cases is, I think, unreasonable; but if Education Committees through their medical officers take the responsibility of advising and of insisting upon children being operated upon, they should, in my opinion, provide beds for those whose homes are judged by their own medical officers as unsuitable for safe post-operative treatment.

Before, however, they can be expected to entertain any such idea, or consent to taking such steps as practical experience demands, they ought in all fairness to be quite sure that the profession really practise what they preach.—I am, etc.,

William Milligan,
Aurist and Laryngologist, The Royal Infirmary, Manchester.

Manchester, Dec. 20th.

Sir,—I trust you will give me space to congratulate Mr. E. Watson-Williams on his most valuable article upon the dangers attaching to the present arrangements for operations on tonsils and adenoids in children.

The first person, I believe, to draw attention to these risks was Mr. Douglas Drew, in his letter which appeared in your issue of November 1st, 1919. This was followed by a letter from myself on November 15th of the same year. We seemed to me to make out a strong case, but to my disappointment nothing seemed to come of our letters. Judge, then, of my delighted surprise to find in your issue of December 11th of this year the concise, restrained, but forceful article by Mr. E. Watson Williams. My pleasure at the appearance of the article was reinforced by the letters in your issue of December 18th by Dr. P. Watson Williams and Mr Scott Ridout. When names like these are moving in the matter something will be done.

I trust that Mr. E. Watson Williams will proceed further, and that he will write a pamphlet in popular terms which may be used for propaganda purposes to induce local authorities and Education Committees to do their duty in this matter.—I am, etc.,

PETER MACDONALD,
Senior Honorary Surgeon, Eye, Ear, Nose and Throat Department, York County Hospital.
York, Dec. 19th.

ASEPSIS IN MIDWIFERY.

SIR,—I have read with interest the paper by Dr. W. J. Young, published in your issue of December 18th, on "Some Points in Midwifery Practice," but it is difficult to refrain from comment on some of his views, more especially his remarks on the aseptic technique of obstetric practice.

Our efforts to combat the peril of *post-partum* sepsis are ridiculed by the description which Dr. Young gives of

> The aseptic accoucheur . . . gowned and gloved and gas-masked, who shaves the vulva and gives a bath of picric acid, will naturally douche the uterus in all cases and pursue a consonant post-operative routine.

But he draws less of a caricature than he thinks, for he really portrays an ideal, the soul of which is scrupulous care. Incidentally, I might say that such an accoucheur will have no need to douche the uterus. Dr. Young goes on to say that

> The ordinary general practitioner will . . . care for none of these things, and his patients will get along equally well;

and later that in view of the fact that

> Cases of sepsis will occur, just as cases of embolism and white leg and mammitis and puerperal insanity, in which one will not be able to trace a cause, . . . the pursuit of a technique which experience has shown to be adequate is enough.

Does an experience of more deaths from sepsis per 1,000 births in 1915 than in 1849 (see Registrar-General's reports) show that this technique is adequate enough? We still have from 1,000 to 1,400 deaths from puerperal sepsis every year in England and Wales, and for every death which occurs there are four or five cases of dangerous and anxious illness from sepsis, while in addition to these there are countless cases of minor sepsis often causing a persistent low degree of incapacity.

It is true, as Dr. Young states, that cases of sepsis will occur, but only so long as there is an absence of technique during labour. The overwhelming mass of puerperal sepsis is preventable, though, as a sop to our consciences, we are apt to speak too much of autogenous infection. It matters not whether the microbes exist upon the finger of the accoucheur or on the peri-anal skin of the mother, they are conveyed to the vagina or uterus during the course of examination, or from inadequate cleansing of the skin of the vulva and perineum.

So common is puerperal sepsis and so terrible are its worst cases that surely we cannot take too much care in the conduct of labour, whether it be normal or manipulative. —I am, etc.,

London, W.1, Dec. 18th. ALECK W. BOURNE.

THE NAVAL MEDICAL SERVICE.

SIR,—The great attraction of the public services is the security of tenure. This does not apply to the navy. I am myself a concrete instance among many.

> Over a quarter of a century ago I joined the navy with a certainty of full pay up to the age of 55, an excellent chance of promotion to higher rank than Surgeon Commander, and at the worst a pension of £547 10s. per annum. I arranged my life on that plan, taking out endowment insurances expiring at age 55.
>
> By a stroke of the Admiralty pen the conditions were altered last year. I am now retired several years earlier than 55. Consequently I lose several years' full pay, all my chances of promotion, and pay expensive insurances for some years on a very reduced income. I gain somewhat increased pay for two or three years and a maximum pension of £600. But this pension is to be regarded as to 20 per cent. due to increased cost of living, and is liable to reduction to that extent—that is, my ultimate pension may be nearly £50 less than I was originally guaranteed.

Well may Mr. Walter Long airily state that it was recognized that there may be some cases of hardship under the new regulations. He might have been less airy had he been one of the said cases. What guarantee have the new aspirants to the navy that the same breach of faith may not be meted out to them? Let them not imagine that they may retire on a gratuity after a few years; such retirements are at the discretion of the Admiralty and are duly exercised with a regard to the Admiralty's convenience. It would take a lengthy letter to point out the many disabilities of a naval career, but shortly the principal points are: Financially, the naval medical officer is (if married) a poor man and far worse off than his colleagues in any other public service; and, in any case, with increasing years, the social conditions become very uncomfortable. There are surgeon commanders in wardrooms of ships at sea years older than any other member of the mess, and twenty years older than the vast majority. Some are upwards of ten years older than their captains. These and other disabilities are largely a matter of maladministration. Incapacity is still rewarded with quiet billets where no harm can be done, and a stool at the Admiralty is still the royal road to promotion. Status and respect are largely a matter of one's own personality. Work is what you make it. I fancy your six correspondents (December 11th) are moderately junior. Clinical work among 1,200 young men is only a part; individual physical guidance and prevention of disease generally may well take up the time of more than one medical officer.

The onlooker may say, "You have your pension *and* your profession." Let him try for civil work confessing that he is over 50 and has been in the navy, and see what luck he has. *Experientia docet.*

I hate anonymity, but must at present subscribe myself—

December 13th. "ACTIVE LIST."

TREATMENT OF ANGINA PECTORIS.

SIR,—I read with much interest Dr. Blackhall-Morison's letter in your issue of November 27th, 1920. He advisedly describes Jonnesco's methods as heroic. Operative surgery would not remove such conditions as are common in angina pectoris, namely, cardiac dilatation, fixed chest, amounting often to emphysema, and increased arterial tension. There are many varieties of angina pectoris, but they are as follows in a typical case of true angina, of which Osler says "no instance of true angina has come under my observation in which there were not signs of cardiovascular changes." Such a case would exhibit attacks of agonizing pain and breathlessness which are not marked by periodicity, and any one of which may prove fatal to the patient. There are frequently premonitory pains down the arms, especially the left, and an alteration in the left radial pulse. On physical examination the heart is found to be largely dilated, showing signs and symptoms of fatty degeneration and, more often than not, overlaid by an emphysematous lung. There is little or no chest-excursion at the level of the nipples. There is eversion of the free ribs and the breathing is abdominal. During the attack the chest is absolutely fixed and the patient is unable to move or speak, can scarcely breathe, and labours under the fear of impending death. *Post mortem* the heart is found to be in a state of fatty degeneration, and the coronary arteries sometimes, but much less frequently, atheromatous.

Now, the diminished chest movement implies diminished negative pressure in the chest, and in marked cases is turned into positive pressure. This enables the enlarged heart to exert pressure in many directions and on important organs and nerves, which may cause—

1. Suffocation from pressure on the lungs and diaphragm.
2. Pressure on the vagi causing pulmonary and gastric complications.
3. Pressure on the sympathetic causing increased arterial tone. Sir Lauder Brunton in a Harveian Oration suggested that the pain in angina pectoris was caused by the over-distension of the heart with blood.

Cases of angina pectoris complicated with aortic symptoms are fairly frequent, but the aortic signs and symptoms may be simulated by conditions of cardiac dilatations—for instance:

Case 1.—A man, aged 49, attended my clinic at the St. Pancras Dispensary in 1908 suffering from angina pectoris and marked distress; the breathing was laboured and entirely diaphragmatic. A pulsating tumour was to be felt in the region of the sternum, accompanied by marked thrills all over the chest. There was a second pulsating tumour in the abdomen just about the umbilicus with a dull note on percussion extending up into the thorax. The heart was dilated four inches outside the left nipple. The patient had suffered from syphilis twenty years before, and the case was diagnosed as one of angina pectoris complicated by double aortic aneurysm. The attacks were apt to come on after the least exertion. A skiagraph revealed a large dilatation of the heart and a gourd shaped swelling of the ascending aorta. The diaphragm was pressed down into the abdomen, accounting for the pulsation to be felt in that region.

The cardiac dilatation was gradually reduced by a three months' course of "Nauheim" resisted exercises, and the chest movement subsequently re-established by selected breathing exercises. (These exercises were demonstrated before the Medical Society of London on November 8th, 1920.) A second skiagraph was taken six months afterwards, when it was found that the heart was reduced to the normal dimensions, and had assumed its proper position in the chest. The gourd-shaped swelling of the aorta had nearly disappeared, and the abdominal and thoracic pulsations were no longer to be felt, neither was there any thrill. The anginal symptoms disappeared, and gradually the patient was able to resume his ordinary occupation. I saw him a month ago—that is, after a lapse of twelve years, and he had no recurrence of his anginal symptoms.

Case 2.—A man, aged 72, consulted me in 1909 suffering from angina pectoris, which prevented him from following his favourite occupation of salmon fishing. He was unable to go upstairs to bed without help, and had had three attacks of angina in the last four months. He had fixed chest, emphysema, and cardiac dilatation. The second sound in the aortic area was replaced by a blowing murmur. After six months' treatment his heart was reduced, his chest made mobile, and he was able to go back to his salmon fishing. I last heard of him five years ago, when he had no recurrence of angina.

Case 3.—A nurse, unmarried, aged 44, in 1895 had endocarditis, intensified by overwork and worry, and lifting a heavy patient. During three months she had six attacks of angina pectoris induced by exertion and preceded by high temperature. She was seen in January, 1896, in consultation with the late Dr. Marshall, senior physician to the Bristol Hospital, and her local doctor, Mr. White of Nailsea. She had a large amount of cardiac dilatation, which was treated as above, and made a complete recovery; twenty-five years afterwards her health was maintained, and she is now matron of a nursing home.

Of 200 cases of angina pectoris treated during twenty years by these methods 185 have been relieved.—I am, etc.,

London, W.1., Dec. 15th. ERNEST KINGSCOTE.

Medico-Legal.

CHARGES OF FRAUD IN INSURANCE PRACTICE.

AT the Manchester Assizes on November 29th, before Mr. Justice Acton, John Thomas Godfrey, M.B., Ch.B., of Royton, pleaded not guilty to charges of fraudulent conversion of goods and attempting to obtain money by false pretences. The charges were preferred by the Lancashire Insurance Committee. Counsel for the prosecution said the indictments containing the nine counts fell into two distinct parts. The first three counts contained a series of three charges of attempting to obtain from the Lancashire Insurance Committee sums in respect of fees for attendance on certain patients whom, the prosecution suggested, Dr. Godfrey never, in fact, attended. The remaining six charges related alternatively to three specific charges. It was stated that, having received, on account of certain persons, drugs and chemical appliances, the defendant converted them fraudulently to his own use, or alternatively, that he obtained the drugs and appliances from a chemist at Royton on the false pretence that they were required for the use of the patients named. The inference that the prosecution asked the jury to draw was that these goods were never intended to reach the patients at all, and that they were fraudulently converted by the defendant to his own use. In regard to the first part of the case, counsel said that the three patients were invalided [illegible]. Counsel suggested that the only inference the jury could draw from the detailed circumstances of the case was that the doctor [illegible] the people who received certain certificates [illegible] that the attendances had, in fact, been [illegible], and, with regard to the second group of charges, that the drugs named were, in fact, required for the patients set [illegible]. Three [illegible] denied having received treatment, [illegible], drugs or dressings from the accused, and the [illegible] stated in evidence that they had not [illegible] the defendant on the dates mentioned.

Dr. Godfrey, giving evidence on his own behalf, said that he [illegible] his practice at Royton about two years ago; he had over a thousand panel patients on his list, with some forty [illegible], and he had some [illegible] to 7,000 private patients. On an average fifty or sixty people attended at his surgery during the day. He had his own store of drugs, and if he treated a panel patient with them, he sent in an account to the chemist for an equivalent quantity to that he had used, following the usual custom. All the witnesses mentioned were treated by him on the dates stated on the certificates. Having referred in some detail to the circumstances of the various charges, Dr. Godfrey, in reply to his legal representative, said that from first to last, in these attendances or for these drugs he had never any intention in his mind of defrauding this Government department of a single penny. Four witnesses were called for the defence, and certain witnesses for the prosecution were recalled.

His Lordship, summing up, told the jury that the ultimate issue to be decided was: Of two witnesses, one of whom said black and the other said white, whom did they believe? A good deal of the somewhat detailed examination and cross-examination they had heard was only of value in so far as it guided the jury to a conclusion on the degree of credibility to be attached to one side or the other. The jury, after an absence of twenty-five minutes, returned a verdict of guilty on the first six counts, and sentence of three months' imprisonment was passed.

In some of the newspaper reports of the trial, including those published in the *Manchester Evening News* and the *Manchester Evening Chronicle*, the accused is described as a "coloured doctor."

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

AT the graduation ceremonial held in the M'Ewan Hall on December 17th the following degrees were conferred. Most of the successful candidates for degrees were students in the Faculty of Medicine, and out of a total of 85 medical degrees about a quarter went to women students. Principal Sir J. Alfred Ewing performed the "capping" ceremony.

M.D.—*J. B. Alexander, S. Arnott, †P. W. P. Bedford, H. P. Caithness, ‡Frederick Dillon, Jean D. Don, F. J. C. Johnstone, *G. J. I. Linklater, Isobel M. MacLullich, Ada J. Macmillan, *J. McC. A. Macmillan, J. M. D. Scott, J. M. Smellie, E. T. A. Stedeford, *R. M. Stewart, *Gladys Ward.

M.B., CH.B.—E. H. Ablett, Isobella M. M. Aitken, C. B. Brownlie, E. M. Byres, C. A. Calder, E. H. Connell, Mary E. Cripps, Elizabeth E. Critchley, Cornelia J. J. Cross, A. W. G. Cumming, A. H. Cuthbert, W. Eadie, J. W. Eijkelenboom, Dorothea M. Gall, ‖R. M. Galloway, S. G. H. Gasson, Isabella A. Gillespie, I. Goldberg, Winsome D. Grantham, W. L. Grassick, H. A. C. Gregory, J. D. Grierson, E. F. Griffin, T. E. Hastings, H. H. Holden, W. L. Hunter, E. Isserow, R. Jackson, M. K. Jardine, J. P. Leckie, D. R. Lewis, J. K. C. Liddell, J. S. Macbeth, Flora MacDonald, Isabella J. Macfie, R. MacGarrol, §A. L. McGregor, F. A. E. Meiné, P. S. Menon, J. D. Mill, Rosemary O. Morris, Deborah F. Morrison, H. Nichol, H. B. Pierce, C. L. Pieters, J. W. Rabkin, Roberta T. Rankin, Marion E. Reid, F. H. Reynolds, J. Riesnik, D. G. Robertson, Helena J. Robertson, John Robinson, G. V. S. Rodriguez, Eileen S. P. Rowney, J. G. R. Scarff, J. Smith, Dorothy M. Somerville, Helen C. Spencer, Marguerite Stewart, S. S. Sumner, J. B. Taylor, L. W. Thomas, J. A. Thomson, P. C. du Toit, O. H. Wild, Anna M. Williams, D. H. Williamson, Christine V. D. Willway.

D.P.H.—R. M'M. Bowman, G. Lilico, C. C. Philip.

* Commended for thesis.
† Highly commended for thesis.
‡ Awarded gold medal for thesis.
§ First-class honours.
‖ Second-class honours.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Part I*: E. W. Ashworth, Eudora V. Beatty, J. R. Bhatia, D. Brown, Hilda Cantrell, A. Cathcart, Marie B. Clarke, Mildred M. Clegg, R. W. Cockshut, H. Cohen, M. J. Cohen, C. Cookson, Gladys W. Darlington, J. B. Elleray, W. C. Evans, R. A. Galway, J. V. Hall, S. B. Hall, T. K. Hughes, Hilda F. Jefferson, Irene E. Kenworthy, Dorothy E. Knowles, Eleanor Lancelot, N. H. H. Longton, B. L. McFarland, F. Q. M'Keown, Annie Mather, Vera M. Mitchell, J. H. Moorhouse, Annie R. Niven, Muriel Pickering Jones, E. D. Pridie, Gertrude E. Pugmire, *D. Riding, J. E. T. Shirlaw, Enid F. Stowell, J. E. Sykes, N. S. Taylor, Mary A. Thomas, A. K. P. Tobin, L. F. Unsworth, S. A. Walker, C. H. Walsh, A. Weisberg, *C. A. Wells, Dorothy A. Williams, Grace H. Wood. *Part II*: *A. V. Campbell, C. H. R. Carmichael, †E. N. Chamberlain, R. W. Cockshut, J. B. Elleray, E. H. Glynn, †P. R. Hawe, A. R. Jones, Beatrice M. Niven, N. S. Taylor.

* Distinction in Pathology.
† Distinction in Forensic Medicine and Toxicology.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Jurisprudence and Hygiene, Pathology and Bacteriology*: M. Bewley, G. M. Irvine, C. D. Dickman, *D. Hugo, *C. E. Brunton, *L. O. Vermeul, *A. Robinson, *S. G. Ransford, G. Blackall, C. E. Oven'ale, S. G. Weedon, M. W. Kaplan, W. B. E. McCrea, J. C. Gillespie, M. G. J. Powell, J. C. J. McEntee, C. J. T. Murphy, H. S. King, I. Moran, J. Lait, G. C. B. Robinson, J. B. Horan, L. M. Hilliard, G. C. Malherbe, R. H. Satchwell, W. S. Dickson, R. Lang, Margery Bourchier-Hayes, Beryl I. F. Cockle, J. V. Williams, I. F. A. de Villiers, W. E. Holmes. *Materia Medica and Therapeutics, Jurisprudence and Hygiene*: A. G. Bewley, Doris Holland, S. W. Russell, A. E. Phillips, N. McI. Falkiner, H. C. Dundon, H. L. Hanna, J. Devane, J. F. van Staden, J. J. P. Kelly. *Pathology and Bacteriology*: W. H. Smith, A. D. Ward, J. R. Craig, J. R. Wills, A. S. Bradlaw, Vera G. M. Menary, W. A. Murphy.

PART II. *Medicine (M.B.)*: E. C. Smith, L. Herzenberg, C. E. McQuade, P. I. Levitt, D. de Bruijn, T. Radloff, J. H. B. Crosbie, E. G. Campbell, Nannette Norris, Mary Horan, I. Levy, M. E. McBrien, Nora Griffith, E. W. S. Deale, H. O. Hofmeyr. *Midwifery (B.A.O.)*: P. Jabkobitz, Margaretta T. Stevenson, D. de Bruijn, J. A. Acheson, J. C. Davis, E. G. Campbell, Alice E. Lawlor, P. M. J. Bobbett, L. Wigoder, J. C. Brennan, T. Radloff, A. S. Bradlaw, J. R. Craig, Edith F. Willock, Vera G. M. Menary, J. R. Waugh, R. V. Dowse, J. M. Semple, Mary Horan, R. H. Satchwell, H. O. Hofmeyr. *Surgery (B.Ch.)*: *T. Radloff, C. E. McQuade, R. H. J. M. Corbet, F. Y. Pratt, R. W. Power, E. W. S. Deale, T. F. L. Cary, I. Levy, F. W. Shegog, Elinor D. Stopford, J. A. Smith, Elsie A. Burns, H. O. Hofmeyr, C. S. Wilson, Emily E. G. Baillie, Constance McIlrath, D. J. Browne, D. V. Latham, E. S. E. Mack, Ruth F. Flavelle, Nora Griffith, S. R. Hill, T. W. Panter.

D.P.H., PART I.—*Chemistry, Bacteriology, Physics and Meteorology*: S. J. Healy, S. K. Sen, F. W. Godbey, C. L. McDonogh, P. J. Lane.

PART II.—*Sanitary Engineering, Sanitary Inspection and Report, Hygiene, Epidemiology, Vital Statistics, Public Health Law*: S. J. Healy, P. J. Lane, S. K. Sen, J. P. Quinn, Mary C. Sheppard.

* Passed on high marks.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

AT the annual meeting of the Royal College of Physicians of Edinburgh, held on December 2nd, Sir Robert W. Philip was re-elected President for the ensuing year. The other office-bearers for the year were appointed as follows:—Vice-President: Dr. Harry Rainy. Councillors: Drs. John W. Ballantyne, Francis D. Boyd, George M. Robertson, Robert Thin, and James Lamond Lackie. Treasurer: Dr. Norman Walker. Secretary: Dr. J. S. Fowler. Honorary Librarian: Dr. John William Ballantyne. Curator of the Research Laboratory: Dr. J. J. Graham Brown.

George Sandison Brock, M.B.E., M.D., was elected a Fellow of the College.

At an extraordinary meeting, held on December 14th, Sir Robert Philip, President, in the chair, Drs. F. W. N. Haultain and John Macpherson, C.B., were elected as Representatives of the College on the Board of Management of the Royal Infirmary.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the College on December 15th the following candidates were admitted Fellows:

W. Barclay, W. G. Borrie, I. McW. Bourke, E. E. Bronstorph, F. R. Brown, J. Chisholm, J. L. A. Grout, G. M. A. Herzfeld, W. R. C. Heslop, R. L. Impey, M.C., S. Jesudason, F. H. Kennedy, G. E. Kidd, M.C., J. T. M'Cullagh, E. L. Mackenzie, M.C., J. Morlet, S. K. Mukhopadhaya, H. C. W. Nattall, W. T. Patterson, J. W. G. H. Riddel, M.C., H. D. Rollinson, Z. M. H. Ross, W. H. Simpson, A. C. Smith, J. E. Stacey, W. B. B. Taylor.

Medical News.

WE are asked to state that the General Committee of the Royal Army Service Corps Memorial Fund is prepared to pay the cost, or part of the cost, of convalescent treatment for men who have served in the R.A.S.C. who are medically recommended for convalescent treatment and are unable to afford such treatment for themselves. Secretaries of hospitals are invited to bring such cases to the notice of the Honorary Secretary of the Fund, Kensington Palace Barracks, W.8.

MR. J. HERBERT PARSONS, C.B.E., F.R.C.S., D.Sc., has been elected President of the Illuminating Engineering Society. He was the first Chairman of Council of the Society and has taken a leading part in the sections of its work dealing with the influence of light on vision.

THE Ministry of Health has issued a revised list of the treatment centres for venereal diseases which have been approved by the Ministry up to the present date under Article III of the Public Health (Venereal Diseases) Regulations, 1916. The list also gives information as to the days and hours of the out-patient clinics and the days and hours for the irrigation of cases of gonorrhoea during the intervals between the clinics. Copies of the list can be obtained by those concerned on application to the Ministry of Health, Whitehall, S.W.

DR. INFROIT, Chief of the Central Radiological Laboratory in Paris, has recently died at the age of 46. He had undergone twenty operations for *x*-ray cancer, including amputation of the right arm and of the left hand at the wrist.

DR. MAURICE DEBOVE, professor of medicine, and for six years dean of the Paris Faculty of Medicine, has recently died at the age of 75. He was a voluminous writer on various medical subjects, and was the editor of a series of manuals of medicine, diagnosis, and treatment.

AFTER eighteen years' service in charge of the Assistance Publique in Paris, Monsieur G. Mesureur has been succeeded by Monsieur Mourier.

LIVINGSTONE COLLEGE, Leyton, which during the war was used as a hospital for wounded soldiers, has been reopened as a missionary college. The work of the twenty-third session is described in the annual report for 1919–20; an average of seventeen students entered each term, and included men from Australia, France, Switzerland, Sweden, Denmark, and Finland. Clinical instruction is given at Poplar Hospital, at the Seamen's Hospital, and at several medical missions; and there are in addition lecture courses. During the past year women students have been admitted for the first time.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"B. H. E." asks for advice as to claiming repayment in respect of tax paid as a full-time civil practitioner at a military hospital.

⁂ We advise this correspondent to write to the inspector of taxes for the district in which the hospital is situated, explaining the circumstances and asking for the appropriate form for the claim. The army rate varied, as did the civilian rate, with the amount of the total income; the maximum was 3s. 6d., as compared with 6s.

"F. H. L." sold his practice and ceased work on June 30th.

⁂ As the practice did not cease, our correspondent's liability is determinable on the three years' average basis only, but he is liable for the period to June 30th only—that is, on one-quarter of the assessment for the full year, the burden of the remaining three-quarters falling on his successor.

"E. H." inquires whether he is liable to super-tax as for 1920–21; his income for 1919–20 exceeded £2,000 owing to the receipt of army pay, but he has now retired and considers it unlikely that his present and future income will exceed £2,000 per annum.

⁂ Yes; the liability is measured by the amount of income chargeable to tax for the previous financial year, and there appear to be no special provisions for 1920–21 which would relieve our correspondent of liability on that basis.

"C. B. A." inquires as to the basis of calculation of his income.

⁂ If his practice was kept in being during his absence on military service his "income" is the average of the civilian earnings of the past three years, but our correspondent does not explain the facts sufficiently to permit of a definite reply.

CHRONIC NEURALGIA OF THE TONGUE WITH PERSISTENT GINGIVITIS.

DR. T. D. HALAHAN (Dowanhill, Glasgow) asks for suggestions in the following case of long-standing neuralgia of the tongue with persistent gingivitis: The affection began in November, 1914, following an abscess in connexion with a wisdom tooth. One morning the patient, who is a man aged 59, woke up with severe pain in the tongue; this continued for a few days, stopped for a fortnight, and then recurred, being present ever since in the daytime. The patient can sleep, but as soon as he uses the tongue the pain recurs, making his life a burden. The tongue is normal in appearance; common sensation and sense of taste are normal; there are no tender points; there is no history of syphilis, and the Wassermann reaction is negative. The knee-jerks and other reflexes are normal; the general health is good. The following treatments have been tried: Strychnine and other tonics; codeia; potassium iodide; bromides and arsenic; butyl chloral, pyramidon, aspirin, salicylates; insufflations of morphine, cocaine, etc. Last year an attempt was made to inject the lingual nerves with alcohol, but without success; there is some doubt, however, as to whether it was efficiently done. More recently the patient came under my care; as some of his teeth appeared septic they were extracted, and a vaccine (of streptococci) was prepared from the sockets. This gave some relief, and the rest of his teeth have since been extracted with further advantage. The neuralgia now, though much less severe, still persists, and would seem to depend on chronic slight inflammation of the lower gums; the upper gums are normal. The patient cannot tolerate peroxide of hydrogen on the gums, nor any of the common lotions; they irritate the gums and increase the neuralgia. He does not use his false teeth, and takes only minced food.

LETTERS, NOTES, ETC.

THOSE of our readers who are beekeepers will be interested to learn that a company has been formed, under the title of "Adminson, Limited," for the purpose of running an experimental apiary and of maintaining a beekeeping journal entitled the *Bee World*. From a copy which has been sent to us we judge that it will be useful to beekeepers. Full particulars can be obtained from the honorary secretary of the Apis Club, Port Hill House, Benson, Oxon.

A SPECIMEN copy of *Smith's Medical Visiting List*, now in its seventy-fifth year of publication, has reached us from the publishers, Messrs. Hazell, Watson, and Viney, of 52, Long Acre, W.C.2. The suggested scale of professional fees has been revised in accordance with present-day conditions. The lists are sold in two styles of binding, and in five kinds of ruling and spacing, at prices ranging from 6s. 6d. to 12s. 6d.

WE have received a well-written little pamphlet setting out the special features of the forthcoming edition of *Burke's Peerage*. This is the eightieth edition, the first having appeared in 1826 and the last in 1917. From its start the family connexion has remained unbroken, and at the present time Sir Henry Farnham Burke, K.C.V.O., C.B., Garter King of Arms, is chairman of the new company which has been formed to publish this historic work of reference. It contains a complete "guide to relative precedence," with the scale of precedence divided into degrees, to each of which one thousand or more are allotted, while each rank is numbered in seniority. Every person in the land, therefore, entitled to the precedence belonging to the peerage, baronetage, or knightage has his or her number attached to the key in the volume.

OCCUPATION IN THE TREATMENT OF NEURASTHENIA.

DR. [illegible] (Ministry of Pensions Neurological Hospital, [illegible]) writes: Extended experience in the treatment of neurasthenia has shown me that, although the difficulties of treatment depend [illegible] on the fact that while the pre-war patient paid to go to a neurasthenic hospital the [illegible] patient is being paid whilst he is ill; nevertheless, this is not an obstacle which is insuperable. A matter presenting greater difficulty is the question of occupying the patient's mind whilst he is in hospital, as in the absence of mental occupation the tendency is to hatch plots, to smoke or drink excessively, and to ponder freely over his temporarily warped outlook. This might be avoided if attached to, or within reach of, every neurological hospital suitable occupation were provided in workshops and gardens, with competent instruction; such a provision would be of the greatest assistance, both to the patient and to the medical attendant. Some [illegible] being made to provide treatment on these lines, but [illegible] the importance of the matter has not been sufficiently recognized. When applied to neurasthenics the adage "all work and no play, etc." is less true than its converse.

NOTIFICATION TO APPLICANTS FOR PUBLIC POSTS.

"[illegible]" writes: In the BRITISH MEDICAL JOURNAL of December 11th a correspondent drew attention to the non-intimation to persons applying that vacancies advertised have been filled, and suggested that this omission might be due to the negligence of the clerical staff. This is not always the case. [illegible] the recent invitation by the Scottish Board of Health to apply for district medical officer posts, the [illegible] for the guidance of applicants distinctly stated that if the applicant heard no more about it he was to conclude that the appointment had been made as official intimation would not be sent. I can understand the work occasioned by the notification of so many individual applicants, but surely an intimation could be made in the BRITISH MEDICAL JOURNAL as soon as a short list had been drawn up, that those who had not heard further would understand that they were out of the running? It is pure selfishness and bombastic officialism to fail in at least this small courtesy to fellow medical men.

DISAPPEARANCE OF RADIAL PULSE DURING DEEP INSPIRATION.

DR. H. FERGIE WOODS (London, W.) writes: After reading the note by Dr. Edgecombe on disappearance of the radial pulse during deep inspiration (December 11th, p. 890) I experimented with my own pulse, and found that during a deep inspiration my *left* radial pulse quite disappeared for as long as the breath was held, but the *right* pulse only disappeared if I braced back my shoulders while retaining the breath. The difference in the anatomical relations of the main arteries on the two sides of the body may account for this. I may say that, as far as I know, my heart and lungs are normal.

ANAESTHETIC FEES IN THE PROVINCES.

"ANAESTHETIST" writes: It seems to me that the fees paid for anaesthetics at the present time in the provinces are quite disproportionate and inadequate when the cost of chloroform and ether and the value of money to-day are taken into account. I have recently given anaesthetics for cases in which the operator received fairly large fees, whilst I only received a paltry guinea or two. Giving an anaesthetic skilfully in a long and trying case demands quite as much skill as doing the operation. I think it is time that the relationship between the fees of the anaesthetist and the surgeon should be revised.

IS LIFE WORTH LIVING?

THIS old question has, perhaps, become even more insistent since 1914, and is not infrequently answered in the most tragic way by men, women, and even by children. Periods of stress are naturally succeeded by reaction and epidemics of depression, and for these there can be no better antidote than wholesome remarks such as those in Dr. Lachlan Grant's address entitled *Is Life Worth Living?* in which the active agencies bearing down on society for its detriment and the counteracting forces working for hope, faith, uplift, and progress are lightly worked in with many an apt quotation. People may be divided into three types: the pessimists, who have no doubt in answering the question in the negative, and, like Lawrence in W. H. Mallock's *New Republic*, consider that "life is a d——d nuisance"; the indifferentists, who, while admitting that there are screws loose in society, prefer to jog along in comfortable intellectual stagnation and leave others free, if they like, to set matters right; and the optimists, defined by Jowett as believers in the coming of the best while looking at the worst; curiously enough those who live hungry and hunted lives are often most confirmed optimists. Dr. Lachlan Grant points out that idle people are a danger to themselves and to the community, and that much of the modern decadence is the outcome of empty and narrow lives with cramped activities, suppressed affections, and selfish egotism. He gives advice with a cheery optimism; the great ideal is to create conditions that will make life a continuous joy for everyone; physical pleasure and harmony of bodily functions are not the chief end of life, but they are necessary for a sane and whole personality; dyspepsia, as suggested by Thomas Carlyle's history, may be responsible for no small amount of pessimism, and to a certain class of pessimist our guide would say: "Buck up! get out in the open as much as you can; find out your bent and start a hobby. . . . Take an interest in something or in somebody *worse* off than yourself. If you find nothing to do, go out and kick a ball or run or climb."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 41 and 42.

THE following appointments of certifying factory surgeons are vacant: Marple (Cheshire), Ripley (Derby).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

NEW SCALE.

The following new scale of charges for advertisements will come into force on January 1st, 1921:

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Whole page	20	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.

THE
British Medical Journal.
THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

SUPPLEMENT

CONTAINING

CURRENT NOTES ON THE WORK OF THE ASSOCIATION

REPORTS OF CONFERENCES

MEETINGS OF BRANCHES AND DIVISIONS

THE GENERAL MEDICAL COUNCIL

MEDICAL BILLS IN PARLIAMENT

NATIONAL INSURANCE PROCEEDINGS

NAVAL AND MILITARY APPOINTMENTS

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British Medical Association.

CURRENT NOTES.

ANNUAL REPRESENTATIVE MEETING.

THE annual meeting of the Representative Body this year has been longer than in any recent year, and the conditions under which the JOURNAL is now printed do not permit the report of the proceedings to be completed in this issue. The report of the first three days, during which much important business was transacted, will be found at page 3 *et seq.*

Finance.

The Treasurer, in dealing with the financial statement in the Annual Report (SUPPLEMENT, April 24th), said that while the £5,000 received from the Government for the expenses of the Central Medical War Committee brought out the balance on the year's working on the right side, that amount did not nearly cover the whole of the expenditure of the Committee, which he estimated to have been £14,000. But the Representative Body had all along recognized the principle that this was the donation of the Association to the war, and was money well spent. The Chairman of the Journal Committee, Mr. Albert Lucas, in explaining the JOURNAL account in the financial statement, dwelt on the great difficulties that had attended the conduct of the JOURNAL during 1919, owing to increases in the cost of paper, in printers' wages, and postal charges. The Chairman of Council, as an instance of the effect of the rise in costs in all directions, said that an extra halfpenny on the postage of the JOURNAL meant an additional expenditure of £60 a week, or more than £3,000 a year. A member from Scotland suggested that the whole cost of the JOURNAL ought to be met from advertisements and outside sales; but Mr. Lucas pointed out that the JOURNAL was supplied to every member of the Association and was part of the benefit he received in return for his subscription; if members had to buy the JOURNAL as they did other journals in the ordinary way in the open market they would have to pay 1s. for a copy. The Treasurer added that if the member who had spoken were simply to pay £2 2s. to have the JOURNAL delivered to him, the balance sheet would show a profit of £31,000 a year. The JOURNAL was, in fact, a very paying concern.

Increase of Annual Subscription.

The Council, as members are well aware, decided some months ago to advise the Representative Body to raise the ordinary subscription to the Association from two guineas to three. The reasons which had caused the Council to make this recommendation were set out at length in its memorandum published in the SUPPLEMENT on June 5th. The Treasurer, in moving the necessary alteration in the by-law, said that had the economic situation not changed the subscription of two guineas fixed some years ago would have been sufficient. He referred to the great increase in cost in all directions, but rested the case for the larger subscription mainly on the need for adequate funds to carry on the forward policy the Association had determined to adopt. Not only must money be provided for the central work, but every active Division must be furnished with the funds it needed to carry out its peripheral work. It may here be noted that at a later stage the meeting instructed the Council to take steps to make higher contributions to the Divisions. Dr. Haslip warmly repelled the suggestion that the increase would lead to resignations, contending that when what the Association had done for its members in the past was remembered such resignations would not only be a calamity, but a disgrace. The Chairman had to point out that owing to the requirements of the law the resolution proposed by the Council must either be accepted or rejected as it stood, and that if an amendment to increase the subscription by half a guinea were carried it could not become operative; the effect would be that the matter would be postponed for a year. He, however, allowed a discussion upon the point, and the proposal for the smaller increase was rejected. Eventually the decision to raise the subscription to three guineas was carried on a vote taken by roll call, 116 Representatives voting in favour of the increase and only 22 against.

The Treasurer in his opening remarks had referred to the point made by Dr. Larking in our correspondence columns (SUPPLEMENT, June 19th), to the effect that the increase in subscription would fall very hardly on those who had retired from active practice, and suggested that some arrangement might be made to meet their case. After the vote in favour of the increase of the subscription, the meeting resolved to ask the Council to consider the desirability of exempting from the increased subscription any member who had retired from practice or was of forty years' standing. Many of them, it was pointed out, though they received no benefits from the political work the Association was doing, retained their membership out of a feeling of loyalty.

Medical Federation.

Since 1914 the question whether it would not be advisable for the British Medical Association to be able to become the centre of a federation of medical bodies has been under the consideration of the Representative Body. The proposal presents various difficulties, and involves alterations in the articles and by-laws. It has never been suggested that the British Medical Association should abandon its present position as an association of individual members, but that it should obtain power to be, in addition, a federation of medical bodies. The matter has become pressing, owing largely to the great development in the numbers and influence of the Branches in Australia; but the same question has arisen in South Africa and in Ireland, where there are movements in favour of autonomy, though both the Irish and South African bodies desire to remain in federation. The Chairman of the Organization Committee, Mr. Russell Coombe, said that the question really was whether the constitution of the Association should be so altered that connexion might in some looser but effective way be maintained with the big overseas Branches, and possibly Branches in certain parts of the United Kingdom, or whether it should become an association for Great Britain alone. Dr. Brackenbury pointed out that the proposal went beyond a federation with bodies outside Great Britain; it would allow federation of any other medical body, such as the Society of Medical Officers of Health or the Royal Society of Medicine. He proposed that the whole set of resolutions should be taken together; this was accepted, and they were carried, the Chairman of Council observing that it would now be the business of the Council to draft new articles and by-laws and submit them to the Representative Body.

Professional Secrecy.

Towards the end of the first day's work a debate began on the question of professional secrecy; it has attracted a good deal of attention in the newspapers, and the impression has, in some instances, perhaps unintentionally, been conveyed that there is some hesitation in the profession on the general principle. In 1915 the Council went fully into the question. It was advised that, apart from State officials, such as Ministers of the Crown, judges of the High Court, and others placed in positions of more or less supreme importance, the only classes of persons recognized by the law courts as competent to claim to hold statements made to them, involving matters of criminal import or otherwise, as absolutely inviolable from obligation to disclose were solicitors and barristers and ministers of religion. It was pointed out, however, that, though no such universally recognized protection attached to statements made to a member of the medical profession by a patient, there was admittedly a certain degree of professional secrecy recognized as being associated with such statements, although a conflict of authority existed upon the decided cases as to the extent to which this could be carried. As a result of its consideration of the subject the Council in 1915 expressed the opinion:

> That a medical practitioner should not under any circumstances disclose, voluntarily, without the patient's consent, information which he has obtained from that patient in the exercise of his professional duties.

The matter was raised again in the annual report of the Council because it had been suggested that a certain shifting of opinion on the subject had occurred, and that some medical men held the view that the ethical principle enunciated in the resolution quoted above does not apply to the same extent when the patient is suffering from venereal disease. On this the Council pointed out that, from the legal aspect of the matter, a claim could not be made upon the medical man in a case of venereal disease to disclose the confidence of his patient without the patient's consent, because no protection is afforded to him from legal consequences that might arise from his so doing. But it based its recommendation to reaffirm the principle on wider grounds, expressing a strong opinion against any relaxation of the immemorial tradition and practice of the profession, whether in respect of venereal or any other disease, since any such relaxation must tend to deter the public from consulting medical practitioners in cases in which it is necessary, in the interests of the community as well as of the individual, that they should do so. The Council recommended the Representative Body to reiterate its opinion with an additional clause referring to venereal diseases. Dr. Langdon-Down, the Chairman of the Ethical Committee, in submitting the proposal admitted that in certain circumstances, rare except in respect of proceedings in lunacy, it might become a question of conscience whether an exception should not be made. But he well said that were confidence between the public and the doctor—on which all professional work was based—to be withdrawn, untold, if unseen, damage would be done. The discussion, which was resumed on Saturday morning, was somewhat discursive, owing, as it subsequently appeared, to the fact that there were in truth two points for decision: the first was the opinion of the profession on the matter, and this was made plain in the resolution eventually adopted (p. 10). The terms had been redrafted by the Solicitor, but the effect did not differ from that of the form proposed by the Ethical Committee. The second point was what action could or should be taken to give effect to this expression of opinion. The Solicitor had advised the meeting that protection similar to that enjoyed by the legal profession could only be obtained by Act of Parliament, although in Scotland the Court of Sessions had decided that secrecy was an essential condition of the contract between a medical man and his patient. Mr. Hempson was not very hopeful about the prospect of obtaining such an Act, and eventually this second point was met as far as possible by a resolution instructing the Council to consider the extent to which and the ways in which the Association could support its members in maintaining professional secrecy. There was a certain want of reality about the discussion on the legal aspect of the matter, because the two stories told—if, indeed, they be not the same story—during the discussion by Mr. Hempson and Mr. E. B. Turner, show that the judges are themselves by no means disposed to regard lightly the claim of the medical profession to enjoy the right of professional secrecy.

On the same day the Minister of Health, in addressing, in London, a deputation from the National Birth Rate Commission, said that if the work of the venereal centres established under the auspices of the Ministry was to be really successful in inducing people to go to them promptly every means must be taken to ensure that the work was confidential. Certain cases in the courts of law, Dr. Addison continued, had recently given rise to some misgivings about the confidential nature of the work of medical men at these centres. The Ministry of Health was now investigating the position; he felt certain that, whatever the legal judgement might be, it was necessary to secure the confidential character of work which was essential to the continued success of the campaign against venereal disease.

EIGHTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

CAMBRIDGE, 1920.

ANNUAL REPRESENTATIVE MEETING.

THE proceedings of the Annual Representative Meeting began on Friday, June 25th, in the Examination Halls, Cambridge. Dr. T. W. H. GARSTANG (Chairman of Representative Meetings) took the chair at 10 a.m., when about 150 Representatives and about 20 members of Council not Representatives were present.

PROCEDURE.

The return of election of Representatives for constituencies for 1920–21 was received, together with the notice of appointment of substitutes, and both were entered on the minutes. Certain amendments to the Standing Orders were adopted. One of these provided for the election of four (instead of three) members of Council at the meeting under By-law 46 (*e*), the additional member being to represent the Royal Air Force Medical Service. Another modified the procedure of election of members of standing committees by a slight alteration in the membership of the Election Returns Committee, a slight alteration in the form of return of attendances, and the giving of power to the Election Returns Committee to fill vacancies in the event of insufficient nominations by Representatives.

On the motion of the CHAIRMAN OF COUNCIL (Dr. J. A. Macdonald), the Annual Report and Financial Statement and Supplementary Report (SUPPLEMENTS of April 24th and May 29th) were received.

ANNUAL MEETING NEWCASTLE, 1921.

The recommendation that the next Annual Meeting should be held at Newcastle-on-Tyne in July, 1921, was unanimously agreed to, and Dr. David Drummond, C.B.E., Vice-Chancellor, and Professor of the Principles and Practice of Medicine, University of Durham, consulting physician Royal Victoria Infirmary, Newcastle-on-Tyne, was elected President of the Association for 1921-22, with acclamation.

The meeting agreed, further, to Glasgow as the place of Annual Meeting in July, 1922.

FINANCE.

The Treasurer (Dr. G. E. HASLIP), in presenting the balance sheet, said that last year the assets had increased from £134,000 to £139,000, and the overdraft at the bank had diminished from £8,500 to £4,000. The balance sheet simply showed the position of the Association's capital. He defended the procedure of showing the depreciation in the investments. The Association was registered under the Companies Act as a company not trading for profit, so that any loss sustained either in investments or in the working of the Association must be shown. This year, unfortunately, the depreciation in investments amounted to over £1,000. The £5,000 received from the Government for the expenses of the Central Medical War Committee did not nearly cover the expenditure of the Committee, which amounted to about £14,000; former Representative Meetings had decided that that should be the donation from the Association to the war, and the money was well spent. (Applause.) One most encouraging feature of the accounts was the increase in the profits on the JOURNAL. The Association was to be congratulated upon the way in which the JOURNAL had been conducted, especially in view of the difficulties under which all periodicals were being conducted. (Applause.)

THE COST OF THE "JOURNAL."

Mr. ALBERT LUCAS (Chairman of the Journal Committee) said that the meeting would have realized the difficulties encountered during the past year in carrying on the JOURNAL. Paper had gone up greatly in price, and printers' wages and postal charges had been and again would be largely increased. It was the purpose of his committee also to recommend shortly to the Council that the rate of payment to contributors be increased by 50 per cent. He would like to say how deeply the Association was indebted to the efforts of the Editor. (Applause.) None of them who had not had the opportunity of seeing intimately his work were aware what an asset he was to the Association. The JOURNAL was in a somewhat different position from an ordinary paper; it had to act as a reporting medium for the work of the Association and to be a scientific periodical at the same time. Members would be able to form from "Current Notes" some idea of the work of the Association, but very often it was impossible to publish what was going on in that column because it was a matter of negotiation with Government departments, who objected to premature publication.

The CHAIRMAN OF COUNCIL wished to emphasize one point to which Mr. Lucas had referred; an extra halfpenny on the postage of the JOURNAL meant an additional expenditure of £60 a week, or more than £3,000 a year. The Committee had a difficult task to keep the JOURNAL efficient and at the same time to keep it within the limits required by the penny post. He wished also to emphasize the debt which the Association owed to the Editor of the JOURNAL. The Editor not only devoted his whole time to the JOURNAL, but there was no man in the British medical profession who carried such influence or was so much respected as Dr. Dawson Williams. (Applause.)

Dr. C. E. DOUGLAS (Fife) asked why it was that the BRITISH MEDICAL JOURNAL was not a paying concern. ("It is.") The balance from subscriptions to meet the cost of production and issue of the JOURNAL was £7,600. The Association should not have to pay anything for the JOURNAL at all. ("Oh!")

The TREASURER: You mean, "Why does the JOURNAL not pay for itself entirely from advertisements and outside sales?"

Dr. DOUGLAS: Yes.

Mr. LUCAS said that when anyone bought a periodical in the ordinary way he had to pay for it. But nothing was charged to members for the JOURNAL. Members paid two guineas subscription to the Association, from which something between 7s. and 8s. was allocated to cover the cost of the JOURNAL and postage. The JOURNAL was a paying concern. If members bought it in the ordinary way in the open market they would have to pay 1s. for each copy. He thought that must be perfectly clear to them.

Dr. DOUGLAS asked where, if the JOURNAL was a paying concern, was the dividend. Another periodical which was on all fours with their own paid a dividend of 6 per cent. to its shareholders, and did not need £7,600 in the way of endowment. He wanted to see a revolutionary step taken by the Association. He wanted the JOURNAL placed in the hands of ordinary business men, not the physicians and surgeons who at present dealt with it on its business side, to turn into a paying concern.

The TREASURER said that if the Association did not have Representative Meetings and did not have to keep an establishment at 429, Strand, and did no medico-political work, and Dr. Douglas simply had to pay two guineas for his JOURNAL delivered to him, the balance sheet would show a profit of £31,000 a year. The JOURNAL was the best paying concern attached to the Association.

INCREASE OF SUBSCRIPTION.

The meeting then considered the proposed increase of subscription. The recommendation of the Council was that the by-law determining the amount of subscription should be altered to read as follows:

1. On and after the 1st of January, 1921, and except as hereinafter provided, the annual subscription to the Association shall be:

(a) For a member resident in any part of the United Kingdom—three guineas.

(b) For a member resident elsewhere—two guineas.

Provided as follows:

(c) In the case of a member resident in the United Kingdom and admitted before the expiration of two years from the date of his registration under the Medical Acts, the annual subscription shall be one and a half guineas until the 31st of December next occurring after the expiration of the period of four years from the date of such registration.

(d) A member admitted on or after July 1st in any year shall pay half his current subscription for that year.

2. For the purposes of this by law a member shall be deemed to reside in that place in which his ordinary place of abode is situate at the time at which according to the regulations his subscription is considered due.

The TREASURER, in moving the acceptance of the recommendation, said the Finance Committee had placed the financial position of the Association before the Council in order that it might consider, as a question of policy, whether the subscription should be raised. The financial strength of the Association was due to the sound policy which had been adopted of accumulating, year by year, a balance of receipts over expenditure. But during the coming year the expenses of the Association were going to be greater than its income. Since the issue of the Annual Report postal expenses had increased very considerably; there had been a further increase of 10 per cent. in printers' wages; the Scrutiny Committee were now considering the revision of the by-laws with regard to the question of federation, and that would involve legal expenses amounting to probably £1,000. No money had been spent on the Association's building since its erection, and the lowest estimate which had been received for redecoration inside and out, a matter which could no longer be delayed, was about £1,500. The plaintiffs' costs in the Coventry case, amounting to £3,000, had also to be paid. The Council, therefore, came to the conclusion that the time had arrived for the Representative Meeting to be asked to consider whether the annual subscription should be raised. It was true that the last increase took place only a few years ago, and if the economic situation had not changed, there would have been no necessity to ask for any further increase. The two guineas subscription then agreed to would have been ample, even for the extended policy which the Association was now carrying on, had it not been for the economic changes to which he had referred. The executive committees had had to go before Government departments and point out that an increase was necessary in the salaries of medical officers, and they had now to ask the members to endorse the same principle when applied to their subscriptions. In addition to the increased charges on the Association's funds, to which he had referred, the salaries of the staff (other than the clerical staff) had been increased by 33⅓ per cent., and in addition a scheme of superannuation had been introduced. The money spent on that superannuation scheme was money well spent; it had given general satisfaction to the staff. Probably all members of the Association belonged to one or more clubs, the subscriptions to which had been considerably increased. In the business world every energetic company required more capital to increase its activities, and if the Association was to extend its activities it also required more money. The Council advised the meeting to consent to the subscription being raised to 3 guineas. That was not a very large amount to ask for. With regard to the payment made to Divisions, a Division which was practically dead and did no work cost the Association nothing, and if all the Divisions were in that condition it would probably not be necessary to ask for any increase at all. The members had to decide, as a question of policy, whether the Divisions should be encouraged to be active or not. One great problem the Association had to deal with was that of printers' wages. In the old days printers might not have received a living wage, but at the present time their demands were excessive. The letter from Dr. Larking, which had appeared in the SUPPLEMENT of June 19th, p. 204, contained the only criticism of the proposal which had so far been made. Dr. Larking had pointed out that the increase would fall very hardly on those who had retired from active practice, and the Treasurer said that with that point he agreed. If some arrangement by which the subscription for those men should remain at two guineas could be made, it would be of advantage. Dr. Larking had also mentioned the possibility of resignations. Considering what the Association had done for its members in the past, he thought it would be not only a calamity but a disgrace if there were any resignations on account of the increase. (Applause.)

The CHAIRMAN pointed out that a two-thirds majority was required to pass a resolution such as the one now before the meeting. The Association's legal advisers had also laid down that no alteration was possible in the wording of a resolution of that nature; it had to be accepted or rejected as it stood.

Mr. HEMPSON, Solicitor to the Association, said that under Article 30 it was laid down that any alteration which it was proposed to make in the by-laws must be published two months ahead in the JOURNAL. If in the present case the amount of increase proposed was altered, it would not be the same by-law as had appeared in the JOURNAL. The question of principle involved had been raised at every Representative Meeting during the past five or six years.

The CHAIRMAN drew the attention of the proposers of amendments making the increase 2½ guineas to the fact that the effect of those amendments would be to postpone the whole subject until the next Representative Meeting. The same end would be attained if the resolution was simply negatived. With regard to the Treasurer's statement that salaries had been increased by 33⅓ per cent., he would like to point out that the clerical staffs had had their salaries increased from 50 per cent. to 100 per cent.

Dr. E. R. FOTHERGILL (Brighton) said the Treasurer had given five heads under which additional expenditure was incurred. Increases were also shown in para. 28 of the Annual Report (estimate of expenditure and receipts for 1920), and he asked whether the amounts to which the Treasurer had referred were in addition to those given in the two paragraphs he had mentioned.

The TREASURER said that in some cases they were additional.

Dr. THOMAS RUSSELL (Glasgow) pointed out that the notice was published in the JOURNAL on April 24th. That gave the Divisions no opportunity of putting down any amendment, if two months' notice had to be given.

Dr. W. DOUGLAS (Maidstone) asked what the estimated expenditure was for the coming year, excluding the expenses in the Coventry case.

The CHAIRMAN said the expenditure would depend on whether certain later motions were carried. He further pointed out, in reply to another question, that a vote given against the motion would have the same effect as one given in favour of an amendment If it appeared that a large body of feeling was in favour of some other figure than the one proposed by the Council, the meeting would naturally reject the motion and accept a recommendation to the Council to consider the matter further with reference to some other amount. It would then come up at the next Representative Meeting.

Dr. W. F. LAW (British Guiana) said that it took at least a month for the JOURNAL to reach British Guiana. If the notice required under Article 30 was only published two months before the meeting the distant colonies had no time to consider the points raised.

Dr. P. R. COOPER (Mid-Cheshire) said that although personally he considered a very good case had been made out for the increase, Representatives had had no opportunity of discussing it with their constituents. He did not think it would be very serious to postpone the decision for another year; in an emergency a special meeting could always be called to discuss the matter.

Sir JENNER VERRALL suggested that while the only thing that could be done to become immediately effective was to accept the decision of the Council, it was worth while to ascertain the opinion of the meeting on the points in the amendment—first, did it agree to a higher subscription; secondly, did it disagree with the increase of a guinea; and thirdly, did it think it should be half a guinea? An expression of an opinion would be valuable. It would allay a certain amount of feeling in the Association outside that meeting.

The CHAIRMAN replied that he had been careful not to say that the amendment was out of order. He had been trying to expedite business by confining discussion to one resolution, but he agreed with Sir Jenner Verrall that it would be valuable to ascertain the wishes of the meeting as to the exact amount of the increase which should be asked for. If, therefore, the meeting wished it, he was prepared to allow an amendment for the substitution of a smaller increase to be discussed.

In reply to Dr. Douglas's question, Dr. HASTIE said that prices changed monthly, but half a guinea increase would meet the budget of this year. Since the figures of the budget were published at the end of February expenses had gone up £3,000. A rise of 1d. a lb. in the price of paper meant an increase on the expenses of the JOURNAL of approximately £2,500 a year. Printing had increased £1,800 a year since those figures. The legal expenses, approximately, for the Scrutiny Committee, £1,000, were not included in the budget. He had not taken postage into consideration, because the postal increase had come since, and its effect was not quite known, but if the postage on the JOURNAL was 1d. more that meant over £2,000 a year. Dr. Fothergill had a pet subject of federation—and they all sympathized with it and that was going to cost more. Further activities required more money to meet them. In the old days, when their fathers were able to accumulate the balance on capital account, the great grievance against them was that they did nothing for the profession. It was important to remember that.

Dr. J. D'Ewart (Manchester) inquired whether the bank overdraft would be wiped out by the half a guinea increase, and any balance be left for further activities, or would the Council have to come again for a further increase.

Dr. Haslip replied that the £5,000 overdraft was simply the amount at the end of the year; within about two weeks it was wiped out.

Dr. D'Ewart asked whether the half-guinea would give any balance at the end of the year; and Dr. Haslip answered that he feared not if the cost of paper continued to increase.

Dr. D. Lawson (Aberdeen) pointed out that there were objections when the subscription was increased from one to two guineas, objections similar to those advanced now, and the proposal was thrown out. After a year, however, there was no difficulty in carrying it. The Association then owed the bank £40,000, but that was soon wiped out. Expenses were rising, and they could not go on for any material length of time budgeting on a deficit. To raise the subscription to a point that would merely wipe out last year's deficit would be a waste of time. They were asking 25,000 men to pay two-thirds of a penny a day. There was no dignity and no sense in the discussion. They might have to come in two years' time and ask that this subscription be raised to 4 guineas; two-thirds of a penny a day would enable the Council to pay off its debts and have money for further activities. The alternative was to curtail activities.

Mr. Hempson, on the question of the validity of an amendment by Exeter and Maidstone to raise the subscription to 2½ guineas, said that if put it would serve the purpose simply of effecting Sir Jenner Verrall's proposal to obtain a knowledge of the mind of the meeting; it could not be a valid resolution for the by-laws.

Dr. F. Roper (Exeter) then moved that 2½ guineas be substituted for 3 guineas. He did so for two reasons: first, apprehension lest the increase of 1 guinea should defeat its own object by a corresponding decrease in the membership of the Association, and, secondly, a feeling that an increase of half a guinea would produce a sufficient increase of revenue.

The Chairman of Council hoped the meeting would not accept the amendment, but come to grips with the original proposition as the simplest way of dealing with the subject. Speaking as probably the oldest member of the management of the Association, he said candidly that the Association could not carry on its business as it was now doing, and still less have any prospect of advancing its powers and influence, unless the increased subscription was agreed to. It was almost impossible for him to understand the hesitation of members of a profession such as theirs to pay a subscription of 3 guineas to carry on the work they were doing. Surely that work was one the profession ought to be proud of. The Association was being consulted by every department of the Government; its influence was spread over the whole habitable globe; it had gained kudos during the recent war which it was impossible to estimate.

It was moved that the question be now put, and this being agreed to, the Exeter amendment was lost by a very large majority.

Dr. Gordon Bell (Sunderland) said that he was instructed to support strongly the recommendation of the executive that the subscription be 3 guineas; there was not the smallest reason why the Association should assume an apologetic attitude with regard to the matter. He was also instructed to call attention to the fact that the Association showed among its assets nearly £4,000 for unpaid subscriptions. An expert accountant informed him that while this was rightly credited, it was not quite a valid asset, because in the profit and loss account for two consecutive years it had been necessary to write off as bad debts very large sums (£1,800 and £1,500) of this very sort of asset.

Dr. C. O. Hawthorne (Marylebone) said that he was instructed by his Division to vote against this proposal by the Council, but he was also allowed to be open to conviction. He did not propose to inquire too closely into what had caused his constituents to arrive at that decision. Probably it was not so much present as future conditions which appealed to them. Dr. Brackenbury, with the aid of the Ministry of Health, was looking forward to the prompt extinction of consultants, in which case Harley Street would become a howling wilderness. In such circumstances Marylebone might well feel dismayed at the prospect; but personally he had been convinced during the discussion, and he would vote in favour of the increase.

Dr. Irvin Sellers (Preston), believed that the British Medical Association suffered because a large number of members of the medical profession were not members of the Association. The men whom the Association could not get in because they were opposed to paying two guineas were even less likely to come in when they would have to pay three.

Mr. Lucas said it must be borne in mind that members were having the Journal at the pre-war price. The price had not been raised to members, although the Journal was costing a great deal more to produce than it did in the pre-war period. If it was the desire of the members that the Association should go on producing a Journal such as it had at the present time, the subscription must be raised from two to three guineas.

The Treasurer, replying on the discussion, said that if the Council had been settling the subscription for one year it would certainly have recommended an increase of half a guinea, but they were budgeting not for one year, but for some years ahead. As to the non-members of the Association, there was no guarantee that, even if the subscription were decreased by a guinea, their adhesion would be secured. The Association must be so strong that the feeling of members of the profession must be, not "I cannot afford to belong to it," but "I cannot afford *not* to belong to it." (Hear, hear.)

Ten members rising in their places, the vote on the Council's recommendation of the increased subscription was taken by roll-call. There voted:

In favour	116
Against...	22

The Chairman, in announcing the figures, which were greeted with cheers, said that this disposed of any question of a two-thirds majority.

Special Reductions of Subscriptions.

Dr. R. C. Buist (Dundee) moved to instruct the Council to consider the advisability of making provision whereby in the case of practitioners co-resident otherwise than in institutions those other than the first might for membership pay a subscription of 2 guineas, and one copy only of the Journal be sent to the common address. He said that co-residence was the reason why a number of doctors who might otherwise join the Association remained outside.

The Chairman of Council asked whether the proposer had considered the case of Harley Street, where half a dozen doctors might live in the same house. Dr. Buist said that that was a matter for consideration by the Council. The Treasurer thought that the Council might also consider the question of members no longer in active practice. Professor R. J. A. Berry (Victoria) thought that another class deserving of consideration was that of teachers in medical schools.

The Dundee rider was agreed to, and on the motion of the Treasurer the Council was instructed to consider the question of the subscription of practitioners who have retired from practice.

Dr. I. W. Johnson (Bury) moved that the Council also consider the desirability of exempting from the increased subscription any member of forty years' standing. His Division felt that some little sympathetic consideration should be given to senior members of the profession. Many of them retained their membership for sentimental reasons and received no benefits from the political work the Association was doing.

Dr. Johnson Smyth (Bournemouth) seconded, and this also was agreed to.

Office Committee.

The Treasurer moved the adoption of the remainder of the report under "Finance."

Dr. E. R. Fothergill (Brighton) moved to discontinue payments for attendance to the members of the Office Committee who had been in receipt of them, pending the necessary alterations in the Articles and By-laws and the sanction of the Representative Body. The Representative Body should control the expenditure of the Association by definite regulations. He was of opinion that the expenditure was illegitimate and in excess.

Mr. Bishop Harman (Marylebone) opposed the amendment. The work was purely of an office character, and those who undertook it ought to receive some remuneration.

Mr. E. B. Turner (Kensington) said it was on his initiative that the matter was first discussed by the Finance Committee. It had been found during the war that very useful work could be done in co-ordinating the work of the different departments. The Council decided that that could best be done by a committee. It would not have been fair to ask men who were already giving a great deal of their time to the work of the Association to serve on such a committee without asking them to accept as remuneration a sum equal to the minimum fee paid to a director of a small commercial company.

Dr. S. T. Lord (Rochdale) asked whether the payment of those who served on the Office Committee would constitute a precedent. The Chairman replied that future Representative Meetings could take such steps as they thought fit. He did not imagine that another committee similar to the Office Committee could be appointed.

Dr. Manknell (Bradford) asked whether, if the Committee were made a standing committee, the grant would not have to be limited to travelling expenses.

The Chairman of Council hoped the suggestion that the Office Committee should be made a standing committee would not be approved. It had better be left to the Council to appoint the committee each year if it so desired. In that case no question of precedent would arise.

Dr. Fothergill's amendment was then put by the Chairman, and lost by a large majority.

Dr. Morton Mackenzie (Reigate) moved:

> That the payment of members of the Office Committee up to the present be sanctioned, but that no payment of members of committees be made in future.

The payment of those members introduced a new principle, and one which many members of his Division disapproved of. He had been able to convince his Division that the work done by the Office Committee up to the present time merited payment, but they thought no remuneration should be granted in future, as the work did not appear to be more arduous than that performed by other committees.

The Chairman of Council hoped the amendment would not be carried. The work done by the Office Committee was of an entirely different character from that carried out by any other committee. It consisted of internal business work, and did not affect the general body of the members to the same extent as the work of other committees. It was only fair that those who gave their time to the business of the Association should be paid as other business men were. He spoke reluctantly as he had been a member of the Committee, but his term of office was at an end.

Dr. Morton Mackenzie's amendment was then put by the Chairman and lost.

Salaries of Medical Secretaries.

The Chairman ruled that the rider by Nottingham—

> That the salary of the Medical Secretary be raised to £2,000 per annum, and that of his assistants *pro rata*,

was out of order in its existing form. Under By-law 66 the appointment of all paid officers and the amount of their pay was entirely in the discretion of the Council.

Mr. A. M. Webber (Nottingham) then moved:

> That it be an instruction to the Council to consider the desirability of raising the salary of the Medical Secretary to £2,000 per annum, and that of his assistants *pro rata*.

In the opinion of the Nottingham Division the salaries at present paid to the Medical Secretaries were inadequate. The Association wanted to get good men for these posts, and it wanted to keep them. That could not be done unless the salaries were raised. They had lost good men in the past because they could get better pay elsewhere. At the present time a doctor with 1,500 patients on his panel would earn a salary not far short of £2,000. ("No, no.") The proper salary of a medical officer of health for a town of 100,000 inhabitants, according to the scale proposed by the Council, was about £2,000. The work of the Association's Medical Secretary was of equal importance, and should be equally well paid. They were asking their medical staff to go down to the Divisions and help to raise the salaries of the local doctors by 60 per cent., and yet they had only raised the salaries of their staff by 33⅓ per cent. He submitted that that was not just.

Dr. J. D'Ewart (Manchester) inquired whether the Council had any scale for the payment of their officials. The Treasurer (Dr. Haslip) answered that those recently appointed were appointed on a scale.

Dr. D'Ewart thereupon supported the motion that the Council be asked to reconsider the question of salaries. He was most gratified, he said, to find that the Council had to a certain extent met the views expressed last year, but he could not understand why they fixed the increase at 33⅓ per cent. The Council told the Government, on behalf of its members who were insurance practitioners, that 66⅔ was the minimum increase on which they could continue their work, and yet in the case of their own medical staff they said that 33⅓ was sufficient. They ought to be equitable. He would like to see the bonuses swept away; they should not be *ex gratia* payments, but salaries.

Professor R. J. A. Berry (Victorian Branch), while not opposing the general principles enunciated, thought the time had come to remind the meeting that they had a duty to fulfil to another body of members of the Association—those who taught in medical colleges and universities in this country and overseas. What had the Association ever done for those members? No medical chair in the empire had a salary equal to that of the Medical Secretary of the Association. Most did not attain to a higher salary than £800, and the salaries were the same to-day as thirty years ago.

The Chairman intimated that the speaker's remarks were not germane to the subject then under discussion.

Dr. E. R. Fothergill (Brighton) asked for withdrawal of the resolution. The meeting, he said, might take it that the Council was trying to look after the interests of the staff. If the resolution were thrown out it would place them in a rather invidious position with regard to their Medical Secretary and his colleagues. It would appear to the rank and file of the Association who saw the report in the Journal that the Association did not value its staff as it should. He moved that the next business be proceeded with.

Dr. W. Johnson Smyth (Bournemouth) and others seconded, but the Chairman decided to permit the discussion to continue.

Dr. Agnes Estcourt-Oswald (Colchester) said that if they wanted the Association to do well they must have the best men they could get to carry on the work, and unless they paid them really well, how could they keep their service? These men were experts and worked most arduously, and there were few members who had not benefited by their services. To be niggardly in a matter of £100 or £200 was false policy. All sorts of Government appointments were going to be opened up and their servants might be snapped up at any time; valuable men had already been lost in that way.

The Treasurer (Dr. Haslip) thought Dr. D'Ewart would agree with him that at the present time they could not drop the bonus system because they could not say as a hard and fast law what was the economic value of money. While things were in the present fluid state it was impossible to fix definite salaries for the staff. If they decided to give the salaries suggested by Nottingham and the cost of living increased in six months' time, they would still have to deal with the question of bonuses. He therefore asked the meeting to leave the question to the Council to decide. As to pensions for officials, Dr. Haslip agreed that the position was unsatisfactory. They had never faced the question in a broad, straight way, but it was known that when their officials did retire after long service the Association in honour bound would have to give them adequate compensation. That was going to cost the Association some hundreds of pounds, and they should be a little careful how they spent money on salaries at the present time. He could assure the meeting, and he thought the Chairman of Council and his other colleagues would agree, that they were not satisfied with the salaries of the medical staff. They did not wish in any way to be cheese-paring, and the Association could safely leave it to the Council to secure that the staff received in every way the consideration they deserved.

Mr. WEBBER obtained leave to withdraw his amendment.

VARIOUS EXPENDITURES.

Mr. E. B. TURNER (Kensington) moved a rider on behalf of his constituency suggesting that railway fares and other expenses of non-members who served on standing committees should not be paid by the Association. The TREASURER asked how non-members could be expected to attend if this concession were not made. Dr. BRACKENBURY said that the proposal was extraordinary in view of the constitution of the Insurance Acts Committee, which, at the almost unanimous instance of the Representative Meeting, might consist partly of non-members. The proposal was negatived.

Dr. W. BLAIR (South-Eastern Counties, Edinburgh) moved that care be taken to restrict expense on the JOURNAL and circulars printed by the Association, but on assurances from the Chairman of the Journal Committee, and the Chairman of Council, he withdrew his motion.

The remainder of the report under "Finance" was then approved.

THE CHAIRMAN OF COUNCIL.

Before the lunch adjournment,

The CHAIRMAN (Dr. Garstang) announced that Dr. J. A. Macdonald had intimated that he could not continue as Chairman of Council beyond the date of this meeting. His colleagues on the Council immediately and unanimously decided that his long and valuable services to the Association should be recognized by some sort of presentation. (Hear, hear.) The members of Council had themselves started a subscription list. Thirty-six out of the forty-seven present members of Council had already subscribed; many of the others were oversea members with whom it was not always easy to get into communication. He reminded the meeting of Dr. Macdonald's record. Dr. Macdonald was a member of the committee which brought about the reorganization of the Association in 1902, and in 1905 he was elected Deputy Chairman of Representative Meetings. In 1906 he succeeded to the chair, which he held until 1909 He faithfully and efficiently maintained the traditions of the Representative Meeting during his term of office. After that he was elected Chairman of Council, a position he had held for the unprecedented term of ten years. What that had meant in sacrifice of private interests could not be stated in a few words. In 1911 the profession, led by the Association, elected him on the General Medical Council, and there he had served the interests both of the profession and of the Association. In 1914 he undertook a journey to the Oversea Branches in Australia and New Zealand. This year it was hoped that he would visit the Oversea Branches in South Africa. He also served on the Central Medical War Committee, and recently the Minister of Health had appointed him a member of the Consultative Council. In addition to his work, he was known far and wide for his charming personality. Everybody admired and liked him. The Council hoped that the members of the Representative Meeting would make a suitable second to the lead which the Council had given in the matter of the presentation.

ORGANIZATION.

THE ASSOCIATION AS A FEDERATION OF MEDICAL BODIES.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) moved:

> That the Association take steps to obtain further powers under its constitution, on the lines indicated in the joint opinion of counsel, whereby the Association may, without abandoning its present position as an Association of individual members of the medical profession, become in addition a federation of medical bodies.

There was a further recommendation instructing the Council:

1. To arrange for there being held at an early date a conference of representatives of the Overseas Branches, especially the Branches in the Dominions, with representatives of the Association at home and with representatives of other bodies, if any, who in the opinion of the Council should be invited to such a conference, with a view to arriving, if possible, at a full agreement as to what should be the lines of the proposed new articles and by-laws.

2. To report further as soon as practicable to the Representative Body on the subject, with, if possible, such draft alterations of the articles and by-laws as the Council may suggest with a view to taking further powers under the constitution of the Association in the way proposed.

3. To arrange that the draft new articles and by-laws shall, *inter alia*:

   (*a*) Define the classes of organizations to be admissible, whether directly or by means of nominees, to membership of the Association. Such classes to include any portion of the Association which may incorporate itself separately but also desire admission on the new basis; and to include also medical bodies outside the Association, and bodies representative of the allied professions, anywhere within the empire.

   (*b*) Assign to the Representative Body the settlement of the general conditions of such membership, including decision as to what shall be the minimum numerical backing, within a body seeking to become such member of the Association, which shall render a request for such membership eligible for consideration.

   (*c*) Assign to the Council the duty of submitting to the Representative Body, with a view to such membership, the name of any body proposing, or proposed by the Council, to become such member of the Association.

   (*d*) Assign to the Representative Body the decision as to whether any individual body applying shall be admitted as such member of the Association, and if so, upon what special conditions, if any, in the individual case.

In moving the first of these recommendations Mr. RUSSELL COOMBE recalled the ways in which the federation idea had presented itself. First came the matter of the incorporation of certain Branches in the big Dominions, notably Australia, where the Branches were large and important bodies, owning their own property, receiving additional subscriptions, and having a large balance sheet every year. These branches had found it important to obtain some form of recognition under the law of Australia. In 1894 the New South Wales Branch did, in fact, incorporate itself. The Federal Committee brought the matter up again, and there was also a request that the South Australian Branch should receive recognition for incorporation. That matter was referred to Mr. Gore Brown, K.C., in 1915, and he indicated certain difficulties. Another sort of federation was suggested in 1914, when the Representative Meeting instructed the Council to consider the question of arranging for an affiliation of other medical societies to the Association. More recently the question of Ireland came forward, and also that of South Africa, but both the Irish and the South African bodies had expressed their wish to remain in federation. Thus the Association was faced with the fact of bodies which wished to be incorporated and yet to be able to work in full sympathy with the Association. Should the meeting proceed so to alter the constitution of the Association that in some looser but yet effective way it might maintain connexion with the big Overseas Branches, and possibly with Branches in certain parts of the United Kingdom, or should it become an association for Great Britain only?

Dr. H. B. BRACKENBURY wanted the meeting to understand exactly to what it was committed by this resolution. This meant more than a federation of colonial or of Irish associations. It allowed them to federate any medical body with the Association—the Society of Medical Officers of Health, for instance, or the Royal Society of Medicine—at present unassociated with it, friendly though it might be. It was not a question merely of the Dominions or of Ireland, but it meant opening the door to the possibility of any Branch of the Association becoming more or less separated from, though federated with, the parent body; and it meant that the membership of the Association would be open, not merely to individuals, but to such societies as he had mentioned. Certain conditions must be attached to the opening of so wide a door, and therefore he begged that the two motions should be taken together (the first that further powers be taken to become a federation of medical bodies, and the second that a conference be arranged and a further report made to the Representative Body). He did not want to vote for the first motion unless he was sure that the second would be carried. Accordingly he moved as an amendment that at the end of the first motion the words should be inserted: "Provided that it be an instruction to the Council," with the second motion to follow.

Mr. RUSSELL COOMBE accepted the suggestion; in the minds of the Council the two motions were a single proposal, and were only separated for convenience in drafting.

Sir Jenner Verrall supported Dr. Brackenbury's plea that the two motions be taken together. If they were satisfied that this very long-standing dissatisfaction on the part of the Colonies as to their powers of self-government must be met, he thought they must face the possible difficulties which might arise at home.

Dr. Crawford Treasure moved an amendment instructing the Council to ascertain what steps could be taken, and report to the Representative Meeting.

The Chairman of Council urged that the Council should be trusted to take the necessary steps which it would be instructed to take. The draft new articles and by-laws would, of course, be submitted to the Representative Meeting.

The two motions together were then put to the meeting and carried.

Machinery as to Arrears of Subscriptions.

Mr. Russell Coombe moved that the by-law of the Association dealing with arrears of subscriptions and cessation of membership be altered to read:

> If the subscription of a member for any year shall not have been paid on or before December 31st in that year, he shall *ipso facto* (but save as otherwise provided by the Regulations and without prejudice to his liability to the Association) cease to be a member as from that day. Provided that upon payment before March 31st in the succeeding year of all subscriptions due from him he shall, if eligible, be restored to membership without re-election.

It had been customary to suspend membership for twelve months without it actually ceasing. During that time the Journal had usually been supplied to members, and very often had not been paid for. That meant a considerable loss to the Association. The Council had come to the conclusion that it was very much better definitely to terminate the membership if a member was a full twelve months in arrear.

The motion was agreed to.

Dr. C. E. Robson (Glasgow South) asked whether it would be possible to warn a member before that course was adopted.

The Chairman said that had been done in the past, and the practice would be continued. The motion was carried.

Recovery of Arrears of Subscriptions.

Dr. D. A. Sheahan (Portsmouth) moved:

> That the Council be instructed to consider the advisability of By-law 13 1 being further amended so as to provide that in the event of a member's subscription being a year overdue the Solicitor of the Association be instructed to take action to recover the same.

Since coming to Cambridge he had discovered that the amount of the arrears was not so great as had been at first supposed, and therefore, although he was obliged, on behalf of his Division, to propose the rider, he did not think it would be at all politic to enforce payment through the county courts.

The rider was lost by a large majority.

The following rider by Southport was withdrawn, on a statement by the Chairman of the Organization Committee that the matter was being attended to:

> That the Representative Body instruct the Council to take steps to prepare a concise history of the Association, its foundation and past achievements, its present activities and aims, for issue to members and sale to the public.

Expenses of Divisions.

Dr. David Ross (City) moved that it be an instruction to the Council to take steps for higher grants being made to the Divisions, and this was agreed to.

Dr. R. H. [illegible] (Leicester and Rutland) moved an instruction to the Council, when allocating grants to Divisions, to allocate a special amount per head to be earmarked for the development of the social side of the Association.

Mr. Russell Coombe said the Association had been advised that it was impossible legally to accede to the request.

The rider was then put by the Chairman and lost.

Work of the Association and the "Supplement."

Dr. R. Wallace Henry (Leicester and Rutland) moved:

> That it be an instruction to the Council to ensure a more adequate setting forth of the current work of the Association in the Supplement of the Journal week by week.

The greatest weakness of the Association in the past, and he thought still, was that it did not advertise its work sufficiently well. "Current Notes," as far as the material went, were excellent, but he would like the Journal Committee to have a little more of the advertising ability of the *Daily Mail*, and a little more of its push and go. The Supplement of the previous week for the first time had come up to his wishes: the first page of the Supplement was handed over to the Propaganda Subcommittee for its own special work. He would like to suggest that once a month the first page of the Supplement should be placed at the disposal of the Propaganda Committee, and that from time to time it should take different branches of the profession—general practitioners, medical officers of health, education officers, lecturers at universities, etc.—and should set out what the Association had done during the past three or four months for that particular branch of the profession. This should be in bold type, to reach the man who did not care about the Association, and compel him to read what was being done for the various branches of the profession. He believed the Association would thus gain greatly in strength.

Mr. Russell Coombe said that the Organization Committee and its excellent Propaganda Subcommittee had given most anxious consideration to the matter. Only on June 9th they had met the Journal Committee to discuss it. To a large extent what went into the Supplement must be regarded as preaching to the converted. On the present occasion the Propaganda Subcommittee—and great thanks were due to Dr. Morton Mackenzie for his work—deliberately planned a page of the Supplement, not for members of the Association, but to be taken out and given to non-members. That sort of Supplement he, like Dr. Wallace Henry, hoped would be repeated. During the past twelve months on the agenda of every committee was an entry to consider matters which might be dealt with in "Current Notes." He hoped that during the next twelve months there would be considerable development of "Current Notes" and of the work in the Supplement.

Mr. A. Lucas (Chairman of the Journal Committee) informed the meeting that whenever any Committee had submitted to the editorial staff matters for insertion in "Current Notes," that matter had been published, with one exception which it was considered could not with advantage be published at that time. The Committee and the editorial staff were most anxious to keep members of the Association acquainted with all the work that was being done, but there were often matters under discussion with Government departments which at the time it would be absolutely impolitic to publish in the Journal. If the Propaganda Subcommittee would supply matter suitable for insertion, he could give an undertaking on behalf of the editorial staff that it should be inserted. They were perfectly familiar with the fact that the ordinary member did not know what was going on in the Association. In most instances the fault was that of the member, because he did not read his Supplement, and particularly "Current Notes."

Mr. E. B. Turner said that during his two years' chairmanship of the Medico-Political Committee he had been surprised at the number of inquiries that had been received from all parts of the kingdom asking what the Association and what that Committee in particular was doing. The inquiries showed that the ordinary "converted" member of the Association was not studying the Journal as much as he might, and that made it all the more important that the things the Association was doing should be put in a prominent place in the Supplement.

Mr. Bishop Harman said that it was far from his mind to criticize the editorial department, but, all the same, he thought that the activities of the Association should be brought more prominently before the readers of the Journal. The Journal was thought of too much as the great scientific journal of the medical profession, not sufficiently as the journal of the British Medical Association. There was a tendency to put in letters which were captious criticisms of the Association's policy. Very often letters might be suppressed with advantage.

Dr. C. O. Hawthorne said that the presence of Representatives at that meeting involved the function of criticism, but it was not always the province of critics to show what could be done. He would suggest that the gentlemen who looked to "Current Notes" as the opportunity for spreading the true light in the countries of the unbelievers should make a practice once a week or month of submitting a model "Current Note" which could be considered by the editorial staff and, if deemed appropriate, found space for in the SUPPLEMENT. There had been suggestions even from people who occupied a prominent place in the Association that matter for "Current Notes" had been sent in and not published. The fact was that the space given to "Current Notes" was never entirely filled by the contributions submitted. No effort had been lacking to make the SUPPLEMENT fulfil the ideal which had been laid before them that day, and the criticisms were not justified by the facts. He hoped that the mover of the resolution would be willing to leave out the word "more," which implied criticism.

Dr. **WALLACE HENRY** accepted this suggestion, and in this form the motion was carried. The remainder of the report under "Organization" was then approved, with the exception of the matter of special subscriptions to Oversea Branches, which was postponed to a later day.

SCIENCE.

REMUNERATION OF LABORATORY AND RESEARCH WORKERS.

Dr. J. A. **MACDONALD**, in the absence of the Chairman of the Science Committee (Sir Clifford Allbutt), moved:

> That the minimum commencing salary of a medically qualified laboratory or research worker, who is permanently employed as such, should be not less than £500 per annum.

Dr. D. **ROXBURGH** moved that the remuneration should be subject to an annual increment of £50 to the limit of £1,000.

Dr. T. R. **BRADSHAW** pointed out that the motion did not provide that the worker in question must be in whole-time employment.

Dr. F. W. **GOODBODY** related the experience of an organization which was trying to raise the salaries of university professors and teachers.

Professor R. J. A. **BERRY** (Victoria) said that throughout the British Empire there were medical men who devoted their lives to the study and teaching of their subjects, and it was by their researches that medical men were able to treat disease. Yet wholly inadequate salaries were being paid to the research men. The Vice-Chancellor of the University of Liverpool a month ago stated that a junior medical teacher of the Liverpool University, holding a full-time appointment, applied for an increase. He was in receipt of £250 per annum, and his salary was raised by £50, but even then it was £50 less than the wages at union rates paid to the man who stoked the university boiler. The economic reward of the teachers in the universities of the British Empire was altogether on a wrong footing. It should be the business of the Association to make representations to the appropriate bodies.

Some discussion took place on the drafting of the motion and the amendment before the meeting, and the **CHAIRMAN OF COUNCIL** said that it was the intention of the Science Committee to have a form of words which would indicate that the medical research worker in question was intending to make research work his career. Ultimately, Dr. Roxburgh's amendment was lost, and the original recommendation was adopted as it stood.

The Council was instructed to consider the salaries of members of the medical profession who are professors and teachers at universities and teaching colleges, and make recommendations thereon.

MEDICAL ETHICS.

PROFESSIONAL SECRECY.

DR. LANGDON-DOWN (Chairman of the Central Ethical Committee) moved that the Representative Body should express the following opinion:

> That, having considered the question of professional secrecy, more particularly with regard to venereal disease, the Representative Body reiterates the opinion that a medical practitioner should not, under any circumstances, disclose voluntarily, without the patient's consent, information which he has obtained from that patient in the exercise of his professional duties.

It was felt by some that questions becoming newly prominent in connexion with venereal diseases demanded some review of the position. The Council had carefully considered whether any steps should be taken. It was very easy to imagine cases connected with the transmission of venereal diseases to wives, children, and so on, in which secrecy would be difficult. The rule of secrecy, which had hitherto been self-imposed, had obtained official recognition in the regulations governing venereal diseases. That, he believed, was the first instance of such recognition. It had been thought that the National Council for Combating Venereal Diseases was disposed to take a weaker line on the matter, but he had put the question to Mr. Turner, who was on the Council of that body, and he said that that view was mistaken; the bill drafted by the National Council had an express provision guarding professional secrecy. It was recognized that there must be exceptions to the rule. A doctor might receive from a court of justice an order to divulge his professional confidence. An individual practitioner might yet feel that even so he would defy the order of the court and take the consequences; and if that were done for good reasons it was unlikely that any severe punishment would be visited upon him. Another exception, of common occurrence, but possibly of less weight, was where an Act of Parliament governed the actions of the profession, as, for example, the Infectious Diseases Notification Act. Then there was a group of cases, not governed by court of law or Act of Parliament, in which there was a conflict between a man's duty as a citizen and his duty as a medical man. A doctor might feel it his duty to divulge a secret obtained in a professional way in order to prevent the commission of a crime, or to prevent grave danger to anyone else, when all other measures had failed, or when it was in the interests of the patient himself, as in many proceedings in lunacy. The question was whether they should weaken their rule by specifying those objections. The Council had decided that question in the negative. If exceptions were specified, the great anchor on which all professional work was based—confidence between the public and the doctor—would be withdrawn, and untold, if unseen, damage would be done. The Council therefore thought it would be well to adhere to their old rule, leaving those cases of doubt and difficulty for the individual to decide whether there was sufficient compelling necessity for him to break that confidence or not.

Dr. D. A. **SHEAHAN** (Portsmouth) moved an amendment (which was afterwards declared by the Chairman not to be an amendment but a separate resolution) embodying the view that the medical profession should be placed on the same footing as to professional secrecy with clergy, barristers, and solicitors, and urging the Association to take every means to bring this about.

Dr. **FOTHERGILL** asked the Solicitor to say what steps would have to be taken to place the medical profession on the same footing as the legal profession and the Church.

The **SOLICITOR TO THE ASSOCIATION** said that protection, so far as professional secrecy was concerned, was practically confined to the Law and the Church. Barristers were naturally precluded from being required in giving evidence to disclose matters which were communicated to them by a solicitor, and solicitors were similarly precluded in regard to the confidences of a client. A solicitor who betrayed such confidence when he went to the court would probably be struck off the rolls. So far as the Church was concerned, the privilege appeared to have gained recognition on sentimental grounds, which were respected by the courts. In the case of the medical profession, the recognition given in certain countries was much greater than here. Under the penal code of France imprisonment was imposed for the disclosure of professional matters without the consent of the patient, and a case was recorded in which this was put in force. In America there was an enactment which laid it down that no doctor should be allowed or compelled to disclose information which he might have acquired in attending any patient in his professional character. In Scotland there was a record in the Court of Sessions in which it was judicially decided that secrecy was an essential condition of the contract between a medical man and his employer, and that breach of secrecy was a relevant ground for an action for damages. In England there was great confusion of thought and decision as arising out of recorded cases and dicta of judges. During the last twenty-five years he had had numbers of these cases to advise upon, and he had always told the medical man who was called upon to give evidence to plead professional secrecy before he disclosed anything arising out of his professional attendance on his patient, and even to go to the extent of being threatened with contempt of court. One of his clients went to the length of refusing, under that threat, to make a disclosure in evidence, and he was not committed and never did give the evidence. Lord Mansfield said in 1776 that "if a man were voluntarily to reveal these secrets, to be sure he would be guilty of breach of honour and a great indiscretion, but to give that information which, by the law of the land, he is bound to do, will never be imputed to him as any indiscretion whatever." Then there was a case in which the late Lord Brampton (then Mr. Justice Hawkins) was extremely sarcastic in his reference to the medical man who disclosed what he did in that case, and went to the length of saying that it would make him extremely careful what medical man he himself consulted in future. There were occasions, it seemed to the speaker, when the medical man must disclose information unless he had an Act of Parliament prohibiting him from doing it. Personally he did not hold out any strong hope of getting such an Act of Parliament. It had not been granted to ministers of religion, and he hardly knew the exact date and origin of solicitors' protection, but it was founded, not on an Act of Parliament, but on professional custom, backed by strong common sense. The evidence which the medical man gave in a case might be so material to the discovery of a crime that the judge would feel compelled to say that the law of the land must be observed by the doctor as a citizen, and that he (the judge) absolved him from anything like a breach of etiquette or of duty to his profession. The Association some few years back sent a very important deputation to Lord Reading and the late Sir Charles Mathews (Director of Public Prosecutions) and other law officers of the Crown; on that occasion Sir Charles Mathews was particularly desirous that the medical profession should consent to act in a manner as private detectives in the discovery of crime. This the deputation flatly declined to recognize in any sense whatever, and were successful in disabusing his mind of the idea that the profession would act in that capacity. It appeared to the speaker that they were aiming almost at the impossible in hoping to get an Act of Parliament, and the motion from Portsmouth could not have full effect given to it without an Act of Parliament. There were also circumstances which occurred to him in which the practitioner himself might feel it absolutely necessary as citizen or friend to make disclosures of matters which came to his knowledge in his professional capacity. If the doctor knew that a man suffering from venereal disease was to be married to an innocent girl, the daughter of a friend of his, would he not be justified in urging that young man to tell the girl's father of his condition, and threatening that if he did not do so he (the practitioner) would tell him himself? ("No" and "Yes.") In answer to Dr. Fothergill's question, it was only by an Act of Parliament that the medical profession could be placed on the footing sought to be established under the Portsmouth resolution.

Dr. **Crawford Treasure** asked for further enlightenment as to the position of a medical man ordered to examine a prisoner in a criminal trial who was suspected of a disease.

The **Solicitor** said that if the doctor accepted the order of the judge of the High Court to do so, and if the prisoner accepted his services, he must disclose the result he found, but he could refuse to undertake the examination.

Mr. E. B. **Turner** hoped the meeting would stick to its guns with regard to the resolutions it had passed before, and that there would be no tampering with professional secrecy.

Dr. J. A. **Macdonald** said that the West Somerset Branch wished him to move an amendment to the Council's recommendation deleting the words "under any circumstances" and "voluntarily," and adding at the end "unless compelled to do so by a court of law."

Sir **Jenner Verrall** supported the amendment, and the **Solicitor** stated, in reply to Dr. [illegible], that "court of law" included a bench of magistrates.

Dr. C. O. **Hawthorne** said that if a practitioner was ordered by a magistrate to examine a person, it was his duty first to tell that person that he could refuse to be examined, but that if he consented, the result of the examination might be given in evidence against him. Without the consent of the person the examination would be an assault upon him, for which the practitioner would be liable to an action for damages, or possibly even to trial in a criminal court.

Dr. **George Parker** thought the Council's recommendation would be useless without the Portsmouth motion, for the former did not propose any means of getting rid of the legal penalties involved in the course of action it laid down.

Dr. W. **Johnson Smyth** pointed out the moral dilemma with which practitioners were faced. Whilst it was the duty of practitioners to maintain secrecy, their conscience might also bid them make disclosures in the interests of the general welfare.

The Somerset amendment was put and lost. The discussion on the subject was then adjourned until the next day's session.

Saturday, June 26th.

Professional Secrecy.

On the resumption of the meeting the recommendation of Council, moved by the Chairman of the Central Ethical Committee, dealing with professional secrecy was further considered.

Dr. T. R. **Bradshaw** (Liverpool) moved that the whole subject be referred back to the Council. Members of the meeting had very clear ideas as to what professional secrecy meant, but it was a different matter when it came to formulating them in definite terms. The legal adviser had brought forward some very important considerations, and it would be unwise for the Representative Meeting, without having legal draftsmanship at hand, to commit itself to what would be a cut-and-dried policy for the whole profession. The matter should go back to the Council in the hope that before another meeting some form of agreed words might be arrived at.

Dr. E. H. **Snell** (Coventry) seconded. His constituents thought that in certain circumstances it was quite reasonable for a medical man to inform the persons concerned, and as there was a possibility of so much difference of opinion it would be very much better to let the matter stand over for a time until they had a fixed formula on which they were all agreed.

Dr. **Christine Murrell** (Kensington) spoke strongly against the proposal to refer back. That was a policy which lacked courage. If they did not know themselves what they wanted they could hardly expect the public or the State to support them. It was obvious that if they had not some definite views they would be bound by the State and by society to divulge practically all they knew about their patients. However difficult the subject, they must come to a definite conclusion as to what was their duty.

Dr. **Langdon-Down** deprecated this being sent back to Council without a more definite expression of opinion. It seemed to him that they were so near agreement that they could without difficulty deal with the matter there and then.

Mr. **Bishop Harman** hoped the meeting would consider that the resolution moved by the Central Ethical Committee was the one to be passed. The motion was judiciously worded. It represented the considered thought of their colleagues, who had spent anxious hours over it.

The motion to refer the matter back to the Council was lost.

Dr. **Langdon-Down** said that a form of words, which carried out practically the intention of the Central Ethical Committee, had been prepared by the Solicitor which might be substituted for the form of words he himself had introduced at the beginning of the discussion:

> That having further considered the question of professional secrecy, viewed from the standpoint of the medical profession, and with special regard to venereal diseases, the Representative Body reiterates the opinion that a medical practitioner should not, without his patient's consent, voluntarily disclose information which he has obtained from such patient in the exercise of his professional duties.

Dr. E. H. **Willock** (Croydon) thought it of little use putting down a pious opinion if the members of the profession were going to be bound by words which might mean anything or nothing.

The **Solicitor** said, in reply, that no resolution could be framed to meet every circumstance. Some general form of resolution must be adopted, and in view of what had appeared in the Press that day he would regard it as extremely unwise policy to refer the matter back to the Council for further consideration, as had been suggested.

The permission of the meeting was given for the substitution of the above form of words prepared by the

Solicitor in place of the Council's recommendation moved on the previous evening.

Mr. N. BISHOP HARMAN (Marylebone) hoped the meeting would accept the motion suggested by the Solicitor, which he thought superior to that originally put forward by the Central Ethical Committee, though it was impossible to frame a resolution to meet every situation that might arise. He did not agree that in no circumstances should a doctor disclose matters which he had learned in his consulting room. If a doctor knew a man was suffering from venereal disease in a virulent form, and that he was likely to communicate it to a third party, and the doctor did not inform that third party, he thought an action for criminal negligence would lie against the doctor in the event of any harm being done.

The CHAIRMAN then put the resolution, which was carried by a large majority.

Dr. D. A. SHEAHAN (Portsmouth) again moved the resolution which he had brought forward the previous evening. America, France, and Scotland had, he said, decided in favour of absolute secrecy for the medical profession. The question which had to be decided was whether every medical practitioner should be allowed to go his own way in the matter or whether some definite standard of conduct should be laid down similar to that prevailing in the legal profession and the Church.

Dr. G. PARKER (Bristol) said it seemed to him there were two strong reasons for supporting Dr. Sheahan. First of all, if they recommended the medical man to maintain his traditions of secrecy they were placing him in a very painful position. He went into court feeling in his conscience that he could not disclose certain matters, and he had to suffer the penalty of contempt of court or to disclose them. The legal profession had obtained that privilege of secrecy without any legislation, and the medical profession could and must do the same. The second point was that unless they obtained some recognition of that kind they would have thrust upon them from time to time continually increasing obligations to hand over to the State their professional knowledge.

The CHAIRMAN OF COUNCIL said that, as was told them by their Solicitor the previous day, and as anyone who knew anything of public affairs would agree, they could not possibly get such recognition by Act of Parliament. All they could do was to build up the same position as lawyers and clergymen had done, by sticking to their guns, and saying that they would not divulge secrets. It was only by the law of custom they were going to gain that end.

Mr. BISHOP HARMAN desired to point out a fallacy in the motion. It had been claimed that there was some particular privilege in the secrecy preserved by the clergyman. What was it? It rested upon the word of one man against another—the word of the clergyman against that of the prisoner, and the word of the former might or might not be accepted. But the doctor's position was quite different. The information he obtained was a concrete fact that could be proved, often by documents, often by laboratory tests. Dr. Sheahan said the profession should be put upon the same footing as lawyers and clergymen. Who was going to do it? (Voices: "Ourselves.") That was not enough.

The Portsmouth motion was put to the meeting and lost.

Dr. H. G. DAIN (Birmingham) moved as a rider to the resolution on professional secrecy:

> And that the Council be instructed to consider the extent to which, and the ways in which, the Association is prepared to support its members in maintaining professional secrecy.

The weakness of their position with regard to professional secrecy was their own fault, because they had never been prepared to support their own actions or to have a definitely formulated opinion as to what they would do in any given circumstances, for a man challenged by a judge or ordered to disclose a thing had not the slightest knowledge as to how he would stand if he resisted the order. It was quite true that the judge might not press it, and he might not be sent to prison for contempt of court; but if they knew definitely that their own organization stood behind them when they felt justified in resisting an order of the court, they would be aware of their position.

Mr. E. B. TURNER seconded the resolution. He said he was one of the deputation to the Lord Chief Justice whose effect was to "stellenbosch" the attempt to compel the disclosure of professional secrets. In emphasis of the position he told the following story: Some years ago he was subpoenaed to give evidence in court on a question of fact. He gave his evidence on the question of fact, as he could as a man in the street, and then counsel asked him a question which he could only answer from his knowledge obtained in the exercise of his profession. He at once declined to answer, and counsel said: "You know that you are obliged to answer that in a court of law." He replied: "I know the court can do its utmost to compel me, but it cannot make me." Counsel said: "As Mr. Turner objects I will not press it, because perhaps I may get it in another way." Some time after, the judge, who was a patient of his, was taken ill and sent for him. He said: "Well, Turner, you know I could have 'quodded' you last week for not answering that question; but, by God, if you had I never would have had you in my house as a doctor again!" (Laughter and applause.)

Dr. DAIN's rider was then put and carried.

THE PROFESSION AND ITS ATTITUDE IN RELATION TO SECRET REMEDIES.

Dr. R. LANGDON-DOWN (Chairman of the Central Ethical Committee) moved:

> That the Representative Body express the opinion that a registered medical practitioner should not make use of, or recommend, any remedy of the composition of which he is not aware.

It had been brought home to the Committee, he said, that there was growing laxity in this matter on the part of a large number of members of the profession. They had taken a very strong public line, as the meeting probably knew, in urging Parliament to bring in legislation to control the sale of registered preparations, with the perpetual protection of trade marks and other similar practices which they regarded as inimical to the public interest. But if they found that the advertisers were able to say truthfully that doctors themselves were guilty of gross remissness in regard to that question, they had the ground cut from under their feet for any effective action. It was high time the fact should be brought particularly to the notice of the Representative Body, and that they should reiterate and strengthen their position. The motion had been worded rather openly and freely in order to cover the great variety of circumstances and special cases affected. By the word "composition" they did not mean the exact chemical composition of the drug, but only "composition" in a broad sense. The last thing the Ethical Committee desired to do was to lay down rules which were so impracticable that they could not enforce them effectively.

The MEDICAL SECRETARY made a confidential statement regarding the attitude of the profession towards secret remedies.

Dr. H. C. BRISTOWE (Bristol) moved as an amendment:

> That a registered practitioner should not make use of or recommend any remedy the principal ingredients of which are not divulged.

Dr. LANGDON-DOWN said he was prepared to accept that modification on behalf of the Council, but would suggest that the word "divulge" should be altered to "known," and Dr. BRISTOWE concurred.

Dr. R. N. GOODMAN (Kingston-on-Thames), while entirely in favour of the general principle enunciated by Dr. Langdon-Down, thought its application at the present time impracticable.

Dr. C. BUTTAR (Kensington) moved that the word "disclosed" be substituted for the word "known" in the amended resolution which had been accepted by Dr. Langdon-Down. The onus should be thrown on the maker of the remedy, and not on the doctor who used it; the principal ingredients should be stated on the bottle.

Dr. BRACKENBURY did not think that practitioners ought to be enabled to prescribe secret remedies the composition of which had been discovered, in spite of the proprietors, by the Association's efforts.

Dr. LANGDON-DOWN disagreed with Dr. Buttar's view. The Committee wished the profession to be able to prescribe anything which they thought was useful and of which they knew the composition. In ethical matters it was of no use to go ahead of the common practice of the profession. They could not force the makers of these things to do, at the Association's instance, what could only be done by the force of an Act of Parliament.

Dr. HASLIP hoped the meeting would support the amendment of Dr. Buttar. It was the duty of the profession to insist on disclosure in the case of every patent medicine, and to take a very firm stand on that policy.

The CHAIRMAN OF COUNCIL suggested that the disclosure of contents should be made to Government officials, and the issue of a registration stamp indicating that such disclosure had been made would probably get over the difficulty.

After further discussion, Dr. Buttar's amendment was carried *nemine contradicente*, and on Dr. WALLACE HENRY's suggestion the words "to the profession" were also added. The motion was then put as a substantive resolution and carried with one dissentient. As finally agreed it ran:

> That a registered medical practitioner should not make use of or recommend any remedy the principal ingredients of which are not disclosed to the profession.

Dr. W. DOUGLAS (Maidstone) moved that the report on "Secret Remedies" be continued and brought up to date. It was many years since he first suggested the analysis of secret remedies and the publication of the results obtained. That suggestion had been adopted with great success, and the result had been appreciated both by the profession and by the public.

The TREASURER pointed out that the Association had only had one action brought against it in connexion with its analyses, and in that instance it had been successful.

The rider was carried.

GENERAL MEDICAL COUNCIL.

Dr. P. R. COOPER (Mid-Cheshire) moved:

> That this meeting is of opinion that in the event of a personal complaint from an aggrieved member being received with regard to illegal interference by the General Medical Council, the Council of the Association should take the matter up vigorously; and failing the receipt of such personal complaint the Council shall press for a decision on the general question of such illegal interference.

In doing so he gave an instance of the kind of interference to which he referred. Although he had the greatest respect for the General Medical Council, he thought they had no right to dictate to a medical practitioner whom he should or should not attend.

Dr. LANGDON-DOWN said the Council was in sympathy and agreement with the general principle set forth in the resolution; but he could not agree to it if it was intended as a criticism or censure of the General Medical Council, with whom the Council of the Association had always worked harmoniously. But, on the other hand, they would always take the necessary steps to prevent the liberties and rights of the profession being over-ridden by the General Medical Council. The Council of the Association had recently taken steps to bring to the notice of the General Medical Council a case in which these rights seemed to have been infringed, and was given to understand that no ground for complaint on that score was likely to be given in the future.

Dr. J. A. MACDONALD, as a member of the General Medical Council, endorsed what Dr. Langdon-Down had said. The General Medical Council recognized that it should not interfere with a doctor's liberty to select his patients.

The CHAIRMAN suggested that the mover of the rider had achieved his object by the discussion which had taken place. Dr. P. R. COOPER agreed, and the rider was accordingly withdrawn.

THE CHAIRMAN OF REPRESENTATIVE MEETINGS.

It was announced amid applause that Dr. T. W. H. Garstang had been re-elected Chairman of Representative Meetings.

Dr. GARSTANG, in thanking the members for their confidence in him, said it had been very much on his conscience that he had not last year instantly taken the opportunity of expressing his opinion of the honour done him. He thanked the members heartily for the great compliment they had paid him.

MEDICO-POLITICAL.

FEES FOR TREATMENT OF SCHOOL CHILDREN.

Mr. E. B. TURNER (Chairman of the Medico-Political Committee) moved a recommendation of Council approving a certain scale of fees for the treatment of school children by private practitioners. These were:

> (i) For the treatment of minor ailments, £2 2s. per session of not more than 2 hours.
>
> (ii) For ophthalmic work involving refractions, 10s. 6d. per case, or where cases are seen at clinics, £3 3s. per session not exceeding 2½ hours in which not more than eight new cases shall be seen.
>
> (iii) That a fee of not less than £1 11s. 6d. per case (including anaesthetist's fee) be paid for adenoid and tonsils operations, involving a general anaesthetic.
>
> (iv) That the fee for other operations on eye, nose, ear and throat cases should be specially arranged for at a higher remuneration.
>
> (v) That the fee for *x*-ray treatment for ringworm be £3 3s. per completed case where the practitioner provides his own apparatus, but where the apparatus is provided by the local authority the fee to the practitioner should be £2 2s.
>
> (vi) That the foregoing fees be exclusive of any fee paid to institutions for maintenance, etc., of patients.
>
> (vii) That any local variation in the above terms, before being adopted, be submitted to the Council for approval.

This matter, he said, was remitted by the Medico-Political Committee to the Maternity and Child Welfare Subcommittee, which went into it extremely carefully, with the result that appeared in the recommendations.

Dr. F. J. S. HEANEY (Liverpool) moved to widen the scope of the recommendations by making them apply to the treatment of school children not only at clinics but at welfare centres.

Dr. E. R. FOTHERGILL said that this widening to embrace welfare centres would simply help to establish those places. As soon as Primary Health Centres with specialists and properly trained general practitioners could be got going there would be no need for children's welfare centres. They were of no use, and were taking work out of general practitioners' hands.

Dr. BRACKENBURY said that they were not discussing whether infant welfare centres should or should not be established, but attempting to give some guidance centrally as to the kind of fees that ought to be required. The conditions under which these centres should be set up were determined by the Representative Meeting last year, when it was left to each locality to settle its own fees, and now a scale was being provided for the guidance of those localities.

Dr. CHRISTINE MURRELL protested against some of the things said against welfare centres under conditions which precluded an opportunity for reply.

It was agreed to insert the words "at treatment centres or welfare centres" at the beginning of the recommendation.

Dr. F. ROPER (Exeter) moved that a fee of one guinea should be chargeable for the treatment of minor ailments where the session or time involved was one hour or less.

Dr. BRACKENBURY hoped that such cases as Dr. Roper had in mind might be covered by the final clause of the recommendation, so that any local variation of terms, such as the admission of a fee of less than two guineas, might be submitted to the Council for its sanction, which would not be unreasonably withheld.

Dr. ROPER withdrew his amendment.

Dr. A. C. FARQUHARSON, M.P. (Bishop Auckland and Durham) moved that the fee for adenoids and tonsils operations should be in accordance with the number of cases done at a session.

Dr. BRACKENBURY hoped the meeting would not go too minutely into small variations of fees. The Subcommittee felt it to be a question of principle that for cases like operations for tonsils and adenoids the charge should be made on a case and not on a time basis. In minor ailments the position was different. Operative work should not be paid for at so much a session. A number of local authorities had already accepted this arrangement. A local authority might perhaps be willing to pay 1½ guineas a case for two or three cases done by two men in combination; but if the men were there and all the apparatus was at hand, and they had to do six or eight cases, the local authority might insist that the payment for the whole number should be at a somewhat lower rate. In tonsils and adenoid operations the fee should be so much per case.

Dr. J. W. JOHNSON (Bury) said that the Education Committee in his area had just arranged for the treatment of tonsils and adenoids at 2 guineas a case, and this had been sanctioned by the Minister of Education. He thought the fee for these operations should not be placed as low as it appeared in the Council's recommendation. He had found no difficulty whatever in getting local authorities to agree to a fee of 2 guineas.

Dr. BRACKENBURY suggested that the 2 guineas in Dr. Johnson's case covered the payment made to the infirmary. (Dr. JOHNSON signified assent.) The fees recommended by the Council were exclusive of payments to institutions.

Dr. G. H. LOWE (Cleveland) asked how the fees should be divided between practitioner and anaesthetist. Mr. TURNER replied that this was purposely left vague so that it might be arranged among the doctors themselves.

Dr. W. MUIR SMITH (Eastbourne) explained that in his locality a rota of practitioners was appointed each year, consisting of two anaesthetists and two operators, and for a session of not more than eight cases the operator was paid 5 guineas and the anaesthetist 3 guineas. The operator was paid more than the anaesthetist because he might have to pay certain visits to the children's homes after the clinic was over. Of course, now that the fees had been advanced, they would very likely ask for a little more than hitherto. The arrangement had worked with perfect satisfaction to the Education Authority and the practitioners concerned.

Professor R. A. BOLAM suggested that in order to prevent this work passing into whole-time hands there must be a very reasonable interpretation of the clause permitting local variations. He instanced the case of a specialist working four hours a week in a large hospital and performing eight operations an hour, or thirty-two a week.

Dr. H. J. M. MILBANK-SMITH (Worthing) was not quite satisfied that the division of the fee should be an arrangement between operator and anaesthetist. In his Division they found that it was the general practitioner who was the anaesthetist and that the operations were performed by the medical officer.

Dr. W. H. IRVIN SELLERS (Preston) said that tonsil and adenoid operations were done by a throat specialist at the hospital with which he was connected. Each operation took barely five minutes, so that ten cases were easily disposed of in an hour. He thought no local authority would pay fifteen guineas an hour for work of that kind.

Dr. H. B. BRACKENBURY said that no doubt in many places the local circumstances would call for a very free interpretation of the final clause of the recommendation. The Council was considering the matter from the point of view of this work being done by the local practitioners—a policy already agreed upon. If the general practitioners of a locality were not able or willing to do the work the local authority could make what arrangements it liked. But in the ordinary way the local authority should arrange with local practitioners to do the work at local centres, and in that case the payment suggested could not be called excessive. The instances mentioned by several speakers in which it appeared to be so were really exceptions.

Mr. N. BISHOP HARMAN (Marylebone) said he intended to vote for the series of propositions put forward mainly on account of the last one, which he regarded as a saving clause. There was a difference between rural districts and urban centres. In all the great centres of population there had to be subdivision of labour, and a man who practised a single branch of medicine naturally acquired such skill that he could do four or five times as much work in that branch in a given time as a general practitioner.

Dr. H. ROSE (Buckinghamshire) said that in his county they found they could easily earn nine guineas an hour at this work, which seemed excessive when compared with what was received for eye work and so on. A guinea and a half per case seemed too much, because all the preliminary work was done for them, and they could get through six cases in 45 minutes. It would be better to change the proposed scale for the first two cases and make a reduction for the remainder.

Dr. FARQUHARSON said his Division did not want a medical man to be in the position of earning twenty to forty guineas per session when a practitioner engaged on other work for a similar period was only earning 2½ guineas or less. If a limit could be placed to the amount that could be earned he would willingly withdraw his amendment.

Dr. AGNES ESTCOURT-OSWALD said that to compare minor ailments with the operation for tonsils and adenoids was lacking in a sense of proportion. The chief conditions dealt with in minor ailments were external eye diseases, skin diseases, and ringworm; they involved comparatively slight responsibility. Tonsils and adenoids, on the other hand, involved considerable responsibility, and the payment ought to be more than for minor ailment cases.

Professor BOLAM asked whether the reference to local variations would cover the submission of a scheme involving treatment per session instead of treatment per case for tonsils and adenoids.

The CHAIRMAN: I believe so.

Dr. FARQUHARSON in that case had nothing more to urge.

Dr. BRACKENBURY said he would be very sorry to give his own adhesion to the ruling that a local variation might be held to cover a departure in principle from the scheme laid down. Could a local variation be said to include such a radical change as the substitution of a fee per session for a fee per case? But it would certainly cover the variation to a fee per case in proportion to the number of cases taken.

Mr. TURNER observed that this "omnibus clause" would permit of the submission to the Council of any variation of scheme which was locally thought necessary. The reception of the scheme by the Council would depend upon the circumstances which necessitated the laying of that scheme before it.

Dr. FARQUHARSON withdrew his amendment, and Mr. TURNER accepted an amendment by Mr. H. [illegible] (Liverpool) deleting the words "for at a higher remuneration" at the end of Clause iv.

With these slight alterations, the whole recommendation setting forth the scale of fees was agreed to.

MINIMUM SALARIES FOR PUBLIC APPOINTMENTS.

At the opening of the afternoon session the question of minimum salaries for public appointments was taken, and Dr. W. J. Howarth, M.O.H. City of London, Dr. G. F. Buchan, M.O.H. Willesden, representatives of the Society of Medical Officers of Health, together with Mr. G. S. Elliston, secretary of the Society, were present to take part in the discussion.

Several pages of the agenda paper were occupied by recommendations which set out the suggested minimum salaries for whole-time medical officers of health (varying with the population of the administrative area), assistant officers (not less than £700, rising to £900, with the civil service bonus in addition), senior officers in charge of departments, officers employed in departments, superintendents and officers in hospitals and sanatoriums, and part-time officers (£4 4s. a day, according to the time devoted to their duties). Each recommendation was accompanied by a definition of the specified classes of officers.

Mr. E. B. TURNER (Chairman of the Medico-Political Committee) cordially welcomed the representatives of the Society of Medical Officers of Health, who had come to help in solving this very difficult problem. Everyone present would agree that salaries all round must be raised. The Society, after careful consideration, had almost unanimously arrived at what they considered a just and proper scale of payment according to the importance of the work they undertook. Population was taken as the basis of their scale. In trying to impress local authorities throughout the kingdom with the necessity of adopting the scale, they wished to have behind them all the support they could get, and they asked the Association to back them up in the way it could when convinced of the justice of a cause. If, after considering the matter, the Representatives came to the conclusion that the Society of Medical Officers of Health was justified in its demands, and decided to support it, they would have to take action in a definite way. They would have to exclude from the JOURNAL advertisements of appointments the remuneration of which was below the scale agreed upon, and to support the policy adopted in every other way possible. The Society was of opinion—and it was in a position to judge—that if it had the support of the Association it would be able to hold its own members, and none of its members would accept a post except at the proper salary. The meeting would have to consider the case on its merits, bearing in mind the large number of men with the D.P.H. who had returned from the war and were at a loose end. If the local authorities objected to the increased scale they would use every means in their power to counteract the efforts made by the Association and by the Society, by inserting their advertisements in whatever papers would take them, and by inducing doctors to accept posts at less than the proposed remuneration. It was necessary to go into the case carefully, because he for one would be very sorry if the Association took up a case and did not carry it through to the bitter end, or light-heartedly engaged in a fight which might end disastrously. He concluded by moving, so as to put the discussion in order, that the scales of minimum salaries for whole-time medical officers should include all emoluments attaching to the office, and represent the value of the whole-time services of medical officers in the various classes indicated.

The Chairman then called upon the Representative of the Reigate Division to move his amendment (referring back the recommendation), on which he thought the discussion might conveniently turn.

Dr. S. Morton Mackenzie (Reigate) felt very strongly that nothing should be done to impair the prestige of the Association, which was coming to a position of great strength. It should not enter into a fight which might turn into a débâcle. His Division wanted to be satisfied before any action was taken that the increased scale proposed was fair and right; at present his Division thought it a little high, but, of course, he was expressing that view without having heard the explanation of representatives of the Society of Medical Officers of Health.

Dr. G. F. Buchan, representing the Society of Medical Officers of Health, then addressed the meeting. After thanking the Council and members for allowing his Society to come and present its own case, he said that this question of salary scale and revision had arisen because there existed in the ranks of the Society very serious dissatisfaction on the score of salary. It arose from three causes: (1) The remuneration of medical officers and local authorities had always been poor; (2) no adequate increase in that remuneration had been made on account of the rapid changes which had taken place in public health work; (3) no adequate increase had been given to meet the cost of living. There was also no proper arrangement as to grading or to the comparative rewards of part-time and of whole-time service. His Society formed a special committee and heard the cases of a great number of medical officers who were dissatisfied with their remuneration, and drew up a scale in something like the form in which it was presented to that meeting. The help of the British Medical Association was asked, and many joint committee meetings were held at which the proposals were discussed. His Society believed the time to be ripe for fixing the salaries for the various grades of work in the public health service, having regard to qualifications, experience, and responsibility. With regard to the reasons for dissatisfaction, the cost of living might be dismissed, that being met by the civil service bonus, which the Ministry of Health recommended all local authorities to adopt. The point on which they laid stress was that no real increase in pay had been made on account of the rapid extension of public health work. In 1912 the Annual Representative Meeting fixed the minimum salary of medical officers of health at £500. Since then there had come along the treatment of school children, with school clinics and open-air schools, the treatment of tuberculosis, the treatment of mothers and infants, with maternity hospitals and homes, children's hospitals and baby clinics, and, finally, the treatment of venereal diseases, with clinics and dispensaries. Beyond all this there was propaganda work, which hitherto the M.O.H. had not been required to undertake. This had been placed on the medical officer, with very slightly increased remuneration. To enter the public health service a man had to acquire, in addition to full medical and surgical qualifications, a diploma in public health, which cost him another year of study. Dr. Buchan went on to describe the proposals before the meeting. In what he defined as Class IV—the men who had held house appointments in fever hospitals, and had reached the age of 28 to 30—they were asking for an average salary of £625, or with civil service bonus, £872 per annum. For the class next above this, Class III, they were asking for £800, or with bonus, £1,100. For the next class of assistant medical officers the same salary, and for Class I, £1,150, or with bonus £1,554. The civil service bonus fluctuated with the cost of living. These salaries compared very closely with the pay of army medical officers in corresponding grades, and the army officers had their pensions in addition, which medical officers of local authorities had not. The representatives of the Society of Medical Officers of Health were nearly all members of the British Medical Association, and were just as anxious for the future of that Association as the member for Reigate. The Society had no doubt whatever that it could hold its members in any action which was taken. What was asked of that meeting was that the memorandum be accepted in principle, and that it be then referred to a conjoint committee of the British Medical Association and the Society of Medical Officers of Health for further action.

Dr. Buchan was then asked many questions by Representatives. He said that 99 per cent. of medical officers of health were members of his Society, and the bulk of them were members of the British Medical Association. On a rough estimate the total number of men in the service was 1,460. Of these, 335 would be medical officers of health, 182 assistant medical officers of health or medical officers in charge of departments, and 943 were employed in departments. Ireland was not included in these figures.

Dr. Fothergill said that the meeting had no precise information as to the number of these officers who were members of the Association. Presumably they were dealing with a large number of non-members. What steps, if any, would the Society take to bring its members into the Association if the Association stood by them?

Dr. Buchan said that his Society would make every effort to get its members into the Association. All that was asked of the Annual Representative Meeting at that stage was that the resolutions should be adopted in principle and referred to a joint committee.

Dr. Wallace Henry asked what proportion of the assistant medical officers of health were members of the Society. Dr. Buchan could not give the figure, but said it was relatively smaller than the figure for principal officers, because the assistants had not the money to join either his Society or the Association. (Laughter.) Mr. Elliston (the secretary) said that the total membership of the Society was just over 1,200, and 33 per cent. of the members were whole-time officers.

Mr. Turner read letters from the editor and the manager of the *Lancet*, pointing out difficulties in subjecting advertisements to the scrutiny which would become necessary if the recommendations were carried. The manager stated that there were too many classes and the distinctions were too finely drawn to enable the rapid decisions, necessary in the office of a journal, to be taken.

The Medical Secretary, who was asked to speak, said that if the Representative Body agreed on the policy it was for the staff to carry it out. But on the question of procedure, with which alone he was dealing, if this policy were adopted it would be impossible to get an advertisement into the *Journal* in the week in which it was offered owing to the complexities of the scale. His colleagues agreed that it would be necessary to get out a questionnaire to send to every advertiser before these advertisements could be put into their proper category. He was quite sure, from the readiness of advertising agents at the present time to drop advertisements, that as soon as difficulties were raised they would be only too glad to avoid all the trouble by simply transferring their advertisements to the lay press, who would ask no inconvenient questions. He entirely agreed with the editor of the *Lancet* that if the local authorities decided that the scheme was unreasonable and combined to transfer their advertisements from the medical to the lay press, the medical press would be seriously embarrassed in its efforts to help the profession.

In reply to Dr. W. Douglas, Dr. Buchan said that the secretary of the Society gave the proportion of whole-time men as 33 per cent., but it must be remembered that the authorities in England and Wales numbered about 182, and that the larger areas appointed whole-time and the smaller areas part-time men, the latter being in the majority at present.

Dr. J. Nelson (East York) wanted a definition of "whole-time medical officer of health." Some medical officers of health, while technically whole-time men, were allowed to hold other appointments. That applied particularly to ports. The question whether the so called "whole time" M.O.H. was allowed to supplement his salary by holding other public posts would have some bearing upon the decision as to the salary given to whole time officers.

Dr. H. B. Brackenbury said that nobody in the room had a keener desire than he to work harmoniously with the Society of Medical Officers of Health, or appreciated more highly the medical officers of health who were members of the British Medical Association, but when they were in for a fight he liked to feel that there was some reasonable prospect of success, because an unsuccessful fight would leave them very much worse off than before. Therefore his point was not whether the scheme was a good one in itself, whether the definitions were good, and whether the emoluments asked for were in themselves and in the abstract such as they would like the medical officers of health of the various grades to have, but whether it was a practical proposition within the next year to fight the local authorities in this country and many members of their own profession. The representative of Nottingham had said that if the scale were applied to that city the M.O.H. there would receive £2,400. Suppose an advertisement came from Nottingham to the *British Medical Journal* offering £2,200 for the post of M.O.H., the Association would have to refuse it and to bring pressure to bear upon intending applicants; it would be compelled to ostracize, as far it legally could, any practitioner who accepted the post at £2,200. Would public opinion endorse such a fight, and would there be an insufficient number of suitable men in the profession to apply for the post at that salary? If, in spite of both the Association and the Society, such a situation arose and they were beaten in one place, all other local authorities could at once say, "So much for the British Medical Association and the Society of Medical Officers of Health—we can do without them!" He did not want to leave the matter where it was, but he wanted the meeting to realize the situation as he saw it before taking this extremely important decision. If Dr. Buchan was only asking them to accept the principle and appoint a joint committee to further it, he was heartily in agreement, but he did not feel that at present he could vote for or recommend others to vote for a cut-and-dried scale of salaries exactly as put down on the paper. His own suggestion would be to adopt the motion which set up the conjoint committee, and adopt also the Newcastle amendment expressing the opinion that the salaries of those officers ought to be raised very materially indeed, but declining to pledge that meeting to the exact figures set out in the scale.

The **TREASURER** asked how many appointments in the United Kingdom would come to a value of over £2,000 a year under the proposed scale. Dr. **BUCHAN** said he supposed such posts were those in populations of over 500,000, where the salary would be £1,800 per annum, *plus* bonus, bringing it to £2,300. There were thirteen of these appointments in England and Wales.

Dr. J. **STEVENS** (Edinburgh) inquired, presuming this policy were adopted on behalf of the medical officers of health and it led to litigation, who would meet the cost? Dr. **BUCHAN** replied that the members of the Society would certainly bear their share, just as any other members of the Association would bear their share of expense in any action taken in their interests; and as a Society they would be willing, as far as possible, to help the coffers of the Association.

Mr. F. J. S. **HEANEY** (Liverpool) observed that hitherto there had been a continual crossing of purposes. The public health service of the country, for good or for evil, had been endeavouring to take as much of the clinical work and the work of the general practitioner as it could. If the salaries of medical officers of health were made very attractive, the natural economic tendency would be for more doctors to find their way into the public service, and the pressure in the direction of a whole-time State service would be increased. Therefore they wanted some very definite understanding with the public health authorities before they entered into that scheme.

Dr. R. L. **LANGDON-DOWN** (South Middlesex) said that before undertaking to fight on a question of that sort they should consider the resources at their disposal for making it effective. What steps could the Society take to enforce any decision that might be arrived at? As far as the Association was concerned, he foresaw very considerable difficulties in putting into force the decisions that might be reached, particularly by way of pressure on non-members of the Association. The acid test of the situation was this: Was the Society of Medical Officers of Health prepared to call out its men from situations which they now held at salaries below the standard proposed?

Dr. **BUCHAN** said that the formation of a conjoint committee which should report to the Council was as far as it was desired to go at present. They were not now asking that men be withdrawn from posts, but that the recommendations be passed in principle, and that the matter be referred to the conjoint committee.

In reply to Dr. **BRACKENBURY**, who asked what was meant by "principle," Dr. **BUCHAN** said that the scale proposed was the principle which should guide the conjoint committee in its further action.

Dr. A. E. **COPE** (Westminster) thought it would be difficult to make this a practicable scale at present, but it could be taken as the scale to be aimed at.

Dr. C. O. **HAWTHORNE** observed that not only had the meeting now heard the case of the medical officers of health, but on the previous day it had listened to a moving and eloquent appeal from those engaged in teaching. He wished to draw a common lesson—namely, that they must help one another. It was undoubtedly the case that professors, being on fixed salaries, were placed in an unfortunate economic position; but if the professors were to have the Association's aid they must recognize—as the medical officers of health also must recognize—that the time had come when they could no longer stand isolated in academic or official seclusion, but must follow the example of Professor Berry on the previous day and throw themselves into the Association. He gathered a great deal of encouragement from these two appeals, for they went to show that the British Medical Association was the proper body to which to appeal when any section of the profession was placed in a position of relative injustice.

Professor **BOLAM** said that his own county—Northumberland—recently appointed a chief medical officer at £1,100 per annum (£800 salary, *plus* £300 bonus), not much more than half of the amount it should be according to the proposed scale. The number of such posts falling vacant in a year was not great, so that the number of those required to break the scheme was very small. He believed that all were in favour of the principle adumbrated, and he hoped Dr. Buchan would leave it to the strength of the conjoint committee to get, bit by bit, all he wanted.

The **CHAIRMAN** said he would put to Dr. Buchan one question, a direct answer to which might shorten the discussion: Did the Society intend the scale it had put forward to be the working scale from that day onwards which the Association would be bound to defend, or did it merely mean that it was a scale of perfection towards which the medical officers would work to the best of their ability?

Dr. **BUCHAN** said his Society wanted this to be the ultimate scale which they desired to attain in the least possible time. They wanted it accepted and referred to the conjoint committee to take such action as was necessary to hurry it on.

Professor **BOLAM** asked if the position would be met by passing a resolution to the effect that the meeting was of opinion "that a substantial addition is needed to all public health salaries on the general lines of the scales laid down in the recommendations of Council set forth in the agenda"; and to follow this up by appointing, as the Council recommended, a conjoint committee of the Association and the Society to take charge of the case for improvement and to report to the councils of those bodies. (Applause.)

After some further discussion, Dr. **MORTON MACKENZIE** (Reigate) asked whether, if he withdrew his amendment (referring back the recommendations), the representatives of the Society would accept the amendment by Professor Bolam.

Dr. **BUCHAN**, after consultation with his colleagues, said that he was quite willing to accept that amendment; and Dr. **MORTON MACKENZIE** then withdrew his amendment, and expressed the good wishes of his Division for the success of the Society. (Applause.)

Professor Bolam's proposition—

> That this Annual Representative Meeting is of opinion that a substantial addition is needed to all public health salaries on the general lines of the scales indicated in paragraphs 77 to 112 of the Agenda (SUPPLEMENT, April 24th, 1920, pp. 115 and 116)—

was then taken as a preface to the Council's recommendation—

> And that a conjoint committee of the British Medical Association and the Society of Medical Officers of Health be formed to take charge of the case for improvement in the salaries of medical officers in the public health services and to report to the Councils of the British Medical Association and of the Society of Medical Officers of Health as to any steps that may be necessary to this end.

The whole of this was then put as one resolution and carried [illegible]. Mr. TURNER thereupon withdrew many detailed motions dealing with this subject, and a number of amendments to them fell to the ground.

Mr. TURNER offered the thanks of the meeting to the representatives of the Society; and Dr. BUCHAN acknowledged the courtesy with which they had been received. The representatives of the Society then withdrew.

CONTRACT RATES FOR UNINSURED PERSONS.

Mr. TURNER moved the recommendation of Council to amend the appropriate minute regarding fees for attendance on uninsured persons so that the modified paragraph would read:

> That in general, in considering the necessity for obtaining [illegible] schemes for the treatment of [illegible] persons on contract terms, the following principles and conditions must be adhered to:
>
> (a) Free choice of doctor by patient and of patient by doctor;
>
> (b) Remuneration to be not less than that which is deemed [illegible] to be equivalent to that paid in respect of [illegible];
>
> (c) Persons with a total income from all sources of £250 per annum or upwards, or the dependants of any such persons, not to be treated under contract terms at all.

[The original minute, which was that of the Representative Meeting, 1919, was published in the SUPPLEMENT of April 24th, 1920, page 115.]

The motion was agreed to.

Dr. J. STEVENS (Edinburgh) moved as a rider:

> That contract rates for uninsured persons paid on a basis of payment by attendance be not less than the minimum fees recognized in the district for private medical attendance.

The rider, which was seconded by Dr. J. B. MILLER (Lanarkshire), was carried on a show of hands. The CHAIRMAN, on being appealed to, said that the passing of the rider was an expression of opinion by the meeting, but it did not thereby become the policy of the Association, because it had not received the requisite two months' notice.

MEDICAL ATTENDANCE ON MINERS' FAMILIES.

Dr. C. J. PALMER (Nottingham) moved:

> That the time has arrived when the Association should deal with the question of the medical attendance on miners' families, and endeavour to establish a minimum uniform rate throughout the kingdom.

The Ministry of Health was said to be considering the question of bringing the dependants of insured persons into some sort of contract for treatment. Miners' families had for years been attended at contract rates, and the Government would naturally use the amount they paid as the basis of any scheme. The rates at present paid per family varied from 39s. in Scotland to 16s. 3d. in the Midlands, where they were endeavouring to raise the fee to 26s. while pointing out to their patients that that figure was only temporary. The Scottish rate had been arrived at by combined bargaining with the Miners' Association, and the same system had met with partial success in Derbyshire, but in Nottinghamshire all efforts had failed. They felt if the matter was put into the hands of the Association a great improvement might be effected.

Dr. J. B. MILLER (Lanarkshire) supported the proposition, adding that in negotiations with the miners it was very necessary to have skilled men on the doctors' side. It was impracticable for doctors to start negotiating by themselves [illegible].

Mr. W. J. GREER (Monmouthshire) agreed that the doctors ought to organize themselves for a fight which might be very sharp indeed, and that in negotiations [illegible] would be invaluable.

[illegible] wished the case of [illegible] and [illegible] to be included in the [illegible], but Dr. WALLACE HENRY urged that this should be the subject of a separate [illegible]. [illegible] suggested that the [illegible] should be referred to the Council. [illegible] Dr. PALMER'S [illegible] was [illegible], and in this form was accepted as a reference to the Council.

Dr. [illegible] (Cardiff) said his Division had instructed him to move a resolution, with which he could not associate himself at all, criticizing Dr. Cox for meeting representatives of lay bodies at Ebbw Vale in connexion with a dispute between colliery workers and their doctors. Mr. W. J. GREER, as President of the South Wales Branch, remarked that if anyone was to be blamed it was he, for Dr. Cox came down on his invitation. The CHAIRMAN thought he need not call on Dr. Cox to answer so ridiculous an accusation, and the meeting passed at once to the next business.

FEES FOR LIFE INSURANCE EXAMINATIONS.

Industrial Offices.

Mr. E. B. TURNER said the question of the fees payable for industrial life insurance examinations had long been under consideration, and his Committee was now endeavouring to get it settled. For the first time they had been met by the real representatives of the insurance companies—the big men. Two meetings had been held, and as a result, although they had not obtained all they wanted, very large concessions had been made, which would mean much extra money in the pockets of the Association's members. But they had been given to understand that these concessions represented the limit to which the insurance companies were prepared to go. He moved:

> That the fee for medical examination for industrial insurance be 5s. (minimum), or 10s. 6d. according to the form of report asked for.

Dr. A. G. WILKINS (Mid-Staffordshire) proposed the following amendment:

> That this meeting does not accept the principle of a modified examination for life insurance, seeing that the responsibility of the medical man in deciding the prospect of life is the same in all cases whatever the amount of the policy, and irrespective of the form or length of the medical report required; and that the fee for all such reports should be one guinea.

Mr. E. B. TURNER said that although they deserved a guinea they would never get it. The companies pointed out that a very large number of industrial life insurances lapsed after the first few premiums had been paid, and often the companies were out of pocket on them; so that if the fee was raised further they could not recoup themselves.

Dr. J. S. DARLING (Portadown) thought it hopeless to try for more than 5s. He had been leading the struggle in his Division for a number of years, and thought they had done splendidly in getting the fee doubled.

Dr. S. NOY SCOTT (Plymouth) understood that many companies would admit people without examination rather than pay the additional amount asked for.

Dr. C. E. S. FLEMMING (Salisbury), while sympathizing with the amendment, was afraid the time had not yet come when it could be put into effect. It was absurd for the insurance companies, with their enormous profits, to say they could not afford to pay more, but he believed it was useless to ask for more. He did not believe the companies would carry out their threat to do without examinations; they would have done that already had it been possible. But they might, and probably would, appoint whole-time examiners.

Dr. WALLACE HENRY said that the Association had not gained anything like what it wanted, but it had secured a considerable advantage, and it had arrived at a basis on which later on it might be able to fight for a still greater increase.

Dr. JAMES STEWART (Lambeth) said that the insurance companies were well aware that a very large number of industrial policies were dropped after the first year. As medical men, of course, they could not be expected to anticipate anything of that kind, but the insurance companies, being business people, argued from that point of view as to their position with regard to affording the fee. This consideration ought to prevent the meeting pushing the case further than the moderate recommendation of the Council.

The amendment proposing a guinea fee was lost, also two amendments from Reigate, one proposing that fees for all life insurance examinations should be proportional to the sums insured, and the other that all insurance fees be increased [illegible] per cent.

Dr. J. W. BONE said that the subcommittee in charge of the negotiations considered that, taking the case as a whole, it had secured a more advantageous increase than the 50 per cent. proposed by Reigate.

The Council's recommendation was agreed to.

Intermediate Offices.

Mr. Turner moved that as regards intermediate offices (the ordinary branch of industrial offices, and offices which issued policies whose average amount was small) the minimum fee for medical examination should be 10s. 6d. for policies up to and including £100, and 21s. if over £100.

Dr. J. A. Macdonald brought forward an amendment from West Somerset which had the effect of grouping the intermediate offices with the ordinary offices, whose fees were next to be considered. This was carried by 54 votes to 46.

Mr. Turner asked whether this vote meant that the Association was going to take action against the medical men engaged by the intermediate offices. The meaning of the resolution was that in intermediate offices a guinea would have to be charged for every examination.

Dr. Bone said that the class of intermediate offices was just as distinct as the class of industrial offices on the one hand and the class of ordinary offices on the other. These offices issued policies whose premiums were collected in many instances monthly or quarterly, and the average value of the policies was about £100. The effect of what had just been passed, if carried as a substantive resolution, would be that in the large towns the offices would appoint whole-time examiners.

After some further discussion, the whole question with regard to the intermediate offices was referred back to the Council, with power to act. The Council has since met and resolved that the scale originally proposed by the Committee shall be carried into effect.

Ordinary Offices.

Mr. Turner, in moving a recommendation of Council that as regards ordinary offices the fee for medical examination be 21s. whatever the amount of the policy, said that here, in the Committee's belief, the largest concession had been obtained, as a large number of examinations formerly paid at 10s. 6d. would now be paid at £1 1s.

Dr. J. A. H. White (Birmingham Central) moved that the fee for ordinary life insurance examinations be 1½ guineas. The average amount of these insurances was £400, and surely the companies could afford to pay a guinea and a half. The threat to do without the examination was one which the companies could not carry out.

The amendment was lost, and a suggestion by Dr. Baildon to make the motion applicable only to British offices was negatived. The original recommendation of Council was then carried.

The meeting agreed without discussion to recommendations of Council that the fee for a report (without medical examination) for children proposed for "thrift" policies remain at 10s. 6d.; that existing fees should in no case be reduced; that no attempt should be made to standardize the guinea form of report; and that representations be made to the Life Offices' Special Committee as to the modification of forms which were objectionable from the medical examiners' point of view.

The meeting adjourned at 6.30 p.m.

Monday, June 28th.

SIR PHILIP MAGNUS AND SIR JENNER VERRALL.

At the resumption of the Representative Meeting the Chairman of Council announced that the Council had decided that morning to recommend that the Representative Body elect Sir Philip Magnus, Bt., M.P., an honorary member of the British Medical Association for the constant help he had given to the Association in medical Parliamentary affairs, and more particularly in the long fight for security of tenure for medical officers of health which had just been brought to a successful conclusion. The Council had also decided to ask the Representative Meeting to elect Sir T. Jenner Verrall, LL.D., a Vice-President of the Association, for the long-continued and eminent services he had rendered. (Loud applause.) No words of his (said Dr. Macdonald) could express the thanks which the Association owed to Sir Jenner Verrall for the work he had done during so many years.

The recommendations of the Council were carried by acclamation.

Sir Jenner Verrall expressed his cordial thanks for this one more proof of the confidence and esteem of his fellow members of the Association.

MINISTRY OF HEALTH.

THE REPORT OF THE CONSULTATIVE COUNCIL.

The meeting then turned to the various items of the agenda under "Ministry of Health," with special reference to the interim report of the English Consultative Council and the first report of the Welsh Consultative Council on Medical and Allied Services. A special report of the Ministry of Health Committee to the Representative Body on these reports was circulated, setting out the resolutions which the Committee had arrived at as a result of its consideration of the subject. Some of the resolutions reaffirmed decisions already arrived at by the Representative Body and the Conferences of Local Medical and Panel Committees, and some were based upon parts of the "Scheme for a Ministry of Health" to which the Representative Body in 1918 gave a general approval.

Mr. E. B. Turner, Chairman of the Ministry of Health Committee, described the work of his Committee, which had been presided over by Dr. J. A. Macdonald until he was appointed a member of the Consultative Council. The Committee desired the debate that day to be as exhaustive and thorough as possible on the main principles. Although any resolution passed could not fix the policy of the Association, he hoped it would not be taken as a mere pious opinion, but would go out as the definitely formulated view of the Representative Body. It must be remembered also that this was an interim report. One thing the Consultative Council had not yet tackled was that of financial provision, but he thought that this should not intrude upon their deliberations that day. In the nature of things the recommendations of the Consultative Council could not come into operation at once. So profound a change in the whole matter of the provision of treatment would come, probably, by degrees. He moved:

> That the Representative Body express a general approval of the Interim Report (that is, the English Report) of the Medical Consultative Council to the Ministry of Health.

The Chairman decided that an amendment by Dr. Charles Buttar should be taken as a peg on which to hang discussion. The amendment was in these terms:

> That the Representative Body proceed to define the general principles contained in the report of the Consultative Council to the Ministry of Health, and these principles be submitted to the Divisions for an expression of opinion.

Dr. Buttar said the meeting was asked to express approval of the Report of the English Consultative Council to the Ministry of Health without having had time to digest it. It was necessary to consider what the expression "general approval" implied. There might be dangers in giving their approval prematurely. A report of this kind could not be approved without the meeting first seeking for and examining the principles lying at the basis of it. The Report stated that any scheme of service must be available for all classes in the community. He did not think the profession had ever expressed an opinion on that principle. With regard to primary centres, the Report laid down that the primary centre was an essential part of efficient general practitioner service; that it was as essential in town areas as in rural areas; that it must be conducted by the general practitioners of the district; and that all the general practitioners of the district should be on the staff of the centre. On none of these general principles, although they might be inclined to accept the third, had the medical profession expressed an opinion; and in his view the last one would be impracticable in many cases. The whole matter should be considered by the constituencies before the meeting expressed an opinion upon it. If the Representatives were to express approval at that stage the Press would be able to say that the Association had approved a document which had only been issued a few weeks. He contended that the constitution of the Association did not permit them to act in that way; their business was to pick out the principles embodied in the Report and submit them, with a minimum of guidance, to the constituencies.

Sir James Barr (Liverpool) seconded the amendment gladly; he would have liked it to be even stronger. For the good of the country, Divisions ought to have a fair chance of discussing the matter before any opinion was expressed. If Lord Dawson's scheme was put before an intelligent accountant it would fall to pieces. If carried out in its entirety—as it should be if it was carried out at all—it would cost a hundred million pounds a year for the first five years, and in ten years' time it would be costing a hundred and fifty. The country would never stand that. The promoters explained that they were not financiers, but had put forward an ideal scheme. The most important point about an ideal scheme was that it should be practical. (Laughter.) The thing began when Sir Auckland Geddes persuaded the Prime Minister that the population of this country could be made A1 by setting up a Ministry of Health; but no Government could convert a C3 man to A1; if they wanted A1 men they must breed them. It was not the duty of the State to look after ill people, but to prevent them becoming ill. The State should be solely concerned with prevention of disease.

Dr. J. STEVENS (Edinburgh and Leith) suggested that By-law 40 forbade the meeting to express approval of the Report.

The CHAIRMAN ruled that the meeting could express an opinion, but the Council would have to bear By-law 40 in mind when deciding what weight should be attached to that opinion.

Dr. H. B. BRACKENBURY hoped the amendment would not be carried because before they could conduct the procedure set out in it the position would be lost. (Cries of "Oh!") Within the limits of their time at that meeting they would not be able to formulate in that body the general principles which the amendment invited them to formulate afresh. That would have to be done by somebody; it would have to go back to the Divisions and to come to the Representative Meeting either next year or at a special meeting before those general principles could be approved, and by that time there would be a bill before Parliament involving them in serious alterations of their medical service. It was only because the Representative Body had already approved in general the principles upon which the Report seemed to be founded that the Ministry of Health Committee asked them that day to give general approval to that Report. The Committee had set out 36 resolutions, and said that its consideration of the Report led it to conclude that the Report was in general agreement with those 36 resolutions. At least 21 had already received the general approval of the Representative Body last year or the year before. Several others had received the general approval of the Conference of Local Medical and Panel Committees. Others had received the approval of the Council.

Dr. G. E. HASLIP asked how many of these resolutions had received the approval of the Divisions.

Dr. BRACKENBURY replied that the Divisions had had two years in which to consider and give their approval. (Cries of "No, no.") In 1918 a pamphlet was published by the British Medical Association entitled "A Ministry of Health," which set out in a series of resolutions a scheme for the establishment of a Ministry of Health and consequential changes thereupon. That scheme was sent out broadcast. At the Representative Meeting of 1918 all those resolutions were printed on the agenda and discussed *en bloc*, and the Representative Body gave general approval to the scheme and instructed the Council to take steps to bring it into effect.

Sir JAMES BARR asked what was the value of sending those pamphlets out at a time when half the medical profession were away in France.

Mr. BISHOP HARMAN confirmed Dr. Fothergill's impression that at the Representative Meeting he (Mr. Harman) moved a general approval and the meeting did not examine the details of that pamphlet.

The CHAIRMAN said he found from the minutes of the Annual Representative Meeting in 1918 that the long circular on the subject was in the Report of Council, therefore all the members had it. The following was the amendment which, on July 25th, was carried finally as a substantive resolution:

> That the Representative Meeting, in approving the action of the Council in formulating a scheme for the establishment of a Ministry of Health, authorizes the Council to press upon the Government the formation of such a ministry, and that the Council be instructed to seek the co-operation of the Royal Colleges, and such other medical bodies or corporations as shall interest themselves in the matter in securing its effect.

Another resolution was also passed:

> That this Representative Meeting of the British Medical Association urges upon the Government the importance for the general welfare of the nation of immediately establishing a Ministry of Health upon a comprehensive basis, and providing for adequate expert medical and scientific advisers.

Mr. E. B. TURNER said he was in the chair at that meeting, and, as far as he remembered, the matter had been considered by the Council on the report of the Ministry of Health Committee, and there were a large number of the resolutions in that pamphlet which came before the Representative Meeting after they had been in the Report of Council in the JOURNAL. In those days they got the Representative Meeting over quickly, for economic and other reasons of necessity, and there was not time to consider those measures, and a motion was made, which he accepted, that the Representative Meeting give general approval to those resolutions.

Dr. A. C. FARQUHARSON, M.P., said that late one afternoon in 1918 a very strong opposition sprang up in the Council to the whole scheme. Eleven members were present. Six voted for and five against it, so that the whole of those proceedings had arisen out of the difference of one vote at a meeting of eleven members of Council.

Dr. BRACKENBURY did not accept the history. More than two years ago certain resolutions were sent out after full deliberation, not at one meeting, but at many meetings of the Council and its Committee. In 1918 the Representative Body expressed general approval of the scheme. In 1919 it said very much the same thing on certain other resolutions. Now their opinion was that the Ministry of Health Committee, having examined the Report of the Medical Consultative Council, found itself in general harmony with the scheme. If the Report of that Council had been radically different, then, of course, they would have had to begin a minute examination in all its details of the Report, but if the Report were in general harmony with the resolutions, there was no reason to begin all over again, but the meeting should be content to express general approval. The general principles underlying the resolutions and the Report were mainly three—namely, (1) that the general practitioner was the foundation of the whole scheme; (2) that it was important to make preparation for all the population and not merely one section; (3) that the general practitioner should not merely be the foundation of the whole business in one sphere, but should have opportunities to develop his skill and abilities in spheres at present beyond certain general practitioners.

The CHAIRMAN said that the scheme mentioned by Dr. Brackenbury was published in the SUPPLEMENT of May 5th, 1917—two and a half months before the Representative Meeting of that year, when a resolution was passed approving generally the scheme submitted for the establishment of a Ministry of Health, and leaving it to the Council to represent the scheme to the Government and secure acceptance so far as this was found to be possible.

Dr. STEVENS asked if that was carried by a two-thirds majority. The CHAIRMAN said it was probably a majority vote, and seeing that it was only a preliminary step for the purpose of obtaining the approval of the profession, he did not think it mattered.

Dr. NOY SCOTT (Plymouth), speaking as a general practitioner, wanted to emphasize the fact that the general practitioner had had no proper opportunity of considering the effect these proposals would have upon him. (Hear, hear.) In 1917, when the pamphlet in question was sent out, the profession had no time to read anything.

Dr. E. R. FOTHERGILL (Brighton) said he was not opposed to Dr. Buttar's proposal. Were they in a position to give a lead to their areas on this question? Had each of them considered the Report in such detail that his Division could look to him for such a lead? The question of parliamentary urgency might be taken for what it was worth. Were they to be jockeyed in a matter in which they were responsible as trustees of Medicine for the next generation?

LORD DAWSON OF PENN, who was cordially received, said he was only going to address himself to the narrower issues which had been raised. Despite the time spent in the debate, the meeting had not really come to grips with the subject. He cared not what method was adopted, provided they discussed that day the main principles underlying the Report. He would be the last to want a body of this size, after so short a time, to express detailed approval of a Report of this magnitude and complexity. It was an interim Report. It stated that the time had come for the medical profession to take a comprehensive survey of the medical services. These medical services had been growing up bit by bit and patch by patch for years, and it was time they were surveyed and the general principles agreed upon. This Report only pretended to give the trend of their considerations. It was time to take a big outlook. In what direction were they moving? In the direction of pure individualism, or towards a whole-time State salaried service? That was what the promoters of the Report had tried to envisage, and a difficult task it had been. Their answer to those who spoke of the tremendous cost of such a scheme was that this was a scheme which might take twenty years to materialize, but it was necessary to know what kind of building was ultimately going to be put up. If once they had the idea of the ultimate design, then even a few stones of the basement would not only be useful now, but would contribute eventually to the finished fabric. He was not hostile in any way to Dr. Buttar's resolution. To try and bind the meeting by the resolutions of previous meetings would not be a sane proceeding. All that his colleagues and himself wanted was to get the medical profession to look at the thing seriously. The public was looking to the profession for guidance on health matters. The public was profoundly moved over the question of health, and the best evidence of that was the force of opinion which brought about the Ministry of Health. That Ministry was brought about by public opinion and not, unfortunately, by medical opinion. The public had often been ahead of the profession, but the public had learned to appreciate the profession during the war. The Consultative Council's Report aimed at bringing guidance before the profession. This detail or that of the Report was a small thing; it was the big outline that mattered. He thought the public would expect them to give some sort of guidance as to the direction in which medical services and medical practice in this country should move. He asked that certain broad principles should now be discussed. He had nothing to say against Dr. Buttar's speech in proposing the amendment, but he begged them not to follow in the evil path of Sir James Barr. This was a time when they could not indulge in after-dinner criticism, however pleasing and witty it might be. They must get down to serious business and be constructive.

Mr. BISHOP HARMAN (Marylebone) agreed generally with Dr. Buttar's amendment, but not with the expression that the meeting should "proceed to define the general principles." He thought that Dr. Buttar should have mentioned the outstanding principles embodied in the Report, and that they should go to the Divisions for their view. He had no doubt that the pivotal point in the whole Report was that of primary health centres. They served to bring together the two ends of the profession—the general practitioner and the consultant. He welcomed that idea. He wished to suggest an amendment to the following effect:

> That the Representative Meeting accepts the view that the establishment of primary health centres is the pivotal idea of the changes recommended in the Report of the Consultative Council to the Ministry of Health, and that this principle be submitted to the Divisions for an expression of their opinion thereon.

Mr. F. J. S. HEANEY (Liverpool) said it had been suggested that if this were referred to Divisions and valuable time wasted they would find a bill before Parliament and the whole matter settled behind their backs. During the past few weeks, while the Association was discussing the question of remuneration of hospital staffs, they suddenly awoke to the fact that the Hospitals Association had come to an agreement with the Ministry of Pensions over their heads. Notwithstanding that, he thought the Divisions should be allowed to express their opinion on this matter.

The CHAIRMAN pointed out that Dr. Heaney was mistaken in imagining that the Council was out of touch with what was going on in the case to which he had referred.

Dr. JOHN STEVENS (Edinburgh) said Lord Dawson had mentioned that it was only the broad outline which he wanted supported that day, but it was the broad outline that he personally objected to. In paragraph 7 of the Report it was stated, "any scheme of service must be available for all classes of the community under conditions to be hereafter determined." That meant it would be a whole-time State service in reality, although not in name. ("No, no.") That was contrary to a decision come to at the last Representative Meeting, that the level of income below which such services were available should be £250. What Lord Dawson had said clearly showed that the scheme was only an extension of the National Health Insurance system at present in existence. He hoped the meeting would not express approval, however indefinite, unless they had first made themselves thoroughly acquainted with the provisions of the Report. The eyes of the Dominions and the United States were on the Association, watching what it would do.

Dr. E. R. FOTHERGILL (Brighton) suggested that the word "define" in Dr. Buttar's amendment should be altered to "consider." (Dr. Buttar accepted the suggestion, and his amendment was, by consent of the meeting, altered accordingly.)

Professor BOLAM thought that in the main there was general agreement as to what should be done with the Report. They all felt that it was a new departure and could not achieve success unless it had the united support of the profession behind it. He hoped it would be agreed that the Report was only a new presentment of principles previously agreed upon. After many years of work the Association's scheme for a Ministry of Health was presented in 1917. In the main the present scheme was the scheme of the British Medical Association. ("No" and "Yes.") There were points in it, however, to which many might take serious exception. He asked if Dr. Buttar would accept an amendment in the following terms:

> That the Annual Representative Meeting approve of the action already taken by the *Ministry of Health Committee*. That this meeting now proceeds to consider the general principles contained in the Report of the English Consultative Committee to the Ministry of Health, and further, that the whole question be submitted anew to the Divisions, and thereafter considered by a Special Representative Meeting.

Although a special meeting would cost nearly £1,000, it would be worth it. (Hear, hear.) They should be in a position next year to say to the State: "This is what we feel is best for England, and we will do our best to support it."

Dr. G. E. HASLIP quite agreed with Professor Bolam. He had always objected to pious opinions being expressed by the Representative Body. Pious opinions had a way of developing into policies. In 1917 the war was in progress, and no Ministry of Health had been established. Many big events had taken place, but he did not think any big principles had been sent down to the Divisions to decide. The Divisions had never yet been asked whether the principle of voluntary hospitals should be continued or not, and how far State influence over medicine should be extended. There was a large amount of indifference to the future amongst those who were not insurance practitioners; this he deplored. Whatever happened, they must take care that if a fight occurred in the future the profession was united.

The CHAIRMAN OF COUNCIL said that all the Representatives were trying, at great cost of time, to arrive at the same thing. Nobody supposed that they were going to lay down the policy of the Association that day. The particular principles could be discussed without defining them, as Dr. Buttar suggested. He believed that legislation on this subject was going to be introduced early in the spring session, and the matter would have to be sent down to the Divisions, clearly defining to them the points on which an expression of opinion was desired.

After some further discussion by Dr. FARQUHARSON and others on procedure,

Sir JENNER VERRALL, speaking as one who had much experience of what had happened in times past, was afraid that a sufficiently definite expression of opinion might not be forthcoming, such as would do the profession credit. The wise thing was to consider the principles.

Dr. Buttar's amendment, with the substitution of the word "consider" for "define," was put and carried by a considerable majority, and became the substantive resolution. Professor Bolam's proposition, which had been altered to meet certain criticisms, was taken as an amendment and read:

> That the Annual Representative Meeting thanks the Ministry of Health Committee for the work already undertaken, and proceeds to consider the general principles contained in the Report of the English Consultative Council to the Ministry of Health, and that the whole question be submitted to the Divisions and considered at a Special Representative Meeting.

This was carried as an amendment by a considerable majority, and was subsequently adopted *nemine contradicente* as the substantive resolution.

Mr. Bishop Harman moved, and Dr. F. W. Goodbody (both of Marylebone) seconded:

> That the Representative Body accept the view that the establishment of primary health centres is the pivotal idea of the changes recommended in the Report of the Consultative Council of the Ministry of Health.

The scheme, said Mr. Harman, sought to bring together the consultant on the one hand, and on the other the general practitioner who saw the cases at the beginning.

Lord Dawson, speaking again by invitation, said he agreed with the decision which had just been taken, and now, he imagined, they were going to discuss some of the principles underlying the Report. The scheme was an attempt to carry out the view that in order to prevent and cure disease the best means should be made available for all members of the community. The word "available" did not mean "given to." There were innumerable instances where people with ample means to pay for it could not get it because of lack of organization. One object of this scheme was to show where those weaknesses lay and to think out an organized means of overcoming them. Far from this making for a whole-time State salaried service, he ventured to say that it was the sole alternative. The Consultative Council had faced the question of such a service in paragraph 52 of the Report and had decided against it. He drew attention to the various interpositions of the State in medical services during the last few years, which suggested that a whole-time State salaried service was coming by instalments and almost by stealth. Each of these *ad hoc* services lopped something away from general practice. Where would it stop? Was it not time for the profession to look broadly and in a statesmanlike way into the whole position? If this went on, a man might be doing nothing else but take out adenoids from the age of thirty to the age of sixty, or doing some such small section of medical work; they would have a whole-time service, which would not be to the benefit of the public. To say that if they wanted healthy people they must breed them brought the medical profession into contempt. (Hear, hear.) The profession should appear as a body having constructive ideas. It was their duty to say what they recommended. No one in the room was better able to destroy the Report of the Consultative Council than himself; there was no report ever brought up through which one could not drive a coach and four. They had to meet this solid fact, that medicine and surgery had become a much more complicated process, and one man could no longer do everything in the way of diagnosis and treatment of disease. Lord Dawson repeated the arguments in this connexion which he had advanced at the meeting of the Stratford Division on June 3rd (BRITISH MEDICAL JOURNAL, June 12th, 1920). Organization was needed to bring within the means of the profession the fabric and equipment whereby the best work could be done and keen men could get the requisite aid. That was one of the ideas underlying the primary health centre. Obviously, the greatest proportion of work in the care of patients must be domiciliary. But something more than that was necessary; the doctor must be able to send his patient where equipment and apparatus were available. The second idea underlying the primary health centre was that the patient remained the patient of his own doctor, and the payment of doctor by patient was a matter simply for the doctor and the patient concerned. Another underlying idea was that the State should provide the fabric and equipment, and yet at the same time maintain the freedom of professional relationship. It was asked why the primary health centre was not described as a primary hospital. They wanted something more embracing than a hospital—something which was going to deal with the prevention and early treatment of disease. Less and less as knowledge progressed was a distinction between prevention and treatment possible. The health of the district should as far as possible be managed by the doctors who lived in that district. (Hear, hear.) The general practitioner must enlarge his vision rather than contract his functions as a result of the setting up of instalments of State service. These State services, which they called communal services, should be run by the doctors who resided in that district. That did not mean to say that, in the bigger centres of population, there would not be consultative men; specialists would obviously be needed. But they took the line that the practitioner should be identified with the preventive as well as the curative services. These services should be staffed on a part-time basis by part-time officers, where possible by the local general practitioners. They hoped that in time, as these services were thrown open to doctors in the districts, they would lead to men taking up specialized lines. The idea of setting up primary health centres was to see that all classes got the advantage of these services—not only insured, but private patients. The question of payment was very difficult, and the Consultative Council had not attempted to express any final opinion on it.

Dr. J. W. Bone (Bedford) felt that he voiced the views of some of the men who were to work the scheme, namely, the general practitioners in the outlying districts. They were told that the scheme was based upon primary health centres, and Lord Dawson did not wish to call them hospitals. But they were nothing else but hospitals. If they had before them only what Lord Dawson had said that day they might agree with him, but, unfortunately, he had published an elaborate document with plans. In Gloucestershire it was proposed to put down some twenty health centres, or, as he preferred to call them, hospitals, with out-patient departments added. In small villages it was proposed to put down Type I primary centres with sixteen beds, to be staffed by general practitioners. How many practitioners lived in such a village? The practitioners worked in two places—their own surgeries and the homes of their patients; their time was fully occupied without setting up a new centre. He had no objection to health centres in the larger towns. This scheme in its endeavour to be thorough had gone very much too far. The doctor's surgery should be the primary health centre in the smaller places. That would much cheapen the scheme. The Consultative Council might well consider the scrapping of this hospital provision and reduce the status of the proposed hospital to that of a small building, perhaps an extension of the doctors' surgeries. It might be necessary to consider the question of combined surgeries.

Dr. H. F. Oldham (Lancaster), said that "communal services" were referred to in the Report, but nothing was said as to their extent, or as to whether the directors of those services would have to combine administrative with clinical work. Part-time administrative work was almost invariably futile. If the work was purely clinical the scheme could be carried out, but if administrative work was superadded it would be difficult to get men to accept the posts, and harmonious working would be jeopardized. It was important therefore to know what was meant by communal services.

Dr. C. E. Douglas (Fife) said that in his constituency there existed at St. Andrews what he believed to be the only primary health centre in the kingdom. It had been started through the zeal of Sir James Mackenzie, assisted by local munificence, and was now an extremely active and going concern. The practitioners met daily to discuss difficult cases and points of interest; and *x* ray examinations, bacteriological work, analyses, etc., when needed, were done at the institute. The panel doctors of the city also arranged to see their patients in the building. Thus, while they were discussing the theory of primary health centres, there was one actually in existence in his district which was doing an enormous amount of good. Once doctors had experienced the convenience of these institutions they would never wish to revert to the old system.

Dr. C. Buttar thought the intention of the Consultative Council was to bring together, co-ordinate, regulate, and supply with scientific material under State direction the primary, voluntary, and some State centres that at present existed, such centres to be open to all members of the community. He believed that would come about eventually, and that what had happened to education would also happen with the medical services. There were two ways in which that might be brought about. A system of Government primary health centres, consisting of buildings and equipment, might be started all over the country, available to all doctors. But there was another plan, which he thought more practicable and safer. The existing primary centres—surgeries, consulting rooms, and so on—were deficient as such in various ways, and if those deficiencies were overcome the desired result would be obtained with much less disturbance of the existing order of things. *X*-ray facilities, for example, might be put within the reach of all.

Dr. C. SANDERS (Stratford), speaking from long experience—eight years in hospitals, ten in private practice, and twenty as medical officer of health—could not understand why every practitioner in the country did not welcome the establishment of primary centres such as were suggested in the Report. They would be an enormous convenience to the practitioner and a great benefit to his patients. The Report was a statesmanlike document, and if put into effect would afford the country practitioner all the facilities of a London hospital.

Dr. H. B. BRACKENBURY thought Mr. Bishop Harman's motion inadequate, because it did not attempt to correlate the principle it mentioned with others set out in the Report, and did not ask the meeting to say anything more than that the need for primary centres was emphasized in the Report. Personally he considered the four most important principles arising thereon were, in order of importance: (1) The declaration that a whole-time State clinical service would be detrimental to the interests of the public and unacceptable; (2) that domiciliary service by general practitioners must be the basis of any scheme of systematized medical services; (3) the desirability of establishing primary health centres at an early date; and (4) that means should be immediately undertaken to secure greater co-operation between clinical and preventive services. The Association had long ago decided its policy with regard to (1). With regard to (2) the whole system of health in the country was based on the home attendance of the general practitioner. As to (3) it was proposed that the primary centres should be staffed entirely by general practitioners. In some respects it corresponded to a cottage hospital with improvements, to which any doctor in the locality could send his own patients and attend them himself. Access could only be had to it through a general practitioner. It would be better, no doubt, not to try and establish the centres in every small village. In the Welsh report it was said that every centre would have its own out-patient department. That was not referred to in the English report, and was a thoroughly bad principle. (Hear, hear.) He hoped to deal with the fourth point at a later stage.

Dr. H. G. DAIN (Birmingham) said it was of fundamental importance that general practitioners should look at the question of primary health centres from a large point of view. They were faced with a gradual lopping-off of small sections of their work by the establishment of whole-time services in different directions, which began by being preventive, but nearly always found it necessary to take on treatment. If general practitioners were to get back their old position they must be better organized. If after a time an attempt were made to run the centres with whole-time officials it would be their own fault. If general practitioners realized what the scheme meant to them and took it up properly, that would not take place. He could not see why they feared having beds in the centres; he thought it would be an advantage. It might be an ideal scheme, but in many respects it was extremely practical. He thought it impracticable to say the State ought to provide free services for everybody, but the State should supplement—if necessary by subsidization—the resources of the general practitioner.

Dr. A. C. FARQUHARSON, M.P., pointed out that the primary health centres would be financed and equipped by the new health authority, whatever it might be, and whatever professional relationship medical men had to those centres would *ipso facto* bring them into definite relationship with a statutory authority, and it might be a delicate and difficult one for the profession. The equipment was all that the State would provide. Were they to be bound by the State provision of equipment to surrender their independence and become State officials?

Mr. BISHOP HARMAN replied that his resolution simply stated that the pivotal idea of the changes recommended in the Report centred round the primary health service.

The motion was then put and carried.

Dr. E. R. FOTHERGILL moved:

> That in order to attain the objects of an ideal system of medical and allied services, it is necessary that the prevention of the occurrence of disease as well as the provision for its treatment should be based on the domiciliary medical service, and that general practitioners should be actively encouraged in the practice of both.

He supported his resolution by the following considerations: (1) The first essential in order that the doctor should be able to do preventive treatment was that his education in preventive medicine and its problems and their solution should be adequate; (2) that he should have periodical opportunities of revising his education; (3) that he should have the benefit of laboratory investigations at his disposal before disease had asserted itself; (4) that he should be able to look to one health authority and one alone; (5) that in the home itself he should have the intelligent co-operation of the mother and all adults; (6) that he should have at his disposal in the home what were known as "home helps"; (7) he should also have his home visitors; and (8) the assistance of a public generally educated as to health.

Dr. H. B. BRACKENBURY said he did not think the general practitioner had been divorced from preventive medicine hitherto. So far as personal and domestic hygiene were concerned he had been doing his duty manfully; it was on the administrative side that attention should be concentrated.

Lord DAWSON said they had to decide whether they wished in future to identify the general practitioner with preventive services in a more intimate way than formerly. There was a difference between individual and communal work. The latter could not be carried out by allowing every general practitioner to come in and look after his own patients, for example, in the case of school-children; that would mean absolute confusion. Such a service must be properly organized, and there must be one, or at the most two, directors at the head, and these should be local practitioners.

Dr. Fothergill's amendment was then put and carried.

Mr. E. B. TURNER moved paragraphs xxx to xxxiii in the report by the Ministry of Health Committee on the interim reports of the Consultative Councils. (These dealt with administration: areas and administrative machinery.) The resolutions were on all-fours with the proposals of the Consultative Council.

Dr. FOTHERGILL wished Mr. Turner to amend the first line of paragraph xxxi to read: "That for each area there should be an *ad hoc* local administrative committee."

Lord DAWSON thought this unwise. It was a very complicated question, which they had only a few minutes to decide, and they were without the necessary knowledge. The Consultative Council had given a great deal of consideration to the matter, and had passed it over with a light touch because they felt it would be improper for them as medical men to decide questions which ought to be left to experts on local government. The Council thought it better to state what they regarded as essential points from a medical standpoint and leave it to experts to find a means to carry them into effect. They said that the medical profession should be represented as such on any health authority set up. They had been careful not to claim more than a minority representation, because the elected representatives of the people must be in the majority.

Dr. BRACKENBURY asked if Mr. Turner would content himself with moving paragraphs xxxii and xxxiii (relating to administrative machinery), the former in a modified form. The other two dealt with intricate problems; the Association might well confine itself to those purely medical. He suggested xxxii should read:

> That the composition of the local health authority should provide for adequate representation of the medical profession residing in the area and of other persons or bodies engaged in public health work in the area.

The CHAIRMAN OF COUNCIL, without debating the relative merits of an *ad hoc* authority, wished to point out that only an *ad hoc* authority would have power to grant effective representation to the medical profession.

Dr. BRACKENBURY thought it would require legislation.

Dr. A. MANKNELL (Bradford) thought the only way the medical profession could make itself heard was by doctors becoming members of their local councils, and that was not always convenient. In his district the profession had had great difficulty in making its voice heard. The medical profession should be represented as such, and its members ought not to have to seek election in the ordinary way. They should be given full opportunity of leading the public in the right direction in health matters.

Dr. A. LYNDON (Guildford) said that if the medical profession sent the right men to represent them on a public body where they were in a distinct minority, their influence on that body was quite out of proportion to their membership. He urged that so vital a point should not be decided in a hurry, and that Dr. Fothergill's amendment be not accepted.

It was decided, after further discussion, to make no reference to paragraph xxxi, and to pass xxxii and xxxiii with the amended wording suggested by Dr. Brackenbury.

At this stage Mr. TURNER moved:

> That the meeting reiterates its previous resolutions that a whole-time salaried service would be detrimental to the best interests of both the public and the medical profession.

This was carried unanimously.

After the adjournment for tea, Mr. TURNER submitted a resolution as follows:

> That the Representative Meeting welcomes the establishment of a Medical Consultative Council, and regards it as affording an essential and recognized means whereby the medical profession should exercise its rightful influence on the health policy of the nation.

Dr. BRACKENBURY said that the Medical Consultative Council did not pretend to be and was in no sort representative of the medical profession; it was appointed by the Ministry. The rightful influence of the profession was primarily and fully, and most perfectly expressed by the Representative Body. He suggested the omission of the word "rightful."

Dr. E. R. FOTHERGILL said the profession ought still to be able to approach the Minister of Health direct, and should not have to go through the Consultative Council.

Dr. W. DOUGLAS (Maidstone) asked whether the Council of the British Medical Association could approach the Consultative Council in regard to anything touching the interest of the medical profession.

Lord DAWSON said the practice of the Consultative Council was to set apart half an hour before each meeting for what was called "question time." Every member was then asked to give any information in his possession as to what the medical world was thinking. Individual members were thus made use of to obtain intelligence. Thus, if anybody wished to place anything before the Council, that could easily be done by approaching one of the members; or, of course, the Secretary could be written to. The existence of the Consultative Council did not interfere at all with the means the Association might choose to bring its views before the Minister. But in the Consultative Council the profession possessed an organized nexus recognized by Order in Council and blessed by the Minister of Health, and it constituted an additional means of securing vocational representation on medical matters. In addition to its old rights, and not in supersession of them, the Association had obtained new rights.

The CHAIRMAN OF COUNCIL asked Lord Dawson to explain his statement that the Consultative Council had a right to be consulted on all matters of medical legislation.

Lord DAWSON replied that if he had used that expression he did so inadvertently. At the moment they possessed no such right, but they should have power to influence the policy of the Ministry when in the formative stage; they should be able to influence any piece of legislation affecting medical matters before it appeared in print. To attain that power they must have behind them the whole hearted support of the profession. He wanted the meeting to look ahead.

Dr. BRACKENBURY moved as an amendment:

> That the Representative Meeting welcomes the establishment of the Medical Consultative Council and regards it as an important step in affording an essential organized means whereby the medical profession can exercise its influence on the health policy of the nation.

He wanted to make it clear that they had complete confidence in the personnel of the present Council. (Hear, hear.) What he did not want was that the Council should come to be regarded as the only, or even the main, body which should represent the profession in its dealings with the Ministry of Health and other Government departments. It was an important addition to their means of influencing public health work, and as such they welcomed it. With a new Minister and a new Council, however, a time might come when the Minister would feel that it was the only body he ought to consult in order to obtain the views of the profession. He did not expect the Consultative Council to be a directly representative body, and thought its present composition was as good as could be expected.

Dr. A. E. COPE (Westminster) seconded the amendment.

Dr. J. STEWART (Lambeth) said he was sometimes asked what use the British Medical Association was to the profession, and he always replied that the influence with the Government and the prestige the profession now enjoyed would never have been attained but for the Association. It was a great pity that so many practitioners were not members. They had recently made strenuous organized efforts to enrol non-members in his Division, and he hoped other Divisions would imitate their efforts.

Mr. E. B. TURNER thought the matter so important that the Association should not express its policy by passing an amendment. He therefore proposed to adopt Dr. Brackenbury's amendment and put it as a substantive motion.

The motion was carried.

THE WELSH CONSULTATIVE COUNCIL.

Dr. CRAWFORD TREASURE called attention to the inadequacy of the medical representation on the Welsh Consultative Council. The CHAIRMAN OF COUNCIL drew attention to certain essential differences between the English and Welsh Consultative Councils, and ultimately it was decided to pass to the next business.

MEDICO-POLITICAL.

The meeting then reverted to the report of Council under "Medico-Political," and Mr. TURNER, in introducing the remainder of the report (the first part had been dealt with on Saturday), expressed his disappointment that more members of the Association had not voted in the election of direct representatives on the General Medical Council. Such slackness was not creditable to an organization like the Association.

Medical Certificate of Inability to Attend School.

Dr. A. LYNDON (Guildford) moved that where an elementary school authority required a medical certificate of the inability of a child to attend school, the fee for such certificate should be paid by the education authority.

The CHAIRMAN said his county, Cheshire, agreed, at his instance, to pay for such certificates many years ago. In reply to Dr. J. D'EWART, he did not know whether they paid anything now, but they did when he had the business in hand.

Dr. H. B. BRACKENBURY said the position was that an education authority was at liberty to exclude children from schools because they were dangerous there on the ground of their health, but the onus was on the authority for the exclusion. The education authority was entitled to secure the attendance of children at school, and if the parent said the child could not attend on account of illness the onus was on the parent. ("No.") But there was no duty on the part of the parent to prove ill health by means of a medical certificate, and if the authority chose to say that they could only accept a medical certificate it was the duty of the education authority to pay for it. Like Cheshire, his own authority, at his instance, many years ago accepted that view, and agreed to pay 2s. 6d. for every certificate and had gone on doing so, but it seldom had to be paid.

Dr. E. K. LE FLEMING (Bournemouth) said his authority paid if the parent said he or she could not afford to do so.

The rider was carried.

Medical Witnesses' Fees.

It was also agreed that the fees for medical witnesses giving evidence in assizes, county court and petty sessions, should be £3 3s. and £2 2s. respectively.

Dr. J. W. **Bone** moved a reference to the Council to obtain increased travelling allowances for medical witnesses attending assizes or other courts, particularly where a journey by motor car was necessary, and this was agreed.

Fees for Notification of Diseases.

The Representative Meeting instructed the Council to press for the immediate reversion to the 2s. 6d. fee for the notification of infectious diseases, and for the raising of the fee to 5s., and further declared that all necessary postage on notifications ought to be prepaid by the authority responsible.

Police Calls.

On the question of police calls, it was decided that the fee for day calls should be 7s. 6d., and for night calls 10s. 6d.

Supply of Motor Spirit.

A rider by Cleveland, that the Council be instructed to approach the wholesale distributors of motor spirit with a view to securing that medical practitioners be supplied with motor spirit at the same rate as that charged to traders, was lost.

Post-mortem Examinations and Inquests.

It was agreed, on motions from the City Division, that the fees for *post-mortem* examinations and for inquests should be raised 50 per cent.

Drugs for Self-medication.

It was also agreed to instruct the Council to consider what steps could be taken to deal with the undue advertising of drugs for self medication. Dr. W. **Paterson** (Willesden) said it ought to be made known that aspirin was not harmless except in the hands of a properly qualified medical practitioner.

Unqualified Medical Practice.

Dr. R. **Hopkin** (South-West Wales) moved that steps be taken to bring to the notice of Parliament the injurious effects of unqualified practice in medicine and surgery. Mr. **Turner** said that if this were agreed to, the Council would take all steps possible to bring it to the notice of the Committee of medical members of Parliament and the Government. The resolution was carried.

Dr. W. **Snodgrass** (Glasgow) protested against the action of the Glasgow Corporation during the recent small-pox epidemic in sending out fifty unqualified men to vaccinate the people of Glasgow. Had a casualty occurred there would have been a strong case for claim against the Corporation.

Fee for Notification of Births.

Dr. **Norman Maclaren** (Border Counties, English) moved that a fee should be paid to the medical profession for notifying births, but Dr. **Buttar** and the **Chairman** pointed out that this was not a medical notification, and the motion, on being put to the vote, was lost.

Fees for Doctors called in on Advice of Midwives.

Mr. **Turner** moved the recommendations of Council on this subject which appeared in the **Supplement**, May 29th, p. 169.

Dr. **Brackenbury** described the different conditions in various parts of the country. The negotiations with the Ministry of Health had not yet reached a satisfactory conclusion and the fee had been left at 2 guineas, but they were going on to try and get it raised.

Dr. E. A. **Starling** (Tunbridge Wells) wanted to introduce a differentiation of fee in maternity cases by reckoning night calls as from 6 p.m. to 9 a.m., but on being informed that this would do harm to the scheme as a whole, he did not press it.

The Council's recommendation that the two guinea fee in the Ministry of Health's amended scale was too small was carried, but a further motion that it would be preferable to limit the obligation of the doctor to perform services after birth not by a period of time, but by a definition of the illness as one arising out of the confinement, was lost.

Dr. A. E. **Cope** pointed out, with regard to the second proposal, that administratively there must be a time limit for cases of this kind, and that the taking of illness as the basis instead of time would lead to interminable disputes. Dr. H. F. **Oldham** remarked that the term of obligation under the insurance regulations was ten days after birth, and here it was a month. Dr. **Brackenbury**, however, said that the ten days under the Insurance Act and the thirty days in this case had nothing to do with one another.

Dr. **Farquharson** moved that in all cases where complications arose after the tenth day, and where medical attendance was necessary, the fee for such treatment should be paid to the doctor. Dr. **Brackenbury** said that this had been accepted by the Ministry of Health. There was some hiatus, but he thought the Ministry would get over it.

Dr. F. J. **Baildon** (Southport) moved:

> That in cases where a practitioner is called in by a midwife the onus of payment should lie with the local authority.

He understood different customs prevailed in different parts of the country, and that in some parts medical men had no difficulty in getting the fee from the local authority; but in Southport they were only paid by the local authority when they had failed to get it from their patients. The practice should be made uniform throughout the country, and that could only be done by the fee being paid by the local authority, who could afterwards take what steps they thought fit to recover it from the patient.

The rider was agreed to.

Dr. C. J. **Palmer** (Nottingham) moved as an amendment to para. 224, sub-paragraph 3:

> That one guinea is an insufficient fee for the great majority of these cases (ruptured perineum, etc.), and that it should be at least two guineas.

Dr. C. E. S. **Flemming** (Salisbury and District) said the difficulty was that every flat rate was of its very nature more or less arbitrary. He asked the Council if it would not be possible during the next year or two to collect statistics with regard to all cases in which medical men were called in by midwives. Many of these cases deserved a fee of two or three guineas, but with many others only one visit was required.

Dr. **Brackenbury** felt sure that more information was needed. He had been shown figures by the Ministry of Health, from which, although they were not complete, it could not be maintained that the present fee was inadequate.

The amendment was withdrawn.

Motor Car Tax.

Mr. E. B. **Turner** moved:

> That the remainder of the Supplementary Report of Council (see **Supplement** of May 29th) be approved.

In doing so, he said that as soon as it was apparent that drastic changes were to be made in the system of motor taxation his committee got to work. They first asked the Chancellor of the Exchequer to receive a deputation, and were by him referred to the Ministry of Transport. Mr. Turner gave an account of the proceedings of the deputation to the Ministry of Transport (reported in the **Supplement** of May 8th), and of its lack of success. In the subsequent correspondence between his committee and the Ministry he pointed out that the so-called concession of a quarterly licence for men owning two cars which had been offered was of no value. He instanced the case of a doctor who could not attend a distant patient who was seriously ill because one car had broken down and he could not get a licence for the other until the next day. In their reply the Ministry said that a quarterly licence should enable a doctor who kept two cars to have each thoroughly repaired in turn, so that breakdowns should be infrequent. The reply ended with the ingenuous suggestion: "Doubtless a doctor, if his car was broken down and he received a very urgent call, would use his auxiliary car without waiting for a licence." The Association were met at every point by a blank *non possumus*. This attitude was very unfair, because they had always enjoyed a 50 per cent. rebate in the past. The Committee had entire sympathy with all the amendments, but feared it was impossible to get anything done. To deal with a different matter: they had secured a very considerable concession from the London County Council on its bill dealing with massage and special treatment establishments, but not all they desired, because the London County Council, with its powerful influence on the House of Commons, threatened to withdraw the concession offered if the Association pressed for more.

Dr. W. B. Crawford Treasure moved a rider expressing the opinion that the fairest way to tax motor locomotion was by a tax on motor spirit. Mr. E. B. Turner thought they should give any support possible to the Automobile Association and Motor Union. As the tax was supposed to go towards the upkeep of roads, this was the only fair way of dealing with the question and the only chance they had of getting relief from that somewhat exorbitant taxation. The rider was passed.

The remainder of the report under "Medico-Political" was then adopted.

NATIONAL HEALTH INSURANCE.

Dr. Brackenbury, Chairman of the Insurance Acts Committee, moved on behalf of the Council the adoption of the annual report under "National Health Insurance."

Capital Value of Panel Practices.

Dr. M. W. Renton (Dartford) moved an instruction to the Council to take active steps to further the just claims of insurance practitioners in the preservation of the capital value of their panel practices. He urged that if there were no capital rights in panel practice they had no capital value in anything whatever. He asked those who were not in favour of the Insurance Act as a measure to view the matter in the light of a purely common right. That meeting had given a great deal of time to the financial interests of sections of the medical profession far less numerous than panel practitioners, of whom there were 10,000 in the Association.

Dr. E. A. Starling, in seconding, said that of all the complaints panel practitioners made with regard to the new Regulations, that about the destruction of the capital value of their practices was the most frequent and the deepest.

Dr. E. R. Fothergill asked how the Council was to proceed. One way was by applying to the State, but he could not see how anyone could invent or put forward a case. They had adopted as the foundation of the whole Insurance Act the free choice of doctor. Were they wishing the State to take away that choice? Or did they so doubt their colleagues that they desired the State to come in and protect them? The other means of dealing with the matter lay in the hands of the profession itself, and it could be done by the panel practitioners in each town arranging among themselves, and making and signing a definite agreement upon the subject.

Dr. Brackenbury said that if the resolution simply meant that they should do everything possible and take advantage of anything that came from any quarter, he was quite prepared to accept it. The Insurance Acts Committee was as anxious to get anything inequitable altered as any body of panel practitioners whatever. Even if they had to wait till 1922 they would be able to show the Ministry that the procedure was impossible from an administrative point of view, and must be varied in one or other of the ways suggested.

The meeting agreed to the approval of the report under National Health Insurance, with the instruction to the Council moved by Dr. Renton added.

Dr. W. [illegible] (Maidstone) moved:

> That while conscious of and grateful for the labours of the Insurance Acts Committee, this meeting places on record its opinion that the British Medical Association authorities made a grave error in allowing the Minister of Health to concentrate attention on the capitation fee and pass over the vitally important matter of conditions of service.

One of the principal things complained of was the matter of the transference of practice on death. The arrangements now accepted did a grave injury to widow and children. The Committee appeared to have concentrated on the capitation fee.

Dr. Brackenbury said that the Committee did not allow the Minister to concentrate on the capitation fee, and did not fail to pay attention to the more important matter of conditions of service. Their friends from Kent must have forgotten many of the incidents of the past year. They had two Conferences of Panel Committees last year, at the first of which, in July, the results of the endeavours of the Insurance Acts Committee during the previous fifteen months were presented. On that occasion a motion from the Kent Panel Committee was proposed, stating that the Insurance Acts Committee ought not to have devoted fifteen months to the question of conditions of service, and that the vitally important matter was that of remuneration, which the Committee had not touched at all. (Laughter and applause.)

Dr. Candler-Hope (Scarborough) said that in the North Riding of Yorkshire a vote showed that 70 per cent. of the practitioners were ready to refuse service on account of the conditions imposed and the necessary sacrifice of the goodwill of practices. He was perfectly sure that, had a vote been taken of the whole country, it would have shown as large a majority in favour of decisive action.

The Maidstone rider was lost by a large majority.

Dr. B. G. Baskett (South Essex) was moving for an inquiry into the effect of the National Insurance Act on the nutrition of the poor, when, at 6.30 p.m., the debate automatically stood adjourned.

ELECTIONS.

The Medical Secretary announced the following results of elections:

Deputy Chairman of Representative Meetings: Dr. R. Wallace Henry.

Twelve Members of Council by Grouped Representatives.

Dr. A. C. Farquharson, M.P., North of England, North Lancashire and South Westmorland, Yorkshire.
Dr. I. W. Johnson, Lancashire and Cheshire, East York and North Lincoln, Midland.
Dr. Adam Fulton, O.B.E., Cambridge and Huntingdon, East Anglian, South Midland.
Dr. T. Ridley Bailey, Birmingham, Staffordshire, North Wales, Shropshire and Mid-Wales, South Wales and Monmouthshire.
Dr. David Ross, Metropolitan Counties (Inner Group).
Dr. H. B. Brackenbury, Metropolitan Counties (Outer Group).
Dr. W. Johnson-Smyth, Bath and Bristol, Gloucestershire, West Somerset, Worcestershire and Herefordshire, Dorset and West Hants, South-Western, Wiltshire.
Dr. S. Morton Mackenzie, Oxford and Reading, Surrey, Southern, Sussex, Kent.
Dr. C. M. Pearson, Aberdeen, Northern Counties, Dundee, Perth, Edinburgh, Fife.
Dr. C. E. Robertson, Glasgow and West of Scotland, Border Counties, Stirling.
Dr. J. S. Darling, Munster and Ulster.

(There was no nomination for the Connaught, Leinster, and South-Eastern of Ireland Group.)

Four Members of Council under By-law 46 (4).

Mr. N. Bishop Harman.
Dr. R. Langdon Down.
Mr. E. B. Turner.
Sir Jenner Verrall, LL.D.

Six Members of Insurance Acts Committee.

Dr. H. G. Dain (Birmingham), Dr. E. R. Fothergill (Hove), Dr. H. S. Beadles (West Ham), Dr. C. J. Palmer (Nottingham) (England and Wales).
Dr. John Hunter (Edinburgh) for Scotland.
Dr. J. Singleton Darling (Lurgan), for Ireland.

[*The conclusion of the report of the Annual Representative Meeting will appear next week.*]

ANNUAL GENERAL MEETING.

The eighty-eighth Annual General Meeting of the British Medical Association was held in the Examination Halls, Cambridge, on Tuesday, June 29th, 1920, with Sir Clifford Allbutt, K.C.B., M.D., F.R.S., in the chair.

The Medical Secretary read the notice convening the meeting.

Minutes.

The minutes of the previous Annual General Meeting, held in London on July 25th, 1919 (published in the Supplement of August 9th, 1919), were confirmed and signed.

Appointment of Auditors.

On the motion of the Chairman of Council, Messrs. Price, Waterhouse, and Co. were reappointed auditors for the ensuing year.

President.

The Chairman of Council reported that Sir Clifford Allbutt, K.C.B., F.R.S., had been elected by the Annual Representative Meeting as President of the Association for 1920–21. (Applause.)

Sir Clifford Allbutt returned his cordial thanks to the meeting for his election.

President-elect.

The Chairman of Council introduced to the meeting Dr. David Drummond, C.B.E., D.C.L., who had been elected by the Annual Representative Meeting as President-elect.

Dr. David Drummond, who was received with applause, thanked the meeting very heartily for their vote, and conveyed to them the thanks of the profession in the Newcastle on Tyne district for accepting the invitation to come to that city in 1921. He could assure the representatives that they would receive a hearty welcome when they came to Newcastle. They would find many changes there, most of them for the better; but one thing had not changed: the hearts of the people were as generous and hospitable as ever, and they would join with the profession in welcoming the Association. Newcastle would have great difficulty in competing with Cambridge as a meeting place, and he himself would have very great difficulty, in the matter of the Presidency, in competing with the present holder of that office.

On the motion of the PRESIDENT the meeting was adjourned to 8.30 p.m.

ADJOURNED GENERAL MEETING.

THE adjourned General Meeting was held in the Senate House on Tuesday evening at 8.30. The building was filled with a distinguished assembly, most of whom wore academic dress. The President (Sir CLIFFORD ALLBUTT) was in the chair, and on his right was the Chairman of Council, and on his left the Vice-Chancellor of the University. Others on the daïs were Lady Allbutt, the Mayor of Cambridge, the Chairman of the County Council, the Chairman of Representative Meetings, the Treasurer and Mrs. Haslip, Dr. Simon Flexner, Professor Bordet, Professor Giacosa, Sir George Makins, P.R.C.S., Dr. David Drummond (President-elect), the Bishop of Liverpool (Dr. Chavasse), Sir Humphry and Lady Rolleston, and the Medical Secretary (Dr. Alfred Cox).

Sir CLIFFORD ALLBUTT, on rising, was received with loud applause. He said: Before the formal business of the meeting begins I should like in a few words to say how very cordially we welcome you to Cambridge, and how glad we are that under more propitious skies than we expected this morning we can initiate what will be a very delightful meeting.

PRESENTATION OF FOREIGN VISITORS AND DOMINION DELEGATES.

The CHAIRMAN OF COUNCIL called upon the Secretary of the meeting (Dr. J. F. Gaskell) to present to the President the distinguished foreign visitors and delegates from Branches of the Association in the Dominions.

The following foreign visitors were then presented: Professor J. Bordet, President of Faculty of Medicine and Director of the Institut Pasteur, Brussels; Professor Piero Giacosa, Professor of Materia Medica and Experimental Pharmacology, Turin; Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute, New York; Professor J. Abel, Professor of Pharmacology, Johns Hopkins University, Baltimore; Dr. T. R. Browne, representative of League of Red Cross Societies, Geneva; Dr. Harold Feil, New York; Dr. Robert W. Hegner, director of department of medical zoology, Johns Hopkins University; Dr. Alfred Hess, Professor of Clinical Pediatrics, Belle Vue Medical School, New York; Dr. E. Libman, consulting physician, New York; Dr. Victor Pechère, consulting physician and lecturer to the University of Brussels; Dr. Douglas Thom, Dr. T. A. Williams, Washington.

The following delegates, representing Branches in the Dominions beyond the Seas, were also presented: Dr. K. B. Alexander (Border Branch, South Africa), Dr. B. Spearman (East Africa and Uganda), Dr. E. W. D. Swift (Orange Free State), Dr. McD. Troup (Victoria), Dr. Watkins-Pitchford (Witwatersrand), Dr. A. B. Pearson (New Zealand), Dr. Alex. Douglas (New Zealand), Dr. F. Antill Pockley (New South Wales), Dr. Gregory Sprott (Tasmania), Professor R. J. A. Berry (Melbourne), Dr. R. C. Merryweather (Western Australia), Dr. F. O. Steadman (Hong Kong and China), Lieut.-Colonel R. Row, O.B.E. (Bombay), Sir Alan Perry (Ceylon), Dr. E. H. Bannister (Barbados), Dr. W. F. Law (British Guiana).

THE ASSOCIATION'S GOLD MEDAL OF MERIT.

The CHAIRMAN OF COUNCIL then asked the President to present the Association's Gold Medal of Merit. Unfortunately, he said, it could not be presented to the man who won it. The man who won it made the great sacrifice in the war. The Gold Medal was given for some distinguished merit, either for valour, learning, or work done for the benefit of the Association or for medicine generally. In this case it had a peculiar value, because this was one of the two men who won the Bar to the Victoria Cross, and the medical profession was proud that both these men belonged to it. (Applause). The gold medal was awarded to the late Captain N. G. Chavasse, V.C., M.C., R.A.M.C.

The PRESIDENT then handed the medal to the father of Captain Chavasse, the Right Rev. F. J. Chavasse, D.D., Bishop of Liverpool.

The BISHOP OF LIVERPOOL made a brief speech in response, the whole assembly standing. He said: Happily for myself, I did not know until I came into this Senate House that I was expected to speak to you. If my words are, therefore, halting, I am sure that in the circumstances you will forgive me. In the name of my dead boy, I thank the British Medical Association from the very bottom of my heart for this high distinction which they have conferred upon him. I know him well enough to be sure that, next to the Victoria Cross, there was no distinction in the world that he would have coveted more than this Gold Medal which you have conferred on me to-night. He was a very unassuming lad. He used to say to me again and again, "You know, I am not really brave; I am a great coward; but when my men are dying or likely to die in the open I cannot keep away from them. It is no use trying to do so." It was the mighty power of love that made him what he was. As the son of a doctor, and as descended from doctors for the last 200 years, I know how great is the honour which you have conferred upon him. Again I say, in the name of his mother and myself, we thank you with all our hearts. This Medal will be handed on to those who come after us as one of our precious heirlooms. Mr. President, I thank you. (Applause.)

PRESENTATION OF STEWART PRIZE.

The CHAIRMAN OF COUNCIL said the Stewart Prize had been awarded to Miss Harriette Chick, D.Sc., in recognition of her own work and that of the band of scientific women associated with her in investigation into the means of preventing scurvy and beri-beri in armies and among populations suffering privations. The prize was awarded from time to time in recognition of any important work done or researches instituted which promised good results regarding the origin, spread, and prevention of epidemic diseases.

Dr. Harriette Chick then received the prize from the President amid loud applause.

PRESENTATION OF MIDDLEMORE PRIZE.

The CHAIRMAN OF COUNCIL announced that the Middlemore Prize had been awarded to Harry Moss Traquair, M.D., F.R.C.S.E., D.P.H., and as he was unable to attend, his friend, Dr. J. Stevens of Edinburgh, had come to receive it for him. The prize was awarded from time to time for the best essay or work on any subject which the Council of the British Medical Association might select in any department of ophthalmic medicine or surgery. The prize was awarded for his essay on perimetry (inclusive of scotometry), its methods and its value to the ophthalmic surgeons.

Dr. Stevens then received the prize from the President, on behalf of Dr. Traquair, amid applause.

PRESIDENT'S ADDRESS.

The President then delivered his Address from the chair, which is printed at page 1 of the JOURNAL.

At the close of the Address, which was listened to with profound attention and frequent applause,

Dr. T. W. H. GARSTANG, Chairman of Representative Meetings, proposed a vote of thanks to the President. Although he did not regard himself as qualified to do so, he understood it was the duty of the person occupying the position he held. He had not the least doubt that those present had enjoyed the Address enormously, not only on account of its matter, which would well bear further consideration, but also for the scholarly, classical English in which it was couched. He proposed to ask them in a few moments to pass the usual vote of thanks, but he thought they might pass it with more than the usual amount of acclamation, because it stood out conspicuously from the general run of such addresses, and would well stand the test of future consideration. It was not in his power to do justice to the Address, so that he would refrain from commenting on it; but he would like to say a few words about Sir Clifford Allbutt himself. Sometimes it did people good to hear what others thought of them. He would be guilty of impertinence if he referred to the position which Sir Clifford occupied in medicine and amongst the professions in this country; all he wished to do was to explain how those who were actively connected with the Association had come during the past six years to love their President. (Applause.) As was well known, presidents held office for one year only, and on account of their distance from London or other reasons they were often unable to visit head quarters. Sir Clifford had been elected in 1914, a few days before the declaration of war, and during the six years that had since elapsed he had most kindly consented to be reappointed from year to year as President, the intention being to hold the meeting at Cambridge, and at last that opportunity had arrived. He would like to say, for the information of those ladies and gentlemen at Cambridge who had worked so hard towards that end, that he was sure the meeting would be an enormous success. Sir Clifford Allbutt, in consenting to hold the Presidency for so many years, had conferred on the Association a boon which it would be impossible to repay, because his name and prestige were so well known that he had raised the Association to his own level, as was evident by the attention with which Government departments listened to deputations which he headed. (Applause.) Sir Clifford had taken a very active interest in the work of the Association, and during the whole six years he had held office he had hardly ever missed a meeting of the Central Council. During the past twelve months, also, he had consented to act as Chairman of the Science Standing Committee, and the fact that he occupied that position had been of enormous advantage to the Association. He had also helped them considerably in what might be called their ordinary domestic work. It was a great pleasure to him that night to propose a very hearty vote of thanks on behalf of the Association to Sir Clifford Allbutt for the work he had done and the Address he had read in so admirable a manner.

Sir GEORGE MAKINS, G.C.M.G., President of the Royal College of Surgeons of England, seconded the vote of thanks. He said that it was but a year since Sir Clifford Allbutt delivered an address which astonished them all by its versatility and the universality of the knowledge it displayed. That evening Sir Clifford had descended to more practical subjects, but the speaker believed that they would do well to take to heart the lessons he had put before them, particularly with regard to the education of the medical student in the future. He had put useful matter before them in speaking of the growth of speciality at the present time, and had pointed out the direction in which the growth of speciality might be limited or broadened. It was the duty of every practitioner to have his own speciality and not to depend upon the so-called specialist to do the work he ought to do himself.

The vote of thanks was accorded with great acclamation, the audience standing.

The PRESIDENT, in reply, said he did not know how, in a few words, to thank them for the most cordial reception they had given him, a reception which he could scarcely have thought possible. He must be content to thank them deeply and feelingly, and to thank the speakers for the too kind words they had uttered. He assured them that he felt it very deeply. (Applause.)

[An account of the presentation to the President of his portrait is given in the JOURNAL at page 21.]

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

MIDLAND BRANCH.—The Honorary Secretary, Mr. A. M. Webber, announces that the annual meeting of the Midland Branch will be held at the Guildhall, Lincoln (by kind permission of the Mayor) on Thursday, July 22nd, 1920, at 3 p.m. The President-elect, Dr. H. B. Willoughby Smith, will deliver his presidential address on "Appendicitis." The President-elect has kindly invited all members of the Branch coming from a distance to lunch at the Great Northern Hotel, Lincoln, at 1.15 p.m. Members desirous of availing themselves of this invitation are requested to notify Mr. J. J. Rainforth, F.R.C.S., 2, Lindum Road, Lincoln, before July 20th.

NORFOLK BRANCH.—The Honorary Secretary, Sir Hamilton A. Ballance, announces that the annual meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital, Norwich, on Wednesday, July 7th, at 3.45 p.m. The following papers will be read: "Modern Methods of Diagnosis," by A. J. Cleveland, O.B.E., M.D., M.R.C.P.; "Surgical Experiences—A Retrospect of Twenty-five Years' Practice," by H. Muir Evans, M.D. Dr. G. C. Anderson, Deputy Medical Secretary, will give an address on "The British Medical Association from Behind the Scenes."

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Newbury on Tuesday, July 6th, at 5 p.m. Dr. Victor Bonney will give a lecture on "Modern Methods in the Treatment of Difficult Labour."

SOUTHERN BRANCH.—The annual meeting of the Southern Branch will be held at the South-Western Hotel, Southampton, on Thursday, July 15th, at 2.45 p.m., when Dr. J. Lockhart Livingston will be in the chair. Agenda: Election of Officers; Annual Report of Branch Council; Financial Statement; Presentation of "Childe" Cup to winner of golf competition, 1920. The President-elect, Dr. A. A. Mackeith, will deliver an address on "Professional Secrecy," to be followed by a discussion. By the courtesy of the steamship companies, arrangements have been made for parties to visit the Cunarder *Mauretania* and the White Star liner *Olympic*. The President will entertain the members to tea at the hotel.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—The annual meeting of the Monmouthshire Division will be held on Friday, July 16th, at the Royal Gwent Hospital, Newport, Mon. An Address will be given by the Medical Secretary, Dr. Alfred Cox, O.B.E., on "The Future of Medical Practice in the Mining Districts of South Wales and Monmouthshire—Servitude or Independence."

Meetings of Branches and Divisions.

EDINBURGH BRANCH: EDINBURGH AND LEITH DIVISION.

THE annual meeting of the Division was held on May 27th, when Dr. LAMOND LACKIE, Chairman of the Division, presided.

The SECRETARY summarized the business accomplished by the Executive during the past year and the annual report of the Division was read.

The annual report of the Council was considered in detail. Dr. DREVER, Scottish Secretary, gave information on the Scottish business and the annual report. The SECRETARY drew attention to the facilities of the library of the Association open to all members.

A letter was read from the Secretary of the Branch Council on the subject of remuneration for vaccination, and the following resolutions were unanimously adopted:

1. That a session for vaccination should be limited to two hours, and that the fee to the medical practitioners serving should be £2 2s. per session.
2. That for whole time service the remuneration to medical practitioners should be £12 12s. per week.

The following office-bearers were elected for 1920-21:

Chairman: Dr. R. Thin. *Vice Chairmen:* Drs. J. Lamond Lackie and Isabel Venters. *Secretary and Treasurer:* Dr. G. Keppie Paterson. *Assistant Secretary:* Dr. J. D. Comrie. *Representatives in Representative Body:* Drs. J. Stevens, R. Thin, W. Stewart.

FIFE BRANCH.

A MEETING of the Fife Branch was held at Kirkcaldy on June 10th, when the President, Dr. D. ELLIOT DICKSON, was in the chair.

The following officers were elected:

President: Dr. A. R. Wight Leslie. *President elect:* Dr. A. L. S. Tuke, M.C. *Honorary Secretary and Treasurer:* Dr. D. Elliot Dickson.

The annual report of the Central Council was considered and discussed. The meeting approved the recommendations in regard to devolution of Scottish business to the Scottish office of the Association. After discussing the proposal to increase the subscription to the Association, the meeting felt, looking to the financial statement, that no case had been made out for an increase of 50 per cent. They were unanimous that 25 per cent. would be more than ample, and that accordingly members should not be asked to pay any larger increase. It was resolved to accept the offer of the Life Offices Association in regard to fees for medical examinations for life insurance, and also to circulate members of the Branch to the effect that they should refuse to deliver lectures on ambulance, nursing, or hygiene at a lower fee than one guinea per lecture. The meeting was also of opinion that before a member whose subscription is in arrear was deprived of membership a notification by registered letter should be sent to him warning him of the consequences and drawing his attention to the rules.

LANCASHIRE AND CHESHIRE BRANCH: ROCHDALE DIVISION.

A MEETING of the Rochdale Division was held at the Crippled Children's Home, Norden, on May 26th. Dr. BATEMAN, chairman of the Division and honorary surgeon to the home, gave an address on the home, the class of cases taken in, the method used and how the children could gain admission. The wards were subsequently visited, and every case, mostly tuberculous disease of bone and rickets, examined separately.

METROPOLITAN COUNTIES BRANCH.

THE sixty-eighth annual general meeting of the Metropolitan Counties Branch was held on June 18th, when Lieut.-Colonel **W. McADAM ECCLES**, President, was in the chair.

The following officers were elected for the ensuing session:

President: Dr. E. W. Goodall, O.B.E. *President-elect*: Dr. H. B. Brackenbury. *Past-President*: Lieut.-Colonel W. McAdam Eccles. *Vice-Presidents*: Dr. J. Ford Anderson, Dr. H. S. Beadles, Dr. W. E. Fry, Dr. A. J. Rice-Oxley, C.B.E. *Honorary Treasurer*: Mr. Comyns Berkeley. *Honorary Secretaries*: Dr. J. A. Percival Barnes, Dr. F. W. Goodbody. *Representatives on Central Council*: Dr. J. A. Percival Barnes, Dr. Charles Buttar, Lord Dawson of Penn, G.C.V.O., Lieut.-Colonel W. McAdam Eccles.

The report of Council and the report of the representatives thereon were approved and directed to be entered on the minutes.

The CHAIRMAN then inducted the President, Dr. E. W. Goodall, O.B.E., who delivered his presidential address, entitled "The Report of the Consultative Council."

A hearty vote of thanks was accorded Dr. Goodall for his able and interesting address.

Votes of thanks were accorded with acclamation to the retiring president and to Mr. Bishop Harman who retired from the office of honorary secretary after serving for five years.

METROPOLITAN COUNTIES BRANCH: SOUTH MIDDLESEX DIVISION.

AT the annual meeting of the Division, held on June 2nd, the following officers were elected for the year 1920–21:

Chairman: Dr. P. W. L. Camps. *Vice-Chairman*: Dr. M. R. Taylor. *Representative in Representative Body*: Dr. R. Langdon-Down. *Deputy Representative*: Dr. M. R. Taylor.

Resolutions were adopted in agreement with the Recommendations of the Medico-Political Committee in the matter of fees for medical examinations for life insurance; with the recommendations of the Medico-Political Committee in the matter of payment of hospital staffs for pensions work; with the protest of the Medico-Political Committee against para. 3 of the Draft Regulations for the Training of Midwives issued by the Board of Education. The meeting advocated the raising of the subscription to the British Medical Association by 50 per cent., and instructed its Representative to support the suggested alteration in the constitution of the Association to make it a federation of medical bodies; also the scale of minimum salaries for public appointments recommended by the Council of the Association.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.

A MEETING of the Willesden Division was held on June 11th, when Dr. CRONE, Chairman, presided.

A motion that the fee for a doctor called in to assist a midwife should in all cases be £4 4s. was carried *nemine contradicente*.

A tour of the hospital buildings was made under the guidance of Dr. Stewart, R.M.O., and Dr. Buchan, M.O.H., after which the matron presided at tea, which was generously provided by the Health Committee.

Dr. CRONE, in proposing a vote of thanks to the Committee, the staff, and the M.O.H., said he was chairman of the Health Committee when the hospital was started at a cost of about £100. Dr. STOCKER said he had succeeded Dr. Crone, and spent about £30,000. Dr. BUCHAN, in replying, said he would do all he could to establish good relations between the practitioners and the Health Authorities.

Dr. STEWART said the meeting had given him great pleasure, and he would be glad to see any doctor at the hospital at any time. If those who wished to be present at operations on their patients would let him know he would make the necessary arrangements.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Lieutenants R. R. Adams and D. Paterson to the *Pembroke*, for R.N. Docks, Chatham, B. J. Geekie to the *Ganges II*, for B.T.E., Shotley. Surgeon Lieutenant (temporary) transferred to the permanent list.

ARMY MEDICAL SERVICE.

Major and Brevet Lieut.-Colonel R. B. Ainsworth, D.S.O., R.A.M.C., to be temporary A.D.G., vice Major (temporary Lieut.-Colonel) A. B. Smallman, C.B.E., D.S.O., R.A.M.C.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel J. Godding, O.B.E., T.D. (Colonel T.F.), and temporary Captain J. P. Mitchell (Captain R.A.M.C.S.R.), relinquish their temporary commissions.

Lieut.-Colonel James C. Kennedy to be a professor in the Royal Army Medical College.

Major A. B. Smallman, C.B.E., D.S.O., is seconded for service under the Ministry of Health, and relinquishes the temporary rank of Lieutenant-Colonel.

Temporary Majors E. W. Skinner and C. H. G. Ramsbottom relinquish the acting rank of Lieutenant-Colonel.

The following relinquish the acting rank of Major: Captains N. T. Whitehead, M.C. (August 22nd, 1919), H. D. Lane, M.C. (March 31st, 1919), D. McKelvey, M.C. (April 8th 1919). Temporary Captains G. V. T. McMichael (July 15th, 1918), D. MacIntyre, M.C. (November 9th, 1918), A. A. O'Connor (January 7th, 1919), K. C. Middlemiss (January 23rd, 1919), E. L. MacKenzie, M.C. (February 2nd, 1919), J. S. Joly (February 10th, 1919), D. S. Graham (February 22nd, 1919), G. McMullan (February 24th, 1919), W. D. Kennedy (March 9th, 1919), J. E. Pellow (March 12th, 1919), J. W. Linnell, M.C. (March 13th, 1919), A. E. Knight, D.S.O., M.C. (March 21st, 1919), A. C. Palmer, O.B.E. (March 25th, 1919), M. P. Paton, D.S.O., M.C. (March 31st, 1919), J. Farkinson (April 11th, 1919), H. A. Lake (April 16th, 1919), L. Meakin (May 10th, 1919), A. V. Poyser (May 24th, 1919), G. D. McLean (June 18th, 1919), A. W. Wilcox (on ceasing to command troops on a hospital ship), J. A. C. Roy (July 15th, 1918), H. L. Neil (October 15th, 1918), W. H. Hardy (January 24th, 1919), T. C. Ritchie, O.B.E. (March 13th, 1919), R. E. H. Leach (March 20th, 1919), R. MacDonald, O.B.E. (November 1st, 1919).

Captains to be acting Majors: L. B. Clarke, A. E. Atkinson.

Captain H. G. Trayer resigns his commission, August 4th, 1919, and is granted the rank of Major (substituted for notification in the *London Gazette*, July 29th, 1919).

Captain C. H. Brennan, M.C., resigns his commission.

To be Captains:—Temporary Captains, but not to reckon for pay or allowance prior to June 1st, 1920: J. S. K. Boyd (April 5th, 1918—precedence next below D. Bell), C. M. Forster (July 31st, 1918—precedence next below D. W. Beamish), J. H. Sharpe (December 15th, 1919—precedence next below W. E. Hodgins), L. M. Rowlette, D.S.O., M.C. (March 8th, 1919—precedence next below R. F. Walker), D. J. MacDougall, M.C. (April 28th, 1919—precedence next below W. W. S. Sharpe), D. Crellin, M.C. (August 23rd, 1919—precedence next below T. E. B. Beatty), E. Underhill (January 26th, 1919—precedence next below R. Stowers), W. Millerick, M.C. (July 10th, 1919—precedence next below B. L. Davis), J. V. McNally (March 1st, 1920—precedence next below A. H. Clarke). Captains from Special Reserve, but not to reckon for pay or allowances prior to June 1st, 1920: J. W. Cannon (March 19th, 1918—precedence next below E. E. Holden), D. H. Murray (January 24th, 1919—precedence next below R. S. Cumming), A. K. Robb (March 4th, 1920—precedence next below Captain H. G. Dresing, M.C., late R.A.M.C., March 11th, 1920, but not to reckon for pay or allowances prior to June 5th, 1920, with precedence next below A. H. Clarke.

Captain A. N. R. McNeill, D.S.O., to be temporary Major whilst specially employed.

Captain G. J. Keane, D.S.O., retires receiving a gratuity March 31st, 1919, and retains the rank of Major (substituted for the notification in the *London Gazette*, March 16th, 1920).

Captains from Special Reserve to be Lieutenants and to be temporary Captains, but not to reckon for pay or allowances prior to June 1st, 1920: J. R. S. Mackay (January 20th, 1917—precedence next below A. D. Draper), W. L. M. Gabriel (April 8th, 1918—precedence next below C. P. Chambers).

The following officers relinquish their commissions:—Temporary Majors: Arthur M. Leake, V.C., September 14th, 1918 and is granted the rank of Lieutenant-Colonel (substituted for the notification in the *London Gazette*, November 9th, 1918); Brevet Lieut.-Colonel F. S. Brereton, C.B.E., and retains the brevet rank of Lieutenant-Colonel; J. Jenkins (on ceasing to be employed at the Hammersmith Military Hospital), O. Challis, O.B.E., and retains the rank of Major; temporary honorary Major F. P. Nunneley, and retains the rank of Major; temporary Captains, and are granted the rank of Major: J. A. G. Burton, M.C., J. Cunningham, E. Kidd, L. Meakin (July, 25th, 1919, substituted for notification in the *London Gazettee*, September 17th, 1919), G. D. McLean (August 2nd, 1919, substituted for notification in the *London Gazette*, August 28th, 1919), E. L. Mackenzie, M.C. (February 9th, 1919, substituted for notification in the *London Gazette* of February 25th, 1919); temporary Captains, and retain the rank of Captain: B. T. Saunders, D. P. McDonald, J. Dickie, C. G. H. Campbell, G. S. Woodman, L. V. Gatt (on account of ill health caused by wounds), M. S. Bryce, M.C., J. D. Kenyon, W. H. Marshall, C. E. Freeman, H. C. E. Quin, G. J. Arnold, W. Scot, T. B. A. Haggard (on account of ill health contracted on active service), G. W. Spencer, B. P. Allison, E. S. Hall, E. C. Dutton, D. Fettes, O. Heath, J. D. G. Stewart, G. M. Bluett, J. L. D. Lewis, J. F. Nicholson, K. D. C. Macrae, J. R. Mitchell, M.C. (on account of ill health contracted on active service), P. G. A. Bott, F. de C. Keogh, D. Craig, J. W. Edington; temporary Lieutenant W. A. Slack, and retains the rank of Lieutenant.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the unemployed list: Captains A. L. Robinson, S. H. De G. Pritchard, G. H. Latham, G. McK. Thomas, M. J. Smyth.

Lieutenant C. H. Vernon relinquishes his commission (May 29th, 1919—substituted for notification in the *London Gazette*, July 29th, 1919.)

GENERAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

H. G. Trayer, late Captain R.A.M.C., to be Major, August 4th, 1919 (substituted for notification in the *London Gazette*, July 29th, 1919).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain W. F. Wood, D.S.O., relinquishes the acting rank of Major.

Captain Alexander Glen, M.C., to be acting Major from January 1st to September 25th, 1919.

Captain P. J. Corcoran to take rank and precedence as Captain in the R.A.M.C.(S.R.), as if his appointment to that rank bore date January 22nd, 1920.

The following relinquish their commissions:

Captains and granted the rank of Lieutenant-Colonel: E. T. Burke, D.S.O., C. J. Rogerson; Captains and granted the rank of Major: C. R. McIntosh, J. G. McCutcheon, J. Adams, M.C., L. S. B. Tasker, M.C., G. V. Stockdale, D.S.O., Captain (now Brevet Major) R. C. Peters, M.C., and retains the brevet rank of Major.

Captains and retain the rank of Captain: J. P. Bracken, W. Saunderson, T. Wilson, J. D. Dyson, C. E. Bond, J. A. Murray, E. Lipman, D. H. Anthony, J. E. Kitchen, J. B. Hume, W. E. Wilson, T. Crisp, W. Richards, G. K. E. Inman, M.C., J. E. Bannen, J. Beveridge, H. D. Brown, M.C., W. Donald, M.C., T. J. Honeyman, J. MacA. Mackintosh, D. B. Robertson, H. Chadwick, J. Stirling, M.C., H. W. Torrance, M.C., A. G. Anderson, F. J. C. Johnstone, J. Ratcliffe, J. Sellar, N. N. B. Fleming, R. B. Hawes, C. E. Hopwood, J. R. Banks, J. A. Hill, J. H. Vance, E. Butler, W. Agar, C. Y. Roberts, E. M. L. Morgan, T. P. Williams, P. R. Riggall, G. S. Martin, F. N. Sidebotham, A. R. Balmain, R. F. Jarrett, J. W. G. Steell, R. G. Simpson, T. B. Bailey, L. Cunningham, R. Moser, B. H. Simon, G. S. Lawrence, M.C., J. F. C. Braine, G. W. Heckels, E. Newton, S. C. Swinburne, G. S. Wilson, W. Yeoman, G. G. Jack, M.C., W. M. Morris, W. B. Lawson, D. Mitchell, H. C. Roberts, F. K. Hayman, G. E. Archer, J. H. E. Annequin, W. C. Craig, G. C. McEwan, R. A. Woodhouse, N. C. L. B. Tweedie, N. S. Tirard, H. Franklin, C. J. Penny, O.B.E., R. W. Lush, L. S. Gathergood, T. L. Heath, F. C. A. Frith, H. D. McIlroy, S. A. T. Ware, A. T. Woodward, E. R. Longstaff, M. C. Joynt, G. A. Harrison, R. Woodside, D. C. Bluett, A. R. Dingley, P. A. Buxton, J. W. Gordon, J. A. Tolmie, A. A. Fitch, J. B. Mudge, H. A. G. Dykes, W. F.

Mason, W. G. Verniquet, A. H. Mitchell, F. R. Leblanc, E. A. C. L[illegible], W. Christopher, R. L. Jones, A. G. Lumsden, V. T. B Yule, R. Dixon, P. B. Pinkerton, E. Bramley, J. D. Johnson, R. R. Garden, J. Allison, J. L. Hill, J. M. Martin, H. Patlansky, R. B. Smith, W. McElroy, F. W. Hebbiethwaite, H. F. Hollis, W. H. Kerr, A. D. C. McGowan, D. W. M. MacKenzie, J. W. Patterson, H. B. Sergeant, F. J. [illegible], D. Lennox, S. N. Dykes, A. J. B. Griffin, E. S. Stubbs, H. W. Leatham, C. C. Chesterman, O.B.E., F. O. Taylor, H. W. Featherstone, J. E. Carpenter, P. A. Ashcroft, E. B. Andreae, A. L. Packham, S. Vidot, M.C., A. G. E. Wilcock, T. C. Murphy, J. M. Norman, E. W. Bowell, H. J. C. Churchill, W. W. Newton, W. Brown, L. W. Hughes, A. B. Black, R. G. Battersby, J. J. Mulvey, N. S. Bruce, M.C., R. McGregor, W. J. Walters, A. Rose-Innes, A. Robertson, M.C., L. Jefferson, J. Rowland, M.C., J. H. Wiseman, W. H. White, R. N. Burton, L. Gill, H. Gainsborough, W. R. Mathewson, S. T. Alexander, J. C. C. Howe, J. Wilson, J. A. Keen, A. B. MacDougall, W. L. Agnew, C. G. Irwin, J. Irvine, H. E. Charles, H. V. Horsfall, J. H. Parker, N. Pick, C. H. Smith, C. Reid, W. Eidinow, A. B. Platt, W. T. G. Boul, R. D. Aylward, H. M. Holt, N. Kletz, W. W. Brown, R. Mailer, J. H. R. Smith, S. L. Smith, W. A. Weatherhead, R. J. L. Fraser, E. P. Irving, J. Joels, D. S. Mitchell, F. W. Sandeman, H. D. Apergis, A. Y. Milne, H. G. Morris-Jones, H. B. Dodwell, M. Edwards, N. P. R. Galloway, J. G. Allan, FitzE. Bendix, C. M. Titterton, H. B. Renton, F. Jones, A. McL. Pickup, O. C. Carter, G. D. Malcolm-Smith, W. U. D. Longford, J. J. Robertson, A. B. Cocker, J. Michaelson, J. Marshall, M.C., J. W. Morris, M. J. Hilton, J. G. McK. Macaulay, G. R. Sharp, E. S. Phillips, W. D. MacKinnon, R. F. C. H. Buchanan, J. B. D. Galbraith, A. Riddell, W. H. Wallace, H. Taylor, C. H. Warner, C. G. Magee, S. M. Riddick, W. B. Buer, J. Thompson, M.C., W. H. Rowden, J. L. D. Buxton, F. L. Richard, G. N. Groves, S. Riddiough, I. Liberman, W. M. Kerr, J. F. Twort, W. A. Fraser, M.C., W. G. F. Owen-Morris, M.C., J. W. C. Fairweather, C. F. J. Carruthers, V. P. Nelson, M.C., E. B. Ash, W. E. Le G. Clark, G. W. Coombes, T. Davies, D. V. Halstead, C. F. Rainer, R. B. Britton, B. B. Sharp, D. J. A. Lewis, J. Hope, A. V. Pegge, M.C., F. W. M. Lamb, R. M. Humphreys, A. E. Clarke-Kennedy, C. B. Cohen, P. F. Bishop, R. B. Green, H. S. Carter, W. N. Goldschmidt, J. H. Tighe, M. Chalmers, A. E. C[illegible], W. S. L. McLeish, J. Nicolson, J. J. Treanor, W. A. Walker, N. E. ff. Kemm, J. Gilmour, J. C. Morris, J. S. Mann, C. W. Hayward, W. A. Jackman, W. M. Savery, E. S. Jones, H. P. Gabb, M.C., R. W. C. Ball, T. A. Butcher, O.B.E., E. B. Verney, E. S. Rose, E. F. Rabey, E. Miller, G. S. L. Kemp, J. Peter, M.C., P. W. Putnam, R. H. Sutherland, D. O. Macdonald, H. A. Hill, M. Jackson, J. C. McGregor, A. C. Paterson, J. N. Gale, G. R. Ross, W. S. Herman, A. C. Abelson, J. Morrison, M.C., R. B. MacGregor, J. B. Potter, N. B. Peacock, E. S. Gawne, H. A. Cochrane, W. A. Coutts, E. M. E. Cumming, D. MacColl, R. J. Peters, J. H. E. Moore, W. A. Jaques, L. J. Schwartz, M. Melvin, J. Lipsey, T. McS. Wilson, C. O. Anderson, S. C. Critchley, C. P. Hines, A. Eidinow, E. E. R. Spurway, G. F. Peters, W. H. Simmonds, F. Lyth, G. S. Lewis, L. H. Bartram, J. Fraser, M.C., R. F. Fagan, E. S. Macphee, W. H. Wood, T. Blackwood, C. Milne, W. C[illegible], O.B.E., J. W. Maclean, M.C., K. J. T. Wilson, P. D. H. Chapman, H. M. C. Macaulay, R. V. Clarke, M. A. White, J. A. H. Miller, T. B. M[illegible], J. P. White, H. S. Baker, J. Crerar, C. W. Armstrong, T. D. Watt, W. F. T. Haultain, O.B.E., M.C., A. Winfield, C. R. Knowles, M.C., D. B. Macintosh, H. E. McColl, O.B.E., N. McKillop, D. Macqueen, L. Hardy, P. G. Quinton, G. M. Hetherington, M.C., A. D. G[illegible], J. R. R. Holmes, J. W. Malcolm, M.C., S. Johnstone, W. Garde-Browne, I. C. Mackay, J. Charnley, J. W. T. Thomas, W. R. Dickinson, C. G. S. Milne, D. E. Hearn, F. R. G. Heif, P. N. Cook, J. Adams, M.C., B. E. Jerwood, L. Grey, H. Roger, A. B. Hawkins, S. W. Page, R. S. Paterson, N. D. Ball, W. G. Woolrich, J. G. Lawn, A. H. Morris, G. K. Stone, A. I. Meek, R. N. Walker, T. P. Lloyd, F. K. MacMillan, B. L. Slater, G. Gordon, J. D. White, G. M. Kendall, M. Stewart, A. L. V. Davin, T. P. Chapman, L. J. Vincent, A. M. Dugan, J. H. Shearer, W. S. Dawson, J. F. Murphy, M.C., A. C. Perry.

Lieutenants and retain the rank of Lieutenant: G. V. Davies, F. Walton, J. W. Jones, G. V. W. Anderson, H. A. Chodah, M.C., A. R. C. McKerrow, W. A. Flynn, E. A. Leak, G. S. Escoffery, G. W. C. Dunlop, R. J. Patchett, W. A. Hewitson, J. M. Macpherson, S. G. Evans, E. A. Clegg, G. R. Baxter, C. C. H. Cuff, J. M. Melvin, D. Maclean, B. W. F. Armitage, G. G. Havers, M. S. Thomson, S. V. Goldhurst, A. S. Strachan, J. P. Kilty, A. P. McLeod, W. H. Palmer, W. A. Freedman, R. Gainsborough, A. St. G. J. McC. Huggett, W. B. Watson.

OVERSEAS CONTINGENTS.

SOUTH AFRICAN MEDICAL CORPS.

The notification regarding Major A. Edington's relinquishment of his temporary commission published in our issue of December 27th, 1919, should have appeared under the heading of the South African Medical Corps and not under that of the Special Reserve of Officers.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

[illegible] Lieut.-Colonel [illegible] Major T. [illegible], D.S.O., T.D., and to command [illegible] Clearing Station, Captain F. Barlow, and to command [illegible] Casualty Clearing Station, Captain T. B. [illegible] O.B.E. [illegible] Western Casualty [illegible] A. J. [illegible] and to command 4th London [illegible] A. A. W. Merrick, and to command 3rd West [illegible]

[illegible] T. Chalmers [illegible] the acting rank [illegible] employed.

[illegible] his commission and is granted the [illegible] with permission to wear the prescribed [illegible]

[illegible] Major G. L. Cathrie, O.B.E., and H. G. W. Dawson [illegible] and are granted the rank of Lieutenant-Colonel.

[illegible] to be Major.

[illegible] and retain the rank of Captain: [illegible] D. Kettlewell, C. L. Anderson, A. N. [illegible]

[illegible] Sanitary Section: Captain A. E. Tait [illegible] the rank of Captain.

[illegible] Sanitary [illegible]: Captain A. Romanes, W. F. Smith, and [illegible] their commissions, and retain the rank of Captain.

[illegible] London General Hospital: Officers restored to the establishment: [illegible] W. A. Lane, Bt., C.B., Captain Sir H. M. Rigby, K.C.V.O. [illegible] Captain Sir Archibald D. Reid, K.B.E., C.M.G. [illegible] in the R.A.M.C.)

3rd London General Hospital: Major Sir A. W. Mayo Robson, K.B.E., C.B., C.V.O., resigns his commission, and is granted the rank of Colonel.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

6	Tues.	Oxford and Reading Branch, Annual Meeting, Newbury, 5 p.m.
7	Wed.	Norfolk Branch, Annual Meeting, Norfolk and Norwich Hospital, Norwich, 3.45 p.m. Address by the Deputy Medical Secretary.
15	Thur.	Southern Branch, Annual Meeting, South Western Hotel, Southampton, 2.45 p.m.
16	Fri.	Monmouthshire Division, Annual Meeting, Royal Gwent Hospital, Newport. Address by Medical Secretary.
22	Thur.	Midland Branch, Annual Meeting, Guildhall, Lincoln, 3 p.m.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE.—Wed., 5 p.m., Annual General Meeting of Fellows of the Society in the Barnes Hall. Business: Election of President and other Officers and Council for 1920–21; Annual Report of Council; Honorary Treasurers' Report; Honorary Librarians' Report. *Section of Obstetrics and Gynaecology:* Thursday, 8 p.m., Specimens: Mr. Barris, Primary Carcinoma of Fallopian Tube; Dr. A. H. Richardson, Fibroma of Ovary with Warty Projections. Paper: Dr. Gordon Ley, The Pathology of Accidental Haemorrhage.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital.—Annual General Meeting, Fri., 5 p.m., to be followed by a Special General Meeting at 5.30 p.m.

POST-GRADUATE COURSES AND LECTURES.

MANCHESTER FRENCH HOSPITAL.—Thursday, 4.30 p.m., Dr. N. C. Haring: Ozoena.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Out-patient Clinics, 2–2.30 p.m. daily, except Wed. and Sat. Mon., 3.30 p.m., Dr. Saunders: Ward Cases. Tues. 3.30 p.m., Dr. Howell: Trigeminal Neuralgia. Wed., 2 p.m., Dr. Grainger Stewart: Peripheral Nerve Injuries. Thurs., 3.30 p.m., Dr. K. Wilson: Ward Cases. Fri., 3.30 p.m., Dr. J. Taylor: Ward Cases.

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., Operations, Medical and Surgical Clinics, etc. Mon., 2.30 p.m., Dr. Banister: Gynaecological. Tues., 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. C. H. Hayton: Laryngological; Dr. Metcalfe: Radiology. Wed., 2.30 p.m., Dr. Oliver: Dermatological. Thurs., 2.30 p.m., Mr. N. Fleming: Ophthalmological. Dr. Metcalfe: Radiology. Fri., 2.30 p.m., Dr. Sundell: Children. Sat., 3 p.m., Mr. Carson: Surgical Cases.

APPOINTMENTS.

GIBSON, Robert, M.D., M.B., Ch.B.Edin, Honorary Dermatologist, Salford Royal Hospital.

GORDON, Edward, M.B., House Surgeon, Great Northern Central Hospital, Holloway.

GOTLA, Fram, L.R.C.P., L.R.C.S., Attending Medical Officer, the Western Dispensary, Rochester Row, Westminster.

LANG, Basil, M.A., B.Ch.Cantab., F.R.C.S.Eng., Assistant Surgeon to the Royal London Ophthalmic Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTH.

PARKINSON.—On the 24th June, the wife of John Parkinson, M.D., 4, Devonshire Place, W.1, of a son.

MARRIAGES.

HERRINGTON—HEWES.—On June 16th, at the Parish Church, Coalville, Leicestershire, by the Rev. S. Herrington, M.A., uncle of the bridegroom, Cecil F. E. Herrington, M.B., B.S.(Lond.), son of Percy Herrington, Esq., of Merston, Chichester, to Celia Mary, daughter of Mr. Hewes and niece of Major H. E. Powell, D.S.O., of Coalville.

MACKENZIE—EASTER.—On Monday, June 28th, at Leicester, John James Ross Mackenzie, M.B., Ch.B., of Kingscliffe, Peterborough, to Dorothy Margaret Easter, of Leicester.

DEATH.

DOVE.—On the 26th June, suddenly, at Brightside, Crouch End Hill, N.8, Dr. Aug. C. Dove, M.D., aged 61 years, the beloved husband of M. Evelyn Dove.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 10TH, 1920.

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British Medical Association.

CURRENT NOTES.

The Chairmanship of the Council.

DR. R. A. BOLAM of Newcastle-on-Tyne was elected Chairman of the Council for three years at the first meeting of the Council for 1920–21, which was held in Cambridge on June 30th. Dr. Macdonald, who presided at this first meeting until the election of his successor, said that he vacated the office of Chairman of Council of the British Medical Association with regret, but he felt that it was, as a matter of principle, important that new blood should continuously be brought into the Council and Committees through which the central work of the Association was done. He had therefore decided that he ought to make way. Dr. R. A. Bolam, on taking the chair, briefly thanked the Council for the honour it had done him, and then called upon Sir Jenner Verrall, who, in a few sympathetic and well chosen words, moved a vote of thanks to Dr. Macdonald for his great services to the Council during the ten years he had occupied the chair. All members of the Council, he said, knew with what wisdom Dr. Macdonald had presided over its deliberations, but all did not perhaps fully realize how much more work fell upon the Chairman than was seen at the meetings of the Council itself. He was a member of all its committees, and his advice and guidance were called for not only on matters of principle, but on a multitude of details. The proposal, which was received with unanimous applause, was seconded by Dr. T. W. H. Garstang, Chairman of Representative Meetings. Both speakers referred to their long association with Dr. Macdonald in the work of the Association, and expressed their sense of his devotion to its interests and their recognition of the great ability he had displayed in the chair. The proposal was supported by Dr. Johnson Smyth, speaking for country members, Dr. J. Stevens of Edinburgh for Scottish members, Mr. R. J. Johnston of Belfast for Irish members, Dr. Sprott of Tasmania for members in the Dominions, Colonel R. H. Elliot, I.M.S.(ret.), for the Services, Mr. E. B. Turner, a past Chairman of Representative Meetings, Dr. H. B. Brackenbury, Chairman of the Insurance Acts Committee, Sir James Barr, and the Treasurer. Dr. Macdonald, in his reply, again expressed the regret which he felt on ceasing to be Chairman, but reiterated his opinion that new men should continuously be brought in to serve at the Council and Committees of the Association. The position of Chairman of Council had its own difficulties. He had sometimes found it necessary to take drastic action, but he had to thank the members for being amenable to his decisions and for their loyalty to the chair. His main principle during his term of office had been, so far as lay in his power, to do justice to every member of the Council. Further, the Chairman had, in the interval between the meetings of the Council, sometimes to act for it and take important decisions. He had never hesitated to do so, feeling that it was necessary; he had always attempted, so far as his judgement went, to give his decisions on the lines which the Council would have taken had it been in session, and he was quite sure that his successor, Dr. Bolam, would be prepared to take similar action. He was looking forward to his mission to South Africa; he hoped to do the Association good service there, and anticipated great personal pleasure in seeing new countries and making new friends among members of the Association in another hemisphere.

It was arranged that the next meeting of the Council should be held on October 6th, and that subsequent meetings should take place on December 15th, 1920, and February 16th, April 20th, and June 22nd, 1921.

The Chairmanship of the Representative Body.

The re-election of Dr. T. W. H. Garstang as Chairman of Representative Meetings was a foregone conclusion; the meeting had had experience of his abilities as Chairman on a previous occasion, and they were exercised with even greater success this time. There were moments of difficulty at Cambridge, but they all passed away under the quiet conciliatory hand of the Chairman, who throughout showed himself impartial and tactful. It is to these qualities in the presiding officer that the meeting owed the fact that it was able to get through so much important and often controversial business within the allotted period. The report of the proceedings is completed in this issue, and it will be seen that Dr. Wallace Henry was re-elected Deputy Chairman. It will also be seen that the meeting before separating passed a vote of thanks to the office staff. This, we venture to say, was well deserved. The preparations for such a meeting, though largely in the hands of the officers of the local Executive Committee, necessarily throw on the Central Office a great deal of work which must be carried through to time, but must not be allowed to interfere with the routine business, often particularly heavy before the Annual Meeting of the Representative Body. The strain of a meeting extending over four days—each session lasting from 9 or 10 in the morning till 6 or later in the evening—upon the Medical Secretary and his assistants, medical and clerical, is great, but the whole organization worked without a hitch. Praise is due also to the Financial Department for its share in the preparation and conduct of business and for its organization of the very excellent Exhibition of Surgical Instruments, Drugs, Food, etc., which was arranged in the Corn Exchange.

Sir Philip Magnus.

As announced last week in the report of the proceedings of the Annual Representative Meeting, Sir Philip Magnus, Bt., the representative of the University of London in the House of Commons, has been elected an honorary member of the British Medical Association, in recognition of his many services to the Association in parliamentary affairs, and more particularly for his share in the long fight for the security of tenure for medical officers of health, which has just been brought to a successful conclusion. In a letter acknowledging his election Sir Philip Magnus writes: "I assure you, and I will ask you to inform the Representative Body of the British Medical Association, that I appreciate very highly the great honour which they have conferred upon me. I can only hope that I may be spared yet a few years to give further help to a profession whose great skill and disinterested efforts have rendered such inestimable service to mankind." The number of honorary members of the Association is small, and Sir Philip Magnus makes the fourteenth. Among his colleagues are the Marquis and Marchioness of Aberdeen, the Marquis of Crewe, the Earl of Derby, Mr. Walter Long, and the Very Rev. Sir T. B. Strong, formerly Dean of Christ Church, Oxford, and now Bishop of Ripon.

The Annual Meeting, 1921.

The Annual Representative Meeting accepted, on June 25th, the invitation to hold the next Annual Meeting at Newcastle, under the presidency of Dr. David Drummond, C.B.E., D.C.L., of Newcastle-on-Tyne, Vice-Chancellor and Professor of Medicine in the University of Durham, in July, 1921. It would appear, however, that it will be necessary to call the Representative Body together at an earlier date, inasmuch as the Council was instructed on June 28th to submit to the Divisions a full memorandum on the report of the English Medical Consultative Council of the Ministry of Health, and after a suitable interval to call a Special Representative Meeting to consider the matter.

Central Mileage Fund for 1920.

The Ministry of Health has issued a circular to Insurance Committees dealing with the Central Mileage Fund for 1920, and authorizing Insurance Committees to make advance payments to practitioners in respect of mileage for the current year. It is important that practitioners should understand that the present advances relate solely to claims based upon distance, and do not attempt to cover districts of exceptional difficulty. Unless this is carefully noted, doctors living in such districts will be inclined to believe that the cheques they receive are unduly small. The circular of the Ministry makes it clear that the allotment to districts of exceptional difficulty can only be made after fuller information has been received. The information which has been sent in to the Ministry is far from being as complete as it should be, and in accordance with the promise previously given by the Ministry payments will only be made in respect of mileage to those doctors who have supplied the Insurance Committee with particulars of the insured persons on their lists.

Topics for "Current Notes."

Members of the British Medical Association, and especially Division and Branch officers, are invited to send to the Medical Secretary news as to matters of general interest which appear to them to be suitable for mention in "Current Notes."

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

CAMBRIDGE, 1920.

ANNUAL DINNER OF THE ASSOCIATION.

THE Annual Dinner of the British Medical Association was held on July 1st, when the President and members were guests of the Master and Fellows of St. John's College, Cambridge. A company of 250 sat down in the beautiful hall of the college under the presidency of the Master (Mr. Robert Forsyth Scott, M.A.), who had on one side of him the Vice-Chancellor of the University (Dr. Peter Giles, Master of Emmanuel), and on the other Sir Clifford Allbutt, President of the Association.

THE BRITISH MEDICAL ASSOCIATION.

The MASTER OF ST. JOHN'S, after the loyal toasts had been honoured, proposed the toast of the Association. The raw material of the medical profession in the shape of patients, he said, was in a hopeless minority that evening, and it was with diffidence that he addressed such a gathering, but he would put his diffidence aside, and in the heartiest fashion bid the Association welcome to that hall and to the University. It was very appropriate that that dinner should be given in the hall of St. John's, because, although the Regius Professor who was President of the Association belonged to another college, the first endowment for the teaching of medicine at Cambridge was established in St. John's. Thomas Linacre, who was the founder of the Royal College of Physicians, founded in St. John's in the year 1525—very soon after the college had started—a special lectureship in medicine, and the lecturer was to devote his attention especially to those works of Galen which Linacre had translated into Latin. During the reign of Queen Elizabeth the college gave three Presidents to the Royal College of Physicians, one of whom was William Gilbert, whose theory that the earth was a magnet had been confirmed by the research of much later days with better appliances. A school of medicine was then established at St. John's, which supplied great physicians. Up to the time of Queen Elizabeth the college had been a purely clerical society. At its foundation the study of divinity was regarded as that to which all sciences led in the end. But by a dispensation of Elizabeth two Fellows were allowed to devote themselves to the study of medicine, and to hold their Fellowships for as long as they did so. Amongst the medical Fellows was Matthew Prior, poet, and ambassador to France, who held his Fellowship to the end of his life. Turning to the Association and its work, the Master said he gathered that the object of the Association was to further the science and knowledge of medicine, and promote friendship and community of thought and interest among members of the same profession. The Annual Meeting was held in Cambridge forty years ago, when Sir George Humphry was President, and previous to that, at another Annual Meeting in Cambridge, the President was Sir George Paget. Both of these were names famous in the history of Cambridge. Now they had presiding over them one not less famous both in Cambridge and elsewhere. It was not for him to tell them what the Association ought to be or do, but he was sure such gatherings must be very useful, and a pleasant memory hereafter. He gave them the toast of the British Medical Association, coupling it with the name of Dr. J. A. Macdonald. The toast was drunk with enthusiasm.

Dr. J. A. MACDONALD said that the task of responding to the toast was no new one to him: he had answered to it many times and in many lands. This would be the last time it would be his privilege to do so as Chairman of Council, for he had laid down that honourable office on the previous day, and the duty of responding to the toast should have been that of the new chairman, Professor R. A. Bolam. But it was a pleasure to respond because he was very proud of the Association and would like to see it grow still more influential. With branches all over the world, the influence of such an Association must be very great, but it was not so great as he wanted to see it. There was one weak spot in the armour; a certain number of members of the profession held aloof from the Association for some reason difficult to understand, for no one who had been present at such gatherings as that then in progress could say that the British Medical Association did not do its utmost to further medical science. In the name of the Association he thanked Cambridge for the excellent time they had enjoyed there. The meeting with friends of old days and the calling back of old college associations was one of the greatest pleasures in life, and this had been enjoyed in full measure under the shadow of the grey stones of the University.

THE PRESIDENT.

Sir HUMPHRY ROLLESTON, K.C.B., in proposing the health of the President of the Association, said that it was unnecessary to paint the rose of Sir Clifford Allbutt's reputation. All in that hall knew it well. As Sir Clifford was, so to speak, the king of the British Medical Association, there need be no more explanation of the toast than was necessary in the case of the loyal toasts. Still, there was a word to be said. It was that the British Medical Association was exceptionally fortunate this year. It was happy in the place in which it met, and doubly blessed in its President. It was forty years since the Association met in Cambridge, and during twenty-eight of those years Sir Clifford had occupied the position of Regius Professor. Both directly and from his place in this progressive university he had exercised immense influence in medical education, in public health, and in that thorny problem to which the Association had particularly addressed itself—the relation between the State and the profession. It would take too long to enumerate all the commissions and Government bodies on which Sir Clifford had been an essential member, but there was one body, the Medical Research Council, which he took a prominent part in launching, and which, with the assistance of his pupil, Sir Walter Fletcher, undertook during the war those services to the State which it was no exaggeration to say had a great deal to do with winning the war. So far back as 1882, at the meeting of the Association at Worcester, Sir Clifford Allbutt was President of the Medical Section. In 1888 he gave the Address in Medicine at Glasgow, and last year he presided over the Clinical Meeting in London. It was impossible to do justice to his contributions to the theory and practice of medicine. Looking back, it would be found that his services had been so entirely absorbed into medicine as to have been forgotten very often so far as he himself was concerned. Perhaps few remembered that he was the first to describe syphilitic disease of the arteries, that he first threw light on the effect of strain on the heart and the great vessels, and this study, which he began forty years ago in Leeds, he recently completed in his classic on diseases of the arteries, including angina pectoris. He it was who showed the use of the ophthalmoscope in general medicine. Whenever a patient's temperature was taken it should be remembered also that he was the inventor of the present type of clinical thermometer. Having been a researcher, he made an admirable teacher, and welcomed any new advance with youthful enthusiasm combined with a prophetic sense born of experience. That evening, however, they acclaimed him, not only as President of the Association, not only as professor and physician, not only as the philosophical leader of the profession; there was one aspect of him which his friends—and there were more than two hundred of them present—had most in their minds, and that was the warm-hearted friend to whom they turned, the man for whom they had real respect, the man who had had a great many honours, but one honour above all, the esteem of the whole of his profession. (Applause.)

The toast was honoured with acclamation, and was given musical honours.

Sir CLIFFORD ALLBUTT, K.C.B., said: Master, Mr. Vice-Chancellor, during the last four days I have been wondering whether the events so far as I was concerned were not a dream. Your kindness has taken me day by day so much by surprise. Your estimate of the very small things, as they seem to me, which I have done has been all too kind. My old friend, Sir Humphry Rolleston, has been raking up certain little details of my past; I am afraid that in medical science they had only a transitory value, though they may have been at the time path-making to some extent. But I think it is true—I hope it is—that I have tried to be a warm-hearted friend to my brethren. My brethren have shown me great generosity all through my life. If in that dream there is an unsubstantial fabric, I am afraid that unsubstantial fabric is my own deservings. Having said this, I should like to turn to the Association. I should like to acknowledge the great kindness I have received during the last five or six years from the honorary officers—and not those alone, but equally from the salaried officers—of the Association. Their continual kindness and consideration for me has been such that the work of the Association—at any rate in some measure the work done by those officers—has been very unfairly credited to me, and I am not sure that I am justified in standing here to take to myself the credit for anything that has been done during these last five years. One thing I did, however, was to attend the committees pretty steadily during the war. I think it is difficult to exaggerate the work done by the committees of the Association. I think particularly of the committee which was presided over by Sir Jenner Verrall. (Applause.) Many committees may show spasmodic energy for a few days or weeks, but the important though at times painful work done by the Central Medical War Committee was carried right through to the end. If I have had as President any reflected light from this and other achievements I am grateful. I should like to speak also of the work done locally in preparation for this visit. There again I stand here nominally taking the credit for it, but the work has been done by our local secretaries and committees, and I am quite sure you are now expressing your gratitude to them for the careful way in which this meeting has been managed and the great success which has attended it. (Applause.) I have been looking in at one Section and another, and while I was very much struck with the work of the Sections at the April meeting of last year, which we looked upon as a working meeting, I am bound to say that this has been no less a working meeting. The Sections seemed to be very well attended, there was little flitting from Section to Section; all were very seriously at work, and I saw how extremely keen were the discussions. There is one need which I think we have to recognize, and I do not quite know how it is to be met. There is something centrifugal about these Sections, and I do not see where the integrating machinery is to come from. Each branch tends to go off more and more into its own line and thereby to separate itself from its neighbours. At present I do not think it is a serious matter because there is so very much material at hand to be worked; but, as research gets minuter and more penetrating, something must be done to bring these things together. We are now entering upon a period of laboratory building here and elsewhere. It is of immense importance that the building committees who may take charge of the erection of laboratories should not only pick out convenient sites, but should group the buildings in some way so that the professors are brought into intimate contact with one another. Public medicine must reach the individual very largely through the control of the conditions under which the people live. It is very important, therefore, to group the research bodies in such a way as to construct a great fabric of public medicine. If we look back to the Middle Ages, or even—those of us who are old—to our own youth, we find that enormous changes for the better have certainly taken place. Whether that is a separate phase or part of a general scheme of progress it is not for me to say, but the change is certainly very striking. If we look further back for a few hundred years, we find it difficult to conceive how human beings could have lived in the squalid conditions that obtained. Large numbers of people had no settled homes, and in war these nomads collected in the towns in enormous numbers under indescribable conditions of filth and squalor, and, in consequence, were visited by loathsome diseases. Certainly during the last five hundred years the change has been very remarkable and may justly be described as progressive. And we are now looking forward to a time when, largely through public medicine, we shall still further ensure the health of the individual, and perhaps before many of the young people here to-night reach an old age like mine they will see our systems of medicine eviscerated, and the next generation will have for its diet only such nutritive substance as statistics and blue-books! I must not attempt to express my gratitude to you for the kindness with which you have treated me, not only to-night in drinking my health, but during the six years in which I have been, nominally at any rate, your President. (Loud applause.)

THE UNIVERSITY AND TOWN OF CAMBRIDGE.

Sir GEORGE NEWMAN, K.C.B., in proposing the toast of prosperity to the university and town, said that it was a toast which did not require much support in words, for the Association knew itself to be deeply indebted to the University and the Town for their splendid hospitality during the meeting. None of those who had been present were ever likely to forget what Cambridge meant to them and what it meant in medicine. It had been said that noble buildings were an embodiment of noble thought, and the glorious buildings in Cambridge filled the spectator with a wonder and a mystery which, though he could not explain, fascinated him. Men concerned with medicine owed to Cambridge an irredeemable debt. St. John's College was built upon a hospital foundation. The university was in some ways the largest and most prosperous medical school in this country—almost built up in two generations—with a list of great men unsurpassed by any other seat of learning: John Caius, William Harvey, Francis Glisson, and Thomas Young in their day, and in our day Humphry and Paget and Michael Foster and Clifford Allbutt. To this narrow and more technical list these further extraordinary names must be added: William Gilbert, Isaac Newton, Cavendish, Clerk Maxwell, Kelvin, Rayleigh, J. J. Thomson, and Ernest Rutherford—all of them men who had helped to lay soundly and broadly the basis of medicine upon physical and natural science—and the superlative name of Charles Darwin. Hospitality springing from a history such as that would make each one go back to his work strengthened, refreshed, and reinspired to do it better than in the past. "If the primary and direct aim of education is to enable a man to know himself truly and the world around him, then this university ought fully to secure our educational system; for it has given us a basis for medicine, it has given us a science which is associated with letters, it has demonstrated in our own time the association between the State and the free republic of science, it has proved that the measure of the strength of the universities is the measure of the educational standards of a State, and to us in medicine it has given an even better heritage, which may, perhaps, be summed up in that wonderful word which bespeaks the spirit of Cambridge as no other university in our own country—the spirit of liberty, of catholicity, of a generous humanism." (Applause.)

The VICE-CHANCELLOR, in responding, said that more than forty years ago he left home with a vague idea of one day becoming a medical man, but he had been captivated by Greek and historical research. They must therefore take him as a "stickit medical." But he had spent two thirds of his life as a member of the College of Caius and was now Master of Emmanuel College, which had produced its luminaries in medicine, so that he knew something of medical men and the way in which they were trained. Study in Cambridge had widened very greatly. Down to 1824 Cambridge thought no subject worthy of honours except mathematics. During the next quarter of a century it added only classics, and it was only since 1850 that the natural sciences and the other studies had gradually been able to make their way into the honours list. He need not tell the company how large a medical school there was at Cambridge, but they might not be aware that an even larger school at the moment was the school of engineering. The professorship in agriculture was likely also to have its importance from the medical side, because, with the development of the agricultural school, a great school for comparative pathology came nearer. Speaking as a layman, he took it that there was no difference in essence between the diseases of man and of the lower animals, and the possibility of a synthesis of that comparative study of disease generally was likely to bring nearer the ideal of the profession—not cure, but prevention. He was proud to think of the recent gift of £165,000 to the university for the establishment of a school of biochemistry. Thanks not less to Sir Walter Fletcher and to other kind friends, the great benefaction had come to Cambridge, and it was a satisfaction to think that his colleague, Professor Hopkins, would be its first head. (Applause.) He trusted that out of this school would come very much for the glory of British medicine and for the welfare of mankind. There were more students now in Cambridge during term than ever before in history. Every college had all its rooms full, and some had two men in a room. This was the only way in which they could help the men who had fought and bled for them in the war and had now come back to complete their education. But even when these had gone the university would still be full, for not only was every school in the country filled to overflowing, but the schools were impatient with the university because room could not be found for the men they were turning out. Britannia had in Oxford and Cambridge two universities which had been going on for more than 700 years, and it had never occurred to her to turn them to practical account. Now she had discovered that she had two universities which did something besides row. She sent up a large contingent of naval officers, and already well on to a thousand of these had been passed through Cambridge. She did the same with the flying men and with the Royal Engineers. The best of the Royal Engineers were coming next winter to this university. There were other servants of the Crown that the nation would like to send to the university if the university could take them, but it could do no more at present. Dr. Giles again expressed the welcome of the university to the British Medical Association, so many members of which were her sons. (Applause.)

The MAYOR OF CAMBRIDGE (Mr. G. P. Hawkins) also responded to the toast, offering to the Association a most hearty welcome to the town of Cambridge. The borough as well as the university was glad to have contributed to the pleasure of their visit.

THE VISITORS.

Sir T. JENNER VERRALL, in proposing the toast of the visitors, said that he had to couple with it only two names, those of Professor Simon Flexner (New York), and the Master of Downing, Professor A. C. Seward. Mr. Rockefeller, when confronted with the problem of usefully disposing of his wealth, had used part of it to endow a medical research institute of which Professor Flexner was director. Professor Flexner had many qualities as an individual which made it right to drink his health, but he asked the company to drink it also in grateful tribute to the spirit of munificence in American affairs which Professor Flexner represented. The other guest whose name he had to couple with the toast was not only Master of Downing, but also the distinguished Professor of Botany in the university.

Professor FLEXNER said he had every reason—now greater reason than ever—to feel a deep indebtedness to the University of Cambridge and the British Medical Association. This great university had seen fit to confer upon him the most signal honour that any institution could confer upon a foreigner. He liked to think that when, two days before, he was invested with the scarlet gown of a doctor of laws, and all that that garment implied, he was chosen in order that through him the other great English-speaking people might be honoured. He could not permit the occasion to pass without reminding himself—he need not remind the company—how much American medicine was indebted to British medicine. If there was any way in which America could show appreciation of what had been done for it, this it should do, and do it handsomely, and with a sense that it was only the just and proper return. He had been greatly impressed by the acclamation with which every appearance of the President at that meeting had been greeted, and it was a pleasure to him to think that if he had appeared under similar circumstances and before like gatherings in the United States he would have been received with the same outpouring of love and appreciation that had been shown him here. Sir Clifford Allbutt's reputation was international, and the British Medical Association was not a provincial but a universal institution. He (Professor Flexner) first attended a meeting of the British Medical Association some years ago in Canada. They in America followed its publications with great care and attention, and gave British medical literature precedence over their own.

The MASTER OF DOWNING (Professor A. C. Seward, F.R.S.) said he felt it a peculiar honour to be selected to return thanks for the visitors in the hall of his own college. A meeting of this sort not only broadened the minds of the residents of Cambridge—though, to be sure, they did not live in a mediaeval atmosphere, as some people supposed—but it gave them the opportunity of making new friends. He had attended one of the Sections that morning during a discussion on the preliminary science education for medical students. Some years ago he had the privilege of lecturing to medical students in the botanical part of the elementary biological course, and the discussion was therefore of very great interest to him. In the course of it he was reminded of two remarks, one of them by Samuel Butler, that "The dinners at Oxford and Cambridge are better than their curriculums" (whether that would be so in the future he could not say, but the dinners might well deteriorate and the curriculum improve); the other, by Francis Galton, who said, in speaking of the art of travel: "Take an interest in the progress of your journey, but do not look forward to the end with eagerness." If one followed that advice, not in relation merely to travel, as Galton intended, and made it one's duty and endeavour to interest the medical student in a subject—say botany—for its own sake, which he was immediately studying, the student would be more likely to take an interest in the connexion between biology generally and his future studies.

The proceedings ended with a toast to the Master of St. John's, proposed by Dr. Macdonald, and an expression of thanks for his splendid hospitality and that of the Fellows.

ANNUAL REPRESENTATIVE MEETING.

Tuesday, June 29th.

NATIONAL HEALTH INSURANCE.

Effect of National Insurance Act on Nutrition of the Poor.

Dr. B. G. Baskett (South Essex) concluded his speech in moving:

> That this meeting calls attention to the slackening of the fall in tuberculosis mortality from 1896 onwards, culminating in an actual rise in the death rate after the Insurance Act; and resenting its enforced association with a measure which *prima facie* seems, and on strict investigation may be proved to be, prejudicial to the national health, instructs the Council of the Association to institute an inquiry into the effect of the Act upon the nutrition of the poor.

He said that he was deputed by his Division to lay this, their unanimous resolution, before the meeting. If there was foundation for the resolution, the nation, having found the right road, had left it and gone further and further down a wrong turning. Tuberculosis was a "key" disease: if they went wrong in that it was certain that they were heading wrongly altogether. The outstanding features of the English records for phthisis for the last eighty years were the long, steady, and rapid fall up to the end of last century, and the gradual slackening of the rate of fall, dating, to be exact, from 1896. In each quinquennium before 1896 the average fall was some 200 per million, and to show the gravity of the present position it sufficed to point out that had the rate of fall continued after 1896 the death rate from phthisis would have been some 400 per million to-day instead of about 1,200—that is, between 30,000 and 40,000 lives were being wasted every year. It was of great significance, from their point of view, that after 1916 the rise was checked, though not neutralized. Dr. Baskett went on to develop his argument that the tuberculosis death rate depended in some degree on economics, and that any measure involving State subsidy or indirect taxation must mean increase of poverty, and, in consequence, increase in the incidence of tuberculosis. Dr. Baskett had evidently not completed his speech when the fifteen minutes allowed by Standing Orders had elapsed.

Dr. Noy Scott (Plymouth) supported the rider, believing that the time had come when a national investigation into the incidence of tuberculosis should be made, and that the statements produced by some county councils would not quite bear scientific investigation. He did not wish to associate himself necessarily with all that the mover had said on the subject of the Insurance Act.

Dr. C. E. Douglas (Fife) said that it appeared to him that the rise in tuberculosis was due indirectly to the war, operating in three ways: (1) the alteration of diet, principally in the direction of starvation of fat; (2) a large proportion of the population worked during the war under conditions which entailed a vitiated atmosphere; (3) the health service was crippled by the diminution of the number of doctors available. There was no need to bring in the Insurance Act as the cause of the rise in tuberculosis.

Dr. Brackenbury said that they were not concerned at the moment with Dr. Baskett's political and economic position. They might all agree that the Insurance Act had not performed the functions which some of its short-sighted and enthusiastic admirers in 1913 declared that it was going to perform. He himself was one of those who had declared from the beginning that the sanatorium benefit was not going to do what the promoters of that Act said it was going to do. That was because the general problem of tuberculosis was not properly dealt with in that Act when it ought to have been dealt with in an entirely different way and by quite other machinery. But a more illogical rider than this he had never read. Surely other things since 1913 were likely to have had a greater effect than the passing of an Act, and for the meeting to say that because a rise in mortality was coincident with the passing of such an Act they must make an inquiry would be absurd. There might be plenty of room for an inquiry into the nutrition of the poor, but he hoped such an inquiry would not be confined to the effects of the Act.

The rider was lost by a large majority.

Payment of the Medical Profession.

The Chairman put the following rider, of which notice had been given by the Cardiff Division:

> That the attention of the Annual Representative Meeting be directed to the fact that the 11s. per capita under the National Health Insurance Acts brings the profession little more than the amount received when the profession received 7s. *plus* fees for attending invalided sailors, soldiers, and marines.

The rider was negatived without discussion.

Vaccination of Insured Persons.

Dr. C. E. Robertson moved:

> That this meeting protests in the strongest terms possible against the action of the Scottish Board of Health in saddling the profession with the free vaccination of insured persons, and instructs the Council to obtain legal advice as to whether this service comes within the scope of the agreement with Insurance Committees.

His Division wanted the opinion of the Solicitor on the matter. There were some 400,000 insured persons in Glasgow to be vaccinated by about 400 doctors, who had their ordinary patients to attend to in addition, and the work had to be done in a hurry when an epidemic was raging. The preamble of the Act referred to prevention and treatment of disease, and because of that the Scottish Board of Health thought they could demand that the work should be done for nothing.

The Solicitor to the Association thought the matter arose under an agreement operative only in Scotland, and he could not express an opinion on it without having seen and considered that agreement. Scots law differed from English law in many ways.

Dr. Brackenbury said that a distinction had to be drawn between the Scottish Board of Health and the Glasgow Corporation; the latter had done things it had no right to do, but the position taken up by the former seemed perfectly correct. Under the new Regulations an insured person was entitled to go to his doctor and ask him whether it was proper that he should be vaccinated. The doctor was then at liberty to form his own opinion as to whether vaccination was necessary, and if he thought it was, it was his duty to vaccinate, and he could not charge for doing so. The Glasgow Corporation wanted to make out that an insured person could demand that his doctor should vaccinate him free of charge, and that, of course, was wrong. The Corporation even wanted at one time to go further and say it was the duty of an insurance practitioner to seek out all the panel patients on his list and propose to vaccinate them. Vaccine was supplied by the public authority; it could be obtained from them without charge; if not, the doctor should obtain it elsewhere and charge it to the Drug Fund.

Dr. W. Stewart (Edinburgh and Leith) said that in his Division the insurance practitioners had refused to vaccinate insured persons gratis. At present, in Scotland, they were under the old regulations. Counsel's opinion was in their favour—namely, that the service was outside the agreement.

Dr. BRACKENBURY said he had forgotten that the old Regulations were still in force in Scotland. The new Regulations came into force in England on April 1st, but did not apply in Scotland until July 1st. The position under the old Regulations was not so clear; in his opinion it was not incumbent upon practitioners to vaccinate without fee under the old Regulations.

Dr. J. D'EWART (Manchester) agreed with Dr. Brackenbury's statement that when a patient asked to be vaccinated the doctor could decide for himself whether it was necessary or not. But should the doctor decide it was necessary, he was under no obligation to do the operation himself. As was the case with tuberculosis, venereal disease, etc., the doctor would have fulfilled his duty if he directed the patient how to obtain treatment from some other public source. In the case of venereal disease he could be directed to the venereal centre; in the case of vaccination, in England at any rate, to the public vaccinator.

Dr. W. SNODGRASS (Glasgow and West of Scotland) said that although "prevention" was mentioned in the preamble, it was not referred to in the Act itself, except in connexion with matters entirely apart from vaccination. It was never in the mind of Parliament, he thought, when it passed the Act, that "prevention" should be made to cover free vaccination, or that the 350 odd doctors in Glasgow should be called upon to vaccinate 300,000 people at a moment's notice, in addition to their ordinary work. Of the 400,000 insured persons in Glasgow, about 100,000 were demobilized soldiers, all of whom had been vaccinated in the army, and amongst those not a single case of small-pox occurred until the previous week, when a man with weak vaccination marks had the disease in a slight form. That was a striking tribute to the efficacy of vaccination. The Glasgow doctors wanted a chance to vaccinate people quickly and at a reasonable rate. The Glasgow Corporation wrongly refused to pay for the vaccination of an insured person.

Dr. BRACKENBURY suggested the rider should read:

> That this meeting instructs the Council to obtain legal advice as to whether the vaccination of insured persons comes within the scope of the agreement with Insurance Committees under the old regulations.

Dr. D'Ewart, he said, was quite correct as to the existence of an alternative method, but Glasgow's point was that if a doctor exercised his option and did the operation he was not at liberty to charge for it. The rider was carried.

LIMITATION OF LISTS.

Dr. T. RUSSELL (Glasgow East) moved:

> That the limitation of lists to a number less than 3,000, in opposition to the opinion of the Committee concerned and the medical profession of Glasgow, is a breach of the understanding arrived at on this matter between representatives of the Government and the Insurance Acts Committee.

An agreement had been reached between the Government and that Committee that the limit should not be reduced below 3,000 unless as a punishment for misdemeanour on the part of the doctor concerned.

Dr. C. E. DOUGLAS (Fife) thought the action of the Glasgow Insurance Committee was a gross breach of faith. A conference had been held in Edinburgh between Insurance Commissioners and Committees and representatives of the insurance practitioners at which the whole subject was thrashed out, and there was a general agreement that 3,000 should be the limit, and they heard no more about it until they saw in the papers that the Glasgow Committee had gone back on that agreement.

Dr. BRACKENBURY said there appeared to have been a good deal of muddle on more than one side in dealing with the matter in Glasgow. If the statements in the rider were correct he was prepared to accept it on behalf of his Committee. He thought Dr. Douglas went a little too far. There had been an agreement between the representatives of the profession and those of the Government that 3,000 should be fixed as the maximum, but that a lower limit might be fixed. The Association had strongly protested against pressure being exercised on Insurance Committees to reduce their limits once they had fixed them for themselves. That constituted a breach of the understanding, and if that had happened in Glasgow, as the rider seemed to assume, he would be glad to accept it.

The rider was carried.

PUBLIC HEALTH AND POOR LAW.

Dr. WALLACE HENRY, Deputy Chairman, took the chair, while

Dr. GARSTANG, as Chairman of the Public Health Committee, moved approval of the Report of Council under "Public Health and Poor Law." He said that he would present one matter in detail. Reference was made in the report to the negotiations with regard to security of tenure of medical officers of health. The final result was exceedingly creditable to the action and persistence of the Association. In 1904 the President of the Local Government Board was asked to accept the views of the Association. In 1906 the Association prepared a bill of its own, and in 1907 the bill was dropped because of congestion of business. In 1908 it secured a first reading; in 1909 an attempt was made to include it in the Housing and Town Planning Bill of the Government, but this was ruled out. In 1912 a new bill was presented, but there was no time to consider it. In 1913 the bill was given a first reading, when Sir Philip Magnus was of the greatest service, as, indeed, he had been throughout the fight. In 1914 a deputation waited on the Local Government Board, with the result that an order on the subject was drafted, and was about to be issued when war intervened. In 1920, the war being over, the subject was again taken up with Dr. Addison, who had now given a written promise to bring security of tenure into operation and to issue the necessary order at the very earliest moment. This was a feather in the cap of the Association. He wished to acknowledge the long-continued help of one old member of Council and Representative Meetings, Dr. Herbert Jones of Hereford.

This portion of the report was then agreed to.

Dr. F. J. BAILDON (Southport) moved a rider, which was passed, desiring the Council to draw the attention of medical officers of health to the need for the more thorough vaccination of the community. The recent epidemic of small-pox in Glasgow furnished the occasion for this rider.

Dr. C. E. ROBERTSON (Glasgow Southern) moved:

> That this body expresses its emphatic protest against the action of the Glasgow Local Health Authority in using lay servants for the purpose of medical treatment, and records its opinion that vaccination should only be performed by qualified medical practitioners.

This was agreed to, as was a motion by Dr. J. STEVENS (Edinburgh):

> That a session for vaccination should be limited to two and a half hours, and that the fee for medical practitioners serving should be not less than £2 2s. per session. That for whole-time service in performing vaccination the fee should be not less than £12 12s. per week.

HOSPITALS.

Dr. R. A. BOLAM, Chairman of the Hospitals Committee, moved the following recommendation of Council:

> That for all work for soldiers and sailors, whether discharged or not, for any disease or injuries connected with the war undertaken at voluntary hospitals, the medical staffs should be adequately remunerated. In any case the remuneration should represent an addition of not less than 25 per cent. to the cost of maintenance of in patients, and not less than 25 per cent. of the ascertained cost per patient per attendance for out patients, the additional sum to be placed at the disposal of the medical staff; that in the case of special clinics—for example, aural and ophthalmic—the fee payable to the medical practitioner should not be less than the fee payable by the Ministry of Pensions for identical or similar services—namely, £2 2s. per session.

This was an amplification of a resolution passed at the Annual Representative Meeting last year. It was not realized at that time how extremely difficult the assessment of adequate remuneration was to prove to those who attempted the task. They had, however, arrived at the solution now presented. The recommendation had been put in this way in order to avoid a very obvious criticism that the medical staff should not take from the moneys required for keeping the patient in hospital. The resolution could not be made retrospective.

Dr. H. G. DAIN (Birmingham) said that his Division was not unconscious of the difficulties in the way of arriving at a satisfactory method of fixing payment of the staffs of hospitals for patients who might be provided for by the State. As a temporary method of payment the scheme might be approved, but it should be no more than a temporary method. Developments in the matter of hospital services for the public were bound to take place, and it seemed to him very dangerous to set up anything in the nature of a precedent as to the methods by which the staffs of hospitals should be remunerated when the services of the hospital were paid for, and when the staffs looked to receive an economic return for their services. Any payment which was based on cost of maintenance in hospital was surely most unsound. It was quite easy to fix fees for sessions. He moved:

> That this meeting does not approve of any scheme of remuneration for medical services which is based on the costs of maintenance or administration.

Dr. **Bolam** said that the Committee had had interviews with the Minister of Pensions on the general subject, and it seemed better to leave the resolution as it stood, and not hamper it by the addition of such a rider.

Dr. I. W. **Johnson** (Bury) supported the proposal of the Council, and pointed out that the 25 per cent. was not upon the amount expended by the hospitals, but upon the actual amount paid by the Government to the hospitals.

Ultimately Dr. **Dain** agreed to an amendment of the Council's recommendation which met his point—namely, the substitution of the words "for the present" for "in any case" in the opening of the second sentence. In this form the recommendation was agreed to.

The Position of Poor Law Hospitals.

Dr. E. W. G. **Masterman** (Camberwell) moved:

> That the Representative Body instruct the Council to inquire into and report on the position of Poor Law hospitals, especially in relation to private patients, and into the possibility of a closer co-operation between their medical staffs and the general practitioners of the district.

He said that paragraph 170 of the Council's report (SUPPLEMENT, April 24th, p. 122) was a challenge on this subject. The suggestion there made by the Council was on the one hand utterly impracticable, and on the other hand showed an entire ignorance of the condition and status of the Poor Law hospitals. He would like the British Medical Association to handle this question and see whether in the new regulations for these institutions the closer co-operation indicated in his motion could not be brought about. If they had private patients in the Poor Law hospitals there should be no objection to admitting their own doctors to attend to their treatment.

Dr. J. **D'Ewart** said that in Manchester all the Poor Law hospitals were now available for private patients, but under the ruling of the Ministry these patients could only be attended by the doctor who happened to be in charge of that institution. The outside practitioner had no right of entrance. He very strongly supported the resolution, because, as a working member of one of these institutions, he saw the difficult position in which he was going to be placed.

Dr. **Bolam** said that the Committee would have no hesitation in accepting this rider as framed. With regard to paragraph 170, to which Dr. Masterman had alluded, this was put to the Council as a purely surgical matter, and was answered in surgical terms. The Poor Law hospitals were relatively empty, and were to be utilized, they hoped, to supplement the inadequate provision in the voluntary hospitals throughout the country. The Council and its Hospitals Committee were watching developments carefully.

Dr. Masterman's motion was agreed to.

Payment for Maintenance of Hospital Patients.

Dr. E. H. **Snell** (Coventry) moved:

> That the Representative Body is of opinion that the suggested remedy for existing financial straits of hospitals—namely, to demand contributions in aid of their maintenance from the patients—fundamentally alters the basis of the relationship hitherto existing between the honorary medical staffs and the subscribers; and refers the question to the Council for consideration and report.

His Division felt that when a patient began paying for maintenance he should at once begin to pay for treatment. Several hospitals were starting a system of this kind, and were getting a class of patients for whom such institutions were not originally designed.

Dr. D. **Lawson** (Aberdeen) said that twenty-five years ago 95 per cent. of those who attended hospitals were quite unable to provide anything towards maintenance and treatment; that figure had fallen to something like 25 per cent. at the present day.

Dr. Snell's proposal was agreed to.

NAVAL AND MILITARY.

The **Chairman** said that, with the permission of the meeting, he would call on Sir Havelock Charles, G.C.V.O., the Medical Adviser to the Secretary of State for India, to whom they were greatly indebted, and Colonel Needham, Deputy Director-General I.M.S., who could speak for the officers at present serving with the Indian Medical Service, to address them at a later stage.

Nomination of Service Members to Serve on the Council.

Colonel R. H. **Elliot**, I.M.S.(ret.) (Chairman of the Naval and Military Committee), moved that the following representatives of the Services on the Council be appointed for the period 1920–23:

(*a*) Royal Naval Medical Service: Surgeon Captain E. H. Meaden, C.M.G., R.N. ret.,.
(*b*) Royal Air Force Medical Service: Colonel T. D. Barry, C.B.E., R.A.F.
(*c*) Royal Army Medical Service: Lieut.-General Sir W. Babtie, V.C., K.C.B., K.C.M.G.
(*d*) Indian Medical Service: Colonel Sir W. J. Buchanan, I.M.S.(ret.).

This was agreed to.

The Indian Medical Service.

Lieut.-Colonel **Elliot**, in moving approval of the remainder of the Annual Report under "Naval and Military," made a statement on the position with regard to the Indian Medical Service. What the Association did that day would have a far-reaching effect. It should be a successful climax to the six years' work the Association had put in on behalf of the Indian Medical Service. He would like to say first, last, and all the way through, that everything the Indian Medical Service had got had been got through the British Medical Association. (Applause.) He recalled the time when he stood before that hostile body, the Public Services Commission, as the witness for the Indian Medical Service, and was reminded by a member of the service that he had a commission to lose. The Public Services Commission six years ago utterly failed to understand the importance of the Indian Medical Service, the importance of the demands made, or the big power behind them. The Commission practically turned down every one of the recommendations the Association made through him as a witness. Then followed years of patient, steady work towards one definite result. The profession could not dictate to the Government of India, but could say, and did say, that the Government of India should not have the men it wanted unless it gave proper terms. That had been the Association's attitude right through. The Secretary of State for India, in his dealings with the Indian Medical Service, had had the vision and statesmanship to realize its needs and importance in a way that no one else outside the British Medical Association had done. At the interviews he had with the Association's deputation he spoke of the medical as a pivot service, as indeed it was, for unless there was a strong and satisfied Indian Medical Service it was quite certain that the European officers wanted for the other Indian services would not be got. The offer of one-third increase on grade pay followed one interview with the Secretary for India. He flew over from Paris on that occasion to meet them. The Association had never asked for that third. It was offered spontaneously by the Secretary of State, and had he been able, as he was willing, to carry through those concessions without delay, all might have been well. Unfortunately there was eight months' delay, and evasions and equivocations and alterations of conditions on the part of the Financial Department of the Government of India. When the position was put before him at another interview the Secretary of State for India said that he was deeply disappointed, but he was enough of a statesman and a man to pick up the threads again and start afresh. The deputation then asked for 50 per cent. on pre-war values and for other concessions, and gave a time limit of six months, because the Naval and Military Committee was not willing to repeat its previous experience. If within that time the Government of India had not complied the Committee held itself free to take other action. Three weeks before the Representative Meeting an opportunity was found to discuss the matter with Sir Havelock Charles, who asked for the profession's demands, minuted them, and laid them before the Secretary of State. Sir Havelock had come there that day prepared to state that the terms had been conceded. (Applause.) The seven points which were put to Sir Havelock Charles were as follows:

> (1) The pay of officers should be calculated on the pre-war scale for charge of a regiment, but approximately 50 per cent. in excess of that; (2) allowances for the charge of Indian station hospitals should be granted; (3) such allowance should not be reckoned as part of the 50 per cent. increase, but should be in addition thereto; (4) the same relative consideration should be given to officers of the I.M.S. as to their combatant brethren of the Indian army; (5) officers of the I.M.S. in military employment should receive the same advantages with regard to passages as combatant officers; I.M.S. officers in civil employment should receive the same treatment as their civil brethren; (6) surgeons-general in the provinces, and the Director-General of the I.M.S. in the Government of India, should have the same rights as a Secretary to Government of (a) direct access to the Governor or Viceroy respectively, and (b) access to documents, and an opportunity of forwarding his views to superior authorities; (7) cadre of the I.M.S. should, when possible, have 25 per cent. for furlough and 2½ per cent. for study leave.

Colonel Elliot's comment on this was that he was prepared to say that these concessions provided a young man with a good career in the East and a living wage. As an old officer of the Service, he thanked the British Medical Association for the magnificent and steady support that it had given. But for the Association the Service could not have done anything at all. In conclusion, he paid a tribute to Sir Havelock Charles and to the Secretary of State for India. He considered that the concessions were a tremendous triumph for the British Medical Association. (Applause.)

Sir HAVELOCK CHARLES (Medical Adviser to the Secretary of State for India), who was received with applause, said that one reason for his presence was his desire to thank the British Medical Association for what it had done for the Services. The Association had been an ever-present help in time of trouble. He was amongst the oldest members of the Association, and at the time he joined there was trouble about the Indian Medical Service. He himself had been expressly recommended by the late Sir William MacCormac not to go into the Indian Medical Service, but he did not take that advice, and he found it was a passably good career. There was no line of life in which a man would not grumble now and again. In India, when from time to time he had to fight the Government, he did so with the knowledge that he had the British Medical Association at his back. Things were very different now. A great career was open for any young medical man with the proper qualifications. Such a man could go to India, and if he grasped with the hand of determination the career that India put before him he would "return at evening carrying his sheaves with him." As for his emoluments, on entering the Service he would draw 650 rupees a month, from the day he reported his arrival at Bombay. While in India a few months ago he visited the first cantonment at which he did duty, and on making inquiry he found that a youngster could live a comfortable life as a bachelor on 450 rupees a month. He did not know how many medical practitioners at home, at the end of the first year, could say they had £200 in the bank, made from their practice during that year; and every following year of his career would register an improvement. The first point that the British Medical Association had striven for on behalf of the Service was the matter of pay. The Secretary of State had ordered that it should be improved by 50 per cent. on pre-war rates. That worked out approximately; it would be found that in the case of the senior majors it was rather more than 50 per cent., and in the case of young lieutenant-colonels somewhat less; that was in order to equalize conditions in the two ranks. The second point which the Secretary of State had enforced on the Government of India was that there must be no interference with allowances. The next was with regard to the position of the surgeons-general to the Provincial Governments and of the Director-General to the Government of India. The next point was with regard to pensions. A man now, when he had finished twenty-seven years in India, could come home on a pension of £[illegible]. Possibly few in practice in this country would assure themselves of £[illegible] a year after twenty-seven years' work. After seventeen years' service a man could come home on a pension of £400. As to passages, they would be granted to the members of the Indian Medical Service in exactly the same way as to members of other services under the Government of India. Formerly there had been a leave cadre of 20 per cent.; now it would be 25 per cent. Formerly, for study leave, there had been no leave cadre at all; now it was 2½ per cent. So that there would be 27½ per cent. additional men to allow of furlough and study leave. The Service afforded a very fair career. The men wanted in India were men of sound constitution who loved their profession. With that combination it was scarcely possible that a man would not achieve success. India did not want any European who could not take his proper position. The present Secretary of State for India had scientific instincts and the foresight of a statesman. Mr. Montagu personally knew the necessity for India of a proper medical service. It was with pleasure that he had met deputations from the British Medical Association, and it was with still greater pleasure that he had granted their requests. There had never been any obstruction on medical matters by the Secretary of State. The medical profession had gone a great deal ahead during the past twenty years, and it was going further, but it was a good sign when a Cabinet Minister was ready to listen to reason. (Laughter.) All those present had a considerable amount of influence with friends and relations, and they could take it from him that the sort of man of whom he had spoken could not do better than go to India. There was no country in the whole world like India, and no country where a young medical man would have such responsibilities thrown on his shoulders. He would either be made or broken. He thanked the meeting for listening to a visitor. (Applause.)

Lieut.-Colonel R. A. NEEDHAM (Deputy Director-General, Indian Medical Service) spoke as representing the Indian Medical Service officers on the active list. He was a member of the British Medical Association, and it was in that capacity only that he had the right to speak. The very welcome announcement made by Sir Havelock Charles that day on behalf of the Secretary of State was indeed a great encouragement to all officers in the Service. His own opinion was that the terms offered and the concessions granted would provide a very satisfactory living wage, and would enable any young medical man who desired a career where he could indulge his active habits and pursuits and find unlimited scope for professional work to obtain a very prosperous career in India. He offered his thanks to the Secretary of State and Sir Havelock Charles for what they had done. As a member of the British Medical Association he desired to convey the thanks of his brother officers to the Association, to Colonel Elliot, and to the Naval and Military Committee for their untiring and successful efforts on behalf of the officers in India. They had fought the battles of the Service with skill and persistence, and had now obtained success. He had had the opportunity of meeting many officers of the Service during the last six years, both in an official and a private capacity, and he was quite sure they would all agree that the Association in accepting the terms offered had adopted the right line. The logical consequence of the acceptance of those terms was for the Association now actively to encourage recruiting for the service. The Service was short-handed; the officers in India were now overworked, and had been overworked during the whole of the war. Each of them in civil employ was doing the work of two or three men.

At the conclusion of the speeches by Sir Havelock Charles and Colonel Needham, Colonel Elliot moved the following resolution, which was passed unanimously:

> That the terms offered by the Secretary of State for India [illegible] of the [illegible] to the British Medical Association be accepted, and that the Association should now use its best endeavours to help in recruiting for the Indian Medical Service.

The CHAIRMAN moved that the best thanks of the meeting be offered to the Secretary of State for India and to Sir Havelock Charles for the great services they had rendered the Association. The CHAIRMAN OF COUNCIL seconded, and remarked that the British Medical Association had also to congratulate itself on the position which had been attained.

The vote of thanks was carried by acclamation.

PARLIAMENTARY ELECTIONS COMMITTEE.

The discussion on the report of the Parliamentary Elections Committee was held *in camera*. On the motion of Mr. **BISHOP HARMAN** (Chairman of the Elections Committee), seconded by Dr. **JOHNSON SMYTH**, it was resolved:

> That this meeting of the Representative Body pledges itself to advance the interests of the Medical Representation in Parliament Fund in the Divisions and Branches of the Association, so as to secure sufficient money to support the candidature of at least two approved medical representatives.

The meeting also expressed the opinion that the candidature of Dr. H. B. Brackenbury should by supported from the Fund.

WALES.

CONSTITUTION OF WELSH COMMITTEE.

Dr. **CRAWFORD TREASURE** (Chairman of the Welsh Committee) moved:

> That the Schedule to the By-laws as to the Welsh Committee be amended (1) by omitting in the second column (“Additional Members *ex officio*”) the words “the Secretaries of the North Wales and the South Wales and Monmouthshire Branches,” and (2) by altering the fifth column (“Otherwise Appointed”) to read as follows: “One member appointed by each Division wholly situate in Wales, including Monmouthshire. . . .”

By the setting up of the Welsh Committee Wales had been put on an equality with Scotland and Ireland, but when the Committee met at the beginning of last year a difficulty arose. An amendment came up for discussion from a South Wales Division which was not represented on the Committee, and the Committee had difficulty in dealing with it in consequence. After consideration it was decided to seek permission from the Representative Body to amend the constitution in the way suggested in the resolution.

The resolution was carried.

Dr. **CRAWFORD TREASURE** then moved: “That the remainder of the Annual Report of Council under ‘Wales’ (see SUPPLEMENT of April 24th) be approved.” He mentioned that they were threatened with an outburst of colliery schemes in Wales whereby the workmen would obtain control over the funds they contributed to doctors, and the doctors would be placed under a committee which could interfere with them at pleasure. They were fighting that to the best of their ability. They knew they had the Association with them, for the fundamental principles of professional independence were involved, and Dr. Cox had agreed to visit Wales in order to help them.

The motion was agreed to.

SCOTLAND.

DEVOLUTION OF SCOTTISH BUSINESS.

Dr. **JOHN GOFF** (Chairman of the Scottish Committee) moved to amend the schedule to the by-laws as to the Scottish Committee:

(1) By omitting, in the second column (“Additional members *ex officio*”), the words:

> “The Secretary of each Scottish Branch”;

(2) By inserting in the fifth column (“Otherwise appointed”) the words:

> “Members appointed by the Divisions in Scotland grouped in such manner as shall from time to time be prescribed by the Council”;

(3) By altering the sixth column (“Duties, Powers, etc.” of the Scottish Committee) to read as follows:

> “To consider all matters specially concerning Scotland, and, in conformity with the decisions of the Representative Body, deal with all such matters. It shall meet at such place and time as the Committee itself may direct. The Committee shall have power to add to its number not more than four members specially qualified to assist in the business of the Committee.”

The Council had decided in 1914 to establish a Scottish office. Action was postponed during the war, but became urgent when it was evident that a separate Board of Health was to be set up for Scotland. The office had been opened the previous autumn, and a whole-time Medical Secretary appointed. The Scottish Board of Health had shown great willingness to consult the Scottish Committee, and it was therefore necessary for that Committee to have fuller powers, because a Government department would not deal with a committee which had to refer all matters to another body for decision. There would be many occasions on which the Board of Health would desire from the Scottish Committee definite pronouncements on Scottish subjects, and it had already been asked to deal with many subjects in addition to national insurance. The Committee of course realized that it was bound by the general policy of the Association. The opportunity seemed a good one for suggesting the reconstruction of the Scottish Committee.

The resolution was agreed to.

Dr. **GOFF**, continuing, said that the Scottish Colliery Doctors' Committee, which had the full support and co-operation of the Association, enjoyed the advantage of being recognized by the Miners' Federation in Scotland as the only body to be dealt with regarding the treatment of miners' dependants. The Scottish Committee had decided to refer the vaccination question in Glasgow to the General Medical Council, but he thought it had better be referred to that body by the Council of the Association. (“Agreed.”) He moved that the remainder of the Annual Report under “Scotland” be approved, and this was agreed to.

ELECTION OF SCOTTISH COMMITTEE.

An amendment that Group III be amended by the addition of the words “of the Dumfries and Galloway Division,” and that Group V be amended by the deletion of the words “Dumfries and Galloway Division,” was put by the **CHAIRMAN** and agreed to.

IRELAND.

Dr. J. S. **DARLING** moved approval of the Annual Report of Council under “Ireland.” In view of certain statements made earlier in the meeting he wished to say that the Irish Committee and the Irish Secretary had done a great amount of work and had done it well. Unfortunately, in the curious and chaotic state of affairs, political and otherwise, which obtained in Ireland, it had not been found possible to work entirely through the British Medical Association, but another body, called the Irish Medical Committee, had been set up, so that the unity of the profession might be maintained. They had given their Medical Secretary to be secretary of that body. They had been kept in close touch with everything that was going forward. In these circumstances he would ask the meeting to approve the Report and to bear with them patiently for another year, when he hoped they might have a better account of things to present.

An amendment proposing the elimination of the Irish office and Secretary stood in the name of the Westminster Division, but Dr. Cope, the Representative, said that in view of the unsettled state of things in Ireland he would withdraw it.

The Report was approved.

OVERSEA BRANCHES.

Special Subscription to Branches not in the United Kingdom.

Mr. **RUSSELL COOMBE** moved on behalf of the Council to amend the by-law of the Association respecting special subscriptions to Branches not in the United Kingdom so that it read as follows:

> (1) It shall also be competent for any Branch not in the United Kingdom by Rule (approved as hereinafter mentioned) to require each member of such Branch to pay (in addition to his subscription to the Association and to any such special subscription) an annual subscription of such amount as may be deemed by such Branch to be necessary for defraying expenses occasioned by the special circumstances of such Branch, and not capable of being defrayed out of any grant from the funds of the Association made in pursuance of the by-laws.
>
> (2) No such Rule shall have effect unless and until it shall have been approved by the Branch in accordance with the following provisions.
>
> (3) Approval by the Branch may be given by a majority of not less than three-fourths of the members present and voting at a general meeting of the Branch specially convened to consider the proposed Rule, of which meeting not less than twenty-one days' notice shall be given to all the members of the Branch.

Mr. **COOMBE** said, in answer to Dr. W. F. **LAW** (British Guiana), that he was quite willing that the alteration of a by-law to admit of a postal vote being taken should be referred to the Council for consideration.

The motion was agreed to.

Dr. B. **SPEARMAN** (Uganda) moved to amend the appropriate by-law (7) so as to enable officers of the Colonial services to have the same privileges as other officers of His Majesty's service (as to eligibility for election through the

Council or a Branch without the certificate mentioned in the by-laws immediately preceding), and this was agreed to.

Colonel R. H. **Elliot**, who moved the approval of the Report of Council under "Oversea Branches" in the absence of Dr. Duncan Greenlees, Chairman of the Dominions Committee, said that there were two matters of great importance to be mentioned. One was in connexion with the proposed visit of Dr. J. A. Macdonald to South and East Africa. This had been carried a stage further, and had practically been settled at the Council meeting held on the previous day. The Dominions Committee wished it to be made plain that this visit was one of great importance to the future of the British Medical Association. The future development anticipated in these districts was enormous. For every ten men now there, hundreds would be out in the course of a few years, and that meant that doctors would follow. It would be an impertinence to say a word about Dr. Macdonald. They could not have a better ambassador. (Applause.) The second point was with regard to Uganda. The members of the Association at home were in earnest sympathy with their colonial medical brethren, and the Association was determined to do its level best to look after them in every possible way.

The Report of Council under this heading having been approved, the Representative Meeting again went *in camera* to hear a statement from Professor Berry and Dr. F. Antill Pockley, representatives of Australian Branches, on the subject of hospital staffs in Tasmania.

The Position in Tasmania.

The position in Tasmania, as related to the Representative Body, was that the hospitals in that State had accepted the position that they should deal with State-aided patients, and had exacted from those patients, when they were able to pay, sums of money equal, very often, to the total amount required for their maintenance, and in some instances had assessed them for such fees for medical service as a lay body could determine. Cases were known in which a fee of 20 guineas for an operation, in addition to the cost of maintenance in the hospital, had been asked and obtained from the patient. The hospitals had, further, adopted the policy of paying a staff to deal with the work in these institutions at such a rate that the staff would receive an emolument roughly equivalent to £1,000 per annum when the fees demanded from the patients whom the staff were treating amounted to £3,000 per annum. The staffs of the voluntary hospitals took up the position thus created, and intimated to the authorities that this state of affairs could not be allowed to continue, and, further, that unless it were remedied after a certain date they would withdraw from their association with the hospitals, taking only the necessary steps to prevent any hardship in cases of emergency. The authorities refused to make any alteration in the position, whereupon the staffs refused their work. The reply of the Government was to open by legislation the doors of medical practice to those practitioners in America who held a degree which was granted after only four years of education as against the five years necessary in Tasmania, thereby dealing a blow at the medical standards of their own university. They had, further, altered the constitution of the body which was equivalent to the General Medical Council in this country, and had also made it an offence, to which heavy penalties were attached, for anyone to commit any act or publish anything which would have the effect of deterring a person from taking a situation in the hospitals in question.

The **Chairman of Council**, after the position in Tasmania had been placed before the meeting, said that it was for the Association to assist the hospital staffs in Tasmania to the best of its power. An article which dealt fully with the conditions prevailing in that state would be published shortly in the Journal. They could assure their brethren from across the seas that they would do their very best to assist them in the trouble which had arisen.

A motion by Professor **Berry** instructing the Council to investigate the grave situation which had arisen in Tasmania was carried by general assent.

Before the Overseas Branches business concluded, Dr. W. F. **Law** (British Guiana) expressed the thanks of overseas members to the Association for what it had done in various directions on their behalf.

CONCLUDING PROCEEDINGS.

After the Annual and Supplementary Reports had been duly approved,

Dr. C. O. **Hawthorne** moved a cordial vote of thanks to the Chairman of Representative Meetings for the efficiency and skill with which he had conducted the business of the meeting. Dr. Garstang had come through four days of strenuous responsibility. The strain must have been considerable, yet he had at the end of it an atmosphere of gaiety and juvenility which many of them might envy. The technical virtues of the Chairman had been witnessed by them all, but let them not forget how much they owed to his genial temper and tact, whereby the meeting had passed without a single painful incident, and in the most pleasant fashion.

Dr. **Agnes Estcourt-Oswald** seconded. Dr. Garstang, she said, had frequently struck the table with his hammer, but, had she been in his place, she would have been unable to resist the temptation to hurl it at someone's head. (Laughter.)

The resolution was put to the meeting by the **Chairman of Council** and carried by acclamation.

Dr. **Garstang** said, in his reply, that he did not recognize himself in Dr. Hawthorne's flattering picture.

Mr. E. B. **Turner** said that this was the last time they would see Dr. Macdonald in his official position as Chairman of Council. They could not part with him in that capacity without saying how much they appreciated his work. His own association with him dated from 1875. He moved a hearty vote of thanks to the retiring Chairman of Council.

The vote was carried by the Representatives rising in their places and singing, "For he's a jolly good fellow."

Dr. **Macdonald**, in reply, said that it was difficult for him to express his feelings on this his last official appearance. It had been his dream to see the Association rise to its present great position. During the time of his connexion with it—he was not suggesting that the two things had anything to do with one another—the Association had become a power in the land, the body which was approached by every Government department when it came to dealing with the medical profession. That he himself had had some small part in helping it was a matter of which he would ever be proud.

A vote of thanks was accorded to the office staff for their work before and during the session, and the Representative Meeting concluded its labours after confirming the minutes of the day's proceedings.

THE ULSTER CUP.

Dr. Macdonald announced during the Annual Dinner that the Ulster Golf Cup had been won that day by Mr. Albert Lucas, Chairman of the Journal Committee, with a score of all square with bogey.

The competition for the Ulster Cup was played on the Gog-Magog Golf Course, Cambridge, on July 1st, 1920, with the following result:

*A. Lucas	Handicap (9)	All Square
†G. H. Lowe	(3)	1 down.
R. J. Johnstone	(8)	2 "
W. Starkey	(12)	2 "
W. N. West Watson	(12)	2 "
Sir K. Goadby	(8)	4 "

* Wins cup and first share of sweepstake.
† Wins second share of sweepstake.

Seventeen cards were returned. The course was in excellent condition, and it was good golfing weather. The competition was organized by Mr. S. W. Cole, Captain of the Gog-Magog Golf Club. Members of the British Medical Association were invited to become honorary members of the club during their stay in Cambridge.

Association Notices.

CHANGES OF AREAS.

Amalgamation of Dover and Folkestone Divisions.

The following change has been made in accordance with the Articles and By-laws, and takes effect as from the date of publication of this notice:

> That the Dover and Folkestone Divisions of the Kent Branch be amalgamated to form one Division, to be designated the "Dover and Folkestone Division."

Representation in Representative Body.—Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST YORK AND NORTH LINCOLN BRANCH.—The annual meeting of the East York and North Lincoln Branch will be held within the Board Rooms of the Royal Infirmary, Hull, on Friday, August 6th, at 4 p.m.

MIDLAND BRANCH.—The Honorary Secretary, Mr. A. M. Webber, announces that the annual meeting of the Midland Branch will be held at the Guildhall, Lincoln (by kind permission of the Mayor), on Thursday, July 22nd, 1920, at 3 p.m. The President-elect, Dr. H. B. Willoughby Smith, will deliver his presidential address on "Appendicitis." The President-elect has kindly invited all members of the Branch coming from a distance to lunch at the Great Northern Hotel, Lincoln, at 1.15 p.m. Members desirous of availing themselves of this invitation are requested to notify Mr. J. J. Rainforth, F.R.C.S., 2, Lindum Road, Lincoln, before July 20th.

SOUTHERN BRANCH.—The annual meeting of the Southern Branch will be held at the South-Western Hotel, Southampton, on Thursday, July 15th, at 2.45 p.m., when Dr. J. Lockhart Livingston will be in the chair. Agenda: Election of Officers; Annual Report of Branch Council; Financial Statement; Presentation of "Childe" Cup to winner of golf competition, 1920. The President-elect, Dr. A. A. Mackeith, will deliver an address on "Professional Secrecy," to be followed by a discussion. By the courtesy of the steamship companies, arrangements have been made for parties to visit the Cunarder *Mauretania* and the White Star liner *Olympic*. The President will entertain the members to tea at the hotel.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—The annual meeting of the Monmouthshire Division will be held on Friday, July 16th, at the Royal Gwent Hospital, Newport, Mon. An Address will be given by the Medical Secretary, Dr. Alfred Cox, O.B.E., on "The Future of Medical Practice in the Mining Districts of South Wales and Monmouthshire—Servitude or Independence."

Meetings of Branches and Divisions.

NORFOLK BRANCH: EAST NORFOLK DIVISION.

A MEETING of the East Norfolk Division was held at Norwich on June 16th, when Dr. R. C. M. **COLVIN-SMITH** was in the chair.

A letter was received from the district secretary, Independent Order of Rechabites, agreeing to the terms for contract medical attendance on the terms of the resolution passed at the last meeting (16s. for adults and 8s. for children).

The following officers were elected for the ensuing year.

Chairman: Dr. D. T. Belding. *Vice-Chairman:* Dr. Owens (re-elected). *Honorary Secretary:* Dr. N. S. Carruthers.

A vote of thanks was accorded to Dr. D. G. Thomson on his retirement from the office of Honorary Secretary for the valuable services he had rendered in that capacity.

After discussion it was resolved that nurses belonging to the Norfolk Nursing Federation be examined for insurance for a fee of 10s. 6d.; it would be against the principles of the British Medical Association to do this gratis, because the federation received public money from the County Council for public work.

NORTH WALES BRANCH: SOUTH CARNARVON AND MERIONETH DIVISION.

THE following resolution of the Welsh Committee was adopted:

> That in the opinion of this Division a representative general practitioner should be appointed to the Welsh Board of Health.

The fees for medical examination for life assurance (SUPPLEMENT, March 27th, 1920) were approved. The resolution of the Council regarding payment of medical staffs of hospitals for pensions work was approved. The Division heartily agreed with the view of the Medico-Political Committee regarding the question of the training of midwives. With reference to the proposed allocation of seats on the Council of the Association to Wales, the Division reaffirmed the resolutions passed last year.

The following officers were elected for 1920–21:

Chairman: Dr. Lloyd Owen, Criccieth. *Vice-Chairman:* Dr. R. T. Jones, Harlech. *Honorary Secretary:* Dr. Lewys-Lloyd, Towyn, Merioneth.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.

A MEETING of the Buckinghamshire Division was held on June 1st at High Wycombe, when Dr. **KENNISH** was in the chair.

The annual report of the Council was received and discussed, and the Representative was instructed. The members preferred to express no opinion on the proposed salaries for public health appointments, no whole-time officers being present. The recommendations on life assurance examination were agreed to. The recommendations on payment of hospital staffs for pension work and also that on national emergencies were agreed to. Members present gave the sum of 30s. to the social fund of the Division. A motion dealing with the case of medical men whose patients were attended by a neighbour when they were away on service, and who still continued to attend them, was deemed to be too late, but it was decided to put a notice in the local press asking the public to go back to their original doctor on his return.

Mr. **JOLL** gave an instructive address on "The diagnosis and treatment of abdominal emergencies," and a very hearty vote of thanks was accorded to him.

SUFFOLK BRANCH.

THE first annual meeting of the newly constituted Suffolk Branch was held at Woolpit on June 17th. Dr. O. R. M. **WOOD** (Woolpit) was introduced as President and Dr. **TYSON** (Lowestoft) was elected President-elect. Papers were read by Mr. J. E. R. **MCDONAGH** (London) on "The action of metals and non-metals on the body"; by Dr. G. C. **ANDERSON** (Deputy Medical Secretary of the British Medical Association) on "The British Medical Association behind the scenes"; by Dr. **BROWN** (Ipswich) on "Gall stones and their consequences"; and by Dr. **CHARLES** (Ipswich) on "The treatment of septic peritonitis." *X*-ray plates were shown by Dr. **GOFF KILNER** (Bury). Through the kindness of Dr. and Mrs. Wood a most excellent luncheon and tea were provided for the members and their wives and friends.

Dr. **ANDERSON** compared his impressions of the Association as a former Branch Secretary and as Deputy Medical Secretary. He emphasized the value of the Association to members from the medico-political and the scientific point of view, and dealt with adverse criticisms. He sketched chiefly the valuable work which the Association had accomplished during the past year, and urged the necessity for stronger organization, and impressed upon those present the need for a keener interest in the work which the Association was doing. In dealing with the report of the Consultative Council and the position of the staffs of voluntary hospitals, Dr. Anderson emphasized the necessity for looking well ahead in choosing those whom they could trust to represent the members at Representative Meetings, in the Council, and on committees. It was very evident that there never was a greater need than now for strong central organization in order that the interests of medical men throughout the country should be carefully and intelligently guarded.

SUSSEX BRANCH.

A MEETING of the Sussex Branch, to which all medical men resident in Hastings and St. Leonards were invited, took place at St. Leonards on June 15th. Thirty-five accepted the invitation to tea of the President of the Branch, Mr. R. Sanderson, and attended the British Medical Association Lecture, given by Dr. W. **LANGDON BROWN**, which will be published in the BRITISH MEDICAL JOURNAL. A hearty vote of thanks to the lecturer was proposed by the **PRESIDENT**, seconded by Dr. **FRANK LEWIS**, and accorded with acclamation. The speakers both advocated a closer co-ordination between the members of the profession in view of the need of concerted action in the future.

SUSSEX BRANCH: CHICHESTER AND WORTHING DIVISION.

A MEETING of the Chichester and Worthing Division was held at Arundel on May 5th, when Dr. H. C. L. **MORRIS** was in the chair.

The Representative was instructed to support (1) the recommendation of the British Medical Association for the increased remuneration of the staffs of voluntary hospitals, as set out in paragraph 168 of the Annual Report of the Council; (2) the decision of the Council with regard to the training of midwives, as set out in paragraph 138 (1) and (2) of the Annual Report. On the proposition of Dr. **MILBANK SMITH**, seconded by Dr. **EWART**, the scheme for locumtenents in holidays, sickness, etc., as applying to Worthing was approved. Dr. Milbank Smith was appointed to represent the Worthing, Chichester, and Horsham Divisions at the Annual Representative Meeting. The new tax on motor cars was considered, and it was resolved that a letter be written to Lord Winterton, the member for Worthing, pointing out the hardship thereby inflicted upon medical men and requesting him to press for some modification thereof. The Representative was instructed to press strongly for an increase of the fee [illegible] refraction cases to 10s. 6d. for elementary school children.

CORRESPONDENCE.

Mileage Records.

SIR,—Much effort is being expended on keeping mileage records. This seems incredible to me, since one can work out with fair accuracy the mileage that will be covered in attending any group, or panel, of patients.

The percentage of panel patients requiring treatment is pretty well known, when taken the whole year round. For the sake of a figure I will put the daily percentage of patients requiring treatment at an average of 5. Again, for the sake of a figure we will suppose that 20 per cent. of those under treatment require to be *visited*. I believe percentages in this respect have been carefully ascertained.

The only other factor required is the mean average distance of your panel patients, ascertainable by dividing the total distance at which all your patients live from you by the number on your list. Your mileage will then average out at the mean average distance multiplied by the number to be visited, which with these figures will be one for every hundred on the list.

The whole thing is as simple as falling off a log. The only return needed by the Ministry ought to be the mean average mileage. If any other return is required it should be the total number of visits. Instead of this we are asked to keep accurate daily laborious returns.—I am, etc.,

J. C. JONES.

Pensilva, near Liskeard, June 21st.

Hardships of Country Practice.

SIR,—Again I see there is another utopian scheme of medical services on the boards, and, as Dr. W. Gordon says in his letter (BRITISH MEDICAL JOURNAL, June 26th, p. 882: "If the profession is senseless enough to again consider any scheme of reorganization without at the same time having its financial clauses fully and clearly before it, it will deserve to suffer for it." Unfortunately I think there are very few men in country practice to whom this remark will not strongly appeal. How many there must be who could live in some comfort before the war now find themselves confronted with the difficult task of meeting their ever-growing expenses.

As one who is not entirely dependent on his practice, I shudder to think of those who are struggling for an existence out of their country practice.

Is it not time the Association gave the lead to some plan whereby men in country practice could obtain an equal remuneration to that obtained by the town practitioner in proportion to the time spent and expenses incurred per insured patient? To say that this difference is bridged by a paltry grant of a shilling or so per head mileage is simply laughable to those who know what country practice is. I think if the Association is to obtain the support of the country practitioner in the future, it will refuse to discuss any feather-brained scheme, whether devised by the Consultative Council of the Ministry of Health or anyone else, until such a time as justice has been done to the country practitioner, otherwise I fear there is certain to be a large migration from the country districts to the towns.

With increased expenses, diminution of our fees owing to depreciation of the value of money and the confiscation of the capital value of our practices after 1922, the outlook for the country medical man is anything but a bright one.—I am, etc.,

T. KING-EDWARDS, M.D., M.B.E.

Watlington, June 28th.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following notifications are announced by the Admiralty: Surgeon Captain G. T. [illegible], O.B.E., has been promoted to the rank of Surgeon Rear Admiral. Surgeon Commanders E. D. J. O'[illegible] to be lent to the *Cormorant*, R. M. Richards to the *Royalist*, T. R. O'Keefe to be lent to the *Calcutta*, T. E. Blunt to be lent to the [illegible], M. W. Hayton to be lent to the *Galatea*, all for Reserve Fleet [illegible] on commencing; A. W. B. Livesay to the *Pembroke IV*, for Royal Naval Hospital Yarmouth. Surgeon Lieutenant Commanders [illegible] R.N. D[illegible], Chatham, L. S. Gabe to the *Ramillies*, [illegible] to the *Conqueror* for Reserve Fleet exercises. Surgeon Lieutenants H. E. [illegible], D.S.O., to be lent to *King George V* for [illegible], A. McCallum to the *Argus*. Surgeon Lieutenant (temporary) A. W. Melrose transferred to permanent list with original seniority, November 16th, 1918.

ARMY MEDICAL SERVICE.

Major and Brevet Lieut.-Colonel (temporary Lieut.-Colonel) R. B. [illegible], D.S.O., R.A.M.C., to be A.D.G., and to retain his temporary rank, vice Major (temporary Lieut.-Colonel) A. B. Smallman, C.B.E., D.S.O., R.A.M.C. (June 1st, 1920), substituted for notification in the *London Gazette* of [illegible] 1920).

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel A. M. McLaughlin, C.B.E., relinquishes the acting rank of Colonel.

Temporary Captains relinquish the acting rank of Major: N. G. W. D[illegible] (February 1[illegible], 1919), J. M. Renton (February 25th, 1919), [illegible], D.S.O., M.C. (September 27th, 1919), H. S. Land (April 9th, 1920).

APPOINTMENTS.

BERTRAM, E. [illegible], M.B., Ch.B., F.R.C.S., Honorary Surgeon to Out-patients of the Victoria Hospital for Sick Children, Hull.

D[illegible], W. A[illegible], M.D., B.Sc.Lond., D.P.H.Camb., Medical Officer of Health of [illegible].

[illegible], John W., M.B., B.S.Lond., M.R.C.S., Surgeon to In-patients, the Royal Hospital, Richmond, Surrey.

M[illegible], W. A., M.B., B.Ch., N.U.I., D.P.H.Camb., Medical Officer of Health to the Ogmore and Garw Urban District Council.

F[illegible], M.D., M.Ch., F.R.C.S., Assistant Surgeon to the Middlesex Hospital.

F[illegible], M.R.C.S., L.R.C.P., Senior Resident Medical Officer, W[illegible] Sanatorium, near Bath.

[illegible], M.B., Ch.B.Edin., Honorary Anaesthetist to the Metropolitan Ear, Nose and Throat Hospital.

S[illegible], M.D.Edin., F.R.F.P. and S.Glasg., Surgeon to the Throat and Nose Department, Western Infirmary, Glasgow, and Lecturer on Diseases of the Throat and Nose, Glasgow University, vice Dr. [illegible] resigned.

WOOD, [illegible], M.D., B.Sc.Lond., D.P.H.Durh., Medical Officer of Health, Borough of Bootle.

ST. THOMAS'S HOSPITAL.—Resident Assistant Physician: H. B. Russell, M.B., B.S.Lond., M.R.C.P. Resident Assistant Surgeon: L. N. Reece, M.B., B.S.Lond., F.R.C.S.Eng. Resident Orthopaedic House-Surgeon: W. B. Foley, O.B.E., M.B., B.S.Lond.

KING'S COLLEGE HOSPITAL.—Bacteriologist: Edward Ffolliott Creed, B.A., M.B., B.Ch.Oxon. Casualty Officers: (Senior), J. M. Bickerton, M.R.C.S., L.R.C.P.; (Second), L. P. Johns, M.R.C.S., L.R.C.P.; (Junior), K. Playfair, M.R.C.S., L.R.C.P. House Anaesthetist: H. A. Richards, M.R.C.S., L.R.C.P. House-Physicians: A. N. M. Davidson, M.R.C.S., L.R.C.P., R. H. Yolland, W. F. Matthews. House-Physician for Children: C. D. Banes, M.B., B.S.Lond. House-Surgeons: O. W. Roberts, M.R.C.S., L.R.C.P., H. E. Reburn, M.B., B.S.Lond., R. K. Foulkes, M.R.C.S., L.R.C.P., R. D. Lawrence, M.B., B.Ch.Aberd.; (Eye Department), C. D. Banes, M.B., B.S.Lond.; (Nose, Throat, and Ear Department), H. A. Lucas, M.R.C.S., L.R.C.P.; (Urological Department), O. W. Roberts, M.R.C.S., L.R.C.P.; (Orthopaedic Department), W. S. Wood. Obstetric House-Surgeon: H. J. R. Surrage, M.R.C.S., L.R.C.P.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

15 Thur. Southern Branch, Annual Meeting, South-Western Hotel, Southampton, 2.45 p.m.

16 Fri. Monmouthshire Division, Annual Meeting, Royal Gwent Hospital, Newport. Address by Medical Secretary.

22 Thur. Midland Branch, Annual Meeting, Guildhall, Lincoln, 3 p.m.

AUGUST.

6 Fri. East York and North Lincoln Branch, Annual Meeting, Royal Infirmary, Hull, 4 p.m.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE.—*Section of Dermatology:* Thurs., 4.30 p.m., Cases.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL, MEDICAL UNIT.—Tues., 2 p.m., Dr. Riddoch: Disorders of Function from Lesions of the Pyramidal Tract. Wed., 2 p.m., Dr. Thompson: Hemiplegia. Surgical Unit, Wed., 4 p.m., Mr. Frank Kidd: Coli Infection of Kidney.

MANCHESTER FRENCH HOSPITAL.—Thurs., 4.30 p.m., Dr. A. C. Magian: Chronic Uterine Complaints.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., Operations, Medical and Surgical Clinics, etc. Mon., 2.30 p.m., Dr. Banister: Gynaecological. Tues., 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. C. H. Hayton: Laryngological; Dr. Metcalfe: Radiology. Wed., 2.30 p.m., Dr. Oliver: Dermatological. Thurs., 2.30 p.m., Mr. N. Fleming: Ophthalmological. Dr. Metcalfe: Radiology. Fri., 2.30 p.m., Dr. Smallwood(?): Children. Sat., 3 p.m., Mr. Carson: Surgical Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Wards; 2 p.m., In-patient Clinics and Operations. Mon., 2 p.m., Mr. Armour: Operations; 2.30 p.m., Dr. Saunders: Wards. Tues., 2 p.m., Dr. Bamford: Wards; 2.30 p.m., Mr. Gray: Operations. Wed., 2 p.m., Mr. Armour: Wards; 2.30 p.m., Mr. Addison: Operations. Thurs., 2 p.m., Mr. Armour: Operations; 2.30 p.m., Dr. Saunders: Wards. Fri., 10 a.m., Dr. Robinson: Gynaecological Operations; 2.30 p.m., Mr. Gray: Operations. Sat., 2 p.m., Dr. Beddard: Wards.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

GARDNER.—On July 4th, at "The Moyne," Finchley, N.3, to Phyllis and Humphrey D. Gardner (Major R.A.M.C.)—a daughter.

LOUDON.—At 120, Cathedral Road, Cardiff, on July 2nd, the wife (*née* Morag M. B. Lees) of Dr. A. W. B. Loudon, a daughter (stillborn).

MELVIN.—On June 29th, at Castle House, Oswestry, to Dr. and Mrs. Melvin—a daughter.

DEATHS.

BLAKE.—Henry Blake, M.B., B.S., L.S.A.Lond., died suddenly (of heart failure) at his residence, Great Yarmouth, on July 3rd, 1920.

WALTON.—On June 15th, at Bolton, Lancs, Robert Spence Walton, M.B.Lond., in his 64th year.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 17TH, 1920.

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British Medical Association.

CURRENT NOTES.

Medical Books for Serbia.

The British Medical Association has received an application from the Royal Society of Literature for help in restoring the ruined libraries of Serbia. A letter from the subcommittee of the society on "Intellectual Relations with the Southern Slavs" was considered by the Science Committee at its last meeting. The letter expresses the hope that the Association may be able to spare gifts of standard medical works. The Committee postponed consideration of this request until its next meeting, when there will be placed before it a report from the Librarian as to any surplus books which the Association could send in helping to restore the ruined Serbian libraries. Meanwhile, members who are able to lend any support to this appeal are asked to communicate direct with the Honorary Organizing Secretary for the Reconstruction of Serbian Libraries, Royal Society of Literature, 2, Bloomsbury Square, W.C.1. Medical books are being sent to Dr. Soubotic, Serbian Legation, 195, Queen's Gate, S.W.7.

The University of Belgrade was founded in 1905. During the bombardment of Belgrade by the Austrians, which began on July 28th, 1914, the University buildings suffered terribly. The University contained, in the words of Professor T. Georgevitch, "not only the best library *in* the Balkans, but also the best in the world *on* the Balkans. The Serbian Government made an effort to save what it could, and many books were removed to St. Roman, St. Stephen, Alexinats, Nish, and Mitrovitsa. In the final invasion of Serbia, in which Germany, Austria-Hungary and Bulgaria all joined forces to destroy her, the libraries had to be left behind, and they fell into the hands of the enemy, who systematically pillaged them, destroying such books as they did not require." For the reconstruction of the libraries of Belgrade and other towns in Serbia, only books in good condition are desired. By the gift of standard English works it is hoped to promote the study of our own literature and science where these have hitherto been too little known. A medical faculty of the University of Belgrade is now being founded, and an English medical library would be of special value to the students and staff.

Fees for Life Assurance Examinations.

It is very important that members of the Association should clearly understand the nature of the bargain made on their behalf with the life insurance offices, and confirmed by the Representative Body on June 26th.

The arrangement is the result of negotiations with the Life Offices Association, a body representing all the British life insurance companies. The agreed report of those negotiations appeared in the SUPPLEMENT of March 27th, 1920, and the Secretaries of Divisions were specially asked to bring the matter to the attention of the Divisions preparatory to a discussion in the Representative Body. It was also fully dealt with in the Annual Report of Council (SUPPLEMENT, April 24th, 1920). The Representative Body approved the details of the arrangement placed before it, with one exception—namely, the suggestion that the minimum fee paid by the intermediate offices should be 10s. 6d. for policies up to and including £100, and 21s. over £100. The meeting at first carried a resolution in favour of making the fees for the intermediate offices the same as those for the ordinary offices, but finding shortly afterwards that this decision would prejudice the agreement as a whole, left it to the Council to decide what action should be taken. The Council at its meeting next day decided that as the Representative Body had accepted the rest of the agreement, the bargain should be approved as a whole, including that relating to the intermediate offices. The position, then, is that the Association is pledged to accept the agreement, and it is the duty of loyal members of the Association, however much they may object to particular details of it, to accept the agreement as a whole and therefore to accept work offered by the life offices on those terms. Any other attitude can only have the effect of leading outside bodies to the conclusion that it is useless to carry out any collective bargaining with the Association as its members are not likely to abide by the result.

The new scale represents a distinct improvement on the old one. All the smaller fees for industrial examinations are raised and the objectionable half-crown fee is abolished. The fee for examinations for policies between £100 and £300, which in many offices has hitherto been half a guinea, will now be a guinea, and this concession alone will undoubtedly prove very valuable. It is estimated that the increase of fees under this head alone will be very considerable.

NEW SCALE.

Industrial Offices.—Fee for medical examination to be 5s. (minimum) or 10s. 6d. according to the form of report asked for.

Intermediate Offices—that is, the ordinary branch of industrial offices and ordinary offices which issue policies whose average amount is small (for example, the ordinary branch of the Prudential and the Provident Mutual Life).—Fee for medical examination for policies up to and including £100, 10s. 6d.; over £100, 21s.

Ordinary Offices. Flat rate of 21s. whatever the amount of policy.

"*Thrift*" *Policies.*—Fee for medical report (without medical examination) for children proposed for "Thrift" policies to remain at 10s. 6d.

No Reduction of Existing Fees.—No reduction to be made in any existing fee for medical examinations.

Exceptional Cases. The companies will continue to pay exceptional fees for cases in which exceptional trouble has to be taken, or in which the opinion of a consultant is required. They will adhere rigidly to the arrangement as set out above for all normal cases.

Remuneration of Officers of West African Medical Staff.

The British Medical Association has been informed by the Secretary of State for the Colonies that he has recently approved a revised scale of salaries for officers of the West African Medical Staff. Medical officers' salaries will commence at £660 per annum, rising by annual increments to £720, then, subject to confirmation, to £960, with "proficiency pay" of £72 per annum drawn while in the colony. Free quarters and free passages as at present. Before proceeding beyond £800 officers have to undergo a course of post-graduate instruction. Senior medical officers will receive a salary of £1,000 per annum, rising to £1,150, with £100 proficiency pay; provincial medical officers £1,200, *plus* £240 duty allowance; deputy principal medical officers £1,300 *plus* £260 duty allowance; principal medical officers £1,500 *plus* £300 duty allowance; director of medical and sanitary services, Nigeria, £1,700 *plus* £340 duty allowance; sanitary officers £1,050, rising to £1,200, *plus* £210 duty allowance; and senior sanitary officers £1,300 *plus* £260 duty allowance. As will be remembered, the question of the remuneration of officers of the Colonial Medical Services was with other matters the subject of evidence placed by the Association in February last before the Colonial Medical Services Committee appointed by the Secretary of State (see SUPPLEMENT to BRITISH MEDICAL JOURNAL, April 24th, 1920, page 126). The above rates are now under the consideration of the Council of the Association.

Fees of Civilian Medical Practitioners attending Soldiers on Furlough.

Representations have recently been made by the Association to the War Office that the fees payable on Army Form O. 1667 need revision in view of the fall in the value of money. It was suggested that there should be a fixed fee per visit, with mileage in addition for distances beyond one mile, and that the old visiting fee should be increased by at least 50 per cent. Cases not infrequently occur in which a medical man is called out in the night to a badly injured soldier, and may be kept out of bed some hours and put to considerable trouble quite apart from the actual treatment of the case. It was pointed out to the War Office that under the old scale such a service, if under a mile from the doctor's house, only carried a fee of 3s. 6d., and accordingly a suggestion was made that provision should be made for a fee of at least a guinea for night cases of this kind. A new scale of fees has now been issued (BRITISH MEDICAL JOURNAL, June 12th, 1920, p. 814). The visiting fee has been increased from 2s. 6d. to 3s. 9d., and mileage of 1s. a mile over the first mile by day, and 2s. by night, has been provided for, subject in both cases to a limit of £1. With regard to the special case mentioned, power has been given to general officers commanding to refer to the War Office any case in which they think that the fee provided is inadequate. The payment of a special fee within the limits of a guinea on the merits of the case will then be considered.

Part-time Prison Medical Officers.

In November last the British Medical Association approached the Home Secretary with a view to improving the pay and conditions of part time prison medical officers. From time to time reminders were sent asking when an answer might be expected, and the invariable reply was that certain proposals had been sent to the Treasury, but that he was not yet in a position to make a statement. A letter has now been received from the Home Office, saying that a 50 per cent. increase in remuneration has been granted. The Association is of opinion that this is a most unsatisfactory reply, and would be glad of the opinion of the officers concerned. Apart from the question of salary, several important matters connected with the duties of these officers were brought to the notice of the Home Secretary, but there is as yet no evidence that they have been considered. Further action will have to be taken and it may be necessary to ask members of the service to consider resignation in order that the position may be brought home clearly to the authorities.

Photograph of Annual Representative Meeting.

It may interest members of the Representative Body to know that a photograph of the Annual Meeting in the Examination Hall at Cambridge was taken from the gallery. Those on the platform and the members sitting on the right and in front of the Chairman come out very well. A copy may be had from Mr. A. Broom, 11, Priory Street, Huntingdon Road, Cambridge, price 1s. 9d. post free.

THE FINANCIAL POSITION OF VOLUNTARY HOSPITALS.

SIR NAPIER BURNETT, Director of Hospital Services to the Joint Council of the British Red Cross Society and the Order of St. John, has supplemented the report of which he gave an account in the JOURNAL of May 22nd, p. 710, by a further report on the financial position of the voluntary hospitals throughout Great Britain and Ireland, excluding London, for the five years 1915–1919 inclusive. The hospitals in London are excluded because they are under the particular care of King Edward's Hospital Fund.

Inquiries were made with regard to 900 hospitals and replies received from 702 (77 per cent. of the whole); as 32 hospitals stated that they had incurred no deficit and required no special assistance, the number of hospitals on the returns from which the report is founded was 670. The inquiry was limited to three main points: (1) The total amount of ordinary income, excluding legacies, received during each of the five years; (2) the total value of legacies not ear-marked for specific purposes, as for instance the endowment of beds; and (3) the total amount of ordinary expenditure for each year. The total ordinary income, excluding legacies, of these 670 hospitals was £15,771,346, and the total ordinary expenditure £17,462,299. The deficit shown on these totals, however, was more than made up by the fact that the legacies not ear-marked for any special purpose amounted to £2,061,830. The excess of ordinary income *plus* legacies over expenditure was thus £370,877.

A classification of the hospitals into two groups afforded the surprising result that 259 hospitals (38.65 per cent.) had an excess of income over expenditure of more than a quarter of a million sterling. If legacies not ear-marked received by these hospitals are included, the excess of income over expenditure is £595,552. In the remaining 411 hospitals the excess of expenditure over ordinary income, excluding legacies, was nearly two millions sterling; if legacies not ear-marked are included, the deficit was £224,675. A further analysis from year to year shows that during the first four years of the period, though some had deficits, yet, considered as a whole, the voluntary hospitals were in a satisfactory financial position down to the end of 1918. During 1919 the expenditure rose by half a million, owing largely to increase in wages and in the staff necessitated by the shorter hours of work; but the income ceased to expand. This is attributed in part to the withdrawal of the military capitation grants and in part to the effects of increased taxation.

Sir Napier Burnett defends the inclusion of legacies not ear-marked in income mainly on the ground that donations and such legacies are on the same footing, and on the further ground that legacies if treated as capital will, when invested, yield only something like 5 per cent., while a bank overdraft will cost the hospital 6½ to 7 per cent., Though the capitation grants for the treatment of military patients have ceased, many hospitals are now receiving capitation grants from the Ministry of Pensions, while others are instituting accommodation for paying patients or making a daily levy on all patients towards the cost of maintenance.

The great majority of the hospitals informed Sir Napier Burnett that, anticipating a fall in prices at the end of the war, they postponed the necessary repairs, cleaning, and alterations; there is therefore considerable accumulation of arrears in these respects, and, further, the hospitals are now confronted with the need for providing additional accommodation for the nursing staff, owing to the fact that more nurses are being employed as a result of the shorter hours of service.

The general conclusion drawn is that the voluntary hospitals taken as a whole are solvent, and that their capital in the form of investments, not including the value of buildings, is considerably over twelve millions sterling. This generalization, however, does not take account of the varying financial position of different hospitals, and the basis upon which the Joint Council should allocate the money to the hospitals is discussed. To make grants only to hospitals showing deficits would be wrong, as this would in some cases be to subsidize inefficient administration. The only sound basis is considered to be the results of inspection of each hospital "by some authority possessing the necessary qualifications." The standard of hospital administration varies widely; the object of any fund in the position to make grants should be to raise the standard of hospital administration everywhere.

Taking the deficit for the provincial hospitals at a quarter of a million, and that of the hospitals of London at a similar sum, Sir Napier Burnett estimates that to meet the cost of repairs, alterations, cleaning, etc., the amount required for the whole country, including London, would be three-quarters of a million. The King's Fund has agreed to find a quarter of a million to liquidate the deficit of the hospitals in London; a further sum of one million would, it is estimated, suffice to clear off the deficit of all the other hospitals and enable them to bring their overdue repairs and extensions up to date. Were this done the voluntary hospitals of Great Britain and Ireland would be restored to the position they occupied in 1914, but there would be this difference, that they would need an increased income to meet the increased cost of commodities and salaries.

A further report is promised on the existing bed accommodation, the additional hospital provision required, and the sites that should be chosen for new hospitals. It is already known that in many localities considerable extensions are urgently needed both for patients and the staff. It is recognized that the pressure on the accommodation at present available might be relieved by making use of the beds in some of the Poor Law infirmaries, and this raises the question of how far the State might be called upon to assist in the provision of new accommodation.

Sir Arthur Stanley, Chairman of the Joint Council of the British Red Cross Society and the Order of St. John, in a letter transmitting Sir Napier Burnett's report, states that if the voluntary system is to continue five things are necessary:

1. Payment of war debts, preferably by existing voluntary organizations, or failing that by a grant from the Exchequer.
2. The extension of the almoners' system under which a contribution towards their maintenance is requested from those patients who can afford to make it.
3. The organization of systematic collections from workpeople and employers of labour.
4. The establishment of a competent authority to examine hospital accounts and consolidate appeals.
5. Closer co-operation with the Poor Law infirmaries in which there is a large number of vacant beds that might be utilized to relieve the pressure on existing voluntary hospitals.

Sir Arthur Stanley expresses the confident belief that if the legacy of debt left by five years of war can be removed the subscriptions and donations of the public, which were sufficient to maintain the hospitals in pre-war days, will expand to meet the growing needs due to the great increases in the price of commodities. The immediate and urgent need is £1,000,000, to discharge the legacy of the war, and to give the nation's hospitals a fresh and clean start in their race with sickness and disease.

HONORARY STAFFS OF HOSPITALS AND TREATMENT OF STATE-SUPPORTED PATIENTS.

A CONFERENCE, to which members of staffs of voluntary hospitals were invited, was held in the Examination Halls, Cambridge, on July 1st, to consider the question of honorary staffs of hospitals and the treatment of state-supported patients. There was a large attendance. Sir CUTHBERT WALLACE, K.C.M.G., Surgeon to St. Thomas's Hospital, occupied the chair, and said that he would not take any resolution immediately, but proposed to allow the fullest latitude for discussion.

Dr. R. A. BOLAM (Newcastle-on-Tyne), Chairman of the Hospitals Committee of the British Medical Association, stated the position, and read the resolution which had been passed by the Representative Body affirming that for all work for soldiers and sailors, whether discharged or not, for any disease or injuries connected with the war, undertaken at voluntary hospitals, the medical staffs should be adequately remunerated; further, that the remuneration for the present should represent an addition of not less than 25 per cent. to the cost of maintenance of in-patients and not less than 25 per cent. of the ascertained cost per patient per attendance for out-patients, the additional sum to be placed at the disposal of the medical staff. Dr. Bolam went on to say that the Hospitals Committee had interviewed the Minister of Pensions and obtained from him an assurance that in these arrangements made with voluntary hospitals, both directly and through the intermediary of the British Hospitals Association, the rates were intended to cover a certain amount which was to be set aside for the medical staff. The policy of the British Medical Association had been throughout that in face of the position created by the payment for inmates of hospitals which had hitherto been voluntary, there must be something in the nature of an acknowledgement for medical services. A number of voluntary hospitals were now accepting pensioners; county councils and other local bodies were making arrangements with voluntary hospitals to fulfil the duties which had been laid upon those authorities; it had been suggested that the cases which came into hospital under the Workmen's Compensation Act might possibly be assumed by the State as another burden, and yet, again, institutional accommodation for insured patients was shown to be increasingly necessary to a proper medical service under the Insurance Acts. Probably the great bulk of patients in institutions such as were represented in that conference would in no great length of time be chargeable to the State or to the local authorities for maintenance, and no longer to the charitable public. Upon the services which the medical staffs rendered it was extremely difficult to put a value. If they were chargeable at the fees obtaining in the open market, the sum total for attendance at the voluntary hospitals throughout the country would be prodigious. The Association had adopted the policy in the first instance of saying that there should be a payment, leaving the amount of the payment to be settled by experience and experiment. At the request of one of those present, Dr. Bolam proceeded to give a sketch of the position in Tasmania as it had been described to the Representative Meeting (SUPPLEMENT, July 10th, p. 38; see also p. 81 of this week's JOURNAL).

Dr. ASTLEY CLARKE (Leicester) said that there had been a departure from the position which obtained some years ago, when voluntary hospitals were charities and the staff rightly gave their services. While in 1902 or thereabouts the hospital expenditure in Leicester amounted to £10,000 or £11,000 a year, it was now £40,000. The increase in purely charitable subscriptions had not been anything like equal to the increase in hospital expenditure. The remainder of the income came largely from collections by working people, who in return for their penny a week demanded the attention of a hospital for all purposes. The only people out for philanthropy were the staff who gave their services. Speaking for himself, he did not want to be a salaried official of a hospital. What he wanted to see was the allocation by the hospital board of a percentage on their expenditure as an honorarium for the medical staff—not a percentage on the income, for one never knew what a hospital income was going to be.

Dr. NASON (Nuneaton) said that in the small hospital with which he was connected an arrangement obtained whereby patients whose economic condition was known to admit of it paid a certain amount to the hospital for maintenance, and a small fee was given to the surgeon or physician who treated them.

Dr. GORDON DILL, O.B.E. (Hove), said that the one department of practice which had hitherto been inarticulate was that of the staffs of voluntary hospitals. He suggested that the Association set up an organization of staffs of the whole of the hospitals of this country—teaching hospitals, county hospitals, and hospitals everywhere containing over, say, 200 beds. In this way they would get into a homogeneous whole the staffs of a hundred or more hospitals, and the organization could be perfected by electing automatically those members of the profession who in future went on to the hospital staffs. In this way it would be possible to elicit a general expression of opinion from the entire body of honorary officers.

Dr. EVANS (Lowestoft) said that there had been a number of meetings between the county medical officer of Suffolk and the practitioners of his area of North Suffolk, and at the last meeting they were told that the leading hospitals were receiving 10s. 6d. per case for operations on school children for tonsils and adenoids, and of this sum the medical staffs of the hospitals in question would take 10 per cent. This meant that the operator and anaesthetist would have one shilling or so per case to divide between them. If a protest were made, the local authorities, who hankered after the appointment of a whole-time official, would say that the amount received for the many cases of tonsils and adenoids which were dealt with in a year would justify them in making a whole-time appointment, and, indeed, that this would be the more economical course.

Dr. R. C. **Buist** (Dundee), who was asked to describe the position in Scotland, said that they were proceeding to organize a conference in which the subject would be raised, and in his own hospital the matter was under discussion with the management.

Mr. **McAdam Eccles** (London) thought that the word "adequate" was the rock upon which a good many ships would come to grief. He had been told by an official of the Ministry of Pensions that "adequate" payment was really this 25 per cent. over and above what it cost the hospital to maintain the patient. That was not quite the case. The Ministry of Pensions in its early days, after a considerable amount of bombardment, did state that there should be some monetary basis for remuneration. Then came two difficult questions: The first was whether the Ministry of Pensions should pay that sum to the governing body over and above what it cost the governing body to maintain the patients, or whether the governing body should apply to the Ministry for that sum. The second, whether the governing body, having received that per centage over and above the cost of maintenance, should hand it over to the staff; for at that time there was by no means a unanimous desire on the part of members of the honorary staffs of voluntary hospitals to receive anything at all. To-day there was much less opposition to the proposal on the part of the staffs. He added that this was not a mere question of money; it was a question of future status, and of the relation of hospital staffs to their respective governing bodies. That relationship up to the present had been very cordial, and, as a rule, the governing bodies were at one with the staffs on the matter at issue, and were willing to receive and to pay over this money.

Dr. L. A. **Parry** (Hove) was entirely against the idea of a new organization. He said the Association should keep this question in its own hands, and suggested that each Branch of the Association should call a meeting of the staffs of voluntary hospitals in its area in order to elicit opinion.

Dr. **Lockhart Stephens**, C.B.E. (Emsworth), said that patients seemed to be divided into two categories: those who were paid for out of State funds and those who were not. In his own district it was made clear that the members of the staff of the local cottage hospital were giving their services for the benefit of their poorer neighbours. Every patient was expected to pay the hospital according to his means, which were investigated. He believed that Labour, which to-day thought in terms of pence or shillings per hour, would support the profession in any reasonable requirement in the way of remuneration which it put forward. For example, he was able to show at a meeting in his district that three members of the profession in his country hospital had between them done 113 operations in the year, and on the assumption that each operation lasted an hour, had given in this respect alone fourteen working days, and the Labour men told them "they were mugs to do it."

Mr. **Albert Lucas** (Birmingham) said that the senior staffs were not out to receive payment. If the amount paid by the Ministry of Pensions did not suffice for the maintenance of the patient they would not receive any pay. But the Ministry did pay considerable sums for out-patients, who were seen by the members of the assistant staff, and these did receive a certain amount which was adequate for the work they did. Mr. Lucas went on to say that there had been an enormous redistribution of wealth in this country, and, without question, the working man was very much better off than before, and many of the newly rich had not learned to give. Unlike Dr. Lockhart Stephens, he had not found that the Labour party was very willing in his district to pay adequately for the work done at the charitable hospitals. With regard to future developments, he looked forward to them with a good deal of doubt. The voluntary system was practically dead, and the voluntary hospitals would have to undergo some great change. Either they would have to be supported by contributions from the working people or by some State or municipal subsidy. The staffs did not mind freely doing work which was for charity, but it was a different matter in the case of patients who were paid for at so much a head.

Mr. R. J. **Johnstone** (Belfast) warmly combated the statement that the voluntary system was dead. It had been the glory of English medicine. A large number of small voluntary hospitals were represented at that conference, and it was quite on the cards that the officers of those hospitals should be paid an honorarium, but in the case of teaching hospitals the position was entirely different. The position of surgeon or physician in a teaching hospital would be made difficult if he received payment for his services in the wards. As for pensioners, these should not be taken into general hospitals, but into special ones, and the staffs be paid for treating them.

Dr. **Lockhart Stephens** moved and Dr. **Ratcliffe** (Birmingham) seconded:

> That this meeting approves the action of the Hospitals Committee of the British Medical Association in regard to the remuneration of the staffs of voluntary hospitals for work done on behalf of State-aided patients, and promises its support in bringing the subject before the notice of the governing bodies of the voluntary hospitals of the country.

This was carried, with one dissentient. A rider was then proposed by Dr. **Astley Clarke** and seconded by Dr. **Sevestre** (both of Leicester).

> That the time is ripe for the payment of honorary staffs for all services rendered in voluntary institutions by way of an honorarium on a percentage basis on the expenses of the hospital.

Five hands were held up in favour of this resolution, which was lost by a large majority.

The proceedings concluded with a vote of thanks to the Chairman.

Meeting at Birmingham.

A **meeting** of the staffs of the voluntary hospitals in the area of the Birmingham Branch was held at the Medical Institute, Birmingham, on July 9th. Mr. **Albert Lucas**, F.R.C.S., was in the chair. Dr. G. C. **Anderson**, Deputy Medical Secretary, was present, and addressed the meeting, explaining the position of hospital staffs in relation to the treatment of State-aided and municipally aided patients. Dr. **Nason**, of Nuneaton, proposed the resolution:

> That this meeting approves the action of the Hospitals Committee of the British Medical Association in regard to the remuneration of the staffs of voluntary hospitals for work done on behalf of State aided patients, and promises its support in bringing the subject before the notice of the governing bodies of the voluntary hospitals of the country.

During the discussion which followed it was stated that remuneration was received for nearly all the work done for the State in the hospitals in Birmingham. The resolution was carried unanimously. A vote of thanks was tendered to Dr. Anderson for his address.

Cambridge and Huntingdon.

A **meeting** of members of the staffs of hospitals in the Cambridge and Huntingdon Branch area was held at Addenbrooke's Hospital, Cambridge, on July 9th. Fourteen representatives of the staffs of Huntingdon, Wisbech, Peterborough, and Cambridge hospitals attended. Mr. G. E. **Wherry** was asked to preside.

After discussion of the memorandum issued by the Hospitals Committee of the British Medical Association the meeting decided by a majority of 9 votes to 2 in favour of the principles enunciated in the memorandum, and also that each hospital staff should negotiate with the governing body concerned. The staff of Huntingdon Hospital was not in agreement with the principle of payment of the staffs of voluntary hospitals.

Meeting at Maidstone.

A **meeting** of members of the honorary staffs of hospitals in Kent was held under the auspices of the Kent Branch Council at the West Kent General Hospital on July 9th. The chair was taken by Dr. **Sutcliffe**, President of the Branch, and Dr. Raven of Broadstairs acted as honorary secretary to the meeting. The Chairman explained the reasons for calling the meeting and then asked Dr. Courtenay Lord, Assistant Medical Secretary, to elaborate the policy of the British Medical Association.

Dr. **Lord** explained the circular which had been sent out by the Hospitals Committee, and pointed out that so long as it was made clear to governing bodies of hospitals that a percentage of payments made in respect of persons whose treatment was paid for by the State or by public authorities, belonged by right to members of the staffs, there was no wish or desire on the part of the Association to insist that any individual should actually receive the money if such action were contrary to his inclination. It would be quite open to him to hand the money back to the hospital authority as a personal donation, but the principle must be established in the interests of those who were not in a position to forego their share of the payments.

An interesting discussion took place which showed that members of staffs of hospitals in the county generally were not only in agreement with the policy but were already carrying it out. Members from Folkestone, Rochester, Ashford, Beckenham, and other areas stated that they had already arranged with their governing bodies for payment to the staffs in respect of such work. Mr. Taunton of Chatham made the interesting statement that the Borstal Institution paid 5 guineas per case to the hospital when an operation was required for any of its inmates. It also paid a maintenance fee of 9s. a day to the hospital. The 5 guineas was the property of the honorary officer.

The meeting unanimously carried a resolution similar to the one passed at the Cambridge Conference, reported above.

OUTDOOR MEDICAL STAFF OF THE MINISTRY OF HEALTH.

As announced in the JOURNAL of March 20th, 1920, p. 407, the Minister of Health appointed a committee to assist him in the selection of suitable candidates for the post of medical officer of the Ministry of Health, for which applications were then invited.

Duties.

Each whole-time officer, it was then stated, will be stationed in the area in which he works. His duties will be partly clinical, partly administrative. The clinical duties will consist in examining insured persons referred to him by approved societies or doctors, in advising the societies and doctors on questions of incapacity for work, and in advising doctors on questions of diagnosis and treatment. The clinical duties will thus combine those of referee and consultant. For cases of special medical difficulty specialist advice as to diagnosis or treatment will be made available for the assistance of the medical officers. The administrative duties will include examining health insurance medical certificates, records, reports, and prescriptions, and making inquiries of insurance practitioners respecting any points arising on these, or arising out of the examination of insured persons. The medical officers will also make such other inquiries and take such action as the Ministry may from time to time require.

Remuneration.

The rate of remuneration will be £1,000 per annum, rising by annual increments of £50 to a maximum of £1,400 and no war bonus will be payable in addition thereto. Officers appointed to this scale will be established civil servants with the usual pension rights. Officers of the age of 50 years and upwards will not be established, but will receive a total remuneration fixed at £1,400 a year (non-pensionable), and in such cases the appointments will be for a limited term of years.

Selection Committee's Report.

The Committee of Selection, whose report has now been issued, consisted of:

Dr. T. W. Shore, Dean of the Medical School, St. Bartholomew's Hospital, *Chairman;* Dr. E. Collingwood Andrews, Consulting Medical Officer to the Hampstead Maternity Home; Sir Hamilton A. Ballance, K.B.E., C.B., Surgeon, Norfolk and Norwich Hospital (nominated by the Civil Service Commissioners). Dr. R. A. Bolam, O.B.E., Honorary Physician, Skin Department, Royal Infirmary, Newcastle-on Tyne, and Professor of Medical Jurisprudence, University of Durham; Dr. H. G. Dain, Chairman of the Birmingham Insurance Committee; Dr. Arthur J. Hall, Senior Physician, Sheffield Royal Hospital, and Professor of Medicine, University of Sheffield; Sir Walter Kinnear, K.B.E., Controller of National Health Insurance, Ministry of Health; Dr. E. J. Maclean, Senior Gynaecologist, Cardiff Infirmary, and Lecturer on Midwifery, University College, South Wales; and Dr. J. Smith Whitaker, Senior Medical Officer, Ministry of Health; with Dr. G. F. McCleary and Mr. W. T. Fitzgerald, of the Ministry of Health, as joint secretaries.

This committee reports that the total number of applications received was 1,325. Of these, 1,242 were in respect of English and 83 in respect of Welsh appointments (certain candidates applying under both heads). In considering the Welsh applications the committee had the assistance of Dr. Meredith Richards.

After careful consideration of the applications and testimonials of the candidates, 159 of those applying for English appointments were selected for interview, and 14 of those applying for Welsh appointments. The instructions printed on the form of application required each candidate to give the names of three persons able to speak from personal knowledge of his qualifications for these appointments. In the case of each candidate selected for interview these persons were communicated with before the interview, and the replies received were duly considered.

"We think it proper [the report continues] that you should be informed as to the considerations by which it has appeared to us that our judgement should be guided in the selection of candidates suitable for the discharge of the duties of these posts. We have carefully weighed, in regard to each candidate, the evidence of his qualifications in the following respects: (*a*) Medical degrees and diplomas, academic distinctions, and early clinical experience in resident appointments at hospitals. (*b*) General clinical experience—(i) in general practice, especially practice among the industrial population in England or Wales, and (ii) in other fields of medical practice, whether in civil life or as a medical officer of His Majesty's Forces. (*c*) Experience as a medical referee, whether in connexion with national insurance, workmen's compensation, the work of the Ministry of Pensions, or otherwise. (*d*) Experience of national health insurance administration, as a member of an Insurance Committee, or otherwise, and other administrative experience—for example, in public appointments or in military service. (*e*) Professional and public reputation in the district in which the candidate practised. (*f*) Personal characteristics, including presence, force of character, and tact.

"Certain candidates were pre-eminently suitable in some of the foregoing respects and some in others; and we have not attached preponderating weight to any particular set of considerations, but have viewed each candidate's qualifications on balance as a whole. We regard it generally as important that candidates should not be below 40 or above 55 years of age, but a few younger or older candidates were otherwise so exceptionally well qualified that we have not hesitated to include them among those recommended as suitable for appointment. In the case of the Welsh appointments we attached importance to a knowledge of the Welsh language.

"We submit for your consideration the enclosed list of names of fifty-five candidates suitable for appointment in England and names of eight candidates suitable for appointment in Wales."

Appointment of Whole-time Officers.

The Minister has decided, with the concurrence of the Treasury, that thirty whole-time officers should be appointed for England and three for Wales at the inception of the scheme.

After careful consideration of the recommendations of the Committee, the Minister has appointed (subject, in the case of officers eligible for establishment, to the usual Civil Service medical examination) the following Medical Officers:

England.

G. Ashton, Withington, Manchester.
S. A. Bontor, Great Berkhamstead.
T. L. Bunting, Scotswood-on-Tyne.
T. M. Carter, Westbury-on-Trym, Bristol.
W. Davidson, Bournemouth.
W. Duncan, Ashley Gardens, S.W.1.
J. Gray Duncanson, Hove.
G. W. Eustace, Arundel.
A. Heath, Harrogate.
A. Linnell, Towcester.
M. G. McElligott, Wigan.
W. Moir, Darwen.
D. G. Newton, Sheffield.
J. Orton, Coventry.
R. Paterson, Liverpool.
B. A. Richmond, Catford, S.E.
W. Rigby, Blackburn.
B. M. H. Rogers, Clifton, Bristol.
J. Dill Russell, East Finchley, N.
H. L. Rutter, Newcastle-on-Tyne.
E. W. Selby, Doncaster.
H. Sinigar, Southall, Middlx.
G. K. Smiley, Derby.
M. R. Taylor, Acton.
J. F. Walker, Southend-on-Sea.
H. A. Whitcombe, Formby, Liverpool.
E. H. Willock, Croydon.
C. R. Wood, Hove.
A. Young, Sheffield.

(*There is one vacancy to be filled.*)

Wales.

J. Evans, Bron Menai, Carnarvon.
D. N. Morgan, Gilfach Goch, near Bridgend.
T. R. Llewellyn, Penygraig, Glam.

For England it has also been decided to appoint four medical officers of higher grade, who will be designated divisional medical officers, and will superintend the work of the whole-time and part-time medical officers in the divisions assigned to them respectively:

Divisional Medical Officers.

R. E. Crosse, Nightingale Lane, S.W.
A. Fulton, Old Basford, Nottingham.
C. H. Milburn, Harrogate.
H. J. Neilson, Weybridge.

In Wales the senior medical officer of the Ministry for that country will discharge the functions, as regards the outdoor medical staff, which are discharged in England by the divisional medical officers.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

CONFERENCE OF HONORARY SECRETARIES.

THE Conference of Honorary Secretaries of Divisions and Branches was held in the Examination Halls, Cambridge, on June 30th. Dr. E. A. STARLING (Tunbridge Wells) took the chair, and eighty or more were present.

The MEDICAL SECRETARY introduced a discussion on topics of interest to Secretaries. The suggestions sent in for discussion, he said, might be collected under four heads: What is the ideal Division meeting? What, if any, are the duties of a Branch? How can we increase membership? And, How can we increase interest in Association work? His ideal Division meeting was one which had some kind of business to interest everybody. It combined in some way the medico-political, social, and scientific activities of the Association. Every Division was not, perhaps, in a position to hold scientific discussions, but it was always possible to get up discussions on common diseases. Many Division and Branch agendas were not as attractive as they might be, and more attention should be paid to the art of advertising the business of a meeting. One subject which should have adequate discussion in every Division was the Annual Report of Council. If it were better studied, Representative Meetings would be spared some futile discussions. At the beginning of the autumn sessions there was a perennial theme for discussion in the application locally of the resolutions which the Representative Meetings had passed. Another means of stimulating interest was to bring in occasionally a speaker from outside, either a British Medical Association lecturer or an invited guest. He would also suggest that the social side be cultivated, and that no member who was present at a Division meeting for the first time should be allowed to go out of the room without introductions. He suggested that Divisions should imitate Masonic lodges and "visit" each other. As for the duties of a Branch, a Branch as a rule could do better scientific work than a Division, simply because it had more material from which to draw, and more opportunity of making use of hospital consultants and teachers. Every Branch ought to have one of the British Medical Association lectures at least once a year. These lectures had been a great success, and he hoped would be developed very much in future. On the social side also the Branch was a very important unit of the Association, and another important part of its work was the co-ordination of the medico-political activities of the Divisions within its area. There were few Branches in which there were not serious discrepancies between the contract terms, for example, prevailing in different Divisions. A Branch ought to have two or three committees, similar to the central standing committees, which would see that the standards of practice prevailing in the Divisions were the same as far as possible. The best way to increase membership was to make the Division meetings so attractive, the social side so prominent, and the pressure so persistent that men would feel they could not afford to keep out of the Association. The position and influence of the Secretary was of great importance in this connexion. Every newcomer should be called upon by the Secretary or some member of the Executive. Another factor was the inauguration of various schemes for self help. This side had been very successfully developed in some Divisions, so that doctors were enabled to take a holiday, or get better in an illness without the worry which so often accompanied a locumtenent. Then Divisions and Branches should be kept well before the public. It was good business to cultivate the Press and to secure the interest of influential local people. If doctors outside the Association found that the local body was raising questions of medico-political importance they would know that it was a "live" body and would want to belong to it. After touching briefly on several other subjects, Dr. Cox referred, in conclusion, to the Intelligence Department, a new development from which much was hoped. It was at present making an index of information for use of the Office, much of which had not previously been co-ordinated, and was devoting much time to the [illegible] of our press activities.

The meeting being thrown open to general discussion, Dr. E. A. FISHER (Brighton) wished that the Association lectures contained less of theory and more of practice. He added that a series of clinical meetings in Brighton hospitals had been much appreciated by the Division, and was [illegible] that it was being repeated. Dr. [illegible] said [illegible] considered whether some form of amalgamation with other well-established local medical societies was possible. He did not agree with the last speaker that the Association's lecturers left practice alone. Nothing more practical could have been wished than Sir F. W. Mott's lecture at Plymouth. He was glad to record that a member of the Medico-Political Union had said to him, "An Association which can do what you are doing at Cambridge need never be afraid of anything that can be opposed to it." Mr. A. M. WEBBER (Nottingham) said that there was a good scientific society in Nottingham which afforded the Association a central meeting-place and co-operated in the matter of lectures. Dr. J. HUME (Perth) laid stress on the value of getting more publicity, and urged that doctors should seek membership of municipal bodies. Dr. MORTON ROBSON (Northamptonshire) thought that many Divisions covered too large an area. They were trying now in the Northampton Division to take the Association to the outskirts and to arrange for meetings on the borders of the Division. Dr. WALLACE HENRY described a country meeting of his Division, held about fifteen miles out of Leicester, to which ladies were invited and a programme provided for their entertainment. Dr. LOWE (Cleveland) said that one of the best means of increasing the membership had been the inauguration of schemes for carrying on the work of colleagues in their absence. These, beginning as arrangements between a few, developed into Divisional schemes. Dr. RATCLIFFE (Birmingham Central) also described an arrangement which obtained in the Birmingham area, where medical men formed a rota for holidays, and each acted for the other, charging him half-fees for what he did. He wished that Divisional annual meetings could be held in the autumn, so that the session could begin with them, and he asked for propaganda circulars to be supplied.

After some further discussion, the DEPUTY MEDICAL SECRETARY explained the position so far as the British Medical Association lectures were concerned. The arrangements for the lectures, Dr. Anderson said, were in the hands of the local honorary secretaries; it was for them to suggest the name of a lecturer and his subject. When the lecturer was written to from the head office he was always asked to deal with his subject in as practical a manner as he could. There was no list of approved lecturers, but he tried, in consultation with the Editor and the members of the Science Committee, to secure the most prominent men in the profession.

At the suggestion of the Organization Committee the best time for making the annual reports of Divisions and Branches was considered. After various points of view had been expressed, the CHAIRMAN explained that each Division had to furnish its annual report during January. This report went to the head office and to the Branch Secretary, who had to furnish his report by March 15th. Mr. RUSSELL COOMBE thought it might be possible to give the Division secretary a little longer than one month. On the matter being put to the vote of the Conference, a large number of hands were held up in favour of the continuance of the present arrangement and very few against.

Dr. MORTON MACKENZIE, Chairman of the Propaganda Subcommittee, brought forward the question of the personal canvassing of non-members, and in order to stimulate discussion proposed formally that some form of paid canvasser was desirable for work in the Divisions. Dr. A. E. LARKING (Buckinghamshire) advocated personal canvassing by the secretary, who might well be reimbursed for expenses on a little propaganda excursion. Dr. WALLACE HENRY did not think the appointment of a paid canvasser in most of the Divisions would be of the slightest use. The secretary was the best person. Since his demobilization in October last the membership in his Division had increased by 30 or 40 as a result of personal methods. Dr. A. T. JONES (North Glamorgan) said that in his Division they had gone through the list of non-members and drawn up local lists, and asked members in each locality to be responsible for a certain number of non-members. Mr. R. ALCOCK (North Staffordshire) suggested that the Council should approach the universities and examining bodies so that graduates could be brought into the Association immediately on qualification. Dr. BUIST (Dundee) said he had had experience of some methods which had worked well. One was to get from the secretary of the university the home addresses of all new graduates and send them to the head office. Dr. MORTON MACKENZIE explained that the Propaganda Subcommittee had taken steps to get a notice put up in every medical school and to establish touch with permanent members of the staff at each school. A series of propaganda leaflets had been drawn up during the last five years, and the attention of secretaries had often been called to them. On the motion suggesting employment of a paid canvasser being put to the vote, only one hand was held up in its support.

Other matters having been discussed, the proceedings concluded with a vote of thanks to the Chairman.

Meetings of Branches and Divisions.

MIDLAND BRANCH: HOLLAND DIVISION.

THE annual meeting of the Holland Division was held at Boston on May 28th, when Dr. WHITE was in the chair.

The following officers were elected:

Chairman: Dr. R. Tuxford (re-elected). *Vice-Chairman*: Dr. H. Witham (re-elected). *Honorary Secretary*: Dr. S. S. Rendall. *Representative on Branch Council*: Dr. H. G. White.

It was resolved unanimously to support the Association's recommendations with regard to the new scale for life insurance fees.

The following resolution was adopted, on the motion of Dr. PILCHER, seconded by Dr. SOUTH, and the Secretary was requested to forward a copy to the Holland County Council:

> Whereas, so far as the members present at the Holland Branch of the British Medical Association meeting can judge, the amount of venereal disease (syphilis) does not justify the foundation of a clinic on the ordinary scale at Boston; some arrangements which would allow a specialist in venereal disease to visit Boston once a week in rotation with other centres would be very desirable.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

THE members of the Branch met by the invitation of the officers of the Branch and the chairman of the Division at lunch on June 23rd, 1920, at Hereford, when the President (Dr. ROBINSON (Kidderminster) presided. The annual meeting was held at 3.15 p.m. at the General Hospital, Hereford, when Dr. Steed (Staunton-on-Wye) was elected president and Dr. Holbeche (Malvern) president-elect. Dr. Butler (Hereford) was re-elected hon. secretary and treasurer. After the special business of the meeting was concluded Dr. PARSONS (Birmingham) read an interesting paper, "Some causes of vomiting in children—diagnosis and treatment," dealing mostly with pyloric stasis and pyloric stenosis. A short discussion followed, after which members adjourned to a reception given at the Town Hall by the Mayor.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

MIDLAND BRANCH.—The Honorary Secretary, Mr. A. M. Webber, announces that the annual meeting of the Midland Branch will be held at the Guildhall, Lincoln (by kind permission of the Mayor), on Thursday, July 22nd, 1920, at 3 p.m. The President-elect, Dr. H. B. Willoughby Smith, will deliver his presidential address on "Appendicitis." The President-elect has kindly invited all members of the Branch coming from a distance to lunch at the Great Northern Hotel, Lincoln, at 1.15 p.m. Members desirous of availing themselves of this invitation are requested to notify Mr. J. J. Rainforth, F.R.C.S., 2, Lindum Road, Lincoln, before July 20th.

NORTH OF ENGLAND BRANCH.—The annual meeting of the North of England Branch will be held at the Grand Hotel, West Hartlepool, on Thursday, July 22nd, at 1.30 p.m. A motion that persons who, owing to increased wages, no longer come under the Insurance Act should be regarded as private patients will be submitted by the Branch Council. There will be a golf competition in the afternoon.

YORKSHIRE BRANCH.—The annual meeting of the Yorkshire Branch will be held at the General Infirmary, Leeds, on Wednesday, July 21st, 1920, at 3.30 p.m.

CORRESPONDENCE.

Goodwill of Panel Practices.

SIR,—With reference to the goodwill of a panel practice, there can be no doubt that the goodwill has up to the present been recognized, for large numbers of practices have changed hands, and one of the securities of the goodwill has been the panel list. There should therefore be some recognition of a panel list, as being the asset of the practitioner, which he or his executors can negotiate. That does not affect the rights of patients to change their doctor, for that has always obtained. The regulation that on a doctor's death the panel list automatically ceases is, in fact, not at all equitable, for the connexion is his, and does not belong to the State. And it is a vested interest, for the State has acquiesced in the sale of panel practices. I have just bought a panel practice after serving through the war, to find that the conditions are suddenly to be altered to the disadvantage of my dependants. Is this fair, just, or equitable? I don't think so. I suggest that permission should be given for the practice to be carried on by a locumtenent for, say, six months, allowing time for transfer as heretofore.—I am, etc.,

Barrowford, July 3rd. ALFRED E. SELLER.

The Social Side of the Annual Representative Meeting.

"An Old Representative" writes: There are always good reports of the business of the Representative Meeting, but very little is said of its social side, and the deficiency ought to be remedied, for the social side plays a great part in this the Parliament of the medical profession. Attendance at the Meeting quickly becomes a habit, and the "B.M.A. habit" deserves study. Wives have been known to deplore the development of the habit because it tends to affect the family holiday. A sure cure for this complaint is for the representative to bring his wife with him—she also will develop the habit. The habitué can quickly be spotted. He is fond of telling that he has never missed a Representative Meeting since the beginning or since Oxford or some other long past meeting, and you hear him towards the end of the meeting saying, "See you again next year." Now this habit *may* be due to a thirst for debate, or to sheer intellectual enjoyment of the reports of council and the other thrilling documents placed before the Meeting. But one cannot help suspecting that the social side has something to do with it, or how account for the dozens of good fellows who never say a word unless it be to move "that the question be now put"? It isn't that they *can't* talk. Not a bit of it. They are content to steep themselves in the Representative Meeting atmosphere and hear other fellows doing it—often nothing like so well as they could do it themselves. The Representative Meeting is a great place for the formation of friendships. There is an atmosphere of good-fellowship and common interest which is very conducive thereto, and there are many who would not for worlds miss their annual opportunity of meeting "good old —— and ——." Some of the best work for the Association is done in the intervals and in the evening when the members get together to exchange experiences and talk B.M.A. shop among other things. The Representatives' Dinner is a great function. No formality, sit where you like, which means that cheerful little coteries get together year after year. There are no set toasts, but somebody always discovers that we really can't break up without telling the Chairman, or Dr. Macdonald, or some other worker who has specially distinguished himself, what a jolly good fellow we think he is. And there is always a good word for the Staff, too, which the Staff beamingly accepts, and we have a succession of short really impromptu speeches flavoured with hearty good will for all concerned and a genuine affection for the Association. No better proof of the vitality of the Association can be got than by attending, one of these dinners and mixing with the men and women who, together with the secretaries and a few earnest spirits in every area, form the real working heart of the Association. The Association is evidently much more to them than a body for promoting the medical sciences and maintaining the interests of the profession. It is a freemasonry, an object in life, a hobby. And then the talks in the hotel later on. The stories, the jokes, the comparisons of experience, the criticisms! This part of the programme seemed this year to be a little under the depressing influence of the Control Board. Some of the old hands towards midnight found it difficult at times to find anyone willing to sit up. But we may hope for the best, and trust that at Newcastle, where perhaps we may find a larger rendezvous for the evening hours, it will be found that the ability of the Representatives to "keep it up" to the small hours is unimpaired. Anyhow, Cambridge was a triumphant success and the Representative Meeting habitués are already laying their plans for next year.

Vaccination Fees.

"G." writes: Two letters in the SUPPLEMENT of June 19th interest me very much. The raising of fees in York is a good step in the right direction, but while York fixes 7s. 6d. as the fee for vaccination, Glasgow asks only 2s. 6d. I practise within fifty miles of Glasgow, and here we have also free vaccination schemes under two Authorities, the County and Burgh, and both have generously offered 1s. 6d. per head for each vaccination—panel patients being excluded in both instances. What would the medical practitioners of York, or even Glasgow, say to this? The local branch is endeavouring to get the fee raised to 2s. 6d. for the County—they have already succeeded in doing so in the county town where the fee was also originally 1s. 6d.—but in this burgh my colleague and myself are endeavouring to give battle to the authorities both to have the fee raised to 2s. 6d. and on the question of panel patients, as we were asked in the Town Clerk's letter to perform "the vaccination of any persons in the burgh who apply to you." Your Glasgow letter in one part states "however, the convenor of the Health Committee frankly admitted that had he known the state of affairs he would have put different proposals before the Corporation." It appears to me that his expert adviser on the matter was the M.O.H., from whom he should have known the state of affairs. Here, I have been told that the local M.O.H. recommended the fee of 1s. 6d.. I would suggest, Sir, that Medical Officers of Health (who on the whole are a well paid class) might take more interest in their medical brethren when recommending fees to their authorities for preventive work done by general practitioners—to do so, to say the least, would only be a *quid pro quo*, considering the efforts we, as represented by the Association, are making to see that they are well paid. At the same time this is a matter affecting the greater part of Scotland at present, and it might with advantage to all practitioners be approached by the head quarters of the Association.

LONDON PANEL COMMITTEE.

AT its meeting on May 25th the London Panel Committee appointed certain representatives to undertake preliminary conferences with actuaries with a view to setting up, in association with the Insurance Acts Committee of the British Medical Association, a pension scheme for insurance practitioners in substitution for the one brought forward last year by the Panel Committee.

The Committee is taking steps with a view to submitting a case to counsel with regard to the position of assistants employed by practitioners on the panel. During last month the Insurance Committee consented to applications from four practitioners for permission to employ a permanent assistant, subject to the name of such assistant being included in the medical list.

The Committee discussed at length a motion by Dr. C. L. BATTESON that decisions as to what constituted a breach of professional conduct did not fall within the competence of an Insurance Committee, and that all questions raising such points should be submitted to the Local Medical Committee of the area. Ultimately it was agreed to proceed to the next business.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: The following Surgeon Captains have been promoted to the rank of Surgeon Rear Admiral: W. J. Colborne, C.B., J. H. Stenhouse, G. T. Collingwood, C.B., M.V.O. Surgeon Captains: A. Gaskell, C.B., O.B.E., to the *Pembroke*, for R.N. Hospital, Chatham; M. L. B. Rodd, O.B.E., and J. F. Hall, C.M.G., to the *Victory*, for R.N. Hospital, Haslar; E. J. Finch, C.M.G., to the *Victory*, for R.N. Barracks, Portsmouth; E. S. Tuck, to the *Victory*, for R.M. Division, Portsmouth; A. Maclean, D.S.O., to the *Cormorant*, additional, for Royal Hospital, Gibraltar; E. Sutton, C.M.G., to D.D.G. Medical Department, Admiralty. Surgeon Commanders: S. H. Facey, to the *Commonwealth*; B. P. Pick, to the *Resolution*; E. C. Sawdy, to the *Victory*, for R.N. Hospital, Portland; G. Gibson, to the *Indus*; K. H. Mole, to the *Royal Arthur*; H. J. Chater and R. W. B. Hall to the *President*, additional, for temporary service at Medical Department, and as assistant to M.D.G.; E. R. Townsend to the *Dolphin*.

ARMY MEDICAL SERVICE.

Major-General S. Macdonald, C.B., C.M.G., K.H.P., retires on retired pay.

ROYAL ARMY MEDICAL CORPS.

Major W. F. H. Vaughan is placed on the half-pay list on account of ill health contracted on active service.

Temporary Captain J. A. Cowan to be Lieutenant and to be temporary Captain, December 20th, 1916, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below A. Rodd.

To be Captains, but not to reckon for pay or allowances prior to June 1st, 1920:—Captains from Special Reserve: R. D. Cameron, M.C., January 24th, 1920, with precedence next below G. B. Wild; J. A. Nicholson, M.C., from January 25th, 1920, with precedence next below J. Bennet; J. A. C. Kidd, March 22nd, 1920, with precedence next below D. R. Hennessy; J. Bennet, January 24th, 1920, with precedence next below W. J. F. Craig; C. Armstrong, March 19th, 1918, with precedence next below L. J. Sheil; N. Cameron, April 7th, 1918, with precedence next below G. P. Kidd; J. Cullenan, January 1st, 1920, with precedence next below T. S. Law; W. H. Dye, February 7th, 1920, with precedence next below W. D. Whamond; temporary Captains H. L. C. Noel, September 9th, 1918, with precedence next below E. M. Townsend; P. G. Tuohy, December 1st, 1918, with precedence next below R. N. Porritt; J. M. Macfie, M.C., February 2nd, 1919, with precedence next below R. A. Mansell; H. A. Boyle, August 16th, 1919, with precedence next below T. E. B. Beatty; R. W. Chapman, September 14th, 1919, with precedence next below A. A. B. Scott; G. B. Wild, January 18th, 1920, with precedence next below G. Moulson; A. W. Dennis, February 20th, 1918, with precedence next below C. W. Sparks; G. Fleming, May 15th, 1919, with precedence next below C. L. Emmerson; K. M. Nelson, M.C., with precedence next below C. G. G. Keane.

The notification in the *London Gazette* of June 18th, 1919, regarding temporary Lieutenant B. F. Howlett is cancelled.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Fleet Surgeon A. W. Iredell (R.N.) is granted a temporary commission as Lieutenant-Colonel, Grade (A), October 1st, 1918, with seniority April 1st, 1918, and to receive pay allowances as Major, Grade (A) for period October 1st, 1918, to May 15th, 1919.

The notifications in the *London Gazette* of November 26th, 1918, February 7th, 1919, and June 6th, 1919, concerning A. W. Iredell (Staff Surgeon, R.N.) are cancelled.

Transferred to unemployed list: Captains C. F. Eminson (April 2nd, substituted for notification in the *London Gazette*, April 23rd), A. A. Wilkinson (February 27th, 1919, substituted for notification in the *London Gazette*, April 1st, 1919), M. Hocken, M. C. Breese, H. T. Prys-Jones.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain J. R. C. Mackintosh relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

Captain W. F. McLean, M.C., relinquishes his commission and is granted the rank of Lieutenant-Colonel.

Captain F. S. Cook relinquishes his commission and retains the rank of Captain April 30th, 1920 (substituted for notification in the *London Gazette*, June 21st, 1920).

Captain W. Burrows relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Colonel Sir G. T. Beatson, K.C.B., K.B.E., V.D., late A.D.M.S., Lowland Division, T.F., to be Honorary Colonel for the R.A.M.C. units of the Lowland Division Territorial Army.

To be D.A.D.M.S. to the Divisions shown against their names: Major F. S. [illegible], T.D., Highland Division; Major (Brevet Lieut.-Colonel) R. A. [illegible], T.D., Lowland Division; Major C. J. Martin, Southern Division; Major J. Ward, Home Counties Division.

Major A. W. Nuthall resigns his commission, and retains the rank of Major.

Captains C. Helm, D.S.O., M.C., R.A.M.C., and J. Huggins, R.A.M.C., to be Adjutants of a School of Instruction.

Major (Brevet Lieut.-Colonel) A. B. Harris, T.D., resigns his commission and retains his rank with permission to wear the prescribed uniform.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

21 Wed. Yorkshire Branch, Annual Meeting, General Infirmary, Leeds, 3.30 p.m.

22 Thur. Midland Branch, Annual Meeting, Guildhall, Lincoln, 3 p.m.
North of England Branch, Annual Meeting, Grand Hotel, West Hartlepool, 1.30 p.m.

AUGUST.

6 Fri. East York and North Lincoln Branch, Annual Meeting Royal Infirmary, Hull, 4 p.m.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL, MEDICAL UNIT.—Tues., 2 p.m., Dr. Riddoch: Cerebellar Functional Disorders. Wed., 2 p.m., Dr. Thompson: Cerebellar Disease. Surgical Unit, Wed., 4 p.m., Mr. Frank Kidd: Coli Infection of Kidney.

MANCHESTER FRENCH HOSPITAL.—Thurs., 4.30 p.m., Dr. A. C. Magian: Chronic Uterine Complaints.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Mon., 10.30 a.m., Mr. J. H. Evans: Cystoscopy; 11.45 a.m., Dr. Whiting: Graphic Method in Heart Disease; 2 p.m., Dr. Sundell: Ductless Glands; 4.30 p.m., Lecture: Abdominal Pain, Dr. R. Hutchison. Tues., 10.30 a.m., Mr. Benians: Blood Changes; 11.45 a.m., Mr. N. Fleming: Eye Injuries; 2 p.m., Dr. Leslie: Lung Disease; 4.30 p.m., Lecture: Endocrinous Glands, Dr. Leslie. Wed., 10.30 a.m., Dr. Alexander: Investigation of Dyspepsia; 11.45 a.m., Mr. Carson: Abdominal After-treatment; 2 p.m., Mr. J. H. Evans: Diseases of Breast; 4.30 p.m., Lecture: Hysteria, Dr. A. F. Hurst. Thurs., 10.30 a.m., Mr. Hayton: Laryngoscopy and Rhinoscopy; 11.45 a.m., Mr. N. Fleming: Refraction; 2 p.m., Dr. Metcalfe: X Rays in Lupus; 4.30 p.m., Consultations. Fri., 10.30 a.m., Mr. Benians: Exudate in Gonorrhoea; 11.45 a.m., Dr. Whiting: Graphic Method in Heart Disease; 2 p.m., Dr. Leslie: Fallacies in Auscultation; 4.30 p.m., Lecture: Plastic Facial Surgery in Civil Conditions, Mr. H. D. Gillies. Sat., 11 a.m., Dr. Macarthur (at L.C.C. Mental Hospital, New Southgate): General Paralysis.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient Clinics and Operations. Mon., 2 p.m., Mr. Donald Armour: Operations; 2.30 p.m., Dr. Saunders: Wards. Tues., 10 a.m., Dr. Robinson: Gynaecological Operations; 2.30 p.m., Mr. Tyrrell Gray: Operations. Wed., 2 p.m., Mr. Armour: Wards; 2 p.m., Mr. Addison: Operations. Thurs., 2 p.m., Mr. Armour: Operations; 2.30 p.m., Dr. Arthur Saunders: Wards. Fri., 10 a.m., Dr. Robinson: Gynaecological Operations; 2.30 p.m., Mr. Tyrrell Gray: Operations.

APPOINTMENTS.

ALDERSON, G. G., F.R.C.S., Honorary Surgeon of the Warneford General Hospital, Leamington Spa, vice Bernard Rice, M.D., retired.

BRYAN, C. W. G., *M.C.*, F.R.C.S., Surgeon in Charge of Out-patients (additional) and in Charge of the Orthopaedic Department, St. Mary's Hospital, Paddington, W.

HOLMES, A. Hillyard, M.D., Honorary Physician to Ancoats Hospital, Manchester.

WHITLEY, W. F. J., M.D.Edin., D.P.H.Oxf., County Medical Officer for Northumberland.

WILDMAN, W. Stanley, F.R.C.S.Eng., Honorary Surgeon to the Rotherham Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

GOFFE.—On July 9th, at 10, High Street, Kingston-on-Thames, to L. G. Leopold Goffe, M.D., B.S.Lond., and Edna M. Goffe, M.B., B.S.Lond. (*née* Powell), a son.

ROBERTS.—At Cunningham House, Uxbridge Road, W.12, on July 9th, to the wife (*née* Dorothy M. Hardy) of Dr. A. B. Roberts, a daughter.

MARRIAGE.

VICK—NEVILLE.—On June 30th, at St. Martin's-in-the-Fields, R. M. Vick, O.B.E., F.R.C.S.Eng., of the Warden's House, St. Bartholomew's Hospital, to Jane, eldest daughter of M. K. Neville, Esq., 25, Eccleston Square, S.W.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 24TH, 1920.

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British Medical Association.

CURRENT NOTES.

The Research Scholarships and Grants of the British Medical Association.

GRANTS, known as the Science Grants of the British Medical Association, are made by the Council on the recommendation of the Science Committee, for the assistance of research into the causation, treatment, and prevention of disease. Preference is given, other things being equal, to applicants who propose as subjects for investigation problems directly relating to practical medicine. Besides these grants, and the Stewart and Middlemore Prizes, and the Ernest Hart Memorial Scholarship, three ordinary scholarships are awarded each year by the Council to candidates recommended by the Science Committee as qualified to undertake research into some subject relating to the causation, treatment, or prevention of disease. The awards of the various grants and scholarships are subject to the conditions published in the Handbook of the Association.

Research Scholarships.

The Council, at its meeting on June 28th at Cambridge, made the following appointments to ordinary research scholarships:

Arthur Compton, M.B. (R.U.I.), D.Sc., for a second year, in order to continue his researches relating to cellular enzymes (especially blood and tissue ferments), with particular reference to the problem of cancer and other diseases.

Reginald Heathcote, M.D.Oxon., for continuation of the work on squills, at present engaged in jointly with Professor J. A. Gunn, and investigations on the active principles of lilac seed.

Sydney William Frank Underhill, M.B.Oxon., for investigations into the circulation through the lungs, with special reference to lung collapse and to cyanosis in man in diseases of the respiratory system.

Science Grants.

During the period of the war a very large number of the researches which would normally have been carried out fell into abeyance, and in consequence the sum awarded by the Council in respect of grants for research work was comparatively small. The applications received for the award of grants for the period 1920–21 indicate clearly that with the return of more normal conditions research activities are once more being resumed. As the subjects for research deal with investigations of great medical interest and importance, the Science Committee advised the Council that the applicants should be assisted as far as possible in their work, even if the normal aggregate sum stated in the regulations were exceeded. The following grants were approved by the Council on June 28th:

Renewed Grants.—Alfred J. Clark, M.D.Cantab., £20, to continue investigations upon the modification of the activity of the isolated heart by alterations in composition of the perfusion fluid, with special reference to the effects of lack of oxygen. J. Strickland Goodall, M.B.Lond., F.R.S., £30, for continuance of investigation on arterio-sclerosis in young men. R. T. Leiper, M.D., D.Sc.Glasg., £50, to continue the compilation of a bibliographical index to the periodical literature in medicine and auxiliary sciences in the libraries of public and university institutions.

New Grants.—F. G. Cawston, M.D.Cantab., £85, for research into the treatment of bilharzia cases and allied conditions, with special reference to drugs less toxic than tartar emetic in solution. A. S. Leyton, M.D.Cantab., formerly professor of pathology in the University of Leeds, and Helen Gertrude Leyton, M.D.Birm., late deputy professor, £25, for a further inquiry into the relation of streptothrices to new growths, and into the curative action of vaccine on chronic inflammations of nephritis. Douglas A. Miller, M.D.Edin., £30, for experimental investigations into the cause of accidental haemorrhage and its relationship to the toxaemias of pregnancy. E. P. Poulton, M.D.Oxon., £30, for investigations into the causes of dyspnoea in disease, particularly by analysis of the arterial blood. J. G. Priestley, M.D.Oxon., £50, for research on the regulation of excretion by the kidneys. William Clark Souter, M.D.Aberd., £30, for investigation into the incidence and importance of the prevention of industrial injuries to the eye, chiefly in granite and metal workers.

Women Doctors and War Service.

The Income Tax Act of 1918 made certain concessions in the rate of income tax paid by those who had undertaken whole-time contract work with the army or navy, presumably as some compensation for loss of practice. The governing clause was to the effect that concessions should be given to those who had performed work of a naval or military character and were paid out of money provided by Parliament—a vague expression which has been productive of a great diversity of rulings as to who is eligible and who is not. For instance, the Commissioners of Inland Revenue have ruled that women doctors attending female auxiliary units at home are not entitled to the concession, but that those who did the same work at the base in France are entitled to it; they have, in fact, received it. Furthermore, women doctors, if attending soldiers in home hospitals, are allowed the rebate. Medical men holding no contract at all, but who attended V.A.D. hospitals as part of their ordinary avocation, are held to be eligible. It is not easy to reconcile these rulings. The Association feels that the women doctors referred to have been very unfairly treated, and has arranged that a question shall be asked on the subject in the House of Commons. If the reply is unsatisfactory, legal advice will be taken.

Motor Cars and Left-hand Steering.

The Association is watching the interests of doctors who drive cars with left-hand steering. Whether such cars are or are not a public danger is not a medical question, but one that can be settled by experts. Representations have been made to the Ministry of Transport that, in the event of a decision to abolish left-hand steering in this country, doctors who bought cars of this type, not through choice but because they were practically compelled to do so, should be allowed to run such cars until they need replacement.

Motor Car Taxation.

The resolution of the Annual Representative Meeting, 1920, affirming its conviction that the fairest way to tax motor locomotion would be by a tax on motor spirit was conveyed to the Chancellor of the Exchequer and to the Minister of Transport. The attention of Sir W. Joynson Hicks, Bt., M.P., was also drawn to the resolution, with the result that he invited the British Medical Association to take part in a deputation to the Minister of Transport upon the question of motor car taxation. This took place at the House of Commons on Monday, July 19th, when the Association was represented by Mr. E. B. Turner (Chairman of the Medico-Political Committee), and Dr. G. C. Anderson, Deputy Medical Secretary. The deputation was representative of the motor industry of the country, and was chiefly concerned in proving to the Minister that the industry of the country was in favour of a spirit tax of a flat rate of 4½d. per gallon as against the Government's proposed horse-power tax which it was gathered the Minister had stated in Parliament to be approved by the motor industry. If the Minister should be prevailed upon to substitute the spirit tax, it is understood that the present rebates to doctors would not continue. The Minister undertook to consider the facts and figures placed before him, and stated that provided the tax produced the amount which was necessary—namely, 8¼ to 8½ millions net—it was a matter of indifference to him how it was levied.

The list of whole-time officers appointed for England, which was supplied to us by the Ministry of Health and published in last week's SUPPLEMENT at page 45, contained the name of Dr. J. F. Walker, of Southend-on-Sea, who is Honorary Secretary of the South Essex Division of the British Medical Association, and representative of that Division in the Representative Body and on the Essex Branch Council. We are asked by Dr. Walker to state that he has withdrawn from this appointment under the Ministry of Health.

HONORARY STAFFS OF HOSPITALS AND TREATMENT OF STATE-SUPPORTED PATIENTS.

IN the SUPPLEMENT last week, at p. 43, a report was given of the Conference held at Cambridge during the Annual Meeting of the British Medical Association, to consider the question of honorary staffs of hospitals and the treatment of State-supported patients. After full discussion, the following resolution was carried with one dissentient:

> That this meeting approves the action of the Hospitals Committee of the British Medical Association in regard to the remuneration of the staffs of voluntary hospitals for work done on behalf of State-aided patients, and promises its support in bringing the subject before the notice of the governing bodies of the voluntary hospitals of the country.

Brief reports were also given of meetings of the honorary staffs of hospitals held at Birmingham and at Maidstone, and of the meeting of hospital staffs in the Cambridge and Huntingdon Branch area held at Addenbrooke's Hospital.

CONFERENCE OF REPRESENTATIVES OF HOSPITAL STAFFS IN SCOTLAND.

The Hospitals Subcommittee of the Scottish Committee has arranged a conference of representatives of hospital staffs to be held in the North British Station Hotel, Edinburgh, on Thursday, July 29th, at 2.30 p.m. The staffs of all general hospitals with over 100 beds have been invited to send representatives, and the Branches have been asked to nominate representatives of the smaller and the special hospitals. The conference is a preliminary one, to consider the question of payment of staffs of voluntary hospitals, and another meeting is to be held in the autumn, at which the final views of the staffs may be expressed, and, it is hoped, uniformity of action in this matter secured. Other questions of importance will also be discussed.

READING.

At a meeting of the medical staff of the Royal Berkshire Hospital, Reading, held on July 13th, the following resolution was passed:

> That while the medical staff is prepared to render voluntary service to all necessitous patients at the hospital, it declares its acceptance of the principle that in the case of State-maintained patients and those sent by local authorities for whom payment is made to the hospital an adequate remuneration should be paid to the staff, but that such remuneration should in no way be allowed to interfere with the status or terms of appointment of the staff.

SUSSEX.

On the invitation of the Sussex Branch Council, a conference of the members of the medical and surgical staffs of all the voluntary hospitals in Sussex was held at the Brighton and Hove Dispensary, Brighton, on July 8th, 1920. The President of the Branch opened the proceedings with an address explanatory of the recently issued memorandum of the Hospitals Committee, and the Honorary Secretary of the Brighton Division reported the discussion which had taken place at the Cambridge meeting. The views of all the larger hospitals in the county were put before the conference by members of the various staffs, and the following resolution was passed *nem. con.*:

> That for all work undertaken at voluntary hospitals for soldiers and sailors, whether discharged or not, for any disease or injury connected with the war, the medical staffs should be adequately remunerated. In any case, the remuneration should represent an addition of not less than 25 per cent. to the cost of maintenance of in-patients and not less than 25 per cent. of the ascertained cost per patient per attendance for out patients, the additional sum to be placed at the disposal of the medical staff; that in the case of special clinics—for example, aural and ophthalmic—the fee payable to the medical practitioner should not be less than the fee payable by the Ministry of Pensions for identical or similar services—namely, £2 2s. per session.

The following resolution was then proposed:

> That every hospital staff be requested to take action to secure the acceptance of the above resolution by the governing body of its hospital and the acceptance of the principle of payment of the staff for work done at the instance of a department of the State or a local authority, by the department or authority concerned.

A member of the staff of the Royal West Sussex Hospital intimated the impossibility of the medical staff receiving any remuneration for the treatment of tuberculous cases inasmuch as the hospital was receiving from the Insurance Committee less than the cost for maintenance of these cases. Two emphatic speeches in opposition to the resolution were made, but it was then carried by a large majority.

LANCASHIRE AND CHESHIRE.

A conference of the honorary staffs of the voluntary hospitals was held at the Liverpool Medical Institution on July 8th, to discuss the Memorandum of the Hospitals Committee of the British Medical Association, and to arrange for simultaneous action in approaching the governing bodies of the hospitals in reference to payment for the treatment of pensioners. Fifteen hospitals were represented, including the principal infirmaries of Manchester and Liverpool. After full discussion, the following resolution was unanimously passed:

> That this meeting of members of the staffs of voluntary hospitals considers that the services of the profession should not be given gratuitously to patients for whose treatment in such hospitals the State or other public body is responsible, and *as regards pensioners* recommends each hospital staff to notify its board of management that it provisionally agrees to accept as the remuneration of the honorary staff 20 per cent. of the gross amount paid by the State for maintenance and treatment of such persons.

YORK.

A meeting of the medical staff of the York County Hospital has been held, when the following resolution was passed:

> That for all work for sailors and soldiers, whether discharged or not, for any diseases or injuries connected with the war, undertaken at voluntary hospitals, the medical staffs should be adequately remunerated. In any case the remuneration should represent an addition of not less than 25 per cent. to the cost of maintenance of in-patients and 50 per cent. of the ascertained cost per patient per attendance for out patients (including special clinics).

It is to be noted that the foregoing statement of remuneration makes no provision for the remuneration of honorary anaesthetists.

This resolution is to be brought before the governing body of the hospital.

Meetings of Branches and Divisions.

EDINBURGH BRANCH.

THE annual meeting of the Edinburgh Branch was held in the Hall of the Royal College of Surgeons on June 18th. Tea was served before business commenced. The chair was taken by Lieut. Colonel KEAY, President.

The report of the Branch Council and the annual report of the Branch for 1919 were submitted and approved. A gratifying increase from 367 to 404 in the membership was reported; and the meeting received with satisfaction the report of the successful resumption after the war of the winter clinical meeting and dinner.

The HONORARY TREASURER gave his annual financial statement, and was cordially thanked for his services.

The following office-bearers for 1920-21, as nominated by the Branch Council, were unanimously elected:

> *President*: Dr. J. J. Graham Brown. *President-elect*: Dr. William Stewart. *Vice-Presidents*: Dr. John Stewart Muir, Dr. George Mackay. *Honorary Treasurer*: Dr. Robert Thin. *Honorary Secretaries*: Dr. John Stevens, Dr. John Eason.

Dr. GRAHAM BROWN then took the chair.

On the motion of Dr. GEORGE MACKAY, a cordial vote of thanks was carried with acclamation to Lieut. Colonel Keay for his valuable services as President during the past year.

The re-election of Dr. John Stevens as representative of the Edinburgh and Fife Branches on the Council of the ASSOCIATION was reported.

Dr. R. W. Craig, Pathhead, Ford, was elected to fill the annual vacancy on the Board of Management of the Queen Mary Nursing Home.

Scottish Committee.—The proposed alteration in the reference to this Committee, increasing its powers of dealing with matters concerning Scotland, was explained. The proposed alteration in the constitution of the Committee was also reported on, whereby in addition to the four *ex officio* members, the six members elected to represent Scotland on the Council of the Association and those appointed by co-option representatives, will be directly elected annually by the members in the Scottish Divisions arranged in five groups, each group electing one representative for every completed 150 members.

With regard to the Annual and Supplementary Reports of Council, the meeting noted with satisfaction that the Middlemore prize had been awarded to Dr. H. M. Traquair (Edinburgh). On the motion of Dr. JAMES RITCHIE, seconded by Dr. GEORGE MACKAY, it was resolved that it would be prejudicial to the interests of the Association to increase the annual subscription beyond £2 10s.

The letter and memorandum received from the Medical Secretary with regard to the critical position of the staffs of voluntary hospitals was considered, and it was resolved, on the motion of Dr. DREVER, seconded by Dr. RITCHIE, to authorize the president and secretaries to determine with reference to calling a conference of representatives of hospital staffs after this had been advised by the Scottish Committee.

The subcommittee previously appointed to revise the Branch rules was reappointed, and a cordial vote of thanks was passed to the Royal College of Surgeons for granting the hospitality of their hall.

DORSET AND WEST HANTS BRANCH.

THE summer meeting of the Dorset and West Hants Branch was held in the Hall of Cranborne Manor by kind permission of the Marquis of Salisbury, on July 14th. Dr. P. A. Ross opened a discussion on "The etiology and treatment of Graves's disease." Luncheon was provided at the Fleur de Lys Hotel. Dr. GIRLING gave an interesting sketch of the history of the ancient Manor House, and then conducted the members and guests through the same, after which they partook of tea at his kind invitation. A most enjoyable afternoon terminated by a visit to the Church of SS. Mary and Bartholomew, founded about the year 980.

OXFORD AND READING BRANCH.

THE annual meeting of the Branch was held at Newbury on July 6th. The following officers were elected:

President: Dr. A. Edge. *President-elect:* Dr. W. Collier. *Secretary and Treasurer:* Dr. E. W. Squire.

The following resolutions were adopted:

That the 1921 annual meeting be held at Maidenhead.

That any social gatherings are best organized by the Divisions, not the Branch, owing to the great distances to be covered.

That the ethical rules for a Branch be adopted.

The consideration of the organization rules for a Branch was postponed till the next meeting.

SOUTH-WESTERN BRANCH.

THE report of the Branch Council for 1919–20, submitted to the annual meeting, deals with a period during which every effort has been made to resume the normal activities of the Branch, which were of necessity in a state of partial suspension during the years of the war. In the past year much useful work has been done within the Branch area in the way of organizing and unifying the mass of opinion of the profession and initiating machinery for its effective local expression. In this essential work, the report continues, it has been recognized throughout by the Association that if decisions were to be of real value the whole profession must be included. In order to conform for convenience of working with the administrative areas to be adopted by the Ministry of Health, meetings of the profession in the administrative areas of Exeter, Plymouth, and of Devon County, have been held for the purpose of constituting consultative bodies representative of the profession in each of these areas ready to act in an advisory capacity if called upon by the Ministry of Health. In the case of the Devon County area the election of the consultative body was carried out by division of the area into constituencies each of which elected its member by postal vote, and as the area involved included part or the whole of the areas of several Divisions of the Association, the election was carried out by the Branch. On reporting to the Ministry what had been done, the methods of procedure were approved, and the several consultative bodies have met and are now recognized by the Ministry of Health, and are fully constituted as Local Medical Committees. Further, in cases in which no special funds are raised for the purpose, the Association is at present defraying the clerical and printing expenses incurred in the administration of these committees.

In view of the increased cost of living and depreciation of money value the question of remuneration in various departments of medical work has of necessity been frequently under consideration. At meetings of the whole profession of various areas within this Branch held at the beginning of the present Association year, resolutions were adopted that fees be increased by 50 per cent. on the pre-war basis, it being recognized that this is only a very rough rule for guidance. Further, it has quite recently been found necessary to make a stand for adequate remuneration in the appointment of a certain whole-time medical officer under a local authority within the area of the Branch, this matter being as yet unsettled.

The membership of the Branch for the previous year was 378, and the last membership record was 426, showing an increase of 48 during the past year.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST YORK AND NORTH LINCOLN BRANCH.—The annual meeting of the East York and North Lincoln Branch will be held within the Board Rooms of the Royal Infirmary, Hull, on Friday, August 6th, at 4 p.m.

INSURANCE.

LOCAL MEDICAL AND PANEL COMMITTEES.

COUNTY OF LONDON.

AT the meeting of the London Panel Committee on June 22nd a letter was read from the solicitors to the London and Counties Medical Protection Society advising the Panel Committee not to agree to the proposal of the Insurance Committee that assistants should be required to apply for inclusion in the medical list. It was agreed that the Insurance Committee should be asked to receive a deputation in regard to the matter. A specific recommendation that the Committee should not agree to the proposal that an assistant be required to apply for inclusion in the list was waived.

The Committee agreed to inform the Insurance Committee that in its opinion applications from three practitioners for exemption from liability to attend emergency night calls should be granted. The ground of the application in two cases was weak health (in the second case brought on by war service), and in the other advancing years.

This being the last meeting of the present Committee, a hearty vote of thanks for his conduct of the chair was accorded to Dr. H. J. Cardale, and to the chairmen of subcommittees and the other honorary officers.

BLACKPOOL.

At a meeting of the Blackpool Insurance Committee on July 5th the question of doctors' consulting hours came up for consideration in connexion with a resolution passed by the Medical Benefits Subcommittee on June 28th, the effect of which, if put in force, would be to oblige three panel practitioners who at present had no evening surgery hours to open in the evening.

Dr. Barton moved to refer the matter back, contending that doctors should be given a free hand as far as possible in making their own arrangements; in this way the best work would result, and in the long run the insured person would gain. Mr. Boothroyd, chemist, seconded.

Opposition came from the approved society members of the committee, who contended that the insured persons were being put to great inconvenience.

Dr. Hodgson, in supporting the motion, pointed out that in the case of two of the doctors concerned, the present arrangements had been in existence for two years, and no complaints of hardships had been received from their panel patients.

Before the motion was put, Dr. Barton as mover claimed the right of reply, but the Chairman ruled him out of order. Dr. Barton protested that at an earlier stage of the debate the Chairman had stated that a right of reply would be allowed. The Chairman, however, held to his ruling, and the motion on being put was defeated by thirteen votes to twelve.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Rear Admiral J. Shand to the *Egmont*, additional for Royal Naval Hospital, Malta. Surgeon Captains: F. W. Parker, O.B.E., to the *Vivid*, additional for Royal Naval Hospital, Plymouth; F. J. A. Dalton, C.M.G., to the *Pembroke*, additional for Royal Naval Barracks, Chatham. Surgeon Commanders: M. P. Jones to the *Excellent*, L. E. Dartnell to the *Hood* as Squadron Medical Officer, J. D. S. Muir to the *Vivid* for Royal Naval Barracks.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

The following Captains retire, receiving a gratuity, and are granted the rank of Lieutenant-Colonel: F. W. M. Cunningham, D.S.O., July 29th, 1919; R. B. Phillips, April 14th, 1920 (substituted for the notifications in the *London Gazette* of July 28th, 1919, and April 13th, 1920, respectively). F. C. Davidson, M.C., April 14th, 1920 (substituted for notification in the *London Gazette* of April 13th, 1920).

Captain C. de W. Gibb retires, receiving a gratuity, and is granted the rank of Major.

Captain C. C. G. Gibson, late R.A.M.C., to be Captain, December 9th, 1913, but not to reckon for pay or allowances prior to June 11th, 1920, with precedence next below H. J. Bensted.

Temporary Captains relinquish the acting rank of Major: T. Martin, H. North (April 19th, 1919).

Temporary Captain A. C. Taylor to be Captain, May 6th, 1919, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below W. D. Newland.

Captain D. W. M. Mackenzie, late R.A.M.C.(S.R.), to be Lieutenant, and to be temporary Captain, June 12th, 1918, but not to reckon for pay or allowances prior to June 21st, 1920, with precedence next below V. J. Perez.

Captain D. J. Armour, C.M.G., R.A.M.C.(S.R.), relinquishes the temporary honorary rank of Lieutenant-Colonel (September 12th, 1918).

Temporary Captain J. R. Hayman from Special Reserve, to be Captain, March 11th, 1918, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below G. D. Harding.

Temporary Captain W. L. English to take rank and precedence in the corps and in the army as if his appointment bore date July 19th, 1919.

H. Cardin, late temporary Captain, to be temporary Captain, with seniority from February 2nd, 1918.

Captains from S.R. to be Lieutenants, and to be temporary Captains, but not to reckon for pay or allowances prior to June 1st, 1920: W. Y. Eccott, March 20th, 1919, with precedence next below J. McP. Mackinnon; W. I. FitzGerald Powell, July 19th, 1917, with precedence next below J. C. Collins; W. O. Holst, January 15th, 1918, with precedence next below E. P. N. Creagh.

Hon. Captain C. A. Hutchinson to be Lieutenant and to be temporary Captain, with precedence next below W. Y. Eccott.

Temporary hon. Lieutenant W. N. Richards to be temporary hon. Captain.

The notification in the *London Gazette* of April 13th, 1920, regarding Captain R. F. O'T. Dickinson is cancelled.

Temporary Captain R. B. Wallace, D.S.O., M.C., to be acting Major from October 21st, 1919, to January 15th, 1920, and from January 19th, 1920.

The following officers relinquish their commissions:—Temporary Captain A. Brown, O.B.E., and is granted the rank of Lieutenant-Colonel. Temporary Captains and are granted the rank of Major: F. W. Matheson (on account of ill health contracted on active service), (acting Major) L. J. Spence, M.B.E., A. Fletcher, A. C. Norman. Temporary Captains and retain the rank of Captain: B. P. Hynes, R. G. Michelmore, B. M. Carruthers (June 30th, 1919), H. L. Neil (August 1st, 1919—substituted for notification in the *London Gazette*, September 3rd, 1919), A. Drouin, A. K. Hamilton, H. T. O'Neill, D. McLaren, J. Buchanan, J. R. Fleming, L. D. Roberts, A. Vella, G. C. Berg, C. R. Worthington, W. L. Johnston, T. H. Edey, G. Taylor, G. O. Hempson, A. B. Coomber, D. J. Stokes, M.C., H. A. Whyte-Venables, P. H. Henson (on account of ill health contracted on active service), S. P. Hyam, J. E. Kesson, J. P. Howe, R. T. G. Aickin, W. Leslie, M.C., A. Morrison, M. A. MacDonald, W. W. Morrison, J. W. Robertson, C. E. H. Paley, M. M. Frew, W. B. Bannerman, G. de H. Dawson, D.S.O., M.C. Temporary honorary Captain H. J. Johnson, and retains the honorary rank of Captain. Temporary Lieutenants and retain the rank of Lieutenant: B. F. Howlett (November 22nd, 1918—substituted for notification in the *London Gazette*, December 7th, 1918), J. C. J. Callanan.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Squadron Leaders to be Wing Commanders: H. M. S. Turner, M.B.E., E. C. Clements, O.B.E.

Flight Lieutenants to be Squadron Leaders: A. S. Glynn, A. E. Panter, H. W. Scott, P. M. Keane.

Captain J. P. Hennessy is transferred to the unemployed list, April 1st (substituted for notification in the *London Gazette*, April 27th).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain N. D. Ball relinquishes his commission on account of ill health contracted on active service, April 28th, 1920, and retains the rank of Captain (substituted for notification in the *London Gazette*, June 1st, 1920).

The names of the following officers are as now described and not as in the *London Gazette* of May 25th, 1920: Arthur T. Woodward, R. H. Sunderland.

The following officers relinquish their commissions: Captains and are granted the rank of Major: W. Dunlop, O.B.E., G. Young, M.C. Captains and retain the rank of Captain: G. B. Egerton, M.C., L. J. F. Reid, M. McGillivray, M.C., H. Morley, E. ff. Creed, I. M. Robertson, T. H. J. Douglas, B. Sergeant, J. M. H. Campbell, O.B.E., J. B. Kirk, D. C. Buchanan, J. Irving, E. J. Coombe, R. Hilliard, G. P. W. Staunton, J. K. T. Mills, G. P. N. Richardson, C. G. Coombes, J. H. Thomas, R. T. Lewis, C. C. Harrison, W. D. Miller, J. R. Harris, O.B.E., W. Dempster, W. M. Jones, R. W. H. Miller, H. W. Lewis, G. M. Herriott, R. Thom, C. V. Pink, L. P. Johns, P. D. McLaren, O. St. L. Campion, C. V. Pearson, W. R. McLunden, H. St. H. Vertue, M.C., W. Oats, F. B. Jago, R. H. Chadwick, W. F. Kivlichan, T. R. Wilson, H. N. Pritchett, W. H. Palmer (April 1st, 1920, substituted for notification regarding Lieutenant W. H. Palmer in the *London Gazette*, May 25th, 1920), B. W. Brown.

TERRITORIAL FORCE.

Majors resign their commissions and retain the rank of Major: H. A. F. Fairbank, O.B.E., D.S.O., G. W. Fitzgerald, O.B.E.

Captain S. G. Greaves, D.S.O., M.C., to be D.A.D.M.S. West Riding Division.

Captains F. E. Stokes and R. Eager, O.B.E., to be Majors.

Captains resign their commissions and are granted the rank of Lieutenant-Colonel: D. J. Scott, O.B.E., M.C., F. L. A. Greaves, O.B.E., O. L. Rhys, A. C. F. Turner, D.S.O.

Captain F. H. Mitchiner is seconded under paragraph 401 T.F. Regulations.

Captains resign their commissions and are granted the rank of Major: W. P. Ferguson, M.C., D. R. Kilpatrick, G. P. D. Hawker, C. [illegible] Brentnall, M.C., R. G. Dixon, O.B.E., J. R. B. Russell, F. Scroggie, M.C., G. S. Williamson, M.C., W. B. Keith, M.C., J. H. Lloyd, S. H. [illegible], W. A. Wood, M.C., W. B. Hill, S. R. R. Matthews.

Captains resign their commissions and retain the rank of Captain: [illegible] Preston, [illegible] W. C. Hollist, [illegible] Ken, [illegible] M. Hughes, C. Hibbert, [illegible], F. J. Muir, M.C., L. Courtauld, W. R. H. Heddy, W. T. [illegible], C. Mason, T. J. Mill.

1st London General Hospital.—Captain E. B. Clayton resigns his commission and retains the rank of Captain.

2nd Northern General Hospital.—Captain F. E. Wither resigns his commission and is granted the rank of Major.

[illegible] Eastern General Hospital.—Captain (acting Major) T. R. W. Armour relinquishes the acting rank of Major on ceasing to be specially employed.

[illegible] Western General Hospital.—Captain G. L. Loveday resigns his commission and retains the rank of Captain.

[illegible] Captain G. J. Blacker and [illegible] London University Contingent, Medical Unit Senior [illegible] resign their commissions, and retain the rank of Captain.

British Medical Association.

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Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

27 Tues. London: Scrutiny Subcommittee, 2.30 p.m.

AUGUST.

6 Fri. East York and North Lincoln Branch, Annual Meeting, Royal Infirmary, Hull, 4 p.m.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL.—Medical Unit, Tuesday, 2 p.m., Dr. Riddoch: Disorders of Sensibility. Wednesday, 2 p.m., Dr. Thompson: Sensory Disturbances.

MANCHESTER FRENCH HOSPITAL.—Thursday, 4.30 p.m., Dr. A. C. Magian: Chronic Uterine Complaints.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—The diary of this college is published each week in the *Bulletin* of the Fellowship of Medicine. Further information may be obtained from the Dean.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patients and Operations. Monday, 2 p.m., Mr. Armour: Operations; 2.30 p.m., Dr. Saunders: Wards. Tuesday, 2.30 p.m., Mr. Gray: Operations; Mr. Addison; Wards. Wednesday, 2 p.m., Mr. Addison: Operations; Mr. Armour: Wards. Thursday, 2 p.m., Mr. Armour: Operations; 2.30 p.m., Dr. Saunders: Wards. Friday, 10 a.m., Dr. Robinson: Gynaecological Operations; 2.30 p.m., Mr. Gray: Operations.

APPOINTMENTS.

FRANCIS, T. E., O.B.E., M.D.Lond., D.P.H., Medical Officer of Health for the County Borough of Barnsley.

SANDERSON, R., B.Sc.Lond., M.B., B.S.Durh., Medical Officer of Health to the Maryport Urban District.

ROTH, Paul Bernard, F.R.C.S.Eng., Orthopaedic Surgeon, Miller General Hospital, Greenwich.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **7s. 6d.**, *which sum should be forwarded with the notice* **not** *later than the first post on Tuesday morning* **in** *order to ensure insertion in the current issue.*

BIRTHS.

SMEED.—On the 14th of July, at "Oldfield," Brampton Grove, Hendon, N.W., to Mildred (*née* Burtt), wife of Dr. Edward Smeed, a son.

VARIAN.—On July 16th, to George Varian, M.D., and Hilda Varian, M.D., Thornborough House, Clarendon Road, Watford, Hertfordshire, a son.

MARRIAGES.

GILMOUR—ALMOND.—On Wednesday, July 14th, at Northallerton, John Gilmour, M.B., B.S., F.R.C.S., Newcastle-on-Tyne, to Edith, third daughter of Mr. and Mrs. John Almond, Northallerton.

PENNY—KENWORTHY.—On the 17th inst., at Hoghton Street Baptist Church, Southport, by the Rev. Charles Brown, D.D., of London, and the Rev. J. A. Smallbone, Dr. Cyril John, youngest son of T. S. Penny, Esq., J.P., of Knowls Taunton, to Dr. Muriel Mercer, eldest daughter of Dr. and Mrs. Kenworthy, of Kenworthy's Hydropathic, Southport, and Bentley Lodge, Parbold.

STAUNTON—HEAD.—At St. Peter's, Hornsey, on July 7th, by Rev. E. Smith, Gilbert Patrick Staunton, M.B., B.S., to Elsa Kathleen, eldest daughter of F. Head, Esq., of Amersham, Bucks.

WILLIAMS—HITCHON.—On Thursday, July 15th, at St. Alban's Church, Rochdale, by the Rev. R. Stanley, Vicar of Holcombe, near Ramsbottom, assisted by the Rev. H. Edmunds, Vicar of the Parish, Thomas Buckley Williams, M.B., Ch.B.Vict., of Stalybridge, only son of the late Mr. and Mrs. T. Williams, Ashton-under-Lyne, to Jane, elder daughter of the late Mr. H. Hitchon and Mrs. Hitchon, Lauriston, Rochdale. At Home, Vaudrey House, Stalybridge, September 29th and 30th.

DEATHS.

FORSTER.—Dr. Lucinda Forster died April 16th, 1920, at Deaconess Hospital, Alexandria, Egypt, and buried in the New Protestant Cemetery, Chatby, Alexandria.

MITCHELL.—At Argyll House, Gorseinon, Glam., on the 17th July, Trafford Mitchell, M.D., D.P.H., aged [illegible], Medical Officer of Health for the Rural District of Swansea.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin in the Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 31st, 1920.

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British Medical Association.

CURRENT NOTES.

Gas Light and Coke Company's Medical Benefit Society.

The British Medical Association was recently asked to take up the case of the doctors to the Gas Light and Coke Company's Medical Benefit Society. There are some thirty doctors concerned, and before the war they received a flat rate of 7s. 6d. per family. The doctors who were about to meet the representatives of the benefit society asked that the Deputy Medical Secretary of the Association should be present to put forward their case. The benefit society took the unusual step of refusing this request, and for a time there was a deadlock, as the doctors would not attend the conference without him. Eventually the benefit society gave way, and the meeting took place. The doctors asked for 24s. per family, but were told that the society could not pay more than 15s. It was finally agreed to put the case to the members and ask them if they were willing to pay such an increased subscription as would permit the payment of 21s. per annum to the doctors. The members have agreed to this payment, and the medical men may congratulate themselves on the success of this piece of collective bargaining through a strong Association. A meeting was held at the offices of the Association on July 21st, at which it was agreed to accept the terms. At the same time the Deputy Medical Secretary was asked to point out that the result of the ballot on the capitation fee should have been sent to the doctors' honorary secretary before it was circulated to the individual doctors; that further information was sought as to the proposal to increase the number of doctors; and that whereas the increase was to be paid from July 1st it had originally been stated that any increase would be retrospective from January 1st, 1920. A request was also made that in future doctors should be supplied with the list of those families for which they were responsible.

Services Outside the Insurance Agreement.

The Insurance Acts Committee at its last meeting considered the Model Form for use under Clause 9 (2) of the First Schedule of the 1920 Regulations in the matter of services outside the agreement, and decided that when an opportunity occurs for a revision of the form in question it should press strongly for an amended wording of the second paragraph. This paragraph at present reads as follows:

> I hereby declare that in my opinion this service was beyond the competence of the ordinary general practitioner practising in the district, but that owing to my special experience in this class of professional work it was consistent with the best interests of the patient that I should undertake the service.

The suggested amended wording is as follows:

> Having regard to the custom and practice which is peculiar to this district, I consider that this service was beyond the competence of a general practitioner of ordinary professional competence and skill, but that owing to my special experience in this class of professional work it was consistent with the best interests of the patient that I should undertake the service.

Emergency Cases.

There would appear to be some misunderstanding in the minds of some Panel Committees as to whether cases of emergency which arise outside the area of an insurance practitioner are to be considered as ordinary emergency cases or as temporary residents. The Insurance Acts Committee is of opinion that any cases of emergency arising without the area of an insurance practitioner should be considered as temporary residents under the Regulations.

The Panel Conference.

The Annual Conference of Local Medical and Panel Committees has been fixed for Thursday, October 21st, 1920.

INSURANCE MEDICAL RECORDS.

Report of Interdepartmental Committee.

The report has now been issued of the Interdepartmental Committee* appointed to consider and report upon the form of medical record to be prescribed under the terms of service for insurance practitioners in the new Medical Benefit Regulations, 1920. The Committee was instructed, in tendering its advice to the Minister of Health and the Scottish Board of Health, to have due regard to the clinical purposes (including the remedial value to the patient of maintaining a suitable record of his case), as well as to the administrative and the statistical purposes which such records may be adapted to serve. It consisted of Sir Humphry Rolleston (chairman), Drs. H. B. Brackenbury, J. Brownlee, J. R. Currie, H. G. Dain, J. R. Drever, and J. C. Dunlop, Mr. G. S. W. Epps, Drs. C. E. S. Flemming, A. Fulton, and M. Greenwood, Mr. R. W. Harris, Drs. H. W. Kaye, H. Meredith Richards, T. H. C. Stevenson, Mr. S. P. Vivian, and Dr. J. Smith Whitaker. The Joint Secretaries were Dr. G. F. McCleary and Mr. A. E. Joll. The Committee was appointed on March 1st, and its report is dated June, 1920. Dr. J. C. McVail was originally appointed a member, but was prevented from attending the meetings owing to illness, and Dr. Currie was appointed in his stead. Eight sittings were held, and during the last two Dr. Dain took the chair, owing to the absence from this country of Sir Humphry Rolleston. No oral evidence was taken.

The Regulations under the Insurance Acts require a practitioner to keep records of the diseases of his patients and of his treatment of them in such form as the Minister may from time to time determine. The resumption of the duty of keeping records, which was in abeyance during the latter part of the war period, has been awaiting the report of the Interdepartmental Committee.

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* Cmd. 836. To be purchased through any bookseller or directly from H.M. Stationery Office. Price 3d. net.

Criticisms of the Old Records.

After describing the introduction of medical records and the general features of the old cards, which remained in use until the beginning of 1917, the Committee prefaces its conclusions as to the most suitable form for future records and the particulars to be entered therein, by summarizing the chief objections that have been taken to the old forms of record:

> (i) That the surrender of the card at the end of each year deprived practitioners of much of the benefit which might otherwise have been obtained from it for clinical purposes;
>
> (ii) That the statistical value of the card was impaired by the impossibility of obtaining a continuous medical history from year to year of each person whose illnesses were recorded;
>
> (iii) That the necessity of starting each year a new card for each patient attended imposed much unnecessary clerical labour on doctors in filling in standing particulars, such as name, address, age, etc.;
>
> (iv) That it was useless to record trivial illnesses, for example, colds, cut fingers, etc.;
>
> (v) That no use was in fact made of the records for administrative or statistical purposes.

While not necessarily agreeing that the old cards were without statistical value, the Committee is satisfied of the substantial validity of the first three objections. The fourth objection is discussed at some length on the ground that it raises questions of principle of much importance and difficulty. The fifth criticism is held to be due to misapprehension of the facts. The records, it is stated, have been used both administratively and statistically, and have been found of considerable value, but war-time conditions made it impracticable to utilize, except to a limited extent, the statistical data afforded.

Requirements of Future Records.

The Committee is strongly of opinion that, in so far as any precedence is necessary among the purposes the records can be adapted to serve, this precedence must be given to the clinical objects—that is to say, the ways in which the keeping of records may contribute to the more efficient treatment of patients, both by the doctor who makes the record, and by other doctors under whose care the same patient may come in subsequent illnesses.

> 19. On this ground we are agreed that the form of record should be so framed, and the procedure for dealing with it should be so devised, that it may afford a continuous record of an insured person's illnesses, and be kept ordinarily in the possession of the insurance practitioner who is, for the time being, responsible, under the medical benefit arrangements, for the insured person's care. It is recognized that the last-mentioned requirement will make the record less easily accessible for administrative or statistical purposes than if it were surrendered by the doctor at the end of each year, as was the case with the old record.

The Committee then passes from the question of continuity of the records to that of the limitation of cases for record, which is discussed at considerable length. The substantial recommendations of the Committee are contained in the following paragraphs:

> 31. We consider therefore that, on the whole, the most advantageous system will be to require such notes to be kept of every case treated as are likely to be of value to the practitioner himself, or to any other practitioner treating the same patient in subsequent illnesses, and we recommend that the obligation be thus defined.
>
> 32. Certain important considerations remain to be examined affecting the way in which notes should be made. In this connexion we appreciate the danger, pointed out by Sir James Mackenzie, of appearing to require, or even indirectly encouraging, practitioners to record as "diagnoses" conclusions as to the nature and causation of illness which cannot be regarded as scientifically ascertained. Not only may such notes be misleading to others afterwards using the record, but the practitioner's methods of work may be injured by the practice of making categorical statements for which the data available to him do not afford sufficient warrant. In this connexion a distinction must be made between two uses of the term "diagnosis." From one point of view this term should be reserved for conclusions as to the nature and causation of disturbances of health of a high order of probability, and it must be recognized that the data requisite for establishing such conclusions can, in the present stage of medical knowledge, be ascertained in relatively a small number only of all cases treated at the time when they first come under observation. But for practical purposes action cannot be deferred pending the attainment of such an approach to certainty, but must be taken on the basis of inferences of a lower order of probability or on working hypotheses, which in medicine are termed "provisional diagnoses."
>
> 33. Where such a provisional diagnosis has been made, and even where the practitioner is simply holding his judgement in suspense between a number of possibilities, an indication of his conception of the case at the time may be of distinct subsequent value to himself or to others, provided that his note is suitably worded, and that a general understanding is established which will prevent others who use the record from taking it to represent a satisfactorily ascertained and definite conclusion. To meet these objects we consider that the form of record should be so devised as to provide separate columns, headed "Clinical notes" and "Diagnosis" respectively, and that practitioners should be carefully advised as to the use which is intended to be made of each of these columns. In the first would be entered such notes of symptoms, treatment, and "provisional diagnosis" as are likely to be helpful to the doctor himself or to other doctors in the treatment of the patient; in the other column should be entered those diagnoses only of which the practitioner feels reasonably certain.

The majority of the Committee agree that the use of a small number of conventional symbols, restricted to that part of the record devoted to clinical notes, might be permitted in regard to groups of cases of common occurrence, of which detailed descriptions would not be of sufficient additional value to justify the expenditure of time involved; they think that (with proper safeguards) such symbols would not in the long run impair the value of the records. A minority, however, including the Scottish members, hold that the drawbacks of the proposal would more than balance any advantages it would appear to possess.

Administrative and Statistical Uses.

On the question of the advisability of requiring a record to be kept of visits and surgery attendances the Committee is divided in opinion. The majority hold that such a record is an essential of a sound system of administration of a publicly provided medical service, and therefore not to be regarded as a piece of unnecessary clerical work. The Scottish members, however, are not satisfied that the arguments of their colleagues afford sufficient justification for such an additional demand on the doctor's time as would be occasioned by requiring a record of attendances and visits.

> 41. Concerning the record of certification for sickness or disablement benefit, we are agreed that provision should be made for entry of every occasion on which a first certificate, and every occasion on which a final certificate is given, such a record being of value not only for administrative but for statistical purposes. It has further been suggested that, for the better fulfilment of certain (mainly statistical) purposes, doctors might be required to furnish annually (or at other fixed periods) returns summarizing certain of the particulars in the records of patients certified for sickness or disablement benefit. These returns might conveniently be made on a detachable portion of the record card. The preparation of such returns would necessitate additional clerical work, which must be weighed against the value of the results attainable by means of the returns, and not attainable (or not to the same degree) otherwise. But the question of the value of the returns belongs to the consideration of the statistical uses of the records.

The data that can be expected to be furnished by all doctors, says the Committee, must be such only as can reasonably be required from *every* general practitioner under the stress of his daily clinical work, and must not make demands upon his time disproportionate to the value of the results. Subject to such limitations, the statistical use of the records are divided into: (*a*) Those which could be achieved by the direct examination of the continuous record itself, and (*b*) those for which special returns or summaries might be necessary.

The procedure in carrying out inquiries for statistical purposes is limited by the governing condition that the record is to remain ordinarily in the hands of the doctor attending the patient, and cannot be taken out of his custody for long periods without seriously impairing its clinical uses. Nevertheless, it is thought that a systematic periodical tabulation of selected portions of the records of a large and clearly defined class of persons—for example, those of all insured persons certified as incapable of work—might be a practicable operation, and might yield valuable administrative and statistical results. One way of obtaining the material for this purpose would be by a separate annual or other fixed periodical return by the doctors of a summary such as is mentioned in paragraph 41, quoted above. The majority of the Committee are disposed to think that this plan must be ruled out of consideration, on the ground that it would not yield results commensurate with the work which it would entail upon doctors. The Scottish members consider, on the other hand, that the distinctive advantages of this method would justify the additional demand, especially if practitioners were at the same time freed from any obligation to record attendances and visits. Accordingly, the Committee thinks that an experiment along these lines might be tried, say in Scotland, if the Department and the profession in that country agree.

Form and Method of Record.

With regard to the form of record and procedure of keeping it the Committee concludes (paragraph 47) that—

In respect of every insured patient an envelope should be issued printed on one face so as to contain spaces for the standing particulars of name and address, occupation, etc., and possibly printed also on the other face so as to serve the purpose of an initial current record. For the purpose of the current record (or for the continuance of that record after exhaustion of the space on the back of the envelope, if that be used for this purpose) cards suitably ruled will be employed and kept in the envelope. The envelope should be of practically the same form and size as the old record cards, so that the cabinets which have been in use for keeping these may continue to be so utilized. In Appendix III is shown the arrangement of the particulars suggested for the face of the envelope, for the current record, and for the annual summary of cases of incapacity which is suggested for incorporation in the record for use in Scotland.

48. An envelope would be issued to a doctor by the Insurance Committee in respect of every insured person on his list; and on the face of the envelope, before issue, would be inserted by the Insurance Committee the insured person's name, address, society, and number, the name of the doctor, the Committee's cipher, and the date of issue. It is recommended that different coloured envelopes should be issued in respect of male and female insured persons respectively. Such a distinction would be found generally convenient and would have obvious advantages in the handling of the records in the course of any statistical investigation, besides relieving the doctor of the clerical work which would be involved in entering on each record the sex of the patient. The doctor, on the first occasion when he is called upon to treat the patient, will fill up the spaces for age on first attendance, the date of that attendance, the insured person's occupation, and, in the case of women, a statement whether married, single, or widowed. If a woman marries subsequently to the date of first attendance, it is suggested that the doctor should enter the year of marriage.

49. When the patient changes his insurance practitioner it will be necessary, in order to preserve the continuity of the record, to ensure that it is transferred from the old to the new doctor. The machinery of Insurance Committees will necessarily be utilized for this transmission, and provision could be made for avoiding disclosure of particulars of the illnesses from which patients have suffered to those engaged in the handling of the records in their transference by the use of special "window" envelopes (in the form set out in Appendix IV). . . .

51. We suggest that at the time when the new records are brought into operation practitioners should be furnished with a memorandum explanatory of the objects they are intended to serve and the mode in which they should be kept, and also with concise notes as to the method of filling up and transmitting the records, printed on a card for keeping with the cabinet in which the records are filed.

Finally, the Committee recommends that the keeping of the prescribed records be recommenced in every area on a date uniform throughout Great Britain, and that this date should, if practicable, be October 1st.

The Committee was assisted in its deliberations by the study of a memorandum on some of the medical aspects of the National Health Insurance Act by Sir James Mackenzie and the staff of the St. Andrews Institute for Clinical Research. This memorandum was placed before the Committee by the Ministry of Health, and is printed as an appendix to the report. It indicates the principal existing defects in medical knowledge which impair the success of the Act, and suggests steps which might be taken to remedy them. The defects in medical knowledge are considered under three heads: (1) Defective diagnosis, especially of the early stages of disease; (2) defective knowledge of drugs; (3) defective knowledge of prognosis. In the concluding sections Sir James Mackenzie deals with the teaching of the general practitioner, with central clinics, and with the methods pursued at the St. Andrews Institute for Clinical Research.

HOSPITAL STAFFS AND TREATMENT OF STATE-SUPPORTED PATIENTS.

METROPOLITAN COUNTIES BRANCH.

THE Council of the Metropolitan Counties Branch convened a conference between representatives of the medical and surgical staffs of voluntary hospitals concerning the question of the payment of the staffs for services rendered to the State. The meeting was held in the Council Chamber at 429, Strand, on July 23rd. There were upwards of forty present, representative of various hospitals. Dr. E. W. GOODALL, O.B.E., President of the Branch, presided.

The CHAIRMAN stated that the conference had been convened in response to an invitation from the Central Council to discuss the relationship between the staffs of voluntary hospitals and governing bodies in regard to the question of the payment by and on behalf of patients treated in those hospitals for the Government or municipal authorities.

Dr. C. O. HAWTHORNE, in moving his resolution, stated that it had been drafted and endorsed by the Executive Committee of the Marylebone Division, but not discussed by the Division itself, therefore it had no official status. The motion suggested that the Conference should pledge its support to the principle that medical services rendered on behalf of the community should be paid for by the community. The second motion which he would move later proposed a method by means of which the principle defined in his first motion might be translated into prompt, resolute, and efficient action. His general submission was that it was only by the recognition and the application of this principle that a state of equity could be established between the medical profession on the one hand and the general body of tax-payers on the other. Dr. Hawthorne thereupon moved:

> That this Conference approves of the principles defined by the British Medical Association relative to the recognition by a monetary payment made to a medical staff fund of medical services rendered to State or municipal patients received for treatment at the voluntary hospitals.

Mr. BISHOP HARMAN seconded the motion, which was carried unanimously.

Dr. HAWTHORNE moved, seconded by Mr. BISHOP HARMAN:

> That the Metropolitan Counties Branch Council be requested to approach (either directly or through the agency of the Divisions) each voluntary hospital within its area with a view to learn from the hospital board and medical committee (1) the number of patients treated on behalf of the State or municipal authorities and (2) whether an arrangement has been made to secure the payment to a medical staff fund of the approved proportion of the sums paid to the hospital for the reception and treatment of such patients; further, that the Branch Council be requested to collate and register the information obtained by these inquiries.

Whereupon an amendment was moved by Dr. H. B. BRACKENBURY, seconded by Sir JAMES GALLOWAY, and carried as follows:

> That the Metropolitan Counties Branch Council be requested to approach (either directly or through the agency of the Divisions) each voluntary hospital within its area with a view to learn from the hospital board and medical committee (1) the number of patients treated on behalf of the State or municipal authorities; (2) whether an arrangement has been made to secure the payment to a medical staff fund of the approved proportion of the sums paid to the hospital for the reception and treatment of such patients; and (3) if not, whether any alternative method of payment made to the medical staff has been secured; further, that the Branch Council be requested to collate and register the information obtained by these inquiries.

Mr. COMYNS BERKELEY moved a further amendment, which was seconded by Dr. BLACKHALL-MORISON, to substitute the words "medical committee of each voluntary hospital" for the words "hospital board and medical committee," which was defeated.

NORFOLK.

At a largely attended meeting of the medical staffs of the general and cottage hospitals throughout Norfolk, convened by the medical staff of the Norfolk and Norwich Hospital, and held at that institution on July 19th, the following resolution was carried by a large majority:

> This meeting is of opinion that, under existing circumstances, an addition of not less than 25 per cent. should be made to the sum paid to the governing body of a voluntary hospital for the maintenance of a patient, for whose medical treatment the State or a local authority has accepted responsibility, as payment to the medical staff for their professional services.

Meetings of Branches and Divisions.

MIDLAND BRANCH.

THE annual meeting of the Midland Branch was held at the Guildhall, Lincoln, on July 22nd. Dr. J. H. COX, the President, was in the chair, and twenty-one members were present. The annual report of the Honorary Secretary and Treasurer was read and adopted.

The following officers of the Branch were elected:

President: Dr. H. B. Willoughby Smith (Gainsborough). *President-elect:* Dr. Herbert Peck (Chesterfield). *Vice-Presidents:* Dr. J. H. Cox (Nottingham) and Dr. J. E. Waite (Leicester). *Honorary Secretary and Treasurer:* Mr. A. M. Webber.

An informal discussion took place on the subject of the boundaries of the Branch. The SECRETARY reported that the Council considered the Branch was too large to be really useful, and that a tentative proposal was to divide the Branch into two—namely: (a) Chesterfield, Derby, Leicester, and Nottingham; and (b) Holland, Kesteven, and Lincoln. The latter area was mainly an agricultural area, while the former comprised large colliery and industrial areas. Moreover, it was found the Lincoln and Holland members experienced great difficulty in attending the meetings, which were generally held at Nottingham for convenience. During the discussion several of the Lincoln members agreed with the proposal. The Secretary was asked to get this subject discussed at the various Divisional meetings.

The PRESIDENT (Dr. H. B. Willoughby Smith) then delivered his presidential address on appendicitis. Dwelling on the fact that appendicitis was becoming more frequent, he considered (1) the cause of the disease and (2) the reason for its increased frequency. Carious teeth, loss of vitamines, and dietetic errors were chiefly responsible for its causation. After describing the various types of the disease, the President dealt with the differential diagnosis and treatment: no child under 12 years suffering from appendicitis should be left unoperated upon. After a full description of the operative and post-operative treatment, the lecturer described chronic appendicitis. Appendectomy was the appropriate treatment.

The meeting concluded with a vote of thanks to the President for his address and to the Mayor of Lincoln for his kind permission to hold the meeting in the historic Guildhall.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST YORK AND NORTH LINCOLN BRANCH.—The annual meeting of the East York and North Lincoln Branch will be held within the Board Rooms of the Royal Infirmary, Hull, on Friday, August 6th, at 4 p.m.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders J. W. Craig to the *President*, additional, for Recruiting Headquarters, London (temporary); J. C. Bringan, O.B.E., to the *Egmont*, additional, for Royal Hospital, Malta; H. M. Braithwaite to the *Pembroke*, for R.N. Hospital, Chatham; G. D. Walsh to the *[illegible]*, F. Cook to the *Fisgard*, M. T. Male to the *Pembroke*, for R.N. Barracks; J. Macdonald to the *Crescent*, W. Bastian to the *Victory*, for R.N. Barracks; A. B. Cox to the *Vivid*, for R.N. Barracks. Surgeon Lieutenant Commanders G. H. Hayes to the *Tamar*, for Hong Kong Hospital; W. G. Thwaytes to the *Vivid*, for R.N. Hospital, Plymouth; G. A. Finegan to the *Valiant*. Surgeon Lieutenants J. F. Race to the *Widgeon*, H. L. Peregrine to the *Hood*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Majors to be acting Lieutenant-Colonels: H. T. Wilson, D.S.O., R. N. Hunt, D.S.O.

To be Captains: Temporary Major J. H. Spencer, January 25th, 1912, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below R. O'Kelly; Captain W. E. K. Coles, late R.A.M.C., June 24th, 1918, but not to reckon for pay or allowances prior to June 18th, 1920, with precedence next below T. J. L. Thompson; Captain E. O. A. Singer, from S.R., May 15th, 1920, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below A. Rodd, L. Handy, and J. W. Malcolm, M.C., late R.A.M.C.(S.R.).

The notifications in the *London Gazette* of the dates indicated regarding the following officers are cancelled: Temporary Captain [illegible] (June 24th), Captain W. L. M. Gabriel (June 24th).

Temporary Lieutenant J. F. P. Gallagher to be Lieutenant, November [illegible], but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below W. Y. Eccott.

[illegible] relinquished their commissions:—Captains and retain the rank of Captain: I. M. Grant, J. M. Mitchell, H. R. S. Walford, A. McK. Bell, C. Stanley-Clarke, W. B. U. Patterson, A. P. Adams, P. E. B. Barrow, S. H. Pitcairn.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the unemployed list: Captain J. Chambre, M.B.E.

INDIAN MEDICAL SERVICE.

[illegible], C.I.E., was placed on special duty at Peshawar from April 10th to 26th.

[illegible] have been appointed permanently [illegible].

[illegible] has been permitted to resign his commission [illegible].

[illegible] officers have been permitted to retire, with effect [illegible] their names: Colonels F. R. Ozzard (May 20th), C. Mactaggart, C.S.I., C.I.E. (March 29th), and J. T. Daly [illegible]; Lieutenant-Colonels W. H. Cazaly [illegible] J. J. Bourke, C.I.E. (April 1st), Major F. O'D. Fawcett (February 2nd).

Lieut.-Colonel P. F. O'Connor, C.B., I.M.S. (ret.), has been granted [illegible].

[illegible], C.I.E., Officiating Civil Surgeon, Lahore, has [illegible] to officiate as Professor of Midwifery, Medical College, [illegible].

[illegible] has been posted as Civil Surgeon, Ajmer, and Chief Medical Officer in Rajputana (April 4th).

[illegible] has been appointed to officiate as Chief [illegible] Province (May [illegible]).

[illegible], D.S.O., have been placed [illegible].

[illegible] been promoted to the rank of Major [illegible].

[illegible] J. H. H[illegible], D.S.O., Chief Medical Officer, North West Frontier Province, has been granted privilege leave for six months, [illegible].

Lieut.-Colonel J. W. Watson, C.I.E., Agency Surgeon, Eastern [illegible] leave for eight months, [illegible].

[illegible] has been permitted to retire from [illegible].

[illegible] employed [illegible] rendered at the [illegible] from [illegible].

[illegible] have been passed permanently [illegible] O.B.E., Major V. B. Nesfield, Major G. A. Jolly, Major A. Cameron, [illegible].

[illegible] of the [illegible].

[illegible] April [illegible].

Lieut.-Colonel G. McI. C. Smith, C.M.G., appointed to officiate as [illegible].

[illegible] (May 1st).

[illegible] has been permitted to resign his commission [illegible].

[illegible] M.D., has been permitted to retire from [illegible].

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

Captain P. W. G. Sargent, C.M.G., D.S.O., resigns his commission and is granted the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. I. Ellis, C.M.G., to be D.A.D.M.S., Wessex Division with pay and allowances of a Major.

Lieut.-Colonel A. G. Hamilton, O.B.E., T.D., to command the 4th Cheshire Cavalry Field Ambulance.

The following officers to be Lieut.-Colonels and have been appointed to the commands indicated, February 16th, 1920: Majors C. R. White, D.S.O., T.D. (3rd Western Casualty Clearing Station), E. C. Stack, T.D. (6th Stafford Cavalry Field Ambulance), F. W. Bailey, D.S.O. T.D. (1st West Lancs Field Ambulance), W. Archibald (2nd Eastern Casualty Clearing Station), J. G. Martin, T.D. (2nd West Lancs Field Ambulance), Surgeon-Major C. O. Parsons, from R.G.A. (2nd Welsh Field Ambulance), Captains H. F. W. Boeddicker (1st Southern Casualty Clearing Station), F. A. Roper (2nd Southern Casualty Clearing Station), H. F. Everett (1st East Anglian Field Ambulance).

Major L. C. V. Hardwicke to be acting Lieut.-Colonel whilst specially employed.

Captain L. T. Challenor to be D.A.D.M.S. South Midland Division.

Captain A. G. Wilson, from 3rd Northern General Hospital, to be Captain, with precedence as from January 2nd, 1908.

Captain G. L. Thornton, M.C., to be Lieut.-Colonel and to command 1st Wessex Field Ambulance (February 16th, 1920—substituted for notification in the *London Gazette*, June 8th, 1920).

The following officers resign their commissions: Major H. Fulton, D.S.O., and is granted the rank of Lieut.-Colonel; Major T. D. Brown, and retains the rank of Major, with permission to wear the prescribed uniform; Captain C. E. W. McDonald, and is granted the rank of Major. Captains, and retain the rank of Captain: H. W. Bayly, M.C., E. H. Coyne, M.C., D. Davidson, M.C., C. W. Fort, M.C., P. McRitchie, M.C., C. P. C. Sargent, F. J. M. Kennedy.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

AUGUST.

5 Thur. London, Ministry of Health Subcommittee, 2.30 p.m.
6 Fri. East York and North Lincoln Branch, Annual Meeting, Royal Infirmary, Hull, 4 p.m.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL.—Medical Unit, Tuesday, 2 p.m., Dr. Riddoch: Disorders of Sensibility. Wednesday, 2 p.m., Dr. Thompson: Polyneuritis.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Tues., 12, Mr. Gray: Fractures; 4.30 p.m., Mr. Addison: Practical Surgery. Wed., 11.30 a.m., Mr. MacDonald: Cystoscopy; 4.30 p.m., Dr. Simson: Gynaecology. Thurs., 10.30 a.m., Dr. Simson: Demonstration; 4.30 p.m., Dr. Stewart: Sympathetic Nervous System. Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; 4.30 p.m., Mr. Davis: Throat and Ear. Sat., 12, Mr. Sinclair: Diseases of Abdomen.

APPOINTMENTS.

FORSTER, H. V., M.C., M.B., Ch.B., Honorary Assistant Laryngologist, Liverpool Royal Infirmary.

GABRIEL, W. B., M.S.Lond., F.R.C.S.Eng., Assistant Surgeon, St. Mark's Hospital for Diseases of the Rectum.

LAWRENCE, [illegible], M.D.Vict., D.P.H., Assistant Medical Officer of Health of the West Riding County Council.

YORKE, Warrington, M.D., Honorary Assistant Physician of the Tropical Diseases Department, Liverpool Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

BRASH.—On July 24th, at a Cambridge nursing home, to Gwendoline, wife of E. J. Y. Brash, M.B., B.C., of Exeter, a son.

JOHN.—At Karachi, on June 20th, the wife of Captain J. C. John, O.B.E., I.M.S., of a son.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 7TH, 1920.

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British Medical Association.

CURRENT NOTES.

Fees for Treatment at Welfare Centres.

Medical officers of health and other officials of local health authorities are reminded that in accordance with the resolution passed by the Representative Body of the British Medical Association on June 26th, 1920, no advertisement can be inserted in the BRITISH MEDICAL JOURNAL which offers less than the following terms:

(a) £2 2s. per session of not more than 2½ hours for the treatment of minor ailments;

(b) £3 3s. per session not exceeding 2½ hours for ophthalmic work involving refractions—not more than eight new cases to be seen;

(c) not less than 1½ guineas per case (including anaesthetist's fee) for adenoids and tonsils operations involving a general anaesthetic;

(d) £5 5s. per completed case for x-ray treatment for ringworm, where the practitioner provides his own apparatus; £2 2s. where the apparatus is provided by the local authority.

The Journal Committee

At the meeting of Council held in Cambridge on June 28th, 1920, a warm vote of thanks for his services was accorded to Mr. Albert Lucas, the retiring Chairman of the Journal Committee. Mr. Lucas had served on the Committee since 1909, and was its Chairman for seven years, including the whole period of the war. The Journal Committee at its meeting on July 15th elected Dr. J. A. Macdonald as Chairman for the ensuing year. Among other matters, it was reported to the Committee that the character of the material coming in from the Sections of the Annual Meeting at Cambridge appeared fully to justify the decision to print additional pages during the autumn, in order to provide for the speedy publication of the proceedings. The Committee has agreed that an opportunity should be afforded each candidate for election to the Council from the grouped Branches to publish in the SUPPLEMENT a record of the offices held by him in the Association.

"Current Notes" in the Supplement.

A subject to which much attention has been given by the Journal Committee is the possibility of still further developing "Current Notes" in the SUPPLEMENT, in order that members may be kept informed week by week of matters which are being dealt with by the standing committees of the Association. Space is always held available in this column for brief notes on current matters of interest, setting out what the Association has done and is doing in various directions. It may be added that members owe it to themselves to keep in touch with the activities of the Association, and no practitioner can be too busy to turn to this column each week.

Insurance Medical Records.

A summary appeared in last week's SUPPLEMENT of the Report of the Interdepartmental Committee appointed to consider and report upon the form of medical record to be prescribed under the terms of service of insurance practitioners contained in the Medical Benefit Regulations, 1920. We are now informed that the Minister of Health has accepted such of the recommendations contained in the report as relate to England and Wales. It was intended that these records, with certain particulars inserted, should be in the hands of insurance practitioners by October 1st next, but owing to insurmountable difficulties in regard to manufacture and printing this has been found impossible, and consequently the coming into operation of the arrangements has been postponed until January 1st, 1921.

The particulars which have to be inserted on the envelope record are as follows:

Surname, Christian name or initials, society and branch, membership number, insured person's address, doctor's name, and committee's cipher and date.

It is hoped that this work will be completed by Insurance Committee clerks in time to permit of the cards being in the hands of the doctors before Christmas, so that they may be brought into use uniformly throughout the country on the first day of the New Year. It should be noted that the new form of record will be used both as a medical record and as an index card.

Trinity House Medical Services.

In May last the Elder Brethren, who contemplated raising the capitation fee for medical officers to the Trinity House services, asked the British Medical Association if it were a fact that it had authorized a 50 per cent. increase on pre-war fees. The reply was to the effect that such an increase had been recommended, but that further information was necessary before the Association could say if a 50 per cent. increase in the fees under consideration would be acceptable. It appeared that the capitation fee was 7s., and in some cases 8s., including drugs, bottles, certificates and reports. A letter was sent to the Elder Brethren pointing out that the fee should certainly be no less than that paid in respect of insured persons. The Elder Brethren then made an offer of 12s. (that is 11s. capitation fee *plus* 1s. for drugs). This was accompanied by a not very convincing argument that 1s. a head was enough for their employees, notwithstanding the fact that 2s. was allowed by the Insurance Commissioners for drugs for insured persons. This offer did not meet with general approval, and in the end a capitation fee of 13s. was sanctioned and the fee for visits to dependants of the men was raised from 2s. 6d. to 5s.

Fees for Life Insurance Examinations.

Correspondence has taken place between the British Medical Association and the Life Offices Association concerning the date on which the new scale of fees for life insurance examinations shall be payable. (See "Current

Note" in Supplement of July 17th, 1920.) It has been decided that the new scale will be payable as from July 1st, 1920. Should any difficulties occur in connexion with these payments, members are requested to send the facts to the Medical Secretary, 429, Strand, W.C.2.

THE ANNUAL EXHIBITION OF SURGICAL INSTRUMENTS, DRUGS, AND FOODS.

The exhibition of surgical instruments, drugs, foods, laboratory and hospital apparatus and furniture, and books was held in the Corn Exchange, Cambridge, during the week of the Annual Meeting. Space was found for almost a hundred separate stands, and the busy aisles during four days bore witness to the interest of the medical visitors. Cambridge itself contributed to the display, notably in the exhibit of the electro-cardiograph and the various measuring and recording devices of the Cambridge and Paul Instrument Company, whose stand, with the fine microtomes in action, was one of the most fascinating in the whole exhibition. The Cambridge University Press was also in evidence. Modern medical literature, indeed, was a strong feature of the exhibition, and among the publishers and booksellers who showed their attractive wares were Appleton, Arnold, Brooke-Williams (with a good selection of standard textbooks), Ellis's Medical Library, Heinemann, H. K. Lewis, Lippincott, Macmillan (with Allbutt and Rolleston's *System of Medicine*), Oxford Medical Publications, W. B. Saunders, and Wright of Bristol. Other publishers were represented on the stall of Bowes and Bowes, the Cambridge booksellers.

Instruments and Appliances.

The exhibits of surgical instruments once again furnished proof of ingenuity and resource. Mayer and Phelps placed in the forefront a special grip forceps permitting delicacy of control without tiring the operator's hand. Maw Son and Sons showed an intestinal retractor designed to permit an area of at least 22 sq. in. to be kept free from intestine. Several firms made a speciality of high-pressure sterilizers for dressings, notably Arnold and Sons, the Medical Supply Association, and the Surgical Manufacturing Company; the last showed the "Surgman" sterilizer, which claimed to render dressings absolutely sterile and dry in forty-five minutes. Weiss and Son had a new model of the foreign body forceps by Brüning, for the extraction of bones and coins; and a variety of cystoscopes were a principal feature with the Genito-Urinary Manufacturing Company. Hawksley and Sons had a wide range of instruments for heart research work, electro-diagnosis, and craniometry, as well as psychological instruments such as a reaction time apparatus. Down Brothers had their usual display of operating tables and appliances and hospital equipment. Hospital beds of scientific construction and easy mobility were shown by Nesbit-Evans, while elsewhere Sister Mote drew attention to her adaptable nursing trolley, which has been improved in certain particulars since it was last shown. The operating room of a school dental clinic was reproduced in every detail at the stand of the Dental Manufacturing Company.

Many stands were devoted to orthopaedic appliances. The Gloucestershire Surgical Appliances Company was able to give demonstrations of how war disabilities could be met by artificial compensations. Newlyms, Limited, had an exhibition of artificial limbs designed for various amputations; and another stand in the same category was that of the "P. K." Arm, Limited, with mechanical arms and hands, for which it was claimed that they required the minimum of body harness. Henry Lewis had trusses and surgical boots and many appliances for deformities. Two Cambridge firms, Rampling and the Central Rubber Company, had exhibits respectively of legs and splints and of rubber apparatus. A good deal of apparatus for gymnastic exercises and re-educational movements in pensions clinics was shown by Spencer, Heath, and George. H. Brock had a series of masks for various facial disfigurements. W. H. Pettifor showed a range of electrical aids for the deaf in the form of a series of telephones, by means of a testing set the aural surgeon was aided in prescribing any one of ninety combinations to correct various classes and degrees of defective hearing.

At several stands the staple exhibits were atomizers and sprays of various kinds. The De Vilbiss Company drew attention to a nebulizer for oil only. Frank A. Rogers had a collection of atomizers and inhalers, some of them designed to fit the pocket. Reynolds and Branson had apparatus for oxygen inhalation, and the Hydrogen, Oxygen, and Plant Company exhibited oxygen generators for producing pure oxygen in quantities suitable for practitioners. Ozonair, Limited, showed their well known air purifying and disinfecting appliances. Charles Hearson, among other interesting bacteriological and physiological apparatus, had a portable incubator suitable for work either in field or laboratory, and capable of being heated either by oil or electricity. Outfits for estimating blood pressure and to determine oxygen consumption were shown by the Sanborn Company of the United States.

Electrical Apparatus.

At the several stands devoted to *x*-ray apparatus the thing to note was the growth in compactness of the unit. Instead of the many separate parts which used to make up an *x*-ray outfit, the visitor simply saw a massive cabinet in which everything was included. Watson and Sons had a high tension transformer, an outfit complete in its cabinet, with either a rotary converter or a synchronous motor, according to the nature of the current supply. *X* Rays, Ltd., also made a special feature of high tension transformers, available either for instantaneous radiography or *x*-ray treatment, and carrying tube stands with Coolidge tubes in their lead-glass shields. The exhibit of radiographic prints by some of the foremost workers was an attractive feature at this stand. Schall and Son had a complete *x*-ray outfit, consisting of a 16 in. coil with electrolytic and mercury interrupters; and the Cox-Cavendish Company—a recent amalgamation of two well known houses—had an *x*-ray group suitable for a large hospital. Newton and Wright made a feature of their Snook interrupterless machine, and showed also much accessory apparatus. Another fine *x*-ray display was that of F. R. Butt, with screening stands of various patterns and also a dental *x*-ray outfit. Kodak, Ltd., showed radiographs on their double-coated film. The Medical Supply Association had an electro-medical stand, as well as a stand for surgical instruments. Bergonié's apparatus for the treatment of obesity and a faradic wave apparatus for the treatment of injured and wasted muscles were shown. In another part of the exhibition were the Dowsing radiant heat beds and local heating arrangements.

Drugs and Foods.

Among the chemical and pharmaceutical exhibits, the products of Burroughs, Wellcome and Company caught the eye as usual, and the stages in the preparation of thyroid gland and also of lanolin were effectively demonstrated. At this stall was an exhibit of liquid paraffin for internal use, and other exhibits of paraffin for medical purposes were shown at the stall of W. Browning and Company, C. J. Hewlett and Son, and the Anglo-American Oil Company. Parke, Davis and Company, along with their comprehensive display of serums and vaccines, also showed a mixed paraffin dressing. Reynolds and Branson, in addition to their exhibits of instruments, had some medicinal preparations, including one of ergot of rye. Oppenheimer, Son and Company exhibited palatinoids and colloidal products, and Boots Pure Drug Company had their usual range of tablets and capsules, with "new orthoform" and soluble aspirin as their latest preparations. Howards and Sons had several new products, including "agotan" (phenyl-quinoline$_2$, and carboxylic acid$_4$). Zimmermann and Company had several preparations for treatment of the skin, chief of them "subitol," said to be identical with the Tyrolese "ichthyol." Allen and Hanburys had their usual display of oils, emulsions, and pastilles. At least two American firms were included, the Lambert Pharmacal Company, and the Carnrick Company, which showed various organotherapeutic products. Along with the pharmaceutical exhibit of the Hoffmann-la Roche Chemical Works was an ingenious little device for emergency serum injections. It goes without saying that such things as Jeyes' fluid and Ronuk polishes were conspicuous.

Among dietetic articles were to be noted Brand's meat essences, Robinson's barley, Allen and Hanbury's rusks, Mellin's food, Glaxo dried milk, Horlick's malted milk, Cadbury's cocoa, and Callard's starchless and sugarless breads for diabetics; and among waters, Apollinaris and Apenta, also the British aperient water which goes by the proprietary name of "Osmos," and the French mineral water known as Vichy Celestins. The leading English spas gave proof of their federation; the medicinal springs of Bath, Buxton, Cheltenham, Droitwich, Harrogate, Llandrindod Wells, and Woodhall Spa proclaiming their several merits from under the same canopy.

This outline by no means exhausts the exhibition. At one pole the British Commercial Gas Association was demonstrating the hygienic value of the gas fire, and at the other the Cellular Clothing Company was exhibiting specially dyed fabrics for combating tropical heat; in fact, there was everywhere something to interest alike the intent and the wandering eye, from the sparkle of Norfolk cider to the bombardment of the electrons in the radium spinthariscope.

Meetings of Branches and Divisions.

CAMBRIDGE AND HUNTINGDON BRANCH.

THE seventy-sixth annual meeting of the Branch was held at Cambridge on July 21st, when Dr. W. R. GROVE, President, was in the chair.

The following officers were elected for the ensuing year:

President: The Right Hon. Sir Clifford Allbutt, P.C., K.C.B., M.D., F.R.S. *Vice-Presidents:* Dr. E. H. Ezard, Dr. W. J. Young. *Honorary Secretary and Treasurer:* Dr. G. S. Haynes.

A hearty vote of thanks was accorded to Dr. Grove for his services to the Branch in acting as President during the past six years. Professor F. GOWLAND HOPKINS delivered an address on chemical methods in diagnosis, and an interesting discussion followed. Afterwards members and their wives were kindly entertained to tea by the President and Lady Allbutt.

NORFOLK BRANCH.

THE annual meeting of the Norfolk Branch was held at the Norfolk and Norwich Hospital on July 7th, when the President, Dr. F. W. BURTON-FANNING, was in the chair, and over sixty members were present. By the kind invitation of the President the members attending the meeting lunched with him, and the general meeting was held subsequently. On the motion of the PRESIDENT, the best congratulations of the Branch were directed to be sent to Sir Clifford Allbutt on his recent appointment to His Majesty's Privy Council. The meeting elected Lieut.-Colonel D. G. Thomson to the office of President-elect for the ensuing year.

Dr. G. C. ANDERSON, Deputy Medical Secretary of the Association, gave an address entitled "The British Medical Association from behind the scenes." He gave instances of what the Association had done for the profession in the past and what it proposed to do in the future, and stated that a great deal of the opposition and adverse criticism to which the Association had been subjected was in his opinion due largely to ignorance. He also alluded to the voluminous character of the reports issued by the Association from time to time; these had often been condemned because of their length. Lieut.-Colonel THOMSON, Dr. STEELE, Dr. BELDING, Dr. CHALMERS, Dr. SAPWELL, Dr. SPIERS, and the HONORARY SECRETARY joined in the subsequent discussion, and Dr. ANDERSON replied.

Dr. A. J. CLEVELAND read a paper on modern methods of diagnosis. He alluded to the x-ray diagnosis of fractures, diseases of the chest, diseases of bone, urinary calculi, gall stones, and diseases of the teeth, and to the diagnosis of diseases of the oesophagus and the gastro-intestinal tract by means of bismuth feeds. He also touched on the aid given in diagnosis by the ophthalmoscope, the uses made of the electrical reactions of muscles, and finally on the assistance given to clinical medicine by the methods of the pathologist. The PRESIDENT discussed the paper more especially with reference to the question of the x-ray diagnosis of early phthisis. Dr. STEELE and Dr. STARLING also took part in the discussion.

Dr. MUIR EVANS read a paper entitled "Surgical experiences: a retrospect of twenty-five years' practice." He traced the advances made in surgery in almost every region of the body during the last quarter of a century, and stated his views regarding the many changes in surgical procedure which had taken place during that period. Lieut.-Colonel LITTLEWOOD and Mr. DONALD DAY joined in the subsequent discussion.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.

THE annual meeting of the Monmouthshire Division was held on July 16th, when Mr. W. J. GREER was in the chair. The financial report was read and adopted. The following officers were duly elected for the ensuing year:

Chairman: R. J. S. Verity. *Vice-Chairman:* Dr. T. E. Lloyd. *Honorary Secretaries and Treasurers:* W. J. Greer, R. J. Coulter.

Dr. ALFRED COX, Medical Secretary, gave an interesting address on the future of medical practice in the mining districts of South Wales and Monmouthshire—servitude or independence. A good discussion followed, and it was resolved to request that the address be published in an early issue of the BRITISH MEDICAL JOURNAL.

CORRESPONDENCE.

Panel Practitioners and Institutional Treatment.

SIR,—A grave defect in the medical service established by the National Insurance Act is that no facilities for institutional treatment are available to those who have been called upon to carry out this service.

It has long seemed to me that the panel practitioner has been called upon to do the impossible. It has been expected of him that he should provide a first-class service to his patients, when many of them live in surroundings and under conditions which make the adequate treatment of serious illness a practical impossibility. This applies in particular to the large towns. In many of the smaller towns and rural districts the panel practitioner has access to a cottage hospital, into which he is able to send his patients when they require institutional treatment, and in this hospital *he continues to attend them.* In large towns, on the other hand, if a patient requires institutional treatment, he is taken out of the care of his doctor if he is fortunate enough to find a bed available to him in some hospital. If not, he is treated at home, under heartbreaking conditions, from his doctor's point of view.

The crux of satisfactory treatment for patients under the National Insurance Act is the supplementing of domiciliary treatment by facilities for admission to suitable institutions. If, in the big towns, the present Poor Law infirmaries were adapted to provide what the cottage hospital provides in the country, the panel practitioner's position would be immeasurably improved. He would then be able to send such of his patients who are seriously ill into an institution where they would be adequately nursed, and to continue to have charge of them there. He would not then be called upon as he is now to achieve the impossible.

Further, by contact with colleagues, and by being brought in touch with progressive methods of treatment his experience would advance and his interest be sustained.

In a letter one can hardly set out the full arguments for such an arrangement as is here suggested. If the treatment of the general public in sickness is to be improved, the present barrier between the panel practitioner and institutional treatment must be removed.—I am, etc.,

Liverpool, July 26th. K. W. MONSARRAT.

Minimum Fees.

Dr. J. C. Lyth, honorary secretary York Local Medical and Panel Committee and York Medical Defence Association, writes: Since your publication of the minimum fees decided on in this district representations have been received proving that in certain other districts a mileage fee of 1s. per mile both ways over two miles has been fixed, and is recognized both by the Local Government Board under Section 14 of the Midwives Act and by the Panel and Insurance Committees, in connexion with emergency attendances and temporary residents. In view of these facts it has been decided to substitute a fee of 1s. for the fee of 9d. per mile each way over two miles in the scale of fees previously published.

PRESENTATION TO DR. AND MRS. T. RIDLEY BAILEY.

ON July 22nd the medical practitioners on the Staffordshire panel entertained the chairman of the County Panel and Local Medical Committees (Dr. Ridley Bailey) and Mrs. Ridley Bailey to luncheon. The Mayor of Stafford (Dr. F. Milnes Blumer) presided over a large gathering. On behalf of the subscribers Dr. W. Webster, J.P., of Newcastle-under-Lyme, presented Mrs. Ridley Bailey with a gold wristlet watch, and Dr. Ridley Bailey with a gold cigarette case in which was enclosed a cheque. The case was inscribed:

> Presented to Dr. T. Ridley Bailey by the practitioners on the Staffordshire panel as a mark of their esteem and appreciation of his valuable services to the medical profession, July 22nd, 1920.

Dr. Webster referred to the many positions of responsibility and honour held by Dr. Ridley Bailey not only in the Midlands but also as a member of the Council of the British Medical Association, as a member of the Insurance Acts Committee and of the Conditions of Service Subcommittee, and as a member of the council of the Society of Medical Officers of Health. Dr. Webster said that the profession owed a debt of gratitude to Dr. Ridley Bailey for the clear-sighted and detached view which he had always taken of the position and responsibilities of the medical man in relation to the public; few were capable of taking this view, and fewer still had the power possessed by Dr. Ridley Bailey of acting wisely from it. It was impossible to estimate too highly the value of the services rendered by Dr. Ridley Bailey in connexion with National Health Insurance. "When the Insurance Acts Committee of the British Medical Association was formed," said Dr. Webster, "and when, later, the Advisory Committee was instituted, we found that your abilities had been recognized by many outside your own county. The British Medical Association found in you a valued councillor in all Insurance Acts matters, so that you were placed on the Insurance Acts Committee and the Executive Committee. These positions you have continued to occupy with profit to the profession and credit to yourself. We found to our great satisfaction that your nomination by us to the Advisory Committee was endorsed not only by all the adjacent Midland Panel Committees, but by distant English Panel Committees, and also by similar bodies both in Wales and Scotland." Dr. Tibbetts, Dr. Taylor, and Dr. Southwell testified to the gratitude and deep regard felt by the medical men of the county to Dr. Ridley Bailey. The Mayor associated himself whole-heartedly with all

Dr. Webster and the other speakers had said. His friendship with Dr. Ridley Bailey began when they joined the Staffordshire Branch of the British Medical Association together in 1887, and they were colleagues on the Council for a long period of years. He then saw what an aptitude Dr. Ridley Bailey had for administrative and constructive work. The whole profession was under a great debt to Dr. Ridley Bailey for the exceptionally able and successful way in which he had safeguarded their interests. Dr. Bailey stood for probity and uprightness, and for all that was honest and clean in public life. He had clear and pronounced views in medical politics, went straight for the goal he had in view, and had always the courage of his convictions. Dr. Ridley Bailey, in a graceful speech, thanked Dr. Webster and the subscribers on his own and his wife's behalf, and Mrs. Ridley Bailey added a few words of thanks.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commander A. R. Davidson to the *Caradoc* on recommissioning. [illegible] B. L. Hughes to the *Victory*, for R.N. Barracks. Surgeon Lieutenant Commanders G. B. Cockrem to the *Resolution*, [illegible] to Portsmouth Dockyard.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major R. R. Lewis relinquishes the temporary rank of Lieutenant-Colonel, July 27th, 1916.

Major [illegible], D.S.O., to be acting Lieutenant-Colonel.

Temporary Captain A. Brown, O.B.E., relinquishes the acting rank of Lieutenant-Colonel.

To be Captains: Temporary Captain A. E. [illegible], M.C. [illegible] with precedence next below S. Fenwick [illegible] November 17th, 1918 [illegible] with precedence next below [illegible] Lieutenant (temporary Captain) [illegible] Draper, M.C., J. R. S. Mackay; Captain G. K. Maurice, D.S.O., M.C., [illegible] not to reckon for pay and allowances [illegible] with precedence next below W. W. S. Sharpe.

Temporary Captain [illegible] to be Lieutenant, and to be temporary Captain (November 7th, 1918, but not to reckon for pay or allowances prior to July 1st, 1920), with precedence next below [illegible].

Captain [illegible] from S.R., to be Lieutenant and to be temporary Captain [illegible] 1918, but not to reckon for pay and allowances prior to June 1st, 1920, with precedence next below [illegible].

Hon. Captain C. A. Hutchinson, late R. W. Kent Regiment, to be Lieutenant, June 21st, 1920, with precedence next below W. Y. Eccott (substituted for notification in the *London Gazette*, July 9th, 1920).

The following officers have relinquished their commissions: [illegible] Gillespie, P. Murphy, J. P. Mathie, A. Topping (June 11th, 1919, substituted for notification in the *London Gazette* [illegible]) [illegible] the rank of Captain [illegible] Watson, R. C. De Lacey, G. B. [illegible] A. M. [illegible], G. Maclean, E. [illegible] J. A. Bateman [illegible] Temporary Captain R. M. Richardson [illegible] rank of Captain April 11th, 1919, substituted for notification in the *London Gazette*, May 23rd, 1919).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain [illegible] J. S. Cook relinquishes the pay and allowances [illegible] 1919.

The following officers relinquish their commissions: Captain [illegible] and are granted the rank of Major. [illegible] Captains, and retain the rank of Captain: R. Chevassut, R. H. Yolland, J. H. Davison, A. D. Gorman (April 13th, [illegible] notification in the *London Gazette*, June 21st [illegible]) [illegible] D. Cameron, W. M. Casper, C. A. [illegible]

OVERSEAS CONTINGENTS.

[illegible] MEDICAL CORPS.

Captain H. P. [illegible] to be acting Lieutenant-Colonel from [illegible].

Captain [illegible] relinquishes the temporary rank of Major (October 10th, 1917).

Captain [illegible] O.B.E., relinquishes the acting rank of Major [illegible].

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

[illegible] *London Gazette* [illegible]

[illegible] *London Gazette* [illegible]

Captain and acting Major [illegible] T. Poynder relinquishes the acting rank of Major [illegible] to be employed.

[illegible] D.S.O. [illegible] Menzies.

Captain D. J. [illegible] resigns his commission and retains the rank of Captain.

Captain A. R. Maclachlan resigns his commission and is granted the rank of Major.

1st Eastern General Hospital.—Captain W. L. Murphy resigns his commission and retains the rank of Captain.

Lowland Divisional Sanitary Section.—Captain T. J. Mackie resigns his commission and retains the rank of Captain.

1st Scottish General Hospital.—Major Sir H. McI. W. Gray, K.B.E., C.B., C.M.G., resigns his commission and is granted the rank of Colonel. Captain A. W. Falconer, C.B.E., D.S.O., resigns his commission and is granted the rank of Lieutenant-Colonel.

Sanitary Service.—Major D. R. Dobie resigns his commission and retains the rank of Major.

TERRITORIAL FORCE RESERVE.

ARMY MEDICAL SERVICE.

Major H. Richardson, D.S.O., from R.A.M.C. General List, to be Colonel.

ROYAL ARMY MEDICAL CORPS.

Major C. A. Stidston, D.S.O., resigns his commission and is granted the rank of Lieutenant-Colonel.

Captain E. G. Gauntlett, C.B.E., D.S.O., resigns his commission and is granted the rank of Major.

Captain C. W. Eames, D.S.O., and Captain C. N. Smith from General List, to be Lieutenant-Colonel and Major respectively.

Captains resign their commissions and retain the rank of Captain: C. Killick, J. A. Watt, G. L. Bunting, W. E. Falconar, S. E. Whitnall, B. T. K. Collins, C. C. Ling, K. S. Storrs.

The announcement regarding Captain G. S. Williamson, published in the *London Gazette* of January 9th, 1919, is cancelled.

Captain C. C. Grummitt, from the General List, to be Captain.

QUEEN MARY'S ARMY AUXILIARY CORPS.

Auxiliary Section R.A.M.C. Attached.—Medical Official L. Gainsford relinquishes her appointment.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

POST GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL, Medical Unit, Tues., 2 p.m., Dr. Riddoch: Disorders of Reflex Functions. 2 p.m., Dr. Thompson: Paraplegia.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W. Daily, 10 a.m. Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 12.15 p.m., Dr. Burnford: Pathological Demonstration; 4.0 p.m., Mr. Armour: Subphrenic Abscess. Tues., 12, Mr. Gray: Fractures; 1.30 p.m., Mr. Banks Davis: Throat and Ear. Wed., 11.30 a.m., Mr. MacDonald: Cystoscopy; 2.30 p.m., Mr. Armour: Surgical Cases. Thurs., 10.30 a.m., Dr. Simson: Gynaecological Demonstration; 4.0 p.m., Mr. Harman: Employers' Liability in Eye Injuries. Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; 4.30 p.m., Mr. Buxton: Affections of Buccal Cavity. Sat., 12, Mr. Sinclair: Abdominal Surgery.

APPOINTMENTS.

BALLANTYNE, A. J., M.D.Glasg., F.R.F.P.S., Lecturer in Ophthalmology, University of Glasgow, vice Dr. Maitland Ramsay, retired.

BROMLEY, Lancelot, M.Ch., F.R.C.S., Surgeon to the Neurological Department, Guy's Hospital.

SHATTOCK, Clement E., M.D., M.B., F.R.C.S., Assistant Surgeon to the Royal Eye Hospital.

SHEEN, A. W., C.B.E., M.S.Lond., F.R.C.S., Visiting Surgeon (for general surgery) to Ministry of Pensions Hospitals, Orpington and Shepherd's Bush.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

HARDY.—On the 30th of July, at Bushey Lodge, Teddington, to Eleanor Florence, the wife of W. H. Hardy, M.B., Manea, Cambs.—a daughter.

DEATHS.

GRIMES.—At St. Austin's Mount, Grassendale, Liverpool, on July [illegible], John Grimes, M.D., B.Sc.Lond., aged 77, late Chairman of the West Derby Board of Guardians, Liverpool. Funeral at St. Mary's Church, Grassendale.

[illegible]—On August 1st, at Roseneath, Paignton, Charles William, M.R.C.S., L.R.C.P., D.P.H., in his 73rd year.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 14TH, 1920.

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British Medical Association.

CURRENT NOTES.

Colonial Medical Services.

On February 23rd evidence was given by the British Medical Association before the Colonial Medical Services Committee appointed last autumn by the Secretary of State for the Colonies. The memorandum of evidence appeared as an appendix to the Annual Report of Council, which was printed in the Supplement of April 24th last. We are informed that the report of the Colonial Medical Services Committee is under the consideration of the Secretary of State, but "no decision as to publication has yet been taken." A question has been asked in the House of Commons, but still the report hangs fire. We have reason to think that the report may go far to satisfy the representations made by the British Medical Association, and that, if carried into effect, it would place the Colonial Medical Services on a new and sound footing. It is inexcusable to hold up such a report on any mere departmental pretext, and we hope the attention of the Minister will be drawn to the matter and that this document will, without further delay, be presented to Parliament and published for the information of all concerned.

Fees for Treatment at Welfare Centres.

Medical officers of health and other officials of local health authorities are reminded that in accordance with the resolution passed by the Representative Body of the British Medical Association on June 26th, 1920, no advertisement can be inserted in the British Medical Journal which offers less than the following terms:

(*a*) £2 2s. per session of not more than 2½ hours for the treatment of minor ailments;

(*b*) £3 3s. per session not exceeding 2½ hours for ophthalmic work involving refractions—not more than eight new cases to be seen;

(*c*) not less than 1½ guineas per case (including anaesthetist's fee) for adenoids and tonsils operations involving a general anaesthetic;

(*d*) £3 3s. per completed case for *x*-ray treatment for ringworm, where the practitioner provides his own apparatus; £2 2s. where the apparatus is provided by the local authority.

Remuneration of Medical Officers in the Protectorates in Eastern Africa and Tanganyika.

The British Medical Association is informed by the Secretary of State for the Colonies of the following proposed scales of salary for medical officers in the Protectorates in Eastern Africa and Tanganyika, to have retrospective effect from April 1st, 1920:

Principal medical officers in the East Africa Protectorate, Uganda and Tanganyika, will receive a salary of £1,200 per annum; principal medical officers in Nyasaland and Zanzibar, £1,000 per annum; and deputy principal medical officers in the East Africa Protectorate, Uganda and Tanganyika, £1,000 per annum. The principal sanitation officers of the East Africa Protectorate, Uganda and Tanganyika will also receive a salary of £1,000 per annum. Senior medical officers in the East Africa Protectorate, Uganda, Tanganyika, Nyasaland, and Somaliland, will receive a salary of £700, rising by £25 yearly to £800, as will also sanitation officers in the East Africa Protectorate, Uganda, Tanganyika, Nyasaland, and Zanzibar, and dental surgeons in the East Africa Protectorate, Uganda, Tanganyika, and Nyasaland. Medical officers will now be appointed at an initial salary of £600, rising by £25 yearly to £700. Bacteriologists in the East Africa Protectorate, Uganda, and Tanganyika, a salary of £700, rising by £25 yearly to £800. The medical officer in charge of the anti-venereal disease work in Uganda will receive a salary of £1,000, and the medical entomologist in Uganda (temporary post) a consolidated salary of £800. Medical officers of health to receive special allowances of £50 or £100 a year, according to station. No duty allowances are to be paid, but an officer acting in a higher post will receive an acting allowance equal to the difference between his own salary and the minimum of the incremental scale attached to the post in which he is acting, or, if the latter carries a fixed salary, half the difference between his own salary and that of the post, the minimum acting allowance payable being at the rate of £50 a year. Present war bonus will cease on the introduction of the new scales.

A revised scale of remuneration of officers of the West African Medical Staff was published in the Supplement of July 17th last (p. 42). All the new scales will receive at an early date the consideration of the Council of the Association; but it may at once be noted that the scales in respect of Eastern Africa, if made effective, would actually mean loss of pay to the men in the intermediate grades, who form the main body of the services. For example, a married medical officer who at present, including duty allowance and war bonus, receives as a maximum £745 a year would be paid a maximum of £700, and a senior medical officer would similarly, on such a basis, lose £105 a year. This gives no encouragement to capable men to join the medical services in Eastern Africa.

Hospital Staffs and Treatment of State-supported Patients.

In the Supplement of July 17th a report was given of the Conference held at Cambridge during the Annual Meeting of the British Medical Association to consider the question of honorary staffs of hospitals and the treatment of State-supported patients. The Conference approved the action of the Hospitals Committee of the Association in regard to remuneration of the staffs of voluntary hospitals for work done on behalf of State-aided patients, and promised its support in bringing the subject to the notice of the governing bodies of voluntary hospitals throughout the country. Since then reports have appeared in the Supplement of meetings of the honorary staffs of hospitals held in various large centres. From these it will be seen that the policy of the British Medical Association has been adopted very generally. The Medical Committee of the London Lock Hospital, however, takes a different view and has so informed the Association. The letter states that the Medical Committee of this institution, at a meeting held last week, discussed the questions arising out of the circular letter from the Association dated June 14th, 1920, and unanimously adopted the report of a special subcommittee, to which this matter had previously been referred. The report is to the general effect that the medical staff of the London Lock Hospital has always given its services without payment and prefers to maintain the honorary tradition. It is added that this institution receives no payment in respect of the treatment of school children, nor for the in-patient treatment of disabled soldiers and sailors sent by the Ministry of Pensions.

Leave Pending Retirement in the I.M.S.

The Government of India have now reported their decision that officers of the Indian Medical Service should ordinarily be granted leave pending retirement, if such leave is due and applied for, and if it is proposed to sanction the retirement of the officer in question. This decision has been communicated by the India Office to the British Medical Association, and we are very glad to announce it.

DEATH CERTIFICATION AND CORONER'S INQUEST LAW.

DEPUTATION TO THE HOME SECRETARY AND THE MINISTER OF HEALTH.

A DEPUTATION from the British Medical Association and the Medical Parliamentary Committee (of medical members of Parliament) waited upon the Minister of Health (Dr. C. Addison) and the Home Secretary (Mr. Edward Shortt, K.C.) on August 3rd, at the House of Commons, to advocate the amendment of the law relating to death certification and coroners' inquests. The deputation was introduced by Dr. W. E. Elliot, M.P., and Dr. Nathan Raw, M.P., and consisted of Sir Henry Craik, M.P., Dr. A. C. Farquharson, M.P., Dr. F. E. Fremantle, M.P., and Dr. Donald Murray, M.P.; and, on behalf of the Association, Mr. N. Bishop Harman, F.R.C.S., Mr. E. B. Turner, F.R.C.S., Dr. G. C. Anderson (Deputy Medical Secretary), and Dr. N. G. Horner (Assistant Editor). The Ministers were accompanied by Mr. S. P. Vivian (Deputy Registrar-General and Assistant Secretary, Ministry of Health).

Mr. BISHOP HARMAN said that the purpose of the deputation was, in the first place, to express dissatisfaction with the present form of death certificate, which made it possible for a doctor to certify death when he had no actual evidence that death had occurred. It was objectionable also that the paper certifying the cause of death should be handed to the relatives of the deceased. The relatives were thereby informed of medical details which it was not necessary for them to know, and at times very inadvisable; and this led to the employment of euphemisms by the certifier, thus diminishing the value of the statistical returns. The suggestion of the deputation was that there should be a dual certificate; one part, stating the fact of death, would be given to the relatives, and the other, stating the cause of death, would be handed only to the proper authorities. To some extent this practice prevailed in Ireland, and also in Scotland, but there neither document was confidential. The only people who objected to the suggested procedure were the insurance companies, and he did not think that their objection had much substance. Reform was also needed with regard to the registrar, the official whose certificate of registration was an authority for burial. This official was entitled, on information only, to give a certificate permitting burial. He could take a statement from any bonesetter, herbalist, or other unqualified person, or, if he liked, he could accept the statement of relatives; and these wide discretions meant very unsatisfactory protection against crime or negligence.

The HOME SECRETARY remarked that under the Registrar-General's Regulation of 1914 every uncertified death had to be notified to the coroner. Previously the registrar had been expected to exercise a certain discretion.

Dr. FARQUHARSON said that even after notification to the coroner what usually happened was that an officer was sent to make a few inquiries, and very seldom was an inquest held under such circumstances.

Mr. BISHOP HARMAN then spoke of the need for reform in the office of coroner. Originally, in cases of death, the coroner was not concerned with ascertaining whether there had been foul play; he had simply to discover whether the deceased person committed suicide. The work of coroner had now widened into the investigation of the cause of death, but in the absence of general direction their practice was widely different. Some coroners investigated publicly in great detail cases of death following accidents; others contented themselves with private inquiries, which, he believed, were illegal, but served their purpose. The latter practice was parallel with that of the procurator-fiscal of Scotland. It was not clear whether the coroner was simply an officer of law, and belonged to the department of the Home Secretary, as he did technically, or whether he was an officer of public health and came under the Ministry of Health. If he were simply a legal official, medical assessors would be necessary, to whom all documents and evidence must be referred. On the other hand, if it were recognized, as the deputation maintained, that his real business was a scientific investigation, the coroner became a most valuable official for inquiring into the cause of death, and passing on his information, if necessary, to the officers of the law. But the present procedure was a mediaeval anachronism. The coroner's court was public and full of sensations; his jury were uninstructed in matters of medicine; their verdict was of little value, the law officers frequently acting independently of it, and the verdict was sometimes accompanied by riders which were unreasonable or offensive to the medical profession.

The HOME SECRETARY suggested that it was not right to generalize with regard to coroners' courts from one or two exceptional instances.

Mr. BISHOP HARMAN said that reform was also overdue in the matter of identifying bodies in the mortuary. This duty had to be done by the nearest relative, often a very painful ordeal. Viewing the body by the jury, necessary enough in the old days, when it had to be ascertained that there was a body before the estate became forfeit, was now an unnecessary practice.

The HOME SECRETARY said that the coroner's inquest was occasionally very valuable (and instanced a recent case), though he agreed that the procedure might be capable of improvement. He asked whether it was the opinion of the deputation that all coroners should be doctors.

Mr. BISHOP HARMAN said that this was so undoubtedly. Legal training would be an additional advantage, but the legal powers of his court should be vested in the magistrates, and his office be merely for the determination of the fact and nature of death. The legal side of the coroner's work seemed unnecessary and the publicity of his court undesirable.

The HOME SECRETARY pointed out that even under the present arrangements the coroner must form an opinion as to whether an inquest was necessary or not, and this he had to do by private inquiry. The procedure of the procurator-fiscal in Scotland was very different, and was not regarded as wholly suitable in England.

Mr. TURNER said that if it proved to be a case for legal investigation the coroner should hand over the documents and evidence to the proper authorities, instead of himself holding a pseudo-trial, which was often conducted without due regard to the laws of evidence. The coroner should investigate and pronounce upon the cause of death.

Sir HENRY CRAIK said he did not think that the view of the deputation was that the coroner should be a mere agent of the legal authorities, but that he should have some power of initiation.

Mr. BISHOP HARMAN went on to bring before the Ministers certain purely medical grievances. Doctors objected to the requirement to sign death certificates without payment. Also when a coroner wrote to a doctor asking for information—and a request of that kind was very nearly a demand—he should be entitled to offer a fee, more especially as the information elicited might obviate the need for an inquest. Resident medical officers in institutions who were called on to give evidence at an inquest on a person dying in the institution should be paid for their attendance. Finally, a fee of one guinea for a *post mortem* operation was inadequate. The operation required skill and knowledge, and involved risk.

The HOME SECRETARY said that he appreciated what had been put before them by Mr. Bishop Harman.

The MINISTER OF HEALTH asked whether any amendment was suggested to the position (as improved by the Regulations of 1914) with regard to burials without medical certificate.

Mr. BISHOP HARMAN said that their view was that authority for burial should not be given on information only.

Dr. ELLIOT said that a very large number of burials—several thousands a year—took place on information given by unqualified practitioners.

Dr. FARQUHARSON said that it was a very frequent practice for an unqualified practitioner who had attended the deceased person to write a short statement not technically a certificate—and though this statement found its way to the coroner, in almost every case an authority for burial was given. This was a great encouragement to unqualified practice, which the Ministry of Health was endeavouring to stop. He objected strongly to the practice whereby the fact of such deaths was communicated to the coroner, who sent a police officer to make a few inquiries and did no more in the matter. The coroner really exercised a very wide discretion, not always wisely.

The **Minister of Health** considered that the issue of burial authorities on the statements of unqualified practitioners was a very important matter. He asked whether it was the view of the deputation that a medical man should actually see the dead body before giving a certificate, even though he had been attending the deceased person, and expecting his death, and death took place shortly after he left the house.

Mr. **Bishop Harman** said that the British Medical Association believed that the dead body should be seen by the certifying practitioner in every case. Mr. **Turner** said that this was also the recommendation of the Select Committee of the House of Commons which examined this question.

Dr. **Nathan Raw** expressed the thanks of the deputation to the Ministers.

Association Notices.

FORMATION OF UGANDA AND EAST AFRICA BRANCHES.

Notice is hereby given by the Council to all concerned that, as a result of a proposal made by the Uganda Division to that effect, the Council has decided that as from August 14th, 1920, the East Africa and Uganda Divisions be discontinued, and that new Division-Branches as follows be substituted therefor:

1. East Africa Branch,
2. Uganda Branch,

the areas of the new Branches to be co-terminous with the areas of the East Africa and Uganda Protectorates respectively.

Representation in Representative Body. Unaffected.

Meetings of Branches and Divisions.

SOUTHERN BRANCH.

The annual meeting of the Southern Branch was held on July 15th, when Dr. **J. Lockhart Livingston** was in the chair.

Prior to the meeting the members of the Branch Council were entertained to luncheon by the President-elect, Dr. A. A. MacKeith (Southampton).

In the report of the Branch Council it was stated that there had been two meetings of the Branch during the year, and that the number of members at the annual meeting 1920 was 298 as compared with 270 in 1919. Dr. MacKeith had been succeeded as honorary secretary of the Branch by Dr. Lockhart Stephens. The second British Medical Association lecture, on influenza, had been delivered at Southampton by Sir Thomas Horder, and published in the Journal.

After the ordinary business was transacted Dr. **MacKeith** gave a most interesting address on professional secrecy, and a full discussion took place.

The new President invited all members of the profession not being members of the Association to the meeting. Tea was provided by the President, after which a large party were shown over the White Star liner *Adriatic*, and this concluded a most successful meeting.

SUSSEX BRANCH.

The annual meeting of the Sussex Branch was held at Lewes on July 21st. A hearty vote of thanks was accorded to the retiring President, Mr. R. Sanderson, for his services during his year of office, with many expressions of appreciation. Dr. Frank Loud was elected President for the year 1920–21, and Mr. R. Sanderson and Dr. W. A. Dow Vice-Presidents. The annual report and financial statement were approved.

The President, Dr. **Frank Loud**, gave an address on some methods of treatment used in a military hospital and continued in civil practice. He drew his illustrations from cases of scabies, sycosis, psoriasis, dermatitis, influenza, and asthma. After a discussion the President was cordially thanked for his address.

Before the meeting the President entertained at luncheon at his house the members attending. By the kind permission of Mr. Every, the Phoenix Iron Works were visited, and Mr. Every arranged for a special casting to be made, and later entertained the members at tea.

SUSSEX BRANCH: BRIGHTON DIVISION.

A **meeting** of the Brighton Division was held on July 30th at the Queen's Road Dispensary, when Dr. **Uhthoff** was in the chair. The Secretary of the Division presented his report on the recent Conference of Secretaries at Cambridge and the Representative his report on the Annual Representative Meeting. The Chairman of the Executive Committee, Dr. **Whittington**, announced that arrangements were being made for a series of twelve clinical meetings at the various hospitals in the town at fortnightly intervals, commencing in October. A new feature would be the holding of meetings at which general practitioners would be invited to bring cases, however ordinary they might be, for comment and discussion. The Secretary, Dr. L. A. **Parry**, gave a short address on the work of the Association. It was arranged that a summary of this address should be printed and circulated as part of the propaganda work of the Organization Committee.

CORRESPONDENCE.

Prescribing Chemists, and Medical Practitioners and Dispensing.

Sir,—It is time the British Medical Association considered the question of prescribing chemists, and the dispensing of medicines by medical practitioners—the one is as reprehensible as the other. In my early days I have been guilty of selling medicines—time showed me definitely that the majority of patients looked upon a visit to the doctor as synonymous with getting a bottle of "stuff"; paying a fee for diagnosis and treatment was not considered.

The panel system with all its inequalities has not turned us into a body of dispensing chemists—the fee we receive is for advice—and the chemist gets paid for the supply of drugs.

I quite comprehend the difficulty of relieving the rural practitioner of dispensing—we can at least make a start in the towns.

It is up to the profession to teach the public that we are not dispensing chemists—we will not sell them medicines even at a profit of 2s. on each bottle, but we will have a just fee. Chemists should by law be restrained from prescribing; the new Act on patent medicines should include this proviso; and one also that if there is a chemist within a mile of a practitioner's house the practitioner must not sell drugs—we can leave the Pharmaceutical Society to meet the necessary claims of supply and demand.

I am in general practice, have tried both systems, and have never regretted parting company with the sale of drugs.—I am, etc.,

W. B. Cosens.

Dorchester, Aug. 1st.

Outdoor Medical Staff of the Ministry of Health.

Sir,—You report that some 1,400 doctors, many of the highest standing, competed for some thirty posts under the new Medical Service (Supplement, July 17th, p. 45).

As the pay is about £1,000 a year—equivalent, as we are always reminded, to about £400 pre-war—I submit that it is scarcely seemly to have such keen competition.

I also suggest that it is an affront to the dignity of the profession if the Government can boast that it has at least forty fully qualified men ready to submit to vigorous and exacting, if not humiliating, tests for any job which offers a thousand pounds per annum.

I greatly fear that we have not only deflated our dignity, but sadly cheapened our future remuneration for any future Government posts.—I am, etc.,

J. C. McWalter, M.D., LL.D.

Dublin, July 24th.

COUNTY OF LONDON INSURANCE COMMITTEE.

At the meeting of the London Insurance Committee on June 24th it was reported that out of the 1,450 insurance practitioners in London 282 had applied for corrected lists, which the Committee is required by the distribution scheme under the medical benefit regulations to supply. During the last three months the lists of fifty-five practitioners, representing 22,517 insured persons, have been corrected, and in several cases the effect of correcting the lists has been to increase the number of units of credits to the practitioners concerned. In one case the number of insured persons on a list of 2 610 has been increased by 125. It was also reported that 1,245 insured persons had given notice of their desire to select another practitioner as from the end of June, and that notices had also been received from practitioners which necessitated the removal of 110 names from their lists on the same date.

At the meeting of the London Insurance Committee on July 22nd Mr. F. H. Harris was elected chairman for the year 1920–21. It was reported that forty-nine practitioners on the list had applied for exemption from the liability to have insured persons assigned to them under the new regulations. The practitioners were informed by the Committee how this would affect their individual shares in the practitioners' fund which would be payable to them, whereupon eight withdrew their request for limitation. The others were exempted from the liability. Three applied for exemption from the liability for emergency night calls to other practitioners' patients: in two cases the application was granted, and in the third case the practitioner was relieved of this liability for one year. A case reported by the Medical Services Subcommittee had reference to the treatment provided by an insurance practitioner for an insured person suffering from venereal disease. The Local Medical Committee expressed the view that there was no evidence to show that the procedure adopted by the practitioner was of a kind which could not, consistently with the best interests of the patient, have been properly undertaken by a general practitioner of ordinary professional competence and skill. The Insurance Committee concurred, and it was agreed that the amount of fees (£7 7s.) which had been paid should be deducted from the payment to the practitioner and refunded to the insured person. The Minister of Health, to whom a report of the case had been submitted, intimated that he did not propose to refer the question to referees.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Captain C. S. Woodwright, C.B.E., promoted to the rank of Surgeon Rear Admiral. Surgeon Commanders J. Bourdas to the *Commonwealth*, J. R. A. Clark-Hall to the *Vivid* for Youths' Training Establishment, Devonport. Surgeon Lieutenant Commander R. J. G. Parnell to the *Iron Duke*, additional. Surgeon Lieutenants promoted to the rank of Surgeon Lieutenant Commander: C. A. W. Ford, C. H. M. Gamlette, W. H. A. Sinclair-Loutit, W. J. Gerrard, R. Buddle, O.B.E., W. P. Vicary, A. C. Shaw, R. K. Shaw, M.C., A. C. V. Green, R. A. Brown. Surgeon Lieutenant W. A. Jolliffe to the *Emperor of India*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Captains to be Majors: (Brevet Major) C. Ryles, D. S. Buist, (Brevet Major) W. E. Marshall, M.C., A. M. Pollard, D.S.O., G. G. Collet, C. Clarke, D.S.O., (temporary Major) E. W. Vaughan, D.S.O., M.C., A. N. R. McNeill, D.S.O., A. R. Wright, D.S.O., and to be Brevet Lieut.-Colonel vide *Gazette*, December 12th, 1919, T. B. Nicholls, J. B. Jones, M.C., J. A. Clarke, S. McK. Saunders, (Brevet Major) T. J. Mitchell, D.S.O., (acting Major) D. H. C. MacArthur, O.B.E., (temporary Major) G. S. Parkinson, D.S.O., H. Gall, C. H. O'Rorke, J. Startin, M.C., G. H. Stack, H. H. Leeson, M.C., (Brevet Major) S. W. Kyle, J. W. Lane, (Brevet Major) W. G. Wright, D.S.O., (Brevet Major) A. T. J. McCreery, M.C.

Temporary Captain A. Farquhar relinquishes the acting rank of Major, April 4th, 1919.

Temporary Captains to be Captains: J. W. Malcolm, M.C., February 28th, 1919 (but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below J. T. Scrogie), W. C. Connell, January 24th, 1920 (but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below J. Bennet).

Captain E. F. W. [illegible] from S.R. to be Captain, October 14th, 1919 (but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below J. A. Crawford.

Captain B. R. Evans from S.R. to be Lieutenant and to be temporary Captain, August 30th, 1917, but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below J. C. [illegible]

Captain D. J. H. Jones from S.R. to be Lieutenant and to be temporary Captain, July 1st, 1917, but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below J. M. [illegible]

Temporary Captain Charles E. Dolling, M.B., is removed from the army, the King having no further occasion for his services as an officer, August [illegible], 1920.

The following officers retire on retired pay: Lieut.-Colonel E. E. Ellery; Majors G. Baillie (on account of ill health contracted on active service), R. N. Woodley, D.S.O.

The following officers relinquish their commissions: Temporary Lieut.-Colonel A. Lingard and retains the rank of Lieut.-Colonel; temporary Captain (acting Major) J. A. Mackenzie and is granted the rank of Major; temporary Captain H. R. L. Joy and is granted the rank of Major; temporary Captains and retain the rank of Captain: A. W. C. Bennett, H. C. Hopkinson, B. G. H. Connolly, M.C., P. S. MacLaren, J. V. O. Andrews, G. L. Neil, O.B.E., W. A. Higgins, S. J. W. Donald, C. L. [illegible], W. A. Hotson, F. H. Whyte, H. Stewart, H. H. Crickitt, W. H. Booth.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain P. McDiarmid is transferred to the unemployed list.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains relinquish their commissions: A. H. Habgood, D.S.O., on account of ill-health caused by wounds, and is granted the rank of Lieutenant-Colonel; [illegible] McI. [illegible], M.C., and is granted the rank of Major; [illegible] W. Gray, and retain the rank of Captain.

Captain [illegible] relinquishes the acting rank of Major.

INDIAN MEDICAL SERVICE.

Lieut.-Colonel [illegible] W. D. [illegible], Principal and Professor of Pathology, King George's Medical College, Lucknow, has been granted furlough for [illegible] months in combination of vacation leave for three months (May 1st).

Major A. S. M. [illegible] has been posted as Residency Surgeon, Bushire (June 1st).

Lieut.-Colonel [illegible] Wilson, Professor of Surgery, Medical College, [illegible] to the [illegible] Hospitals, has been granted [illegible]

Major [illegible] O.B.E., has been appointed to officiate as Professor of [illegible], Medical College, Calcutta.

The services of Captain W. O. Walker have been placed temporarily at the disposal of the Government of Bengal (April 7th).

Major [illegible] Carey Evans, M.C., Staff Surgeon, Bangalore, has been appointed to officiate as Residency Surgeon, Mysore, in addition to his own [illegible] (May [illegible]).

Captain I. D. Grant has been permitted to resign his commission (May 6th).

Colonel F. R. Ozzard has been permitted to retire (May 20th).

Major D. Heron, C.I.E., has been granted privilege leave for six months, combined with commuted furlough on full average salary for two months, June 1st.

Captain A. S. Fry has been appointed to officiate as Medical Officer, Sistan Consulate, in addition to his military duties, June 1st.

Captain R. M. Easton, M.B., has been permitted to resign his commission, June 7th.

Lieut.-Colonel A. V. Anderson, M.B. (retired), who was re-employed, has been permitted to revert to the retired list, June 5th.

Lieut.-Colonel D. R. Green, M.D. (retired), who was re-employed, has been permitted to revert to the retired list, June 26th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major H. A. T. Fairbank, O.B.E., D.S.O., resigns his commission, July 14th, 1920, and is granted the rank of Lieutenant-Colonel (substituted for notification in the *London Gazette*, July 13th, 1920).

Captain J. E. Lascelles resigns his commission and retains the rank of Captain.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL.—Medical Unit. Tues., 2 p.m., Dr. Riddoch: Disorders of the Nervous System. Wed., 2 p.m., Dr. Thompson: Paraplegia.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient and Out-patient Clinics and Operations. Mon., 12.15 p.m., Dr. Burnford: Pathological; 5 p.m., Mr. MacDonald: Haematuria. Tues., 10.30 a.m., Surgical Registrar: Demonstration; 2 p.m., Dr. Burnford: Medical Cases. Wed., 11.30 a.m., Mr. MacDonald: Cystoscopy; 4.30 p.m., Dr. Owen: Medical Cases. Thurs., 10.30 a.m., Dr. Simson: Gynaecological; 4.30 p.m., Mr. Bishop Harman: Purulent Conjunctivitis. Fri., 12.15 p.m., Dr. Burnford: Applied Pathology. Sat., 12 noon, Mr. Sinclair: Abdominal Disease.

APPOINTMENTS.

CARROLL, J., M.B., C.M.Glasg., D.P.H.Camb., Medical Referee for Wigan under the Ministry of Pensions and Assistant Physician to the Royal Albert Edward Infirmary, Wigan.

COFFEY, Thomas, L.R.C.P. and S.I., to the Smethwick Branch of the Birmingham General Dispensary.

DYAS, G. E., M.B., Honorary Medical Officer-in-Charge of X-ray and Electro therapeutic Department of the Wolverhampton General Hospital.

SALISBURY-SHARPE, William, M.D., F.R.C.S.I., Assistant Surgeon to the Central London Throat and Ear Hospital.

SINCLAIR, Neil F., F.R.C.S., Assistant Surgeon to the West London Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

JEX-BLAKE—HERBERT.—On Thursday, August 5th, in the parish church at Wilton, by the Bishop of Salisbury, assisted by the Rev. Guy Campbell, Arthur John Jex-Blake, M.D.Oxon., F.R.C.P., of [illegible] Gardens, London, to Muriel Katharine Herbert, younger daughter of the late Earl of Pembroke, of Wilton House, Salisbury.

DEATHS.

EATON.—On the 2nd of August, suddenly, from cardiac failure, at [illegible], Dulwich Village, S.E., Dr. Irene D. Eaton, aged [illegible]

RHODES.—On August 5th, at 50, Brechin Place, S.W., Herbert Rhodes, M.B., M.R.C.P., aged 45.

ROBERTSON.—At a nursing home in Aberdeen on August 4th, Dr. George James Robertson, Kilblean Cottage, Oldmeldrum, late of Oldham, in his 72nd year.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 21st, 1920.

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British Medical Association.

CURRENT NOTES.

Insurance Practitioners and Fees.

The attention of the Insurance Acts Committee has been drawn to a statement published in another journal that a recent decision by the Ministry of Health, in a case in which a practitioner appealed against a decision of the London Insurance Committee, has established "that a breach of the agreement has not been committed if a fee is accepted by a practitioner from a third party who is not acting as an agent for an insured person." It is important that insurance practitioners should not be misled by such a very imperfect summary of the decision referred to. The report of the appeal in the case in question and the official letter giving the decision of the Ministry thereupon make it clear that, while in this case the Insurance Committee's decision to refund the money to the insured person was inappropriate, as the fee had not been paid by her or on her behalf, nevertheless (1) that a refusal to attend without a fee either from the insured person himself or from anyone else is a breach of the agreement, and may be followed by the withholding of part of the Exchequer grant; (2) that the acceptance of a fee from the insured person himself or from anyone else, either acting on behalf of the insured person or not, is contrary to the Regulations and agreement; and (3) that a practitioner who made a practice of accepting fees in such circumstances might be liable to have his name removed from the medical list on the ground that his continuance thereon would be prejudical to the efficiency of the insurance medical service. These observations do not, of course, apply to fees accepted by way of deposit in cases of doubt, as provided for by the Regulations, nor to services rendered which are beyond the competence of the ordinary general practitioner.

Fees for Treatment at Welfare Centres.

Medical officers of health and other officials of local health authorities are reminded that in accordance with the resolution passed by the Representative Body of the British Medical Association on June 26th, 1920, no advertisement can be inserted in the British Medical Journal which offers less than the following terms:

(a) £2 2s. per session of not more than 2½ hours for the treatment of minor ailments;

(b) £3 3s. per session not exceeding 2½ hours for ophthalmic work involving refractions (not more than eight new cases to be seen;

(c) not less than 1½ guineas per case (including anaesthetist's fee) for adenoids and tonsils operations involving a general anaesthetic;

(d) £3 3s. per completed case for *x*-ray treatment for ringworm, where the practitioner provides his own apparatus; £2 2s. where the apparatus is provided by the local authority.

Life Assurance Examinations.

Numerous inquiries reach the Medical Secretary's department regarding the scale of fees for life insurance examinations which has been agreed upon between the Life Offices' Association and the British Medical Association. The scale was set out in this column of the Supplement of July 17th last; it is payable as from July 1st, 1920. The following is a list of the companies which are members or associate members of the Life Offices' Association and are parties to the agreement:

Alliance
Abstainers and General
Atlas
Australian Mutual
British Equitable
British General
Britannic
Caledonian
Canada Life
China Mutual
Clerical Medical
Colonial Mutual
Commercial Union
Confederation
Consolidated
Eagle Star and British Dominions
Ecclesiastical
Edinburgh
Equity and Law
Equitable
Friends' Provident
General
Gresham
Guardian
Law Union and Rock
Legal and General
Life Association of Scotland
Liverpool and London and Globe
London and Manchester
London Assurance
London and Scottish
London Life
Marine and General
Metropolitan
Motor Union
Mutual and Citizens
National Mutual
National Mutual of Australia
National Provident
North British
Northern
Norwich Union
Pearl
Phoenix
Provident Association of London
Provident Clerks
Prudential
Refuge
Royal
Royal Exchange
Royal London Auxiliary
Scottish Amicable
Scottish Life
Scottish Provident
Scottish Union
Scottish Widows
Standard
Sun
Sun of Canada
United Kingdom
Wesleyan and General
Yorkshire

The Half-yearly Indexes.

The usual half-yearly indexes to the Journal and to the Supplement and Epitome have been prepared and printed. They will, however, not be issued with all copies of the Journal, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C.2.

Topics for "Current Notes."

Members of the British Medical Association, and especially Division and Branch officers, are invited to send to the Medical Secretary information as to matters of general interest which appear to them to be suitable for mention in the Supplement.

HOSPITAL STAFFS AND TREATMENT OF STATE-SUPPORTED PATIENTS.

SCOTTISH CONFERENCE IN EDINBURGH.

A CONFERENCE of representatives of staffs of voluntary hospitals in Scotland, convened by the Hospitals Subcommittee of the Scottish Committee, to consider the Memorandum of the British Medical Association on payment of staffs of voluntary hospitals for the treatment of State-supported patients, was held in Edinburgh on July 29th. The following hospitals were represented: Aberdeen, Dundee, Edinburgh, and Glasgow Royal Infirmaries, and Glasgow Western Infirmary, Dumfries Infirmary, Kilmarnock Infirmary, Perth Infirmary, Leith Hospital and Northern Infirmary, Inverness. Representatives of the smaller and of the special hospitals were also present, appointed by the following Branches of the Association: Aberdeen, Border Counties, Fife, Glasgow and West of Scotland, Northern Counties, and Perth.

Dr. R. C. BUIST, Chairman of the Subcommittee, presided, and in introducing the discussion outlined the history of events which had led up to the issue of the Memorandum by the Association. The voluntary hospitals were undertaking more and more work for public authorities for which they were receiving payment, while the medical staffs remained honorary. There were thus two sections of hospital work now, the charitable and the public, and the latter was increasing and was likely to increase still more in the future. It had become necessary for staffs to consider whether the old arrangement was to continue or whether some readjustment of conditions was required to meet the altered circumstances. A meeting of members of hospital staffs held at Cambridge had approved of the policy laid down in the Memorandum, and this conference was called to consider the question. It was a preliminary meeting for interchange of views. Representatives present would report to their colleagues the views expressed, and at a subsequent meeting an authoritative decision might be come to.

Dr. TROTTER (Perth) explained that after the Representative Meeting in 1908 the staff of the Perth Royal Infirmary had a meeting with the directors, when it was agreed to pay 10 per cent. of the fees received into a staff fund to be administered by the staff.

Sir KENNEDY DALZIEL said that the same thing applied to the Western Infirmary, Glasgow. A fee was charged for all patients coming from the pensions authority and other public bodies, and 25 per cent. of this was set aside and placed at the disposal of the junior staff.

Dr. MACKENZIE (Inverness) stated that for some years before the war the directors of the Northern Infirmary had remunerated the staff at the rate of £10 per occupied bed per annum for the treatment of tuberculosis cases, and since the war pensioners had been paid for at the same rate. Disabled men formed a large proportion of the work, and there was insufficient accommodation for ordinary civil cases.

Mr. PRINGLE (Glasgow Royal Infirmary) asked if the British Hospitals Association represented the management of hospitals or if it had any authority to speak for the medical staffs. He stated that a discussion had taken place in March, 1918, between the managers and the staff of the Royal Infirmary regarding the treatment of pensioners, when it was agreed to treat them as ordinary patients if they came with subscribers' lines. Remarkably few pensioners came into the infirmary either on the medical or the surgical side. The volume of work in the infirmary was increasing steadily, and now formed a serious tax upon the time of the staff, involving in many cases the whole forenoon every day. There was a good deal of discontent with the amount of unremunerated work.

Professor MACKINTOSH (Aberdeen) reported that in April, 1918, the honorary staff of the Royal Infirmary intimated to the directors that they would be prepared as a temporary war arrangement to treat pensioners in the hospital on the condition that 5 per cent. of the money received should be paid into the staff fund. They held the view that the Ministry of Pensions should equip hospitals of their own, but they were prepared to treat a small number of urgent cases, the urgency to be determined by the members of the staff. Recently the staff had considered the Memorandum and had approved of the policy outlined in it, and were making representations to the directors accordingly.

Dr. PATRICK (Glasgow Royal Infirmary) discussed the question of payment for treatment of venereal diseases, and indicated the diversity of method and rate of payment. Could a man accept payment for such work and retain his status as a member of the honorary staff? An affirmative reply was given by a member of the conference.

Mr. WADE (Leith Hospital) said that the staff of Leith Hospital were fully alive to the question, and were prepared to go almost any length to obtain efficient hospital service for the State and for the public, but they were not in favour of accepting payment at the present stage lest they might prejudice the case when the larger question came to be decided.

Dr. [illegible] (Dundee) said the Child Welfare Centre had an arrangement with the Infant Hospital whereby of forty beds ten were reserved, and a payment was made of 45s. per week per occupied bed. The staff received none of this. Personally, he would not allow the question of money to interfere with his looking after disabled men.

Sir H. M. W. GRAY (Aberdeen) said it was unfair to the men themselves that pensioners should be made to accept charity. The State should pay for the treatment of the men who had done so much for their country.

Dr. TUKE (Dunfermline) stated that all their accommodation was required for urgent cases, chiefly accidents, and they were unable to undertake any work for public authorities.

Dr. MCALISTER (Kilmarnock) stated that Kilmarnock Infirmary received about £800 annually from various authorities. No payment was made to the staff except for venereal diseases. The staff were hoping for a lead from the rest of the profession in Scotland, and were prepared to support the policy of the Association.

Dr. WATSON GEDDIE (Aberdeen) said that they did a great deal of public work in the Sick Children's Hospital, without remuneration. School children were not all sent direct by the school medical officer, but the parents were put in the position that they must have the operation, etc., done, and they brought the children to hospital. Cases came also from the Child Welfare Centre.

Dr. NORMAN WALKER (Edinburgh) said that the discussion had gone on two lines, the overcrowding of hospitals and the question of remuneration, and he wanted the meeting to concentrate on the latter, which was the main purpose of the conference. It was a difficult question, and there was much to be said on both sides. They should differentiate between types of service and between classes of hospital. In the Royal Infirmary, Edinburgh, there were no subscribers' lines. Proper organization of the work done under arrangement with public authorities might solve many of the problems. In his department he had done something in this way by arranging for the segregation of ringworm cases in a special school and for their treatment in the infirmary apart from the other out-patients. The teaching hospital was in a different position from the county and cottage hospital. In the former the staff were rather glad to have cases for teaching purposes, and they had assistants to help in carrying out the details of treatment. In the latter the men were giving up to public work time which should go to making their own living. It was unfair that the former should take a line which was difficult for the latter to follow. At the same time it was important and desirable that an individual who had peculiar difficulties about accepting a fee should not be forced to do so. Whilst he was personally averse to accepting remuneration for his hospital work, he recognized that circumstances were altering, and he had somewhat reluctantly come round to the view that it would be quite a reasonable thing for the staffs of hospitals to represent to their managers that where they were getting remuneration for certain classes of patients a fixed proportion of that should be placed at the disposal of the staff. He must make it quite clear that he was not authorized to speak for the staff of the Royal Infirmary, which had not yet considered the question.

Dr. GREIG ANDERSON (Aberdeen) thought there could be no question about payment for treatment of pensioners. The men felt that they were injured in the service of the Government, and it was the Government's business to cure their disabilities. Practitioners were paid for treatment of pensioners at clinics, and the in-patient treatment should also be paid for. In his view also the same thing applied to insured persons.

The CHAIRMAN, in reviewing the discussion, said that it would be helpful if the Conference would not part without some general recognition of the issues involved.

After discussion, a motion by Professor MACKINTOSH, expressing approval of the action of the Hospitals Committee, was withdrawn in favour of the following motion, proposed by Dr. STEPHENS and seconded by Dr. LIVINGSTON LOUDON:

> That the staffs of voluntary hospitals be requested to consider the Memorandum of the Hospitals Committee, and to instruct their representatives for a future meeting.

The motion was carried unanimously.

Meetings of Branches and Divisions.

NORTH OF ENGLAND BRANCH.

THE annual meeting of the North of England Branch was held at Hartlepool on July 22nd. Previous to the meeting those attending were hospitably entertained to lunch by the retiring President, Dr. A. Smith (Whickham), many of the most prominent members of the Branch being present.

The following were elected officers for next year:

President: Dr. R. A. Bolam. *President-elect*: Dr. T. Eustace Hill. *Vice-Presidents*: Dr. George Hall, Dr. R. A. Morris. *Honorary Scientific Secretary*: Mr. R. J. Willan. *Honorary Secretary and Treasurer*: Dr Don.

On taking the chair as President, Dr. BOLAM moved a vote of thanks to the retiring President, commenting on the many ways in which Dr. Smith had been instrumental in helping the Association during his presidency. Dr. SMITH suitably acknowledged the vote, and expressed his gratification at seeing the winter scientific meetings re-established during his tenure of office.

Dr. BOLAM gave a short address on some of the problems that will confront the profession in the near future, and urged all present to meet and thoroughly discuss all the questions that are to be asked them in the early autumn, so that their representatives may be in a position in November to express the voice of the profession. The address was of absorbing interest and much appreciated. At its conclusion the members adjourned to the Seaton Carew golf course, kindly lent for the occasion, where a match was played by teams captained by Dr. Bolam and Mr. A. E. Morison (Sunderland). The weather was only moderately good, but the outing was very much enjoyed, and at the conclusion the result of the play was all square.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

THE annual meeting of the Branch was held at the Furness Abbey Hotel.

The Treasurer's annual report was read and adopted. The following office-bearers were elected:

President: Dr. A. F. Rutherford. *President elect:* Dr. C. W. Dean. *Vice-Presidents:* Drs. G. Parsons, A. S. Barling, and G. A. Johnston. *Honorary Treasurer:* Dr. W. D. Barrow. *Honorary Secretary:* Dr. J. Livingston.

A hearty vote of thanks having been accorded to Dr. G. A. Johnston, the retiring President, for his services to the Branch, Dr. Rutherford gave his presidential address, entitled "Experiences of an ambulance train commander." After the meeting the members were entertained to tea by Dr. Rutherford in the Furness Abbey grounds.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

AT the annual meeting of the Portsmouth Division, held at the Corporation Mental Hospital, the following officers were elected:

Chairman: Dr. J. E. F. Palser. *Vice Chairman:* Dr. J. H. F. Way. *Honorary Medico-Political Secretary:* Mr. C. A. Scott-Ridout, F.R.C.S. *Clinical Secretary:* Mr. C. P. Childs, F.R.C.S. *Librarian:* Dr. Carling. *Representative in Representative Body:* Dr. D. A. Sheahan.

After the business of the meeting was finished Dr. Henry Devine read a paper on "Spiritism from a scientific point of view." A discussion followed, and great interest was shown in the subject. A vote of thanks to Dr. Devine for his lecture and for his hospitality in entertaining the Division at the Mental Hospital was carried with acclamation.

INSURANCE.

INQUIRY INTO A PRACTITIONER'S CONDUCT.

WE have received this week from the Ministry of Health a communication regarding an inquiry held under Part VI of the Medical Benefit Regulations, 1920, "in the matter of Dr. X., a practitioner on the Insurance Medical List for the County of Z." Enclosed with this communication is a copy of a letter which has been addressed to Dr. X.'s solicitors, containing the Minister's decision. In reproducing the letter, for the information of insurance practitioners generally, we omit the names of people and places.

In the Matter of Dr. X., a Practitioner on the Insurance Medical List for the County of Z.

I am directed by the Minister of Health to state that he has had under consideration the Report of the Inquiry Committee appointed to consider the representations made by the Z Insurance Committee under Part VI of the Medical Benefit Regulations, 1920, in regard to the above-named practitioner.

A copy of the report of the Inquiry Committee is enclosed. It will be observed that the Inquiry Committee find that after it came to Dr. X.'s notice on October 30th, 1919, that his patient, A. B., had returned home from the infirmary, he did not visit this patient at any time up to the date of his death in January, 1920; and, further, that during that period he gave certificates in the usual form, stating that he had examined the patient on the dates borne by the certificates.

The Minister takes note of the fact that Dr. X. was of opinion that the patient's condition was beyond improvement by medical treatment, and that from his knowledge of the history of the case he could never be otherwise than incapable of work. The Minister, however, is quite unable to regard this fact as justifying in any way the failure of the doctor to visit the patient within the period stated, and he is satisfied that such failure on the part of the doctor is quite inconsistent with the observance of a proper standard of medical service for insured persons. In addition, the furnishing of certificates at variance with the facts is a serious breach of the Regulations which it is impossible for the Minister to overlook.

In view of these facts, while the findings of the Inquiry Committee do not, in Dr. Addison's judgement, suffice to justify the conclusion that the continuance of Dr. X. on the Medical List would be prejudicial to the efficiency of the medical service of the insured, he has decided that the sum of £50 must be withheld from the Exchequer Grant payable to the Insurance Committee, and this sum will, under Article 33 of the Regulations, be recovered by the Committee from the practitioner.

I enclose a copy of the formal document, embodying the Minister's decision under Part VI of the Regulations and his direction that the Insurance Committee's costs shall be borne by Dr. X.

I am, Gentlemen, your obedient servant,

(Sd.) R. W. HARRIS.

Ministry of Health, Whitehall, S.W.1.
August 16th, 1920.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

AT the first meeting of the London Panel Committee held after the recent election, Dr. R. V. Donnellan was elected temporary chairman. The Secretary reported that the elected membership of the Committee was short by six, no return of members having been made from the double-membered constituencies of Holborn, Greenwich and Woolwich. The Committee appointed six practitioners to fill the vacancies. The constitution of the Committee provides for the co-option of practitioners to represent certain non-panel and special interests. The Committee co-opted Sir Thomas Horder, Mr. William Turner, and Dr. Lauriston Shaw to represent consulting medical staffs of hospitals with medical schools; Dr. Howell, of Hammersmith, and Dr. King Brown, of Bermondsey, to represent medical officers of health; Dr. F. Coke, Dr. G. E. Haslip, and Dr. W. Kingdon to represent non-panel practitioners north of the Thames, and Dr. H. C. Howard, Dr. Henry Jackson, and Dr. Edwin Smith to represent non-panel practitioners south of the Thames. The Committee also has the power to co-opt three other practitioners; Dr. H. J. Butler, Dr. A. G. Newell and Dr. A. Welply were selected, and a proposal to include Dr. Brackenbury was defeated. The Committee has to co-opt one representative of women practitioners on the panel. It was reported that a meeting of women insurance practitioners in London had been held, and had nominated Dr. E. A. Allman. The Committee, however, by a narrow majority, passed this nomination over, and co-opted Dr. E. Constable to represent her fellow women practitioners. The Committee then proceeded to elect a chairman, and unanimously chose Dr. H. J. Cardale. Dr. Coode Adams was also unanimously elected vice-chairman. Dr. Lauriston Shaw was re-elected treasurer by twenty votes, against nineteen cast for Dr. James Hamilton.

BLACKPOOL.

Dr. H. T. Barton, Honorary Secretary of the Blackpool Local Medical and Panel Committees, informs us that the dispute between the Blackpool Insurance Committee and three panel practitioners regarding evening consulting hours has resulted in a compromise. After the decision of the Committee, reported on p. 51, SUPPLEMENT, July 24th, an appeal was lodged by the doctors concerned. The Ministry of Health suggested that the Panel and Insurance Committees should confer with a view to an agreement being arrived at. A conference accordingly was held on August 9th, when it was announced that one of the practitioners had recently taken a partner who would have an evening surgery hour, and that the other two would open their surgeries on two nights of the week.

CORRESPONDENCE.

The New Insurance Record Cards.

SIR,—It needs little imagination to predict the irritation and waste of time involved in the taking out and replacing the cards in envelopes. It appears to me a booklet card, perforated for detachment if necessary, and thin in texture, would secure advantages outweighing the privacy secured by the window envelope suggested.

I hope it is not too late for reconsideration of this matter before printing and issuing a form which is sure to secure its own condemnation in practice.—I am, etc.,

Tunbridge Wells, Aug. 10th. C. HAROLD DYER, M.D.

Collective Bargaining and Colliery Practice.

SIR,—I read with interest, in the SUPPLEMENT of July 31st, of the successful collective bargaining of the British Medical Association on behalf of the doctors who contract with the Gas Light and Coke Company's Medical Benefit Society for medical attendance. I am greatly surprised that any doctors should ever have accepted a pre-war flat rate of 7s. 6d. per family per annum. I hope this was free of collectors' commission and did not include drugs! I also understand that the flat rate referred only to non-insured dependants in each family.

The British Medical Association has been successful in getting the flat rate raised to 21s. per family per annum, and this is a considerable advance, but very much short of the ideal approved by the Representative Meeting that contract practice should in future approximate to the National Health Insurance capitation rate. Assuming five in each family (about 1½ insured persons and 3½ dependants), the flat rate per family per annum should certainly be no less than 33s. without medicine, and 39s. with medicine. Evidently the colliery surgeons in Scotland have secured terms approximating to these amounts, and in Wales it is clear that the poundage system must bring in an even larger average sum per annum per family.

In the North of England colliery and club doctors are now endeavouring to obtain an increase from 1s. to 1s. 6d. per family per fortnight; in other words, 39s. per family per annum, including medicine, and subject to a commission for collecting either at the colliery offices or by collectors. In Northumberland the movement is likely to be generally successful as the result of successful negotiations between the Northumberland Miners' Executive

Committee and a deputation from the North of England Branch of the British Medical Association.

In Durham the doctors are hesitating because they are refused collective bargaining by the Durham Miners' Executive, and allege that they are not sufficiently backed up by the British Medical Association and are hampered by the introduction of "blackleg" doctors. How members of a miners' union can consistently employ "blacklegs" of any calling passes comprehension! Here is a fine opportunity for the British Medical Association to step in and insist on collective bargaining with the Durham Miners' Executive Committee. It is true this committee, if convinced of the justice of the colliery doctors' claim for an increase, could only "recommend" the various miners' lodges to grant the increase; but such a recommendation, as in Northumberland, has considerable influence with the miners' lodges and the members of miners' unions generally.

Why should the Durham colliery doctors not threaten a "strike" unless the Miners' Executive Committee agrees to meet a deputation from the North of England Branch of the British Medical Association? It should not be difficult to prove that the vast increase in general expenses and the special expenses of medical practice demand an increase of 100 per cent. on the pre-war fortnightly contribution of 9d. per family.—I am, etc.,

Blyth, Northumberland, Aug. 11th. ARCHIBALD FAIRLIE.

Outdoor Medical Staff of the Ministry of Health.

"ACUTE OBSERVER" writes: There is a very simple explanation of the position mentioned by Dr. McWalter in his letter in the SUPPLEMENT of August 14th—namely, that the 1,400 doctors, many of the highest standing, preferred to become whole-time servants of the State rather than continue in subservience to their own patients. The fact that men of such eminence were anxious to submit to what he terms "exacting, if not humiliating, tests," for jobs which are apparently of a "commercial traveller's" semblance, indicates that free choice of doctor and free choice of patient have not the attraction for the average general practitioner that the decision of the Representative Meeting (and letters in the medical press of this country from time to time) would lead us to believe they have. On the contrary, it very definitely and conclusively shows, given fair conditions of working and the prospect of a pension, that probably the great majority of the practitioners of this country would warmly welcome a State medical service, where the doctor could practise his profession in an altruistic spirit, and free from the drawback of competition for a livelihood, and where even the poor, whether "new" or "old," could freely ask for medical help when they require it without the bogey of a doctor's bill looming vividly before their eyes.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointment is announced by the Admiralty: Surgeon Lieutenant Commander E. St. G. S. Goodwin to the *Blake*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel J. M. Sloan, C.M.G., D.S.O., to be temporary Colonel from January 16th, 1917, to February 4th, 1919, inclusive.

The following officers relinquish the acting rank of Lieutenant-Colonel: Majors G. H. Stevenson, D.S.O., T. H. Scott, D.S.O., M.C., Majors and Brevet Lieut.-Colonels J. M. H. Conway, D.S.O., H. J. [illegible], C.I.E.

The following relinquish the acting rank of Major: Captains H. R. L. L. Strange, O.B.E. (October 1st, 1919), A. L. Aymer, H. G. Robertson, O.B.E., H. C. Todd, W. McM. Chesney, M.C., F. P. Rankin, temporary Captains D. Gillespie, A. H. Greg, O.B.E.

To be acting Majors: Temporary Captains E. G. M. Gilchrist (June 12th, 1919), D. [illegible] (June 12th, 1919), H. [illegible] (from January 4th to August 13th, 1919, inclusive), A. Topping (from January 4th to August 13th, 1918, inclusive).

Captain J. E. [illegible], from S.R., to be Captain, March 10th, 1918, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below G. D. Harding; substituted for notification in the *London Gazette*, July 9th, 1920.

Temporary Captain S. D. [illegible] to be Captain, February 15th, 1918, but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below F. C. [illegible].

The following late Captains R.A.M.C.(S.R.) to be temporary Captains: D. E. [illegible], seniority November 1st, 1917; H. A. Hill [illegible]; A. H. [illegible], seniority November 14th, 1917; D. F. [illegible], seniority September 17th, 1918.

The following temporary officers relinquish their commissions: Temporary Lieut.-Colonel J. R. [illegible], C.I.E., on ceasing to serve with the [illegible] War Hospital, and retains the rank of Lieutenant-Colonel. Temporary Captains and retain the rank of Captain: A. [illegible], [illegible], R. S. [illegible], M.C., C. H. [illegible], J. H. [illegible], D. McLeod. Temporary Captain W. L. English, M.C.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain [illegible] relinquishes his commission on ceasing to be employed, and is permitted to retain his rank, April 3rd; substituted for notification in the *London Gazette* of April 27th.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain C. J. Rogerson, M.C., relinquishes the acting rank of Lieutenant-Colonel.

Captain T. C. Storey, M.C., relinquishes the acting rank of Major.

Captains to be acting Majors from January 4th to August 13th, 1918, inclusive: E. Butler, W. Dunlop, O.B.E.

Captain I. L. Waddell resigns his commission and retains the rank of Captain.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

15 Wed. London: Propaganda Subcommittee, 2.15 p.m. (*provisional*).

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL.—Medical Unit, Mon., 2 p.m., Mr. Goulden: Eye Conditions in Focal Brain Disease.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 12.15 p.m., Dr. Burnford: Pathological Demonstration; 5 p.m., Mr. MacDonald: Stricture. Tues., 10.30 a.m., Surgical Registrar: Surgical Cases; 4.30 p.m., Mr. Addison: Practical Surgery. Wed., 10.30 a.m., Mr. MacDonald: Cystoscopy; 4.30 p.m., Dr. Owen: Medical Cases. Thurs., 12 noon, Mr. Sinclair: Abdominal Diagnosis; 4.30 p.m., Mr. Harman: Disorders of the Lacrymal Sac. Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; 4.30 p.m., Dr. Buxton: Dental Analgesia. Sat., 12 noon, Mr. Sinclair: Surgical Abdominal Diseases.

APPOINTMENTS.

MADDOCK-JONES, A., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer of Health Bala Urban District Council, Medical Officer of Health Penllyn Rural District Council.

ST. THOMAS'S HOSPITAL.—The following house officers have been appointed:—Casualty Officers and Resident Anaesthetists: G. M. Kendall, M.B.Cantab., M.R.C.S., L.R.C.P., D. G. Garnett, B.A.Cantab., M.R.C.S., L.R.C.P., M. Wong, M.A.Cantab., M.R.C.S., L.R.C.P., D.T.M., L. B. Maxwell, O.B.E., B.A.Cantab., M.R.C.S., L.R.C.P., W. A. Low, M.C., M.R.C.S., L.R.C.P. Resident House-Physicians: F. B. Hobbs, B.A.Cantab., M.R.C.S., L.R.C.P., H. J. Blampied, M.R.C.S., L.R.C.P., E. S. Orme, B.A.Cantab., M.R.C.S., L.R.C.P. Resident House-Physician (for Children): S. A. T. Ware, M.R.C.S., L.R.C.P. Resident House-Surgeons: D. G. Churcher, M.B., B.S.Lond., M.R.C.S., L.R.C.P., D. F. A. Neilson, B.A.Cantab., M.R.C.S., L.R.C.P. House-Surgeon to Block 8: R. H. O. B. Robinson, B.A., M.B., B.Ch.Cantab., M.R.C.S., L.R.C.P. Obstetric House-Physicians: (Senior) R. C. Cooke, D.S.O., M.C., M.R.C.S., L.R.C.P.; (Junior) J. Hale, M.A., B.Ch.Cantab., M.R.C.S., L.R.C.P. Ophthalmic House-Surgeon (Junior): E. D. T. Roberts, M.R.C.S., L.R.C.P. Clinical Assistants: (Throat) H. W. H. Holmes, B.A.Cantab., M.R.C.S., L.R.C.P.; (Skin) G. A. Back, M.R.C.S., L.R.C.P.; (Ear) H. W. H. Holmes, B.A.Cantab., M.R.C.S., L.R.C.P. Several other gentlemen have received an extension of their appointment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

BALKWILL.—On Monday, August 9th, at 19, Woodgrange Road, Forest Gate, London, E.7, the wife of Francis Balkwill, M.R.C.S., L.R.C.P., of a daughter.

DICKSON.—On August 14th, at Grindley House, Newcastle, Staffordshire, the wife of Robert H. Dickson, F.R.C.S., a daughter.

RANDALL.—On August 2nd, at 141, Derby Street, Bolton, to Dr. and Mrs. G. F. Randall, a son.

DEATHS.

McCREERY.—On July 29th, 1920, at Skerries, co. Dublin, Benjamin [illegible] McCreery, M.B., F.R.C.S.I., D.P.H., Lt.-Col. R.A.M.C., R.P., youngest son of the late James McCreery, of Fermoy, co. Cork, in his [illegible] year.

MEARS.—Frederick Charles Mears, M.B., M.R.C.S., L.S.A., at 15, Windsor Gardens, North Shields, on August 10th, 1920.

THOMPSON.—At a nursing home at Manchester, on August 9th, Dr. John Hilton Thompson, Heysham House, Chorley Old Road, Bolton, aged [illegible] years.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 28TH, 1920.

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British Medical Association.

CURRENT NOTES.

The Medical Consultative Council's Report.

THE Ministry of Health Committee of the British Medical Association is actively engaged in drawing up a memorandum in connexion with the report of the Consultative Council. This memorandum will be submitted to the Council for approval at its meeting on October 6th, and as soon as possible thereafter the memorandum in its final form will be sent out for consideration by the Divisions and Branches. A further announcement in this connexion will be made later.

Hospital Staffs and Treatment of State-supported Patients.

In the SUPPLEMENT of July 17th we reported the conference held during the Annual Meeting at Cambridge to consider the question of honorary staffs of hospitals and the treatment of State-supported patients. We have also reported week by week the meetings of the honorary staffs of hospitals, held in various large centres of the kingdom, at which the policy of the British Medical Association has been adopted very generally. In our last issue we published a full account of the Scottish conference in Edinburgh, at which it was resolved to request the staffs of voluntary hospitals in Scotland to consider the memorandum of the Hospitals Committee of the British Medical Association and instruct their representatives for a future meeting.

The medical staff of the Royal Infirmary, Hull, has passed a resolution to the effect that the services of the honorary medical staff should not in future be given gratuitously to patients for whose treatment public funds are provided. The Medical Staff Committee of the Bedford County Hospital has resolved to ask for payment of fees in respect of State-aided patients; that such payment should be 25 per cent. of the amount received for hospital maintenance and should be paid into a hospital staff fund; and that this resolution should be valid for the year 1920.

Gas Light and Coke Company's Employees' Medical Benefit Society.

In the SUPPLEMENT of July 31st a statement was made to the effect that this society had agreed to increase the remuneration of its medical officers from 7s. 6d. a family a year to 21s., such increase to take place as from July 1st, 1920. We are glad to be able to announce now that, owing to representations which were made, further concessions have been granted. The society has agreed—

1. To pay its medical officers at the rate of 15s. a family per annum from January 1st, 1920, to July 1st, 1920, and thereafter at the rate of 21s. a family, as mentioned above.

2. That each medical officer shall be supplied with a list of names of those persons who are contributing in order to obtain treatment for their dependants.

3. That a perforated card shall take the place of the present card which the dependant has to produce before medical attention can be claimed; one-half of the card to be retained by the subscriber and the other half to be sent to the doctor concerned.

4. That each medical officer shall receive notification when any person ceases to be entitled to the medical benefits of the society by reason of withdrawal, removal, or other cause.

A meeting of the medical officers of the society was held at 429, Strand, on August 20th, when satisfaction was expressed by those present at the successful termination of the negotiations. It was decided to set up a permanent committee to look after the interests of the medical officers, and the following were appointed:

Dr. J. McDonald (Barking), Chairman.
Dr. J. W. Beaumont (East Ham).
Dr. R. V. Brews (North Woolwich).
Dr. G. W. Johnstone (Hornsey Road, N.W.).
Dr. G. Greenwood (Goswell Road, E.C.).

Before the meeting ended the Chairman, in proposing a vote of thanks to the British Medical Association, drew attention to the invaluable assistance which had been rendered by the Association. He pointed out that the negotiations would not have had so successful a result had it not been for such assistance, emphasized the value of collective bargaining, and urged all those who were not members to join the Association.

Contract Rates for Uninsured Persons.

Inquiries frequently reach the Medical Secretary's department with reference to contract rates for uninsured persons and the policy adopted by the Association towards this matter. The Annual Representative Meeting has laid down certain guiding principles:

1. That, in general, in considering the necessity for obtaining the approval of the Council for schemes for the treatment of uninsured persons upon contract terms, the following principles and conditions must be adhered to:

(*a*) Free choice of doctor by patient and of patient by doctor;

(*b*) Remuneration to be not less than that which is deemed by the Council to be equivalent to that paid in respect of insured persons;

(*c*) Persons with a total income from all sources of £25 per annum or upwards, or the dependants of any such persons, not to be treated under contract terms at all.

2. That the Representative Body realizes that the conditions in certain areas will not allow of the above terms being obtained, and that in these circumstances the approval of the Council may be given provisionally to a scheme involving a less payment when the local profession can show that the economic conditions in the area demand it.

3. That one of the conditions necessary for the approval of schemes containing lower rates of payment shall be the inclusion amongst the rules, in a prominent position, of a statement that approval by the Association has been given to the rates only because of special economic conditions.

4. That the Representative Body express the opinion that contract rates for uninsured persons fixed on the basis of

payment by attendance be not less than the minimum fees recognized in the district for private medical attendance.

All arrangements and proposals regarding any form of contract practice should first of all be submitted to a Division or Branch for consideration, and before any scheme is referred to the Council for approval it must have received the sanction of the particular Division or Branch concerned.

Medical Attendance on Miners' Families.

In April last colliery surgeons were asked to reply to certain questions in connexion with the rates of remuneration prevailing in their districts. If there has been any alteration, either in the rate or in the method of payment since this information was supplied it is hoped that colliery surgeons will be good enough to advise the Medical Secretary of any such change. The Medico-Political Committee will shortly be considering the whole question of the medical attendance upon miners' families, as requested by the Annual Representative Meeting in June last, and it is important that correct and up-to-date information should be available.

Fees for Treatment at Welfare Centres.

Medical officers of health and other officials of local health authorities are reminded that in accordance with the resolution passed by the Representative Body of the British Medical Association on June 26th, 1920, no advertisement can be inserted in the BRITISH MEDICAL JOURNAL which offers less than the following terms:

(*a*) £2 2s. per session of not more than 2½ hours for the treatment of minor ailments;

(*b*) £3 3s. per session not exceeding 2½ hours for ophthalmic work involving refractions—not more than eight new cases to be seen;

(*c*) not less than 1½ guineas per case (including anaesthetist's fee) for adenoids and tonsils operations involving a general anaesthetic;

(*d*) £3 3s. per completed case for *x*-ray treatment for ringworm, where the practitioner provides his own apparatus; £2 2s. where the apparatus is provided by the local authority.

NATIONAL INSURANCE: THE PAYMENT BY ATTENDANCE SYSTEM IN SALFORD.

BY

J. H. TAYLOR, M.A., M.B., Ch.B.,

SALFORD.

AT the Summer Conference of the National Association of Clerks to Insurance Committees, held at Blackpool on June 16th and 17th, a valuable and interesting paper was read by Mr. F. A. Anderson, Clerk to the Salford Insurance Committee, on the Salford system of payment by attendance. Only a limited number of copies of the paper have been printed, though it is hoped that a reprint may be made. The facts given by Mr. Anderson are, of course, authentic, and in what follows I cannot too freely acknowledge my indebtedness to the paper. I may go further, and say that from practical experience as a panel doctor in Salford and a member of both the Insurance and Panel Committees, I can endorse the opinions he has expressed as to the merits of the system and its superiority over the ordinary capitation system, whether it be from the point of view of the doctors or the insured persons.

Briefly, as contrasted with the ordinary capitation system, the Salford system is distinguished by two chief characteristics:

1. The doctors are paid per attendance.
2. The insured have absolute free choice of doctor at any time so far as this is compatible with the equal right of the doctor to refuse patients at any time, this mutual free choice being only limited by certain provisos to be mentioned later.

Payment of Doctors.

With regard to the method of payment of the doctors it may be necessary to explain that the total amount available for distribution is fixed by the Commissioners on the usual capitation method which applies to the rest of the country, and the peculiarity of the Salford system is only in the distribution of this fixed amount to the individual doctors. This fact in all probability accounts for what might seem to be a radical change in the views of the profession as to the best method of payment. In the agitation before the commencement of the Insurance Act a large proportion of the profession appeared to favour payment per attendance, but it was payment in full of a fixed fee for each attendance. That was held to involve an unlimited call on the insurance funds, as no one appeared to be able to satisfy the Government that an unreasonable number of attendances would not be made. The Salford system has to a large extent solved this problem, though it may still be a matter of doubt whether the profession would so readily accept from a Government supervising body the cutting down of its bills which the Salford doctors accept from their own Panel Committee.

By mutual arrangement some years ago the Panel Committee fixed on the following scale of nominal fees:

Visit 2s. 6d. Consultation at surgery 2s. Night visit 5s. Minor operation with local anaesthetic 10s. 6d. Fractures and dislocations 10s. 6d. for first attendance. General anaesthetic 21s.

Early in the present year this scale was raised about 50 per cent., but the old scale is here given because no statistics since the capitation fee was raised for the whole country are yet available. Until quite recently, too, the Salford doctors sent in their bills monthly and were paid sums on account monthly, but this year the bills are to be rendered quarterly. In other respects the arrangements generally remain as before. Books of attendance sheets are supplied by the Insurance Committee, on which the doctor enters the name, address, occupation, age, sex, and society of each patient, with the diagnosis and attendances rendered. The Panel Committee has undertaken to make up from the attendance sheets any record cards that may be required by the Commissioners, considerable trouble being thus saved to the doctors in the past. The attendance sheets are scrutinized by the Panel Committee, which has definite authority for this under the Regulations, having regard to the prevention of unnecessary attendances or excessive cost of treatment, and accounts showing a higher average than the general average are cut down, if satisfactory explanations cannot be given by the practitioner concerned. Seeing that the total sum available for distribution is a sum fixed each year on a capitation basis, depending on the number of insured persons in the area, evidently the actual fee paid per attendance will depend on the aggregate number of attendances, and it may be stated at once that the total amount available has never yet been sufficient to pay the nominal scale fees in full, even after the attendances have been cut down to what the Panel Committee considers a fair number. In the year 1918, for example, the total available for distribution was £26,517, and the total visits, attendances, etc., numbered 359,719, which means that the average cash value to the doctor for each attendance was only about 1s. 6d. The "mean count" of the Insurance Committee's Register was 94,726, and the number of persons who actually received treatment was 50,328. The bills as sent in by the doctors amounted to £37,423 16s., reckoning each attendance according to the scale. By the Panel Committee's scrutiny these were cut down to £30,034 3s., this being the sum allowed to rank for payment, or, as it is called, "the credit rates." To meet this, as already stated, only £26,517 was available, so that only 88.29 per cent. of the "credit rates" could be paid, and that at a reduced fee per attendance, the final result being as stated, that each attendance on the average only brought in about 1s. 6d.

The adjustment of the doctors' bills by the Panel Committee is onerous and perhaps invidious, but quite necessary in the interests of the doctors as a body. It might at first sight seem to be a serious reflection on a doctor who has sent in a bill for, say, 100 attendances when only perhaps 80 or 90 are allowed to rank for payment, but it is quite understood that the cutting down does not necessarily suggest that the doctor has deliberately made unnecessary attendances. Every doctor has his own ideas as to the number of visits he ought to make to particular cases. Some, for example, would consider that they were not doing their duty if they did not visit a case of acute pneumonia two or three times a day, while others would consider once a day generally sufficient. Only the doctor actually in attendance can judge at the time how often a patient ought to be seen, and the Panel Committee, which never sees the cases, cannot and does not pretend to judge the doctor unless some glaring case occurs which the doctor cannot explain. As a result, however, of some years' experience the Committee has been able to arrive at an estimate of the average number of attendances that may fairly be allowed, taking every class of case together, and this average is applied in its scrutiny.

Of course such a rule has to be applied in a liberal and discriminating manner or it might often prove unjust and might be open to the charge of reducing panel practice to a dead level of mediocrity. If, for example, a doctor in any month only saw a few cases and they happened to be all or nearly all severe cases, no rule of averages could properly be enforced. On the other hand, if a doctor has considerably more than the average number of simple cases which continue to appear on his attendance sheets month after month, he has to submit to the attendances which are allowed to rank for payment being cut down if he cannot give satisfactory explanations. Thus the success of the system depends entirely on the discrimination used by the Panel Committee in its scrutiny, and the fact that the great proportion of the Salford doctors continue to prefer the system is sufficient proof that the Panel Committee has carried out its difficult task in a manner that is fairest for the general body of practitioners.

The great attraction of the system is the feeling which every Salford doctor has that he is no more the slave of his insured patients than he is of his private patients, and to this is added the satisfaction of knowing that the Panel Committee is keeping a sharp watch to prevent any doctor unfairly exploiting the practitioners' fund. There is also the feeling that if a majority of the doctors are dissatisfied with the Panel Committee they can dismiss it at the first opportunity. This power is extremely important and needs to be carefully guarded. It may safely be said that no system of payment per attendance can ever be satisfactory to the profession, whether payment be from a limited or from an unlimited pool, unless the supervising body which may have to disallow excessive attendances is freely elected by and from the panel practitioners themselves. Against payment per attendance from an unlimited pool it might plausibly be urged that the Panel Committees would not have the same inducement to cut down unnecessary attendances as they have in Salford where any exploiting of the limited pool would be taking money out of the pockets of all the doctors. On the other hand, the Government experiment in payment per attendance in the case of temporary residents and invalided soldiers has not, so far as is known, revealed that exploitation of the fund which was prophesied.

Free Choice of Doctor.

As already stated, insured persons in Salford are at liberty to change their doctor whenever they think fit, exactly as if they were private patients. As a matter of fact, in 1918 out of 50,328 persons treated, only 2,230 were treated by two or more doctors. This can hardly be a greater proportion than occurs among private patients in industrial districts. On theoretical if not imaginary grounds, the objection has been raised that this unlimited free choice may lead to malingering and exploiting of the sickness benefit, seeing that if one doctor refuses a certificate of incapacity, an insured person can go about trying other doctors until he finds one who is willing to oblige him with a certificate. This, however, can hardly occur in Salford, as the doctor when he accepts a patient for treatment signs and dates the medical card, and if it be taken to a second doctor he would naturally require some explanation, as an insured person is not allowed to attend two doctors at the same time.

The provisos that affect a doctor's right to refuse treatment at any time may be summed up as follows:

1. Every doctor is bound to render immediate treatment in cases of emergency, and in this Salford does not differ from the rest of the country.

2. Persons who cannot get any doctor to accept them might be allocated to a particular doctor under the allocation scheme, and he would then be bound to give them treatment when necessary. As a matter of fact, owing to the freedom of choice which patients have and the fact that in no part of the area is it necessary for patients to go very far to get a choice of several doctors, it has never once been necessary to allocate a single person to any particular doctor in Salford, there being no necessity for allocation on financial grounds as there is under the capitation system.

3. If a doctor desires at any time to terminate his treatment of a patient, he has simply to inform the patient and to give him on a form provided the names and addresses of other doctors. If this is done during an illness, the doctor is bound to continue attendance until the patient has obtained another doctor, and there is never any difficulty in this in Salford. Under the capitation system, where the doctor receives a fixed sum per year for each person on his list whether ill or well, there may be some natural disinclination to accept persons who are likely to need a considerable number of attendances, but when, as in Salford, there is a fee for each attendance there is no such disinclination and the most chronic invalid has no difficulty in finding a doctor. The suggestion has been made that while under the capitation system it is to the interest of the doctors to get their patients cured as soon as possible, as they receive no more remuneration for sick than for healthy persons on their list, on the other hand, under the Salford system, it is suggested that it is to the interest of the doctors that their patients should not be cured quickly because when cured they are of no financial value to their doctors. Surely it is difficult to imagine that any doctor could be so regardless of his professional reputation as to be influenced in any such direction, even if his humanitarian feelings counted for nothing. At any rate, there is not the slightest evidence that any such considerations have existed in Salford. The evidence that does exist tends in the opposite direction, as the temptation is to give excessive attendance. Any complaint, then, comes not from the patient but from the other doctors, and the Panel Committee keeps a sharp look-out for such cases. Moreover, any patient who is dissatisfied with his progress is free to go to some other doctor; he makes no formal complaint against his doctor, but simply calls in another instead. Hence it happens that in the seven years since medical benefit began there have only been nineteen complaints lodged against doctors, most of these being quite trivial.

Mr. Anderson points out that the Salford system has been found to be most readily adjustable to meet contingencies arising under medical benefit. Thus the disabled members of friendly societies referred to in Section 15 of the 1911 Act have the same free choice of doctor as insured persons, and are paid for at the same rate, and this has greatly assisted towards stamping out the old club system. In case of the death of a panel practitioner arrangements have been made for neighbouring panel doctors to look after his practice in the interests of his estate until the relatives have made other arrangements. The question of goodwill only then arises as it does in private practice, except that the arrangements made offer an even greater security to the relatives of the deceased practitioner. In the case of illness or absence on holiday, too, neighbouring panel practitioners attend the patients of the absentee, and in all these cases separate attendance sheets or records are kept which the Panel Committee collects and puts to the credit of the absentee, or the estate of the deceased practitioner.

Mr. Anderson's paper only deals with the attendance system as it exists in Salford, though, as is well known, the system also exists in Manchester. His reasons for this are obvious, but it may be taken that in its main outlines the Manchester system is very similar to what has been described, any differences that exist being chiefly in the details of the methods adopted by the Manchester Panel Committee in the checking of the doctor's accounts.

Conclusion.

Of course it is not claimed that the Manchester and Salford system brings in any greater remuneration to the panel doctors as a body, but it is claimed that the payment is more equitably distributed for work actually done than under the capitation system. In addition, under the attendance system, with its freedom of choice for both doctors and patients, the doctors have reached at any rate a greater degree of satisfaction than can possibly exist under the capitation system, where there is unlimited personal responsibility for a very limited fee and only an approach towards freedom of choice as it is understood in private practice. At the same time it cannot fail to be a source of satisfaction to the insured to feel that they have at any time the same freedom of choice of doctors as if they were paying a private practitioner.

Association Notices.

SUGGESTED CHANGES OF BOUNDARIES.

Proposed Transfer of Dore from Chesterfield Division of Midland Branch to Sheffield Division of Yorkshire Branch.

NOTICE is hereby given to all concerned of a proposal made by the Sheffield Division that the Civil Parish of Dore be transferred from the Chesterfield Division of the Midland Branch to the Sheffield Division of the Yorkshire Branch. Written notice of the proposal has been given to the Chesterfield Division and the Midland and Yorkshire Branches. The matter will be determined in due course by the Council. Any member affected by the proposed change and objecting thereto is requested to notify the fact, and the reason therefor, to the Medical Secretary, 429, Strand, W.C.2, not later than September 28th, 1920.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Surgeon Captains F. J. A. Dalton, C.M.G., to R.N. Hospital, Hong Kong, H. L. Penny, O.B.E., to the *Pembroke*, additional, for R.N. Barracks, Chatham. Surgeon Commander C. H. Rock has been placed on the retired list at his own request. Surgeon Commanders J. L. Burford to the *Crescent* III for Invergordon Naval Base, J. P. H. Greenhalgh to the *Crescent III* for Admiralty Experimental Station, Shandon, J. D. Keir to the *Maidstone*, T. E. Blunt and J. M. Gordon to the *Monarch*, W. G. Edwards to the *Monarch* (August 17th) and to the *Cyclops* (undated), P. M. Rivaz to R.N. Hospital, Chatham. Surgeon Lieutenant R. W. Nesbitt to the *Greenwich*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel H. S. Roch, C.M.G., D.S.O., to be acting Colonel.

The following officers retire on retired pay: Lieut.-Colonel H. W. K. Read, Major T. F. Ritchie, D.S.O., Major E. G. Ffrench (and is granted the rank of Lieutenant-Colonel).

Temporary Captain S. H. Pitcairn relinquishes the acting rank of Major.

To be Captains: Temporary Captain E. J. Mannix (November 17th, 1919, but not to reckon for pay or allowances prior to August 1st, 1920, with precedence next below P. G. Russell), temporary Captain H. S. Moore (April 8th, 1919, but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below W. L. Partridge), Captain D. Fettes, late temporary Captain R.A.M.C. (January 18th, 1919, but not to reckon for pay or allowances prior to July 14th, 1920, with precedence next below G. O. F. Alley).

Temporary Captain M. J. Whelan to be Lieutenant and to be temporary Captain, November 13th, 1918, but not to reckon for pay or allowances prior to June 1st, 1920, with precedence next below L. H[illegible].

Temporary Captain M. F. D. Graham to be Lieutenant and to be temporary Captain, August 11th, [illegible], but not to reckon for pay or allowances prior to July 1st, 1920, with precedence next below W. Y. Eccott.

Lieutenant A. M. Simson, from T.F.R.Art., to be Lieutenant, with precedence next below C. A. Hutchinson.

The following officers relinquish their commissions:—Temporary Captains, and retain the rank of Captain: R. J. Monahan, M. J. Wilson, C. A. B. Horsford.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the Unemployed List: Captains W. G. Weston (March 31st), J. D. Cherry (July 31st).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following resign their commissions: Major H. G. Smeeth, Captain G. A. MacDonald (and retains the rank of Captain).

The following relinquish their commissions: Captains, and are granted the rank of Majors: W. F. Wood, D.S.O., R. P. Starkie, S. J. V. [illegible], O.B.E. Captains, and retain the rank: A. B. Dummere (May [illegible], 1920, substituted for notification in the *London Gazette*, July [illegible], 1920), W. R. McLachlan (June 6th, 1920, substituted for notification in the *London Gazette*, July 15th, 1920), R. R. Trail, M. Morrison, D. C. Rennie, W. M. Wilson, H. L. Addison, H. J. Duske, T. L. [illegible], A. Dick, T. B. Moore, F. J. Harvey, S. Alter, C. Young. Captain A. A. Atkinson (October 1st, 1918, substituted for notification in the *London Gazette*, June 1st, 1920), Lieutenant A. Kennedy, M.C., and retains the rank of Lieutenant.

The name of Captain Bernard Crocker, M.C., is as now described, and not as in the *London Gazette* of May 25th, 1920.

GENERAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain H. J. Bower resigns his commission and retains the rank of Captain.

OVERSEAS CONTINGENTS.

SOUTH AFRICAN MEDICAL CORPS.

Major A. D. [illegible] relinquishes his temporary commission on ceasing to be employed with the Union Imperial Service Contingents, January [illegible], and retains the rank of Major.

The name of Temporary Captain Robert F. McNeil, M.C., is as now described, and not as in the *London Gazette* of May [illegible], 1920.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

The following officers resign their commissions: Majors, and are granted the rank of Lieut.-Colonel: J. W. Bird, D.S.O., F. [illegible]. Captains, and are granted the rank of Lieut.-Colonel: H. [illegible], C. B. [illegible]. Captains, and are granted the rank of Major: R. Armstrong, R. C. [illegible], J. Arthur, C. M. McGillivray, M.C., A. [illegible], W. [illegible]. Captains, and retain the rank of Captain: A. H. Brewer, A. C. C. Lawrence, C. C. Lavington, J. E. Ransford, F. Ryan, Captain F. A. Pring.

Captains (acting Majors) relinquish their acting rank on ceasing to be specially employed: M. Brennan (June 23rd), A. Cameron, M.C. (June 1st).

Captain E. Scott, D.S.O. (late temporary Captain R.A.M.C.), to be Captain.

1st London General Hospital.—Captain W. B. Ainger resigns his commission and retains the rank of Captain.

4th London General Hospital.—Captain A. J. Jex-Blake resigns his commission and is granted the rank of Major.

4th Northern General Hospital.—Major W. E. F. Tinley resigns his commission and retains the rank of Major.

2nd Western General Hospital.—Captain J. Wharton resigns his commission and retains the rank of Captain.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER

7 Tues. London: Scrutiny Subcommittee, 2.30 p.m.
10 Fri. London: Propaganda Subcommittee.
21 Tues. London: Medico-Political Committee (*provisional*).
23 Thurs. London: Insurance Acts Committee, 2.30 p.m.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL MEDICAL UNIT.—Mon., 2 p.m., Mr. Goulden: Eye Conditions in Central Nervous Diseases.

MANCHESTER FRENCH HOSPITAL.—Thurs., 4.15 p.m. Dr. N. C. Harding: Common Throat Diseases.

WEST LONDON POSTGRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Dr. Stewart: Out-patients; Mr. Armour: Operations. Tues., 10 a.m., Mr. Steadman: Dental; 2 p.m., Dr. Burford: Out-patients. Wed., 2 p.m., Mr. Addison: Operations; Mr. Gibb: Eyes. Thurs., 2 p.m., Mr. MacDonald: Out-patients; Mr. Sinclair: Orthopaedics. Fri., 2 p.m., Mr. Davis: Throat, Nose and Ear; Mr. Burnford: Out-patients. Sat., 10 a.m., Dr. Saunders: Diseases of Children. 2 p.m., Dr. Owen: Out-patients.

APPOINTMENTS.

FELDMAN, V., M.R.C.S., L.R.C.P., First Assistant Medical Officer of the Infirmary of the Parish of St. Leonard, Shoreditch.

HARPER, Miss Frances M., M.B., Ch.B.Edin., D.P.H.Camb, D.T.M., Medical Assistant, Maternity and Child Welfare, Leeds Corporation.

JOLL, Cecil A., M.S., M.B., B.Sc.Lond., M.B., M.Ch.Bristol, F.R.C.S.Eng., Surgeon to the Royal Free Hospital and Consulting Surgeon to the Royal Bucks Hospital, Aylesbury.

SPROTT, Norman A., M.A., B.M., M.Ch.Oxon., M.R.C.S., L.R.C.P., Medical Officer to H.E.H. the Nizam's State Railways, Secunderabad, India.

THOMSON, H. Wright, D.S.O., M.D., Surgeon to the Ophthalmic Institution, Glasgow Royal Infirmary, vice A. Maitland Ramsay, M.D., resigned.

WILSON, J. I. P., M.D.Aberd., F.R.C.S.Edin., Medical Officer of the Institution of the Mile End Old Town Hamlet.

DISTRICT MEDICAL OFFICERS: T. H. Evans, L.R.C.P.and S.Edin. (Merthyr Tydfil Union), G. C. Gaynor, M.B., B.Ch., N.U.I. (Forehoe Incorporation and Depwade Union), H. S. Robinson, M.R.C.S.Eng., L.R.C.P. (Romford Union), A. E. Somerset, M.R.C.S., L.R.C.P. (Wem Union), E. Stork, D.S.O., M.B.Lond. (Bury St. Edmunds Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

DOBSON.—On August [illegible], at 3, [illegible] Road, Church End, Finchley, N.3, the wife of J. R. B. Dobson, M.B., B.S., a son.

RIDDOCH.—On August 15th, at 10, Alba Gardens, Golders Green, N.W.4, the wife of George Riddoch, M.D., M.R.C.P., of a daughter.

WILLIAMS.—On August 16th, at 71, Gordon Mansions, to Christine Tillman Williams, M.B., B.S., wife of E. Ulysses Williams, 128, Harley Street, a son.

DEATH.

CHRISTIE.—William Ledingham Christie, M.D., F.R.C.S., July 22nd, on s.s. *[illegible]*. Buried at sea, Gulf of Suez.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 11TH, 1920.

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British Medical Association.

CURRENT NOTES.

The Panel Conference.

MOTIONS for inclusion in the provisional agenda for the Annual Conference of Local Medical and Panel Committee Representatives must be received by the Medical Secretary not later than the first post on Monday, September 20th. The Conference will be held on Thursday, October 21st.

Colliery Practice in South Wales.

The effect on the position and prospects of colliery doctors in South Wales due to the action of certain sections of the miners was the subject of discussion at a special and very well attended meeting at Cardiff of the Contract Practice Committee of the South Wales Branch of the Association held on August 24th. The Medical Secretary, who was present, gave his experience of a visit of investigation he had lately paid to certain areas in Glamorganshire, and expressed his conviction that the subject was one which urgently demanded the attention of the Branch and of the British Medical Association generally. The Contract Practice Committee resolved to advise the Branch Council to authorize the committee to take special action to protect the interests of the members of the profession concerned. It also decided that the report of the Medical Secretary's address on the subject, delivered at Newport, which appears on this page, should be brought to the attention of the Welsh lay press as a matter affecting the public not less than the profession. Dr. Ewen Maclean, the secretary and treasurer of the committee in pre-war days, acceded to the unanimous wish of those present and accepted the chairmanship of the committee. Dr. Arthur Jones of Mountain Ash and Dr. G. I. Strachan of Cardiff were appointed joint honorary secretaries.

Resettlement of late R.A.M.C. Medical Officers.

The British Medical Association is most anxious to assist in every way possible those medical practitioners who through absence from home on military service have suffered financially and in loss of practice and have not so far recovered their position. The Minister of Pensions has repeatedly stated that he is desirous to accord preference in every locality on medical boards to such practitioners, and has given favourable consideration to many individual cases brought to his notice by the Association. A special subcommittee was set up by the Association this year to deal with questions concerning the Ministry of Pensions, and will meet again at an early date. Medical men who have found difficulty in obtaining a reasonable amount of this work are urged to write at once to the Medical Secretary, giving full particulars of their case and details, if obtainable, of all those medical practitioners who are at present engaged on this work in their area. Such particulars should include name; whether practising in that area before the war and in what capacity; whether recently serving in the R.A.M.C. and in what capacity (regular, temporary, territorial); whether away from home on duty and for what period and oversea service, if any; how many boards a week given and in what capacity (specialist, president, or ordinary member); what other contract work held; probable amount of private practice. If desired the writer's name will not be disclosed without his consent, but anonymous communications cannot be considered. The writers of letters on "Medical Resettlement" which have recently appeared in the JOURNAL have been asked to give particulars with a view to their cases being taken up with the Ministry of Pensions.

THE FUTURE OF COLLIERY PRACTICE IN SOUTH WALES AND MONMOUTHSHIRE – SERVITUDE OR INDEPENDENCE.

AN ADDRESS TO THE MONMOUTHSHIRE DIVISION ON JULY 16TH, 1920,

BY

ALFRED COX, O.B.E., M.B.

IF any here should grumble at my choice of a subject I really could not quarrel with him, for you must be heartily sick of the whole business. Trench-worn soldiers cannot be blamed if they show little interest in academic discussions about battles, for they have seen too much of the real thing. To talk of colliery practice troubles to Monmouthshire doctors is taking coals to Newcastle with a vengeance, for Monmouthshire and Glamorganshire have for years been, medically speaking, the cockpits of Wales, and your Division has fought more fights for colliery doctors than any other. I would gladly have given the subject a rest, but I dare not do it. Instead I must ask the Division to buckle on its armour for what I believe will be the biggest campaign of all—to decide soon, and finally I hope, whether the miner's doctor in South Wales is to be the wage slave of the workmen (to use a phrase which they are fond of) or an independent practitioner with a soul and a practice of his own.

Contract practice is the usual way of providing medical attendance in mining districts in this country. The methods of payment vary, slightly; the amounts paid vary considerably in different areas. South Wales has little to complain of as regards the amount. The Welsh colliery doctor has always been as highly paid as any, thanks to his own vigilance, the active work of the Association, and the prevalence of the admirable and equitable poundage system. The way in which the doctors and the miners conduct their common business arrangements varies considerably. In most areas the doctors' money is deducted from the miners' pay at the colliery by one of the officials, who renders an account to the doctor and is paid a small commission for his trouble. No committee of workmen comes into the transaction. The doctor offers his services, in competition with other doctors; the workman chooses for himself and his family the doctor he prefers. The doctor is paid by capitation or poundage and not by fees for individual services, but his essential relation to the patient differs little from that of the man in private practice.

The next stage is seen where a workmen's committee intervenes. The committee has probably been established for other purposes, but adds to its duties that of acting as the mouthpiece for complaints against the doctor, and voices the opinion of the workmen as a whole in dealing with the doctor in matters of common interest. The arrangement is considered by some doctors to be convenient, and need not necessarily lead to any attempt on the part of the committee to pose as the doctor's employer. He is still the free doctor, offering his services to workmen who are free to employ him or not as they think fit.

The arrangements I have described are those common in England, Scotland, and North Wales, and they still obtain in some parts of South Wales, where the doctors have resolutely declined to have anything to do with a committee, or at any rate have declined to accept the doctrine that the committee and not the individual is the employer.

But where a workmen's committee exists it soon wants to extend its influence and magnify its importance (in Wales, at any rate), so it usually proceeds to formulate a scheme which, in addition to providing ordinary medical attendance, is intended to provide probably a nursing service and midwives, and perhaps a hospital. It is, of course, quite possible to provide these additional services without interfering with the doctor, and naturally the doctor welcomes any genuine attempt to provide these additional services for his patients. But almost invariably in Monmouthshire and South Wales proposals for extensions of this kind have included, have indeed had for their main object, the control of the doctor. The first step is to get control of the money. By means of the methods so well known in the mining industry the owners are "persuaded" to pay the deductions from wages over to a workmen's committee, which thus becomes the doctor's employer and master, able to stop his income at short notice, and able to divert part of the money, which in other areas goes direct to the doctor, to the other services I have mentioned; also to the payment of the members of the committee. There is a humour in the idea of using part of the doctor's money to support a committee whose chief work will be to make the doctor's life miserable which has been known to appeal even to the victims. It reminds one of the scriptural "seething the kid in its mother's milk."

The natural conclusion of this evolutionary process is reached when the committee stops paying the doctor by poundage or by capitation and turns him into a salaried officer who can be dismissed by the committee, and who no longer has any vested interest in the practice he may have built up. The doctor who accepts this position is a real wage slave. His tenure of office is precarious. The patients are no longer his. He is the medical equivalent of the peasant proprietor who has been robbed of his land and compelled to labour on it for a master.

No doubt a case can be made out for the employment of all doctors as salaried whole-time servants, and for the destruction of private independent practice as we know it. I believe the Germans convinced themselves, if they did not convince the Belgians, that the occupation of that country was a blessing (in disguise) for the Belgians. The case for the nationalization of the doctors has the great disadvantage that it has never convinced the doctors themselves. Every time the profession has had an opportunity it has declared most emphatically that it does not believe in a whole-time salaried service under the control of the State. Much less does it believe in a whole-time salaried service under the control of committees of workmen. I have nothing to say against workmen as such or as patients. The whole of my life as a general practitioner was spent amongst them, and if I were going back into practice I should prefer industrial practice. The individual working man and his wife are as good and as loyal patients as any doctor can wish for. But nobody can pretend that workmen's committees as you know them in this part of the country are comparable as responsible bodies to publicly elected authorities subject to central government, audit, and supervision, and open to the criticism of public opinion. You know too much of the way in which such committees are formed; the artificial and artful way in which the supposed demand is worked up, the "mass meetings" often consisting of 2 or 3 per cent. of the workmen concerned, which are announced as having agreed to a [illegible] scheme, the farcical "ballots", the combination of apathy on the one hand and trade union pressure on the other which together lead many who would certainly have stayed with their old doctor to fall in with the agitators and pay to the new doctor rather than seem "disloyal to the union." These things are commonplace to you, but they are happily almost unknown to your colleagues in industrial and colliery practice outside Wales. Now why should the Welsh colliery doctor have to endure this humiliation, the suggestion that he alone of all colliery doctors needs a double supervision—that of the Insurance Committee so far as his insured patients are concerned, that of a workmen's committee for all his patients? Are Welsh colliery doctors as a class more unreliable than their English and Scottish colleagues? Or are the English and Scottish miners more easily satisfied? Or is this desire to "own" the doctor due to some peculiarity in the Welsh miner?

Part of the blame must be awarded to the Welsh Insurance Commission, for they aided and abetted this outrage on the sentiment and customs of the medical profession. By their curiously favourable attitude towards "collective contracting out" under Section 15 (3) of the Insurance Act of 1911 they made it easy for those favourable to these schemes to get a start, helped by the money of the State. There is, I believe, only one such scheme existing in England, and it is a very old established affair, existing long before the Insurance Act was thought of. If the Welsh Commission had exhibited more foresight about the medical service in Wales and less fear of the organized minorities of workmen who want these schemes, the present status of mining practice in Wales would not be, as it now is, lower than in any other part of the kingdom.

I am not going to say that all Welsh colliery doctors are immaculate, or that no fault can be found with the service that any of them give. On the contrary, I believe that the workmen in some districts have been rightly dissatisfied with the kind of service they got, and were quite right in trying to improve it. There have been complaints of inadequate attendance, of intemperate doctors, of too much use of assistants, of inadequate assistance, etc. But the same thing happens elsewhere, and other workmen have remedied matters without finding it necessary to try to "own" the doctor body and soul. If this has been adopted as the only way of getting a better service, never did men adopt a cure so likely to be worse than the disease.

The Welsh colliery doctor is probably as good a man, generally speaking, as the colliery doctor elsewhere. All who know anything of the mining industry are aware that the colliery doctor ought to be a better man on the whole than his colleague in the towns, for he has more and graver emergencies to face and less chance of getting others to help him out. Nobody needs a good all-round doctor more than the miner does. If the average in Wales is lower than elsewhere it is the fault of the miner himself. For over twenty years he has been more or less persistently trying to oust the independent practitioner, and he must not be surprised if young practitioners of the right type are giving South Wales a wide berth. Colliery practice at best is not an attractive calling. The colliery doctor must make his home in an area where he and his family will be cut off from most of the social amenities available in other areas; he will be lucky if he can get a decent house; he must send his children away to school much earlier than he would have needed to do in most areas; his work will be more than ordinarily anxious and responsible. The reasons which impel a man to settle in colliery practice are probably that he knows and likes working-class people and thinks he can get on with them, and he believes he can make a fairly good income while doing good and useful work. But if he finds he is expected to be the servant of a committee which will more or less control him and his methods of practice; if he feels himself in a position of inferiority as compared with other practitioners in similar practice elsewhere; if his life is poisoned by the knowledge that there may be intrigue going on which may at any time make his position intolerable, then the game is not worth the candle, and he will choose some other sphere. The story of the fight over these medical "schemes" has already had its influence in the medical profession. You all know of good men who have thrown up the sponge, of good men who are only waiting for a chance to get out; and nobody knows better than I do how many young and promising doctors have decided to go elsewhere rather than enter colliery practice in Wales as was their first inclination. All of you who have tried to get assistants, or partners, or successors will endorse my opinion that the action of the workmen in regard to these schemes is having a distinctly lowering effect on the quality of the doctors entering Welsh colliery practice, and this will grow worse unless the profession can be assured of reasonable security and independence equal to that found in other industrial practice. I think we may fairly put down the present position to a something which differentiates the Welsh miner from miners elsewhere. What is it? The South Wales miner is notorious as being the most dissatisfied and restless workman in the kingdom. In my opinion he has had good reason to be dissatisfied. No man has any right to be satisfied, for example, with the housing conditions under which many of the South Wales miners live. If I were a miner I should be dissatisfied too. The Welsh miner's dissatisfaction has shown itself in prolonged and very successful attempts, not only to raise his wages but also to secure a great measure of industrial freedom. He demands that he shall be not merely a pawn in the industrial game, but a partner in the concern. It is curious that alongside this struggle for his own emancipation there should be a pronounced disposition to "boss" other people. The public has clearly shown that it has no intention of being coerced by any section of the community, however important. We as doctors have our share of that feeling which we like to think is essentially British. We will not tolerate any attempt on the part of miners or anybody else to take away that freedom and independence which we treasure and which we believe to be a necessary condition for the production of our best work. The attempt is bound to fail. It is contrary to the spirit of the times; it is contrary to the principles expressed by the miners themselves (when they talk about their own calling). A profession which hates the idea of becoming the whole-time servants of the State is not likely meekly to consent to be economically subservient to committees of workmen.

Some people say they do not see why doctors should object to whole-time service under a committee of workmen when they do not object to taking service under Town Councils or Insurance Committees, or Poor Law Guardians. There is a profound difference. The bodies I have mentioned are publicly elected bodies with a sense of public responsibility, kept in check by public criticism. The committees of workmen do not answer to any of these tests. "By their fruits shall ye know them."

The British Medical Association will fight this thing to the utmost extremity, knowing that a victory for the "schemes" would mean a fall in status for the whole profession and a mortal blow to its ability to produce its best work. For it is not only, or even mainly, the profession that would suffer. The first and worst sufferers would be the miners themselves. So long as a living could be got elsewhere without the sacrifice of self-respect the right kind of doctors would not enter colliery practice in South Wales, and the Association would be bound to advise them to go anywhere else. Mere money will not tempt them, when coupled with the uncertainty, irritation, and humiliation seemingly almost inseparable from employment under these schemes. I say "almost" because I am aware that one or two of these schemes have doctors who are comparatively contented and who are treated on the whole with consideration. But I say deliberately and with knowledge that I do not think there is one doctor who has been employed for any length of time under any of these schemes who would not be happier as an independent practitioner, who does not know that he could do better work as such, and who would not gladly get out if he could afford to do so. Several of the best of them have told me so.

Some of you may be saying, "Why tell us all this? Don't we know it? Haven't we seen this evil thing growing before our eyes ever since the Division was born? Have we not spent much time and energy in fighting these schemes, and don't we know more about the drawbacks and degradation of the whole business than you can tell us? Are there not some of us here who have had to fight for our very professional existence, though we would gladly welcome any reasonable prospect of getting away from the district for ever?" True! But I inflict these things on you partly because I hope that my words will reach a larger audience who will thus be enabled to understand what you have had to go through, but mainly because it is plain to me that we are in for a still more determined effort on the part of some of the extremists to extend the committee system into areas as yet unaffected, and to dominate our profession and its organization as some of them apparently would like to dominate their employers and the public generally. They will fail, because they will meet people quite as determined as themselves, and who on this point are, I think, absolutely united. But we must recognize the danger and be prepared for it.

It is seventeen years since the Association was reorganized and made capable of fighting for the interests of the profession and its various sections, in addition to its other functions. One of the first things we tackled was the reform of contract practice, and one of its aspects which first called for attention was the development of the "medical scheme" idea in South Wales. In Monmouthshire during those seventeen years you have never been without a fight on your hands. More than fifty "schemes" in Monmouthshire and South Wales have appeared on our list in the BRITISH MEDICAL JOURNAL. Some thirty of these have been defeated—some nipped in the bud, some killed after prolonged and expensive fights often lasting for four or five years, and entailing great pecuniary loss and much mental misery on the doctors concerned. Some others, though not killed, have been so modified by our opposition as to take much of the sting out of them. Ebbw Vale, for example, which fought desperately for a whole-time salaried service, has definitely reverted to "free choice," and the claim of the committee to control the doctors has been much modified after a long struggle which I do not think the Ebbw Vale Committee, and still less the local public, are at all anxious to repeat. We are not satisfied with the present condition, but it is far better than the system we began to fight so many years ago.

Within the last few months many new attempts to undermine the independent position of the profession have been made in South Wales—all however, I believe, in Glamorganshire. Some of them have gone no further than a request that the doctors should for the first time sign an agreement with the medical committee—a very harmless-looking agreement it was, too—but it was our old friend the thin end of the wedge. All the attempts, however innocent-looking, are characterized by an assumption that the doctor is to be employed by a committee, and that he is not an independent practitioner, catering for those who like to employ him. In the Naval Collieries in North Glamorgan a committee has issued a circular to all the workmen, making charges of inefficiency against the medical service which are hotly resented by the local doctors, in order to enforce the moral that all the workmen should authorize the employers to pay the doctors' money over to the committee, which will then kindly dispense it properly to the doctors. This is, of course, merely the first step; the others which I have previously described would soon follow. One of the most glaring instances of tyranny on the part of a workmen's committee that I have ever come across is the affair now going on at the Windsor Collieries (Abertridwr, Senghenydd, Caerphilly, Bedwas, and Taffs Vale), Glamorgan, where ten doctors, against whom no fault is alleged, have been given three months' notice because they decline to become the salaried servants of the committee, and prefer to go on as the individually chosen doctors of those workmen who wish for their services. The committee actually pretends to be surprised because the British Medical Association has declined to sanction its members accepting the new conditions. I leave you to suppose what the miners composing that committee would have said had the colliery owners tried any such autocratic action on *them*.

Some of these schemes will die an early death. I venture to say they would *all* do so if handled firmly by doctors who are conscious of having done their duty to their patients, and who will take the trouble to interest the Division in the case, and through the Division enlist the services of the Head Office. Some of them will have to be fought tooth and nail, and the Association will use every weapon at its disposal for the purpose. To those who like myself have been convinced democrats and believers in trade unionism from youth upwards the spirit shown by the miners recently towards many of the Welsh colliery doctors is profoundly disquieting. It shows that men who have had to fight very hard for their own liberties may have little or no regard for the liberty of others. The duty of the Welsh profession is plain. They must be watchful. They must resist without hesitation all attempts by committees to get control of their money or to pose as their employers. The miners' committees are *not* the doctors' employers. The doctor is employed by the individual workman to attend himself and his family. The workman can change his doctor whenever he likes and the doctor can get rid of him in the same way (always presuming there is another doctor available). Collective employment is a retrograde step which infringes this right of individual selection and change, and places contract practice patients at a distinct disadvantage as compared with private patients and with contract patients in other areas. I want the Monmouthshire Division, as experts in this business, to keep the interest of the South Wales and Monmouthshire Branch in this subject very much alive. And I want the Division and Branch to help me to convince other parts of the Association of the vital importance of winning this fight for the independence and self-respect of the profession. If the Welsh miner succeeds in "scheming" the colliery doctor out of his position as an independent individual and making him the whole-time servant of a workmen's committee, it will not be long before other workmen in England and Scotland will follow suit. The possible effect of the attitude of the Welsh miners on the policy of the Labour party cannot be ignored. If their policy were successful, we should run a great risk of seeing it embodied in the programme of that party.

In making this appeal to you for vigilance and determination I am only asking you to perform your traditional duty as the friend of your patients. You know that you do your best work when you are dealing direct with your patients. You know that the intervention of a third party in this relationship is worse than unnecessary: it is harmful. Some control is necessary in State work, but there it is mitigated by the powerful influence of the Panel Committee and other agencies by which the interests of the doctor are protected. In industrial contract work, as is shown by experience all over the country, the only control necessary is that of the individual patient, who can change his doctor when he is not satisfied. The profession can only justify its existence by giving the public its best services, and it is our duty to resist all attempts to place any obstacles in the way of this. If the miners in South Wales want to exercise their undoubted genius for organization for the real good of the mining community, let them do what has been done at Blaina, for example—set up a good hospital, encourage the local doctors to use it, engage the services of first-class surgeons and specialists, employ nurses in the homes, send convalescent patients away for a change, but leave the doctors to the influence of competition. Let the individual patient please himself as to what doctor he employs. The individual miner has as good a right to do this as any other member of the public. He is a grown-up man, and does not need to be spoon-fed by any committee. Let the good doctors be encouraged and the indifferent ones be frozen out. Let nothing be done which will discourage new men from coming in. These are things the miners can well do, and in doing them they will have not the resistance but the active and enthusiastic support of the British Medical Association and of the whole profession in Monmouth and South Wales.

CORRESPONDENCE.

Insurance Medical Records.

SIR,—[illegible] every insurance practitioner to [illegible] recently to purchase (cost 5d. through his newsagent) a copy of the report (Cmd. 836) of the Interdepartmental Committee on the form of medical record which he will have to keep as from January 1st [illegible] and to peruse the same carefully."

The report should be accepted as undoubtedly an honest attempt to meet two difficulties: the desire to obtain such statistical data from a doctor as will prove of national utility, whilst at the same time avoiding making an undue call on the doctor's time and purse. Unfortunately the theory seems likely to fail in practice.

The Committee took no evidence from any body or committee representative of the medical profession nor asked for its views. It did not contain amongst its members anyone who was personally acquainted with the failure of the A.F.B. 178 of the Army (Medical History Sheet) to be where it was required and the reasons for this failure; nor was any information asked for from the Ministry of Pensions with regard to its scheme of medical records.

The duty of the doctor will be to keep in envelopes [illegible] on which he will be required to enter records of visits, [illegible], certificates with a synopsis of the complaints, symptoms, or disease in such a form as will be of use on reference not only to himself but to any [illegible] into whose hands the patient may pass. He will also be required to abstract from time to time information from these cards for the use of the Ministry of Health [illegible] this can be done when the cards have been dis[illegible] [illegible] to return cards to his Insurance Committee; and to provide all necessary clerical [illegible] at his own expense. It has been [illegible] expense will vary, in accordance with the [illegible], between 9d. and 11½d. per insured [illegible].

[illegible]

be expected to give to a patient the same time as is given by a consultant. If he did, the tendency amongst these patients to develop introspection and a neurosis or malingering would become as noticeable as at present in another group of the industrial class.

It is a question whether the Ministry would not be well advised to provide insurance practitioners with suitably prepared tear-off-leaf day books and to keep in its own hands and amongst a selected whole-time staff the filling in of these record cards. Such work could be done in the doctors' homes. Only in such a way would it be at all possible to read, understand, or value correctly the enormous amount of information proposed to be obtained, and to insure—even up to 75 per cent.—that these record cards are ever in the same district as the insured person, after the scheme has been running, say, five years; and that the envelopes are not at an early date a ragged lot. Also, it is a question each doctor should ask himself—whether he contemplated for 11s. per insured person per annum to give in return 9d. to 11½d. of clerical work, in addition to his medical services.—I am, etc.,

Hove, Sept 4th. E. ROWLAND FOTHERGILL.

AT a meeting of the Warrington Medical and Panel Committee held on August 10th, with Dr. D. FERGUSON in the chair, the principal item on the agenda was the report of the Interdepartmental Committee on Medical Records. After discussion the following resolution was passed, and the Secretary was instructed to send it to the Insurance Committee:

> This Committee is of the opinion (1) that the indiscriminate keeping of records for all insurance patients would be of such slight value to the compilation of reliable statistics as to be wholly incommensurate with the high cost to the State, and with the time spent by the practitioner on this work; (2) that more reliable statistics of insurance work would be obtained by selecting two or three practitioners in each area to keep accurate records of a fair sample of the insurance population, and for which extra payment should be made.

BRANCH AND DIVISION MEETINGS TO BE HELD.

ESSEX BRANCH.—The annual meeting of the Essex Branch will be held at Southend-on-Sea on Thursday, September 23rd. Members wishing to read a paper or show cases should communicate with Dr. J. F. Walker, Rocklands, Clifton Terrace, Southend-on-Sea.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630.)

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2630.)

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

10 Fri. London: Propaganda Sub-committee, 2.45 p.m.
15 Wed. London: Hospitals Committee, 2.30 p.m.
Journal Committee, 3.30 p.m.
16 Thurs. London: Dominions Committee, 3 p.m.
Ministry of Health Committee.
17 Fri. London: Organization Committee, 2 p.m.
21 Tues. London: Medico-Political Committee, 2.30 p.m.
23 Thurs. London: Insurance Acts Committee, 2.30 p.m.
Essex Branch: Annual Meeting at Southend on Sea.

OCTOBER.

6 Wed. London: **Council**, 10 a.m.
21 Thurs. London: Conference of Representatives of Local Medical and Panel Committees.

POSTGRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—[illegible]

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

[illegible] North Wales, [illegible]

[illegible] 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 18TH, 1920.

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British Medical Association.

CURRENT NOTES.

Indian Medical Service.

The attention of readers of the Journal is particularly called to the advertisement concerning the I.M.S. which appears in the advertisement columns of this number. The announcement that the new terms formulated by the Association had been granted was made to the Representative Body of the Association at the Annual Meeting at Cambridge in June last by Colonel R. H. Elliot, the indefatigable Chairman of the Naval and Military Committee, who has given so much time and thought to the betterment of his old Service. At that meeting Sir Havelock Charles, the Medical Adviser to the Secretary of State for India, was present, and stated that one reason for his presence at the meeting was his desire to thank the British Medical Association for what it had done for the Indian Medical Service. He also declared that the Service afforded a very fair career, and that the men wanted in India were men of sound constitution who loved their profession; with that combination it was scarcely possible for a man not to achieve success. Lieut.-Colonel R. A. Needham, Deputy Director-General I.M.S., who spoke as representing the I.M.S. officers on the active list, said that the very welcome announcement which had been made was a great encouragement to all officers in the Service. His own opinion was that the terms offered and the concessions granted would provide a very satisfactory living wage, and would enable any young medical man who desired a career in which he could indulge his active habits and pursuits, and find unlimited scope for professional work, to obtain it very satisfactorily in India.

The Representative Body, recognizing that this announcement was the crowning success of a struggle which had been waged since 1913, received the news with enthusiasm and passed the following resolution:

> That the terms offered by the Secretary of State for India in satisfaction of the demands made by the British Medical Association be accepted, and that the Association now use its best endeavours to help recruiting for the I.M.S.

The advertisement should be carefully studied by those who are on the threshold of their medical career and have leanings towards one of the services. We have it on the best authority that for the man who is keen and fond of his profession the I.M.S. offers opportunities that are second to none. It used to be a common complaint in the I.M.S. that the pre-war pay was good for the senior and junior officers, but that the men in the middle—the senior captains and majors—were in the unenviable position of being too poor to remain in the Service and at the same time too poor to get out of it. Examination of the present scale of pay will show that such objection can no longer be raised. The improvements in the opportunities for leave and study leave are a great advance; but it must not be forgotten that, however anxious the Secretary of State may be to give them, they depend on his ability to find the additional officers necessary. The Association promised the Secretary of State for India that as soon as the terms asked for were granted it would do its best to help in obtaining recruits for the Service, and this undertaking will be fulfilled. We now appeal, therefore, to all the officers in the I.M.S. who are members of the Association to honour the bargain made on their behalf and to encourage young men to join the Service.

Membership of the Association.

In the three months to September 4th, 1920, the membership of the British Medical Association has increased by 828. The members of the Association now number 23,103.

Dr. Macdonald's Visit to South Africa.

Dr. J. A. Macdonald sailed for South Africa on September 10th in the *Walmer Castle.* He is due to arrive at Durban early in the week beginning October 4th—the week fixed for the South African Medical Congress. The secretary of the South African Committee, which is representative of all the South African Branches (Dr. A. W. Reid), has promised to do all he can to facilitate Dr. Macdonald's desire to see as much of the members of the South African profession as possible and to visit all the South African Branches, and the secretaries of the Branches have been asked by the Head Office to do what they can to make his visit profitable to all concerned. The reports which have appeared in the South African medical journals show that Dr. Macdonald is assured of a warm welcome, and he on his part is anxious to discuss with members in South Africa the best ways of making still more effective the union between the Association at home and its Branches in South Africa. Dr. Macdonald hopes to visit the Branches in Eastern Africa, but until his arrival in South Africa he cannot be sure whether time will allow of this.

Direct Representatives on Insurance Acts Committee.

The secretaries of Local Medical and Panel Committees are reminded that nominations for direct representatives on the Insurance Acts Committee must be received by the Medical Secretary not later than the first post on Monday, October 11th. The necessary form (M.2) may be had on application to the Medical Secretary, British Medical Association, 429, Strand, W.C.2.

Hospital Staffs and Treatment of State-supported Patients.

The action of public authorities and other bodies in making payments to voluntary hospitals for the treatment of certain classes of the community, and that of the Government in paying for the treatment of discharged and disabled soldiers and sailors, has led the medical staffs of these hospitals to ask how far their willingness to give their services voluntarily to the necessitous poor can be expected to apply to these new and increasing classes. In June, 1920, a circular letter was sent out to secretaries of medical staffs of voluntary hospitals and secretaries of Branches and Divisions explaining the position and defining the attitude of the British Medical Association in the matter. It is now important that the Association should be in possession of a complete list of all the hospitals which have adopted and are carrying out the principle of payment, in some form or other, of their voluntary medical staffs for this kind of work. The following hospitals are reported as having adopted the system:

Gloucester Royal Infirmary.
Salop Royal Infirmary.
Cheltenham General Hospital.
North Lonsdale Hospital.
King's College Hospital.
Sunderland Royal Infirmary.
Victoria Hospital, Accrington.
Northgate Red Cross Hospital, Bury St. Edmunds.

The Medical Secretary would be very glad of information from other hospitals which will enable him to keep a complete record.

Conference at Nottingham.

A conference of members of medical staffs of voluntary hospitals in the area of the Midland Branch of the British Medical Association will be held at 64, St. James's Street, Nottingham, on Thursday next, September 23rd, at 4 p.m. The following resolution will be proposed:

> That this conference approves of the principles defined by the British Medical Association relative to the recognition by a monetary payment made to a medical staff fund for medical services rendered to State or municipal patients received for treatment at the voluntary hospitals.

In the event of this resolution being approved, the conference will be asked to consider by what means these principles can best be carried out. Invitations to attend have already been issued to the members of medical staffs of all the voluntary hospitals in the area, but any members of the medical profession residing in the area of the Branch who may be interested in this subject are cordially invited to attend.

Colonial Commissions for Venereal Disease Propaganda.

Sympathetic replies have already been received from the Ceylon, British Guiana, Malaya, and Malta Branches, and from members of the Association in British North Borneo and the Leeward Isles, to the letter sent in May last to Branches or members of the British Medical Association in the areas proposed to be visited by the Medical Commissions being sent overseas under the auspices of the National Council for Combating Venereal Diseases, 80, Avenue Chambers, Southampton Row, London, W.C.1 (see SUPPLEMENT, May 29th, 1920, p. 175). All replies received from Branches or from members of the Association in the areas to be visited by the Commissions are being handed by the Association to the National Council, and the latter is communicating further with the writers as to the arrangements for the visits, so far as these have been made. It is satisfactory to find that the action taken by the Association has materially furthered this important work being undertaken by the National Council, and that body has expressed to the Association its thanks for the help thus given.

Colonial Medical Services.

The report of the Colonial Medical Services Committee, appointed by the Secretary of State last autumn, has just been issued, and an account of the Committee's findings and recommendations appears in the JOURNAL at p. 438. The Dominions Committee of the Association is considering the report at its meeting this week.

Mileage for Coroners' Inquests.

A member of the Association who practises in a sparsely populated area has recently raised the question of travelling expenses in connexion with coroners' inquests. He asked if they could be claimed legally. He stated that in his experience it was quite possible in some cases for the cost of travelling to absorb the whole of the fee paid. There does not appear to be any legal claim for travelling expenses in connexion with these services. The member, however, has continued to urge his claim on the Council of the County of Montgomery, in which he resides, and the County Council has recently agreed that the travelling expenses, on the approved county scale, shall be allowed to medical witnesses at coroners' inquests. Rural practitioners should notice this, and take steps to get their local authorities to follow this example. Meanwhile the Association hopes that the representations repeatedly made, and recently renewed, to the Home Secretary and the Minister of Health for the complete reform of Coroners' Law, in which this question was not overlooked, may meet with success.

The Sale of Alcohol in Queensland.

The Liquor Act of 1920 provides for a referendum to be taken every three years; in the first, which is to be conducted in October, the vote is to be taken on three alternative issues: (1) State management of the manufacture, importation, and sale of alcoholic liquors; (2) prohibition of manufacture, importation, and retail of fermented and spirituous liquors—to take effect in 1925; (3) the continuance of the present system. A specially convened meeting of the Queensland Branch of the British Medical Association was held in Brisbane on June 18th, 1920, with Sir David Hardie, the president, in the chair, in order to consider the attitude of the Queensland Branch towards this referendum. In the discussion which took place the speakers, while admitting that alcohol had its uses in stimulating appetite and causing sleep, declared that the price which the community had to pay for these benefits was too high. The opinion was generally expressed that little benefit could be hoped to accrue from State control, and a motion was carried endorsing prohibition of the manufacture, importation, and sale of alcohol. It was decided to take a referendum of all the members of the Queensland Branch and to announce this decision in the public press.

Association Notices.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, October 6th, in the Council Room, 429, Strand, London, W.C. 2., at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH. A clinical meeting of the Branch will be held in the Dumfries and Galloway Royal Infirmary at 2.45 p.m. on Friday, September 24th. The Council will meet at 2 p.m. Members desirous of showing cases or specimens are asked to communicate with the honorary secretary, Dr. Norman Maclaren, 25, Portland Square, Carlisle.

EDINBURGH BRANCH: SOUTH EASTERN COUNTIES DIVISION. A meeting of the Division will be held at the Railway Hotel, Newtown St. Boswells, at 5 p.m. on Wednesday, September 22nd. The business will include consideration of the report of the Representative to Representative Meeting; nomination of candidates for election to the Scottish Committee, British Medical Association, and a paper by Dr. S. Davidson (Kelso) on acute appendicitis.

ESSEX BRANCH. The annual meeting of the Essex Branch will be held at Southend-on-Sea on Thursday, September 23rd. Members wishing to read papers or show cases should communicate with Dr. J. F. Walker, Rocklands, Clifton Terrace, Southend-on-Sea.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH. The autumn meeting of this Branch will be held at the hospital at Malvern on Thursday, September 30th, at 3 p.m. After the ordinary business of the Branch, Dr. H. Russell Andrews, obstetric physician to the London Hospital, will read a paper on the treatment of uterine fibroids.

YORKSHIRE BRANCH: SHEFFIELD DIVISION. A British Medical Association lecture will be given to this Division by Mr. W. Sampson Handley, M.S., on Friday, October 29th, at the Church House, St. James Street, Sheffield, at 8.45 p.m., on "The lines of advance in the surgery of the breast."

Meetings of Branches and Divisions.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.

THE annual country meeting of the Division was held at Melton Mowbray on September 10th. Members' wives were invited to attend an organ recital given in the Parish Church by Dr. Malcolm Sargent, and to tea, tennis, and croquet at the residence of the chairman, Dr. R. H. Fagge, after the Divisional meeting.

The CHAIRMAN having welcomed the Division to Melton, Dr. WALLACE HENRY gave an account of the proceedings of the Representative Meeting. A resolution approving of the suggested alteration in the boundary of the Branch was approved subject to the assent of the Lincoln Division. Several clinical cases of an interesting character were shown, and a discussion followed.

CORRESPONDENCE.

NATIONAL INSURANCE.

The Payment by Attendance System in Salford.

SIR,—After a careful perusal of the article by Dr. J. H. Taylor on "National Insurance: The Payment by Attendance System in Salford," I beg to offer the following objections, briefly summarized, to the opinion therein expressed—that the Salford system possesses "superiority over the ordinary capitation system, whether it be from the point of view of the doctors or the insured persons."

I contend that the claim for the Salford system that it works the National Insurance Act upon private practice lines by "payment per attendance" is not sufficiently established by the facts given. At best it is only a very imperfect adaptation, and a mere approximation to the private practice system. The payment for the medical services given removes it entirely from the plane of ordinary medical practice, the attendance fee being grossly inadequate.

The method of estimating the panel practitioner's income is tedious, irksome, and expensive; and by reason of the Panel Committee's intromissions liable to cause irritation and dissatisfaction, although the loyalty of the practitioners to the system may prevent this being expressed.

The doctor's remuneration must necessarily vary with the prevalence of disease in the district, so that their cheques will vary in amount, perhaps considerably, from quarter to quarter. (Contrast with the regular steady payments under the capitation system.) The temptation to give excessive attendance (admitted) apparently operates so as to depreciate the attendance fee, which at 1s. 6d. is considerably less than that obtained under the capitation system.

The clerical work of the panel practitioner (in keeping attendance sheets, etc.)—the bugbear of the Insurance Act—is greatly increased under the Salford system.

The principle of "free choice of doctor" works out differently in the two styles of insurance practice, so that they cannot fairly be compared from that point of view. The frequency rate of "change of doctor" is much higher under the Salford system—4 per cent. as contrasted with 1 per cent. or 2 per cent. in the capitation system. This latter rate corresponds closely with that found in other forms of capitation practice (colliery) where absolute "free choice of doctor" obtains.

The greater facility to exercise "free choice of doctor" (expressed in frequent "change of doctor") is inseparable from the private practice or "payment per attendance" system, in which the economic relation between doctor and patient is mainly one of barter, and where a quick and easy exchange is an advantage. Under the capitation system there is superadded a definite contractual relationship (the yearly agreement) which militates against frequent "change of doctor." This tends to stabilize the capitation practice, as compared with one run on private practice lines, and enhances its transfer value.

The standard of courtesy, medical relationships, etc., is probably as high in the one system as the other. Practitioners working under the capitation system appear on the whole as well satisfied with their form of service as those in Salford. Hence the general preference among panel practitioners to continue under that system rather than adopt the other, despite all its superiority.—I am, etc.,

Stanley, Durham, Sept. 8th. J. CHARLES.

SIR,—The article in the SUPPLEMENT of August 28th by Dr. J. H. Taylor under the above heading should be carefully read by all interested in the subject. It is the nearest approach to what the whole profession demanded in 1910 and 1911, and with certain and definite alterations it might be made general, and save the face of the profession after the awful *débâcle* in the dark years before the great war. Its best principle is the *definite free choice of doctor* which it gives, and which is not to be had under the present general system.

It is certainly impossible to visit for 1s. 6d. at the present time; this would have to be raised and the wage limit decreased. I have never been able to understand why medical men are always willing to serve under committees who have a majority of lay people; it is quite undignified and very stupid.

The position in London of the medical benefit under the Act cannot be called satisfactory. The number of panel doctors is stated to be about 1,460, but this number is, I believe, over the mark, as on the borders of the boroughs the medical men appear very often in both. I put the number down as 1,300. I have this week counted the names of all doctors in London in the *Medical Directory* for 1919. Excluding the Harley Street and neighbourhood group, men holding official appointments, and retired practitioners, but including names in which the address is uncommunicated, I find the number is 5,797. Omitting the hundreds, the sum works out as follows: Total of non-panel medical men, who will not accept the present conditions of the Insurance Act, is 3,700 (5,000 less 1,300). It is remarked that 80 per cent. of the profession are on the panels; it looks as if in London not 30 per cent. are on. With the above evidence before us a new insurance scheme is necessary if the poor are to have the benefit of the best medical advice.

Thanks to the Insurance Act, there is no unity in the profession; there are three groups, all pulling in different directions, without any present hope of coming together again. It is urgently necessary, therefore, that a Royal Commission should sit without delay and decide what new schemes should be put through. The interim report on the future provision of medical and allied services reads to me like a feverish midsummer's night dream. I have no confidence in the present Minister of Health or his Consultative Council; it seems to me they wish to drag the profession further into the mire of ill-considered medical legislation. The apathy of the profession at the present time is truly awful; are they never going to wake up, not only for the benefit of the dignity of medicine and of the sick poor, but for their own advantage?—I am, etc.,

London, S.W., Sept. 5th. E. H. WORTH, M.R.C.S.

Insurance Medical Records.

SIR,—With reference to the new form of medical records which insurance practitioners will be supposed to keep of their insured patients in the near future, it would be interesting to know what is going to happen to those insured patients who insist upon being medically attended by a private practitioner.—I am, etc.,

Hampstead, N.W., Sept. 11th. O. L. THEOBALDS.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders R. L. Jones to the *Chatham*, P. H. Boyden to the *President*, additional for Porton Experimental Station, J. R. Muir to R.N. Hospital, Haslar, R. H. McGiffin to the *Raleigh*. Surgeon Lieutenant Commander W. H. Murray to R.N. Hospital, Gibraltar. Surgeon Lieutenants H. B. Padwick, D.S.O., to the *Dwarf* (to take passage in the *Monarch*), H. L. Pridham to R.M. Infirmary, Deal, W. J. Colborne to the 3rd R.M. Battalion, Eastern Mediterranean.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel R. J. W. Mawhinny, C.B., relinquishes the temporary rank of Colonel.

Lieut.-Colonel H. S. Roch, C.M.G., D.S.O., relinquishes the acting rank of Colonel.

Major W. Davis relinquishes the acting rank of Lieutenant Colonel.

Major C. R. M. Morris, D.S.O., to be Acting Lieutenant-Colonel.

Temporary Major N. G. Cooper to relinquish the acting rank of Lieutenant Colonel.

Temporary Major G. S. Simpson (Captain R.A.M.C.T.F.) relinquishes his temporary commission on reposting.

Temporary Major A. L. B. Green, D.S.O. (Major, 1st Herefords T.F.), relinquishes his temporary commission (March 20th, 1919)—substituted for notification in the *London Gazette*, July 26th, 1920.

Captains W. Foot, M.C., and F. C. Tibbs relinquish the acting rank of Major.

Temporary Captains relinquish the acting rank of Major: J. L. Wilson, D. C. Metcalfe Dallas.

Captain H. J. Bensted, M.C., to be temporary Major whilst specially employed.

Captain J. M. Macfie, M.C., to be acting Major.

Captain W. L. E. Fretz to be acting Major from September 1st, 1918, to June 13th, 1920, inclusive.

The undermentioned Captains are restored to the establishment: W. C. Hartgill, M.C., C. D. M. Buckley, M.C., J. D. L. Thompson, M.C.

Major W. Bruce, O.B.E., from New Zealand Medical Corps, to be Captain, November 18th, 1918, but not to reckon for pay or allowances prior to August 19th, 1920, with precedence next below D. McVicker.

Captain H. L. C. Noel resigns his commission.

Temporary Captain J. McP. MacKinnon to be Captain, April 3rd, 1918, but not to reckon for pay or allowances prior to July 1st, 1919, with precedence next below J. McFadden (substituted for notification in the *London Gazette*, August 9th and September 3rd, 1919).

Captain F. Holmes, from S.R., to be Lieutenant and to be temporary Captain, October 10th, 1918, but not to reckon for pay or allowances prior to August 1st, 1920, with precedence next below J. E. Rea.

To be temporary Captains: D. E. Hearn, late Captain R.A.M.C. (S.R.), June 3rd, 1920, with seniority from November 9th, 1918 (substituted for notification in the *London Gazette*, August 13th, 1920); J. D. Judson, late temporary Captain, August 9th, 1920, with seniority from June 2nd, 1917; H. H. McClelland, late temporary Captain, August 13th, 1920, with seniority from January 30th, 1919.

The notifications in the *London Gazette* of August 13th, 1920, regarding the undermentioned are cancelled: D. B. Robertson, H. A. Hill, W. H. Simmons.

Captain J. McP. MacKinnon is seconded for service with the Egyptian army.

The following Lieutenants (temporary Captains) to be Captains: G. E. L. Simons, E. Parker, L. G. Blackmore, V. J. Bonavia, D. J. Batterham.

Captain J. C. Preston, from S.R., to be Captain, February 15th, 1920, but not to reckon for pay or allowances prior to August 1st, 1920, with precedence next below R. H. C. Pryn.

The following officers relinquish their commissions:—Temporary Lieut.-Colonel T. S. Good, O.B.E., on ceasing to be employed at the Ashurst War Hospital, and retains the rank of Lieutenant-Colonel. Temporary Captains, and retain the rank of Captain: E. C. Arnold, H. H. Perry, H. C. Sutton, W. L. G. Anderson, J. M. MacPhail, P. Johnson, W. H. Harvey, W. E. Fraser, A. S. Cook, J. M. Wallace, H. Harrison, A. R. Berrie. Temporary Captain C. W. Joynt.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flying Officer G. H. H. Maxwell to be Flight Lieutenant.

The following are transferred to the Unemployed List: Captain M. C. Breese (June 12th—substituted for notification in the *London Gazette* of July 2nd), Captains D. Cromrie, R. D. Jones, E. H. L. Le Clezio, Captain (acting Lieutenant-Colonel) A. P. Bowdler, O.B.E., Lieutenant R. I. Rhys.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain R. Taylor, M.C., relinquishes his commission and is granted the rank of Major.

The following Captains resign their commissions and retain the rank of Captain: C. A. Bignold, G. F. Randall.

Captain A. Bulleid relinquishes the acting rank of Major.

Captain G. I. Evans relinquishes his commission, and retains the rank of Captain.

Captain R. E. Grandy relinquishes his commission.

The notifications in the *London Gazette* of May 25th, 1920, regarding the undermentioned Captains are cancelled: D. B. Robertson, W. H. Simmons, H. A. Hill, T. A. Fletcher, O.B.E.

Captain (acting Major) C. A. McGuire relinquishes the pay and allowances of his acting rank (July 11th, 1919—substituted for notification in the *London Gazette*, June 4th, 1920).

The undermentioned Captains relinquish their commissions on account of ill health contracted on active service: C. A. McGuire, and is granted the rank of Major; G. E. Shand, and retains the rank of Captain (substituted for notifications regarding these officers in the *London Gazette* of April 23rd and January 23rd, 1920, respectively).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel A. T. Falwasser, D.S.O., resigns his commission and retains the rank of Lieutenant-Colonel.

Major H. G. Smeeth (late Major R.A.M.C., S.R.) to be Lieutenant-Colonel and to command 1st East Lancs Field Ambulance (February 16th, 1920).

Major (acting Lieut.-Colonel) W. F. Roe, D.S.O., T.D., relinquishes the rank of Lieut.-Colonel on ceasing to be specially employed.

Captains (acting Majors) W. A. Brechin, M.C., and L. Beesley relinquish the acting rank of Major on ceasing to be specially employed.

Captain C. H. [illegible] to be Major.

Captain O. Teichmann, D.S.O., M.C., to be D.A.D.M.S. 2nd London Division.

Captain A. G. Wilson, from 3rd Northern General Hospital, to be Captain, with precedence as from January 2nd, [illegible] (substituted for notification in the *London Gazette*, [illegible]).

Captain R. L. [illegible] (late temporary Captain R.A.M.C.) to be Captain, with precedence as from February 6th, 1918.

Captain G. [illegible] (late temporary Captain R.A.M.C.) to be Lieutenant and [illegible] the rank of Captain.

Captain J. G. Morris (late temporary Captain R.A.M.C.) to be Captain, with precedence as from April 24th, 1919.

Captain C. H. Vernon (late R.A.F. Medical Services) to be Captain.

[illegible] General Hospital.—Captain H. B. [illegible] resigns his commission and retains the rank of Captain, with permission to wear the prescribed uniform.

[illegible] London General Hospital.—Major L. B. Rawling is restored to the establishment.

[illegible] Southern General Hospital.—Captain G. S. Simpson is restored to [illegible] on ceasing to hold a temporary commission in the R.A.M.C.

[illegible] Southern General Hospital.—Captain F. Clarke is restored to the establishment.

Supernumerary for Service with the Officers' Training Corps: Belfast University Medical Unit Contingent, Senior Division.—Captain G. [illegible].

The following officers resign their commissions: Captain T. H. Peyton, D.S.O., and is granted the rank of Lieutenant-Colonel. Captains, and are granted the rank of Major: D. M. [illegible], T. W. [illegible], O.B.E., A. [illegible], C. S. P. Black, M.C., W. A. Brechin, M.C. Captains, and retain the rank of Captain: L. S. Simpson, M.C., J. [illegible], H. W. [illegible], W. W. Adamson, L. A. Williams, C. W. Greene, J. C. [illegible], G. C. [illegible].

POST-GRADUATE COURSES AND LECTURES.

MANCHESTER FRENCH HOSPITAL, 24, Acomb Street (behind Whitworth Park).—Post-Graduate Lecture: Thurs., 4.15 p.m., "Tubal Abortion."

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Mr. Bishop Harman: Eyes; Mr. Macdonald: Out-patients. Tues., 10 a.m., Dr. McDougal: Electrical; 2 p.m., Mr. Tyrrell Gray: Out patients. Wed., 2 p.m., Dr. Owen: Out-patients; Mr. Addison: Operations. Thurs., 2 p.m., Dr. Grainger Stewart: Out-patients; Mr. MacDonald: Out-patients. Fri., 2 p.m., Mr. Banks Davis: Throat, Nose, and Ear; Dr. Pernet: Skin. Sat. 2 p.m., Dr. Owen: Out-patients; Mr. Sinclair: Out-patients.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London. Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

17 Fri. London: Organization Committee, 11.30 a.m.
21 Tues. London: Medico-Political Committee, 2.30 p.m.
22 Wed. London: Finance Committee, 2.30 p.m.
Edinburgh Branch: South-Eastern Counties Division, Railway Hotel, Newtown St. Boswells, 3 p.m.
23 Thurs. London: Insurance Acts Committee, 2.30 p.m.
Essex Branch: Annual meeting at Southend-on-Sea.
Nottingham: Conference of Medical Staffs of Voluntary Hospitals called by Midland Branch, 4 p.m.
24 Fri. Border Counties Branch: Clinical meeting, Dumfries and Galloway Royal Infirmary, 2.45 p.m. Council meeting, 2 p.m.
28 Tues. London: Scrutiny Subcommittee, 11.15 a.m.
30 Thurs. Worcestershire and Herefordshire Branch: Autumn meeting, at the hospital, Malvern, 3 p.m.

OCTOBER.

6 Wed. London: **Council**, 10 a.m.
21 Thurs. London: Conference of Representatives of Local Medical and Panel Committees.
29 Fri. Sheffield Division: A British Medical Association lecture by Mr. W. Sampson Handley, M.S., at the Church House, St. James Street, Sheffield, on "The Lines of Advance in the Surgery of the Breast," 8.45 p.m.

APPOINTMENTS.

ALDOUS, G. F., F.R.C.S.Ed., Consulting Surgeon to the Totnes Hospital, South Devon.

CHRISTOPHERSON, W. B., M.R.C.S., L.R.C.P., Tuberculosis Officer to the County of Norfolk and Medical Officer to the Stanninghall Farm Colony.

DAWSON, W. S., M.A., M.B., M.R.C.P., Assistant Medical Officer, London County Asylum, Hanwell.

MULLALLY, G. T., M.C., M.S., F.R.C.S., Assistant Surgeon, Westminster Hospital.

TANNER, W. E., M.S., F.R.C.S., Assistant Surgeon, the Prince of Wales's General Hospital, Tottenham.

EDINBURGH ROYAL INFIRMARY.—Resident House Physician: Ronald McD. Canns, M.B., Ch.B. Resident House Surgeons: A. W. P. Haine, M.B., Ch.B., W. D. Brunton, M.B., Ch.B., A. A. Denham, M.B., Ch.B., G. M. S. Lindsay, L.R.C.P. and S.Ed. Non-resident House Surgeons: J. M. Norman, M.B., Ch.B., Miss P. R. Whitaker.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

THOMAS—JONES.—On Wednesday, September 8th, at Moriah Chapel, Carnarvon, by the Rev. H. C. Lewis, Llandudno, and the Rev. W. H. Lewis, Penmaenmawr, Dr. E. R. Thomas, of Beaumaris, to Miss Phoebe Jones, formerly Matron of the Carnarvonshire and Anglesey Infirmary.

DEATH.

NOTT.—On August 26th, suddenly, from heart failure while on a visit to the Engadine, Arthur Holbrook Nott, Lieutenant-Colonel, Indian Medical Service (retired), of 77, Drayton Court, London, S.W., second son of the late William Nott, of Devizes, aged 58.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 25TH, 1920.

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British Medical Association.

CURRENT NOTES.

Report of the Consultative Council on Medical and Allied Services.

The Representative Body instructed the Council to issue a report on this subject to the Divisions, and to call a Special Representative Meeting to consider the report and the replies. The Ministry of Health Committee has been occupied in the preparation of this report, which is now completed, and will be in the hands of the Council of the Association at its meeting on October 6th. The report, which is accompanied by questions, will be published in the SUPPLEMENT as soon as possible after the Council meeting, and Secretaries of Divisions have been asked to make their preparations for meetings in the last week of October or the first week in November, at which the chief business will be the discussion of the report and the furnishing of answers to the questions. As has been pointed out to the Secretaries, the subject is one which concerns consultants and specialists and all administrative medical officers equally with general practitioners.

The Association and Whole-time Medical Officers.

In March of this year the Worcestershire County Council submitted for publication in the BRITISH MEDICAL JOURNAL an advertisement for seven assistant school medical officers. No salary was mentioned, but it is known that the proposed salary was £450 per annum. The attention of the clerk to the county council was called to the fact that no salary was stated, and that unless a salary of £500 was given the advertisement could not be published. About the same time the same council submitted an advertisement for an assistant county medical officer and school oculist at £450 per annum. At the instance of the Division this advertisement also was refused, and an "Important Notice" was put in the advertisement pages of the JOURNAL. In April the chairman of the Worcestershire County Council had to explain to a meeting of his council that the medical press would not publish advertisements for these posts under £500 per annum, and after a long discussion it decided to advertise in the lay press. The result was not encouraging, for the chairman of the council is reported to have stated at a subsequent meeting that, although he had received a considerable number of replies, he was sorry to say that the persons were not suitable. At that meeting power was given to go beyond £450. On September 14th an advertisement was received from the Worcestershire County Council offering a salary of £550, rising by £25 a year to £600, for a school oculist.

Hospital Staffs and Treatment of State or Rate Maintained Patients

The Hospitals Committee, at its meeting on September 15th, had before it the minute of the Representative Body embodying the present policy of the Association as regards the payment to members of the staffs of voluntary hospitals for attendance on pensioners, etc. The Committee considered various criticisms of the method of payment by a percentage of the cost of maintenance, and resolved to collect information on the subject with a view to ascertaining whether some more equitable method could be devised. A subcommittee, consisting of the Chairman (Mr. Bishop Harman), Dr. Astley V. Clarke, and Mr. McAdam Eccles, was instructed to report on the matter.

Ministry of Pensions: Dismissal of Sessional Officers.

Complaints have recently been sent to the British Medical Association that the Ministry of Pensions was dismissing some of its sessional officers at very short notice—some at seven days and others at only four. The officers concerned asked for assistance from the Association. A letter was sent to the Ministry pointing out that, though the Association quite appreciated that sessional work was temporary, as long notice as possible should be given of its termination, as it was a very serious matter for doctors to find themselves faced with unemployment at short notice, particularly when they had been getting what was practically whole-time work for many months. The hope was expressed that if any increase in Board work took place these officers would be found temporary employment. A prompt reply was received from the Ministry stating that, having taken all the circumstances into consideration, it had been decided to extend the period of notice to one month. Members who are giving the whole or a great part of their time to pensions work will be well advised to regard it as temporary employment and to make their arrangements accordingly.

Inactive Divisions.

Complaints are from time to time received by the Head Office from individual members that no steps are being taken in their areas to discuss the important matters they see mentioned in the SUPPLEMENT as being under consideration by the Association, or that nothing has been done to remedy certain grievances of the local profession. Questions are asked as to what should be done to get appropriate action taken. Any member who is in the unfortunate position just described will be furnished, on application to the Medical Secretary, with the names of the responsible officers of his Division, if any, and offers of assistance in those areas not organized will be gladly welcomed. No member of the Association can get the full value of his membership if the Division in which he resides is not alive.

ANNUAL REPRESENTATIVE MEETING, JUNE 25TH TO 28TH, 1920.

SYNOPSIS OF PROCEEDINGS.

(NOTE.—*Members are requested to preserve this for reference.*)

One hundred and sixty-three constituencies made returns of Representatives out of a possible 226. Of the sixty-three constituencies making no return, seventeen were in the United Kingdom and forty-six overseas. One hundred and forty-seven Representatives attended the meeting.

This Synopsis deals only with outstanding items of action taken, declarations of policy, and important instructions given to the Council.

Subscription to Association.

Raised, after a roll call vote—116 for, 22 against—from January 1st, 1921, to (a) 3 guineas for members resident in United Kingdom; (b) 2 guineas for members resident elsewhere; (c) 1½ guineas to members resident in United Kingdom, and admitted before expiration of two years from date of registration—reduced subscription to be payable only till December 31st next occurring after expiration of four years from date of registration. (Min. 29.)

Council instructed to consider:

(a) Advisability of making provision whereby in the case of practitioners co-resident (otherwise than in institutions) those other than the first may for membership pay a subscription of 2 guineas and one copy only of the JOURNAL be sent to the common address. (Min. 30.)

(b) Question of subscription of retired practitioners. (Min. 31.)

(c) Question of exempting from increased subscription members of forty years' standing. (Min. 32.)

Possibility of Association becoming a Federation of Medical Bodies.

That steps be taken to obtain further powers under the constitution of the Association to allow of its becoming a federation of medical bodies in addition to remaining an association of individual members. (Min. 44.)

Increased Grants to Divisions.

Council instructed to take steps for higher contributions to Divisions. (Min. 51.)

Salaries of Laboratory and Research Workers and Professors and Teachers.

Minimum commencing salary of £500 per annum for medically qualified laboratory or research workers permanently employed as such. (Min. 65.)

Council instructed to consider best methods of securing adequate increments in salary for such workers. (Min. 66.)

Council instructed to consider salaries of medical professors or teachers, and to make recommendations. (Min. 68.)

Professional Secrecy.

That, having further considered the question of professional secrecy viewed from the standpoint of the medical profession and with special regard to venereal diseases, the Representative Body reiterates the opinion that a medical practitioner should not, without his patient's consent, voluntarily disclose information which he has obtained from such patient in the exercise of his professional duties. (Min. 74.)

Council instructed to consider extent to which and ways in which Association is prepared to support its members in maintaining professional secrecy. (Min. 76.)

Attitude of Profession to Secret Remedies.

That a registered medical practitioner should not make use of, or recommend, any remedy the principal ingredients of which are not disclosed to the profession. (Min. 86.)

Fees for Treatment of School Children and Maternity and Child Welfare Centres.

That the following minimum fees for the treatment of school children at treatment or welfare centres by private practitioners be approved:

(i) For treatment of minor ailments 2 guineas per session of not more than two and a half hours.

(ii) For ophthalmic work involving refraction, 10s. 6d. per case, or where cases are seen at clinics, 3 guineas per session not exceeding two and a half hours, in which not more than eight new cases shall be seen.

(iii) That a fee of not less than 1½ guineas per case (including anaesthetist) be paid for adenoids and tonsils operations requiring general anaesthetic.

(iv) That the fee for other operations on eye, nose, ear, and throat cases should be specially arranged;

(v) That the fee for x ray treatment for ringworm be 2 guineas per completed case where the practitioner provides his own apparatus, but where the apparatus is provided by the local authority the fee to the practitioner should be [illegible] guineas.

(vi) That the foregoing fees (i-v) be exclusive of any fee paid to institutions for maintenance, etc., of patients.

(vii) That any local variation in the above terms, before being adopted, be submitted to the Council for approval.

(Min. 100.)

Minimum Salaries for Public Appointments.

That this meeting is of opinion that a substantial addition is needed to all Public Health salaries on the general lines of the scale indicated in items 77–112 of the Agenda, and that a Conjoint Committee of the British Medical Association and the Society of Medical Officers of Health be formed to take charge of the case for improvement in the salaries of medical officers in the Public Health Services, and to report to the Councils of the British Medical Association and of the Society of Medical Officers of Health as to any steps that may be necessary to this end. (Min. 106.)

Contract Rates for Uninsured Persons.

That the following recommendation of Council (SUPPLEMENT, April 24th, 1920, p. 115, para. 107) be adopted:

> That Minute 141 of the Annual Representative Meeting, 1913, with regard to the fees for attendance on uninsured persons, be amended by (i) the deletion of the words, "that is, 9s. per annum including medicines," at the end of paragraph (1) (b); and (ii) the substitution of £250 for £104 in paragraph (1) (c), so that the resolution would then read as follows:
>
> That the Representative Body adopt the following principles as essential to the formation of any schemes for the provision of medical attendance and treatment of uninsured persons:
>
> (1) That, in general, in considering the necessity for obtaining the approval of the Council for schemes for the treatment of uninsured persons upon contract terms, the following principles and conditions must be adhered to:
>
> (a) Free choice of doctor by patient, and of patient by doctor.
> (b) Remuneration to be not less than that which is deemed by the Council to be equivalent to that paid in respect of insured persons.
> (c) Persons with a total income from all sources of £250 per annum or upwards, or the dependants of any such person, not to be treated under contract terms at all.
>
> (2) That the Representative Body realizes that the conditions in certain areas will not allow of the above terms being obtained, and that in these circumstances the approval of the Council may be given provisionally to a scheme involving a less payment when the local profession can show that the economic conditions in the area demand it.
>
> (3) That one of the conditions necessary for the approval of schemes containing lower rates of payment shall be the inclusion amongst the rules, in a prominent position, of a statement that approval by the Association has been given to the rates only because of special economic conditions.

(Min. 109.)

That the meeting express the opinion that contract rates for uninsured persons fixed on the basis of payment by attendance be not less than the minimum fees recognized in the district for private medical attendance. (Min. 110.)

Medical Attendance on Miners' and other Workmen's Families.

Referred to Council to deal with question of medical attendance on miners' and other workers' families where such attendance is given on a contract basis, and to endeavour to establish uniform rate throughout the kingdom. (Mins. 111 and 112.)

Fees for Medical Examinations for Life Insurance.

Approved the following agreement between the Association and the Life Offices Association:

> That the fee for medical examination for industrial insurance be 5s. (minimum) or 10s. 6d., according to the form of report asked for. (Min. 119.)
>
> That as regards intermediate offices—that is, the ordinary branch of industrial offices and ordinary offices which issue policies whose average amount is small (for example, ordinary branches of Prudential and the Provident Mutual Life) the minimum fee for medical examination be 10s. 6d. for policies up to and including £100, and 21s. if over £100. (Min. 120.) [*This was not carried by the meeting, but referred to Council with power to act, and the Council approved it.*]
>
> That as regards ordinary offices the fee for medical examination be 21s. whatever the amount of the policy. (Min. 128.)
>
> That the fee for a report (without medical examination) for children proposed for "thrift policies" remain at 10s. 6d. (Min. 129.)
>
> That in no case shall any reduction be made in any existing fee for medical examination for life insurance. (Min. 130.)
>
> That no attempt be made to standardize the guinea form of report, as there are only slight differences between the forms already in use in most British offices. (Min. 131.)
>
> That representations be made to the Life Offices Special Committee as to the modification of those forms which are objectionable from the medical examiner's point of view. (Min. 132.)

The meeting also passed the following, which, however, did not form part of the agreement:

> That in cases examined elsewhere than in the practitioner's consulting room, at the request of the insurance company or its agent, a mileage fee be paid in addition to the examination fee. (Min. 133.)

Reports of Consultative Councils of Ministry of Health.

Council instructed to prepare and submit an exhaustive report to the Divisions, and afterwards to call a Special Representative Meeting to consider the matter. (Min. 147.)

WHOLE TIME SALARIED STATE MEDICAL SERVICE.

Passed the following unanimously:

> That the Representative Body reiterates its previous resolutions that a whole-time salaried State service would be detrimental to the best interests of both the public and the medical profession. (Min. 152.)

MEDICAL CERTIFICATES FOR INABILITY TO ATTEND SCHOOL.

That where an elementary school authority requires a medical certificate of the inability of a child to attend school, the fee for such certificate shall be paid by the Education Authority. (Min. 156.)

FEES FOR MEDICAL WITNESSES.

That the fees for medical witnesses (see para. 123 of the Annual Report of Council) should be 3 and 2 guineas respectively. (Min. 158.

FEES FOR NOTIFICATION OF INFECTIOUS DISEASES.

Council instructed (*a*) to press for immediate reversion to the 2s. 6d. fee for notification of infectious diseases; (*b*) to press for a 5s. fee; and *c* opinion expressed that postage on notifications should be prepaid by responsible authority. (Mins. 159, 160, and 162.)

FEES FOR POLICE CALLS.

That fees for police calls should be: day call 7s. 6d., night call 10s. 6d.

FEES FOR INQUESTS AND POST-MORTEM EXAMINATIONS.

That fees for inquests and *post-mortem* examinations should be raised 50 per cent. (Mins. 165 and 165.)

ADVERTISING OF DRUGS FOR SELF-MEDICATION.

Council instructed to consider what steps can be taken to deal with undue advertising of drugs for self-medication. (Min. 167.)

UNQUALIFIED PRACTICE.

That, in the opinion of the Representative Body, serious steps should be taken, in the public interest, by the Association to bring to the notice of Parliament the injurious effects of unqualified practice in medicine and surgery. (Min. 168.)

FEES FOR PRACTITIONERS CALLED IN ON THE ADVICE OF MIDWIVES.

That the Representative Body expresses the opinion that the fee of £2 2s. suggested in para. 1 of the Ministry of Health's proposed amended scale of fees for medical practitioners called in on the advice of midwives (see paras. 224 and 225 of Supplementary Report) is too small to enable the Association to urge practitioners to respond to these calls in areas or cases where they are unwilling to do so. (Min. 170.)

That in all cases where complications arise after the tenth day, and where medical attendance is necessary, the fee for such treatment shall be paid to the doctor. (Min. 174.)

That in cases where a practitioner is called in by a midwife the onus of payment should lie with the local health authority. (Min. 175.)

Referred to Council to consider whether definition of day and night visits in this connexion should be amended as follows:

Day, 9 a.m. to 6 p.m. ... ... 5s.
Night, 6 p.m. to 9 a.m. ... ... 10s.
(Min. 173.)

TRAVELLING ALLOWANCES FOR MEDICAL WITNESSES.

Council instructed to endeavour to secure increased travelling allowances for medical witnesses. (Min. 180.)

PRESERVATION OF CAPITAL VALUE OF PANEL PRACTICE.

Council instructed to take active steps to further the just claims of insurance practitioners to capital value of their panel practices. (Min. 182.)

VACCINATION OF INSURED PERSONS.

Council instructed to take legal advice as to whether or not vaccination came within practitioner's agreement under old Regulations. (Min. 187.)

VACCINATION.

Council instructed to draw attention of Minister of Health to neglect of vaccination. (Min. 192.)

Expressed strong objection to action of Glasgow Health Authority in using lay persons for vaccinating, and recorded opinion that vaccination should only be performed by qualified practitioners. (Min. 193.)

SESSIONAL AND WHOLE-TIME PAYMENT FOR VACCINATION.

That a session for vaccination should be limited to two and a half hours; that the fee for medical practitioners serving should be not less than £2 2s. per session; and that for whole-time service in performing vaccination the fee should be not less than £12 12s. per week. (Min. 194.)

PAYMENT OF MEMBERS OF HONORARY STAFFS OF HOSPITALS FOR TREATMENT OF PENSIONERS.

That for all work for soldiers and sailors, whether discharged or not, for any disease or injuries connected with the war, undertaken at voluntary hospitals, the medical staffs should be adequately remunerated. For the present the remuneration should represent an addition of not less than 25 per cent. to the cost of maintenance of in-patients, and not less than 25 pe cent. of the ascertained cost per patient per attendance for out-patients, the additional sum to be placed at the disposal of the medical staff; that in the case of special clinics (for example, aural and ophthalmic) the fee payable to the medical practitioner should not be less than the fee payable by the Ministry of Pensions for identical or similar services—namely, £2 2s. per session. (Min. 195.)

POOR LAW HOSPITALS AND CIVIL NEEDS.

Council instructed to inquire into and report on the position of Poor Law hospitals, especially in relation to private patients, and the possibility of a closer co-operation between their medical staffs and the general practitioners of the district. (Min. 198.)

PAYMENT FOR MAINTENANCE OF HOSPITAL PATIENTS.

That the Representative Body is of opinion that the suggested remedy for existing financial straits of hospitals—namely, to demand contributions in aid of their maintenance from the patients—fundamentally alters the basis of the relationship hitherto existing between the honorary medical staffs and the subscribers; and refers the question to the Council for consideration and report. (Min. 199.)

CONDITIONS OF SERVICE IN INDIAN MEDICAL SERVICE.

That the terms offered by the Secretary of State for India in satisfaction of the demands made by the British Medical Association be accepted, and that the Association should now use its best endeavours to help in recruiting for the I.M.S. (Min. 204.)

MEDICAL REPRESENTATION IN PARLIAMENT FUND.

That this meeting pledges itself to advance the interests of the Medical Representation in Parliament Fund in the Divisions and Branches of the Association so as to secure sufficient money to support the candidature of at least two medical representatives. (Min. 209.)

That this meeting is of the opinion that the candidature of Dr. H. B. Brackenbury (North Middlesex) should be supported from the Medical Representation in Parliament Fund. (Min. 210.)

WELSH COMMITTEE.

Amended constitution of Welsh Committee by adding a member appointed by each Division situate wholly in Wales, to take the place of the secretaries of the North Wales and the South Wales and Monmouthshire Branches. (Min. 211.)

SCOTTISH COMMITTEE.

Amended constitution of Scottish Committee by leaving out the secretary of each Scottish Branch and adding members appointed by grouped Divisions in Scotland; also altered its reference as follows:

> To consider all matters specially concerning Scotland, and, in conformity with the decisions of the Representative Body, deal with all such matters. It shall meet at such place and time as the Committee itself may direct. The Committee shall have power to add to its number not more than four members specially qualified to assist in the business of the Committee. (Min. 213.)

OVERSEA BRANCHES.

Altered the method of obtaining power to levy a special subscription. Formerly the Branch had to obtain the approval of the Central Council, and it could take the vote of its members either at a meeting or by postal vote. Now the approval of the Central Council is not needed, and the vote must be taken at a meeting. (Min. 217.)

COLONIAL MEDICAL SERVICE.

Officers of the Colonial Medical Service on the Active List may now, like officers in Navy, Army, Air Force, and Indian Medical Services, be elected to the Association without any certificate signed by three members. (Min. 219.)

HOSPITAL STAFFS IN TASMANIA.

Council instructed to consult Australian representatives as to what, if any, action could be taken with reference to the grave situation in Tasmania. (Min. 221.)

ELECTIONS.

Dr. T. W. H. Garstang (London) was re-elected Chairman of Representative Meetings 1920-21, and **Dr. R. W. Wallace Henry** (Leicester) Deputy Chairman.

Sir T. Jenner Verrall, LL.D., was elected a vice-president of the Association, and **Sir Philip Magnus**, Bart., M.P., an honorary member.

Association Notices.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, October 6th, in the Council Room, 429, Strand, London, W.C. 2., at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—The autumn meeting of this Branch will be held at the hospital at Malvern on Thursday, September 30th, at 3 p.m. After the ordinary business of the Branch, Dr. H. Russell Andrews, obstetric physician to the London Hospital, will read a paper on "The treatment of uterine fibroids."

YORKSHIRE BRANCH: SHEFFIELD DIVISION.—A British Medical Association lecture will be given to this Division by Mr. W. Sampson Handley, M.S., on Friday, October 29th, at the Church House, St. James Street, Sheffield, at 8.45 p.m., on "The lines of advance in the surgery of the breast."

CORRESPONDENCE.

NATIONAL INSURANCE.

The Payment by Attendance System in Salford.

SIR,—I was delighted to see the letter from Dr. Charles of Stanley in the SUPPLEMENT of September 18th on the above subject. I do not think the case for the capitation system could be better put, and the views he expresses therein are exactly my own.

The capitation system is very much simpler than the Salford system, and, as Dr. Charles points out, the payments are regular and steady; consequently one knows, at least approximately, what the amount will be beforehand, and no trouble in keeping accounts is incurred. I have yet to be convinced that the Salford system is as satisfactory as the capitation system, either from the point of view of the doctors or the insured persons.

With a really earnest desire to make the capitation system a success, I consider it can be worked very satisfactorily to all concerned, with the minimum of clerical work, which I feel sure all busy practitioners wish to have reduced as much as possible. I am, etc.,

J. ROBERTSON HALL.

[illegible] House, co. Durham,
Sept. 18th.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London. Tel.: Gerrard 2630).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London Tel.: Gerrard 2634).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London. Tel.: Gerrard 2631).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

28 Tues. London: Scrutiny Subcommittee, 11.15 a.m.
30 Thurs. Worcestershire and Herefordshire Branch: Autumn meeting, at the hospital, Malvern, 3 p.m. Paper by Dr. H. Russell Andrews.

OCTOBER.

6 Wed. London: **Council**, 10 a.m.
21 Thurs. London: Conference of Representatives of Local Medical and Panel Committees.
29 Fri. Sheffield Division: British Medical Association lecture by Mr. W. Sampson Handley, M.S., at the Church House, St. James Street, Sheffield, 8.45 p.m.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: [illegible] Belton to the *Pembroke*, additional, for [illegible]; M. [illegible] Mahe to the *Constance* on recommissioning; H. [illegible] O.B.E., to the [illegible] Squadron Medical Officer for duty with [illegible] Continental Reserve Fleet; R. W. [illegible] to the *King George V*. Surgeon Lieutenants: W. J. McL. Allen to 3rd R.M. Battalion (Eastern Mediterranean); J. R. Brennan to the *Kellett*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major [illegible] T. H. Robinson, D.S.O., relinquishes the acting rank of [illegible]

[illegible] Major M. J. [illegible], M.C., to be [illegible]

[illegible] Captain [illegible] W. L. [illegible] and F. G. M. [illegible]

Captain [illegible], M.C., [illegible]

Captain [illegible] placed on the half-pay list on account of ill health [illegible]

[illegible] to be temporary Captain [illegible] August [illegible]

[illegible] but not to [illegible] with precedence [illegible]

[illegible]

INDIAN MEDICAL SERVICE.

[illegible]

Major R. B. Lloyd, Officiating Chemical Examiner, Bengal, appointed to be Imperial Serologist. He will continue to hold in addition his present officiating appointment.

Brevet Lieut.-Colonel R. McCarrison granted privilege leave for six months combined with furlough for six months (January 29th).

Major A. N. Dickson, M.C., posted as Civil Surgeon, Peshawar (July 9th).

Captains to be Majors (August 1st): R. N. Chopra, H. Stott, O.B.E., A. S. Khan, M. D. Wadia, T. D. Murison, A. J. Symes.

The promotion to his present rank of Major R. S. Kennedy, D.S.O., M.C., has been antedated from February 1st, 1918, to August 1st, 1917.

Major A. E. J. Lister, V.H.S., appointed to be Professor of Ophthalmology, King George's Medical College, Lucknow, with effect from the date on which he assumes charge.

Lieut.-Colonel H. Ainsworth, Professor of Ophthalmology, King Edward Medical College, Lahore, granted combined leave for one year (April 14th).

Major W. W. Jendwine, C.M.G., appointed to officiate as Professor of Ophthalmology, King Edward Medical College, Lahore, during the absence of Lieut.-Colonel Ainsworth.

Lieut.-Colonel H. B. Melville has been granted combined leave for eight months (May 22nd).

K. R. K. Iyengar has been permanently appointed to the Indian Medical Service as a Lieutenant, with effect from July 4th, 1920, and promoted to the rank of Captain from July 5th, 1920.

Major General H. Hendley, K.H.S., has been permitted to retire from the service (June 26th).

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain (acting Lieutenant-Colonel) J. J. C. Hamilton is transferred to the Unemployed List.

TERRITORIAL FORCE RESERVE.

ARMY MEDICAL SERVICE.

Colonel W. Ranson, D.S.O., vacates the appointment of A.D.M.S., East Lancs Division.

Lieut.-Col. (Brevet Colonel) F. H. Westmacott, C.B.E., T.D., from 2nd Western General Hospital, to be Colonel and A.D.M.S., East Lancs Division.

ROYAL ARMY MEDICAL CORPS.

Major A. C. Farquharson, from General List, to be Major.

Captain H. G. L. Haynes, from General List, to be Lieutenant-Colonel.

Major A. E. Hodder, D.S.O., resigns his commission and is granted the rank of Lieutenant-Colonel.

Captain C. T. Matthews resigns his commission and retains the rank of Captain.

POST-GRADUATE COURSES AND LECTURES.

ST. MARK'S HOSPITAL, City Road, E.C.—Tues., 2.30 p.m., Dr. F. Crookshank: Mucous Colitis. Wed., 2.30 p.m., Mr. H. G. Anderson: Fissure. Thurs., 2.30 p.m., Sir C. Gordon Watson: Haemorrhoids; 4.30 p.m., Dr. S. S. Wyard: Pathological Specimens. Fri., 4.30 p.m., Mr. L. E. C. Norbury: Sigmoidoscopy. Sat., 2.30 p.m., Mr. W. B. Gabriel: Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient and Out-patient Clinics and Operations.

APPOINTMENTS.

WILLES?, R. J., M.V.O., O.B.E., F.R.C.S., temporary Honorary Surgeon to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

THOMPSON.—On September [illegible], at [illegible], Princes Road, Liverpool, to Dr. and Mrs. Lucy Thompson, a daughter.

VERNON.—At [illegible] Crescent, [illegible], on September [illegible], 1920, to the wife of C. [illegible] Vernon, M.B., B.C. (Cantab.), a son.

MARRIAGE.

[illegible]—BOTTRELL?—On September [illegible], at the Friends' Meeting House, [illegible], [illegible] Henry [illegible], of [illegible], to [illegible] M.B., B.S. [illegible]. Residence, [illegible] Glyncorrwg?, North Wales.

DEATH.

[illegible]—On September [illegible], Dr. [illegible], M.B., C.M. [illegible], aged [illegible], at [illegible] West [illegible] Nursing Home, [illegible]

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 2ND, 1920.

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British Medical Association.

CURRENT NOTES.

Work of the Medico-Political Committee.

THE Medico-Political Committee at its meeting on September 21st had a very heavy agenda, which included many questions of importance to the profession. The following is a brief summary of the principal items:

Prison Medical Service.—A subcommittee was set up to consider the position of the Prison Medical Service, including both whole-time and part-time officers.

Contract Practice.—A strong subcommittee was appointed and several additional members added on account of their special knowledge of family contract practice among miners and other workmen. An attempt is to be made, in accordance with the instruction of the Representative Body, to formulate a national standard of remuneration for family contract work. The subcommittee will also take up (in co-operation with the Science Committee) the question of the remuneration of laboratory workers, professors, and university teachers; and the fees and travelling expenses of medical witnesses.

Fees for Inquests and Post-mortem Examinations.—This question was referred to the Parliamentary Subcommittee, which, together with the Parliamentary Medical Committee, is negotiating with the Home Secretary and the Minister of Health for legislation covering not only fees but the radical reform of the law governing death registration and coroners' inquiries.

Payment of Pensions Medical Officers.—The Ministry of Pensions Subcommittee was reappointed, and was instructed to consider the whole question of the conditions of employment and remuneration of the officers employed by the Ministry, both whole and part time.

Fees for Police Calls.—The Committee received a report that in the metropolitan area the fees for police calls had recently been raised from 3s. 6d. to 5s. for a day call and from 7s. 6d. to 10s. for a night call, and decided to advise all Divisions to take steps locally to obtain these fees, or at least an increase of 50 per cent. on local pre-war fees. Local action is recommended because these fees are fixed locally and not by any central authority.

Income Tax and Members' Subscriptions.—The Medical Secretary was instructed to obtain a definite ruling as to whether the subscription to the Association can legally be deducted when making a return for income tax.

Medical Fees and Courts-Martial.—The Committee considered the case of a medical man who travelled a long distance to attend a court-martial, was allowed only third-class fare, and was paid a fee which was manifestly inadequate. The War Office is to be urged that first-class railway fare should be allowed in all such cases and the fee raised by 50 per cent.

Fee for Notification of Infectious Diseases.—The Committee considered the latest information on this matter. In spite of strong remonstrances as to the parsimony of the Government in reducing the fee for notification of infectious diseases (probably the only reduction of prices known in recent times), the Ministry of Health declared itself unable, though willing, to restore the pre-war fee in view of the provisions of the Local Government (Emergency Provisions) Act, 1916. According to this Act the fee cannot be altered until the termination of the war, and the "termination of the war" is defined in another Act as a date as nearly as possible simultaneous with the ratification of peace with all enemy countries. As the treaties with Turkey and Hungary have not yet been ratified the official end of the war has not been declared. The Committee directed that an attempt should be made to get inserted in the bill which the Ministry at present has before Parliament a clause abrogating the relevant clause in the Local Government (Emergency Provisions) Act.

Colonial Medical Services.

Owing to the dissatisfaction of the Dominions Committee of the Association with the terms and conditions of service in the Colonial Medical Services, with the pensions of retired officers, and with the delay in publication of the report of the Departmental Committee on the Colonial Medical Services, before which the Association gave evidence in February last, difficulties arose between the Association and the Colonial Office in regard to the advertisement of vacancies for medical officers in the various services. As members and ex-members of the Colonial Medical Services are doubtless aware, the report of the Departmental Committee has now been published (see BRITISH MEDICAL JOURNAL of September 18th, page 448, and SUPPLEMENT of the same date, page 78). As a result of the publication of that report the Dominions Committee is now, on behalf of the Association, reviewing the position, including the recommendations of the Departmental Committee and the question of the action to be taken by the Colonial Office in respect of them. The Dominions Committee has appointed a Colonial Medical Services Subcommittee to deal in the first instance with the matter, with power to seek an interview with the Colonial Secretary and report to the Committee.

A New Division in New Zealand.

The New Zealand Branch has formed a new Division of the Branch to meet the needs of the members in the southern portion of Auckland Province. The new Division has been named "South Auckland Division." Its area comprises the counties of Awakino, East Tanpo, Kawhia, Matamata, Piako, Raglan, Rotorua, Waikato, Waipa, Waitomo, West Taupo. A meeting of the new body to appoint an executive will by now have been held.

Colliery Practice in Derbyshire and Nottinghamshire.

The rate of remuneration for medical attendance upon the dependants of mine workers in Derbyshire and Nottinghamshire has long been lower than the rate obtained in most other colliery districts. The average rate which prevails at present works out, roughly, at 16s. 3d. per annum, which is paid, in addition, of course, to the insurance capitation fee received for the worker, by the head of the family to secure medical attendance and medicine for his dependants. A small extra payment of 5s. per annum is occasionally received for boys under 16 years of age. Since the introduction of the Insurance Act the standard of work has undoubtedly been improved, and its range now includes services which were previously reckoned as extras, such as early miscarriages, fractures, and the like. Altered economic conditions require now to be taken into consideration, and in asking, with the approval of the local Divisions of the British Medical Association, for a remuneration of 26s. per annum, paid by the head of the family (in addition to the insurance capitation fee) the doctors in these areas cannot be considered to be asking too much. At the present moment the rate of payment which prevails is one of the lowest which is paid in any colliery district; and even if the doctors succeed in getting the miners to agree to a payment of 26s. in place of the 16s. 3d., they will not then be paid as much as some doctors practising in other mining areas. In Northumberland and Durham the miners' representatives have recommended that the payment, which is at present at the rate of 26s. per annum, should be increased to 39s., in addition to the insurance capitation fee.

On September 11th Dr. E. H. Houfton, Dr. C. J. Palmer, and Mr. A. M. Webber, acting for the Association, met the representatives of the colliery clubs, when the matter was discussed fully, and since that date an offer of 20s. has been made by the miners' representatives. The matter will shortly be considered again by the Division, but it is not expected that any less sum than 26s. will be accepted in the area. The doctors have given notice to terminate their present agreements, and if the terms which they are now asking are not agreed to, the dependants of mine workers in the future will be attended as private patients, and will have to pay the ordinary private fees which are in force throughout the district.

Medical Representation in Parliament Fund.

The recent appeal for subscriptions to the above fund has produced, in addition to many individual subscriptions, the following subscriptions from Panel Committees:

Manchester, £100; Berkshire, £10 10s.; Oxfordshire, £10 10s.; Warwickshire, £10 10s.; Bournemouth, £10; Westmorland, £5 5s.; Kilmarnock, £3 3s.

Meetings of Branches and Divisions.

SUFFOLK BRANCH.

The autumn meeting of the Suffolk Branch of the British Medical Association was held at Felixstowe on September 10th. A large number of members and non-members were present, and a most successful and enjoyable day was spent. An excellent paper was read by Dr. W. Langdon Brown of London on the principles of internal secretions, and Mr. W. McAdam Eccles of London gave an interesting and instructive demonstration on the manufacture and adjustment of trusses. Lunch was served at the Grand Hotel by the kind invitation of the Chairman of the Urban District Council of Felixstowe, Mr. W. J. [illegible], and of the Vice-Chairman, Dr. [illegible]. A concert was given at the Spa Pavilion by the Urban District Council, and tea was provided by the kind invitation of the President of the Branch, Dr. O. R. M. Wood, and his wife.

Association Notices.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, October 6th, in the Council Room, 429, Strand, London, W.C. 2., at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Kent Branch: Maidstone Division.—A meeting of the Maidstone Division will be held at the West Kent Hospital on Thursday, October 7th, at 3.30 p.m., when Mr. A. Fleming, F.R.C.S. (Assistant Director of Inoculation Department, St. Mary's Hospital), will give an address on "Vaccine therapy in relation to general practice."

Yorkshire Branch: Sheffield Division.—A British Medical Association lecture will be given to this Division by Mr. W. Sampson Handley, M.S., on Friday, October 29th, at the Church House, St. James Street, Sheffield, at 8.45 p.m., on "The lines of advance in the surgery of the breast."

INSURANCE.

CAPITAL VALUE OF PRACTICES.

The Dartford Scheme.

We have received for publication from Dr. C. R. Salisbury, Honorary Medical Secretary of the Kent Local Medical and Panel Committees, a statement regarding the "Dartford Scheme" which has been considered and approved by those Committees. The statement, abridged from considerations of space, is as follows:

The "Dartford Scheme" originated in a meeting of the practitioners of Dartford and district. At this meeting and others subsequently Dr. Renton of Dartford brought forward the question of the approaching loss of the capital value of practices—a loss which becomes more and more serious as larger classes are brought into insurance. The original scheme was purely local, but it soon became evident that there were in it the makings of a national scheme whereby doctors might insure payment of the capital value of their practices to their representatives or to themselves when they retired from active work. The scheme has now been officially adopted by the Kent Local Medical and Panel Committees, and is recommended for adoption to their constituents. If these approve, the Minister of Health will be asked for his sanction.

The scheme is that every year there shall be taken from the county or borough medical pool before its distribution a sufficient sum to pay to each doctor who has retired a sum equal to one year's purchase of his panel practice. This sum will have been provided by the practitioners to whom the amount would otherwise have been distributed, but each of these will be able to draw a like sum when he retires. In effect, on retirement each practitioner will be able to sell his practice to his fellows for one year's purchase.

The resolution, moved by Dr. Renton at the meeting of the Kent committees on September 8th, and approved by them, is as follows:

> That, in view of the following facts:
>
> (a) That a retiring practitioner had formerly a saleable asset in the goodwill of his practice;
>
> (b) That this asset is or may be diminished by the coming into operation of National Health Insurance;
>
> (c) That the Kent Local Medical and Panel Committees are extremely anxious to provide against the economic difficulties which are certain to ensue, and particularly in the case of sudden death or incapacitating illness of practitioners; and
>
> (d) That for administrative reasons no payments could conveniently be arranged except from the medical pool, which is not under the control of these committees;
>
> these committees advise the practitioners of Kent to authorize them to strongly urge upon the Minister of Health that he should, as early as possible, give his permission, make regulations, or promote such legislative enactment as may be required to authorize the following payment:
>
> (a) One year's purchase price of his panel practice in the event of a practitioner's death or his retirement from practice owing to old age or infirmity.
>
> (b) A lesser payment if he retires for the purpose of starting practice elsewhere—for example, in Harley Street.

The lesser payment is on a sliding scale, and is necessitated by the possibility that a practitioner might relinquish his practice just for the purpose of claiming payment, and then move elsewhere and repeat the process. It is further justified in that the primary object of the scheme is to protect widows and wives of those who suddenly fall out of the race owing to illness, and to provide a little capital for the doctor's old age.

This sliding scale is as follows:

After less than 5 years in panel practice ...	one fifth
More than 5 but less than 6 years	two fifths
" " 6 " " 9 "	three fifths
" " 9 " " 12 "	four fifths
12 years or more	five fifths

Thus a doctor who holds a panel practice for less than three years, and then retires for his own reasons and while in good health, will have £100 instead of £500 for his 1,000 panel.

The benefits to be assured involve risks which could hardly be taken by the ordinary commercial insurance company. It would therefore be of little value to attempt a comparison with their rates. To estimate the probable average premium and the average sum payable on death, (a) the number of doctors on the panel, (b) the average number retiring each year, and (c) the average size of panels, must be known. These figures have been considered for Kent so far as they are available. It is estimated that during the last six years one doctor in four has retired from the panel. These are the only years available for consideration, and are war years in which removals have been far in excess of normal. It will be on the safe side to assume that one in every six retires normally in six years. Thus six doctors would have to find in six years enough to pay one of their number £500 at the end of that time. This would mean an annual premium of about £14. But since these payments will be a prior claim on the medical pool, doctors will pay only in proportion to the size of their panel, and £14 is to be taken as a very high estimate of the payment required from a practitioner with 1,000 on his panel.

The hope is expressed that the scheme as drafted will meet the requirements of any county, and that the Minister will permit county option in the matter.

CORRESPONDENCE.

The Payment by Attendance System in Salford.

SIR,—Despite a "careful perusal," Dr. Charles has failed to grasp a single essential detail of the Salford system. Perhaps he will allow me to point out briefly the underlying principles of the method. When the National Insurance Act was yet a bill, we, in common with most cities and boroughs, submitted Mr. Lloyd George's scheme to much discussion and criticism. It was Dr. Bradley of Salford who laid down the axiom that the insurance risk (of sickness incidence) should not be borne by the medical practitioner. Every practitioner who had experience of "club" practice knew that this in the main was the cause of all the evils and grievances of contract practice.

Failing to get the insurance risk borne by the State, we decided that the corporate body of practitioners of our insurance area should bear this risk. This necessitated the pooling of funds and the payment for work done. It also involved the creation of machinery for the prevention of excessive attendance, such machinery necessarily being simple and equitable in action.

Within a very short space of time such machinery was in being and the bugbear of excessive attendances ceased to exist. I speak emphatically, not on the strength of a "careful perusal" of a short and necessarily imperfect sketch of the Salford scheme, but from seven years' intimate executive knowledge of the subject. I can assure you, Sir, that the objections raised by Dr. Charles exist only in his own imagination. At one time I felt it my duty to preach the Salford system as a cure for many of the ills of the Insurance Acts. It was a thankless task; perhaps I was a bad exponent. Anyhow, the profession as a whole preferred to grumble and grouse under a huge club system of practice. Even those who were convinced were too apathetic to attempt any change. Dr. Charles has voiced many of the objections that were raised in discussion, though I must admit that they lacked that tone of finality that is inseparable from complete ignorance of the facts.

The method of estimating the practitioner's income is neither tedious, irksome, nor expensive. I am fortunate in having a most capable part-time clerk, I admit, and the efficiency of the work is largely due to his enthusiasm. Anyway, including the rent of offices and committee room, and including the compilation of record cards centrally (as required by the Ministry of Health in the future), the administrative expenses are well under 1 per cent. of the money distributed. The Panel Committee has been so active in "intromitting"—whatever that word may connotate exactly—that it has decided to sit only once a quarter unless urgent business require an extra session!

The clerical work of the practitioner is no more than is required by the reinstated regulation as to statistics. The free choice of doctor is absolute. It is simply nonsense for Dr. Charles to talk about a "free" choice under the panel system. Is a man undergoing six months' hard labour "free"?

There has been much heart-burning amongst panel practitioners at the expressed determination of the Ministry to destroy vested interests in insured persons. Under the Salford system a doctor gets paid for the patients he actually attends—that is to say, for those who look upon his house as their natural bourne in times of sickness. Surely Dr. Charles can see that this fact makes the insurance patients in Salford as transferable with the practice as the private patients. In fact, it defeats absolutely the object of the Ministry. We have no fears for the future.

I have referred before to the psychological aspect of our system as regards the relationship of doctor and patient. An empty surgery means no money from the Insurance Committee; hence the insurance patient is always welcome. The fee, by the way, is not so bad. It is nearer 2s. 6d. than 1s. 6d., and the payments—previously monthly, now quarterly—show very little fluctuation. August is the slackest month, and we mostly take our holidays then.—I am, etc.,

STANLEY HODGSON,
Honorary Secretary, Salford Local Medical and Panel Committee.

Salford, Sept. 21st.

Mileage Returns.

SIR,—A circular letter from the Secretary of the Lanarkshire Local Medical and Panel Committee has been addressed to the panel practitioners of that county taking strong exception to the particulars as to mileage asked for in the Mileage Return Form 211 I.C. The practitioners are advised to refrain from making the return, and a combined protest from the county panels in Scotland is suggested.

The grounds for objection are two:

> (1) That particulars are asked for of visits paid to *all* patients, uninsured as well as insured, and (2) that they include visits paid within the two-mile limit. It is contended that the first inquiry is unwarrantable as referring to a man's private affairs, and that the second is unnecessary and irrelevant, since only visits to insured persons beyond two miles count for the mileage grant.

May I, as a member of the Mileage Section of the Distribution Committee and as one familiar with the complexity of the subject, try to make clear to the Scottish and indeed to all practitioners why they are asked for the figures in Form 211 I.C., and why they should in their own interests do their best to supply them?

It is only just to the Ministry of Health and to the Treasury to premise (1) that, having at last grasped the reality of our mileage grievances, they have shown every wish and readiness to meet them; (2) that the grant for 1920 was admittedly calculated on inadequate data and on wide and generous assumptions; and (3) that no Government worthy of the name would be justified in continuing a grant of public money founded on such an uncertain basis when the claimants of the grant can, if they choose to take the trouble, furnish reliable figures for a true calculation.

The problem we have to solve is this: What is the average distance that each practitioner actually does travel in a year in visiting the insured persons on his list, over and above that which he would have to travel if they all lived within two miles of his house?

To help us to a solution we have the sum of the distances at which his insured persons live from the residence of each doctor. This is got from the returns on his mileage claim, each mile beyond two per insured person constituting the "unit of distance." But the "unit of travel"—that is, the distance *actually travelled* in a year for each "unit of distance"—is a much more difficult thing to arrive at, and it is this latter unit to which we have to attach a money value to cover the time and cash expenses incurred in travelling.

If every journey paid to an insured patient was a special one—out and back to him only—or if a doctor could divide his visits into two separate rounds, keeping, say, his morning round for insured persons only and his afternoon for the uninsured; or if he could visit all his patients within two miles in one round and all beyond this distance in another, the problem would be comparatively simple, and the Lanarkshire Committee might be justified in their objections. Unfortunately this is not the case; several patients at different distances are usually seen in one round, the insured and uninsured are mixed up haphazard, the proportion of time and money spent in travelling to visit insured and uninsured patients varies with the size of the man's list and the distribution and character of his practice, and the solution of the problem is by no means so simple.

The method finally arrived at by the Mileage Committee as being the simplest that could be called safe was this:

> Ascertain (1) the number of miles actually travelled in a year for all domiciliary visiting in certain typical classes of practice—semi-urban, ordinary rural, and exceptionally sparse, and (2) the proportion of visits in these practices as between insured and uninsured. This will give the gross number of miles actually travelled for insured persons only, and with this there can be calculated the relation of the unit of distance to the unit of travel.
>
> To put it in the language of another profession, we know the number of miles for which a practitioner is "at risk," and from the returns asked for in Form 211 I.C. we can calculate how much of this "matures" into actual travelling.

The Committee could see no way of arriving at the solution of the problem without these returns, and unless the canny Scot can suggest one, I venture to hope that he will do his best to supply them. Whether it is wise to ask *all* practitioners to keep these records instead of a selected 10 per cent. of reliable men, as recommended in the Report of the Distribution Committee, is a matter I need not go into.—I am, etc.,

J. P. WILLIAMS-FREEMAN.

Weyhill, Andover, Sept. 23rd.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty: Surgeon Commanders R. St. G. S. [illegible] as Professor of Hygiene at the R.N. Medical School, Greenwich; R. W. Stanistreet to the [illegible].

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel E. S. Clark is placed on retired pay.

Temporary Lieut.-Colonel W. Murray, T.D. (Lieut.-Colonel R.F.A. (T.F.)), relinquishes his temporary commission.

Majors relinquish the acting rank of Lieutenant-Colonel: E. T. Potts, C.M.G., D.S.O., A. J. Williamson.

Captain and Brevet Major W. I. Webster and temporary Captains F. P. Young and G. W. B. Waters relinquish the acting rank of Major.

Captain K. P. MacKenzie is restored to the establishment.

The following Captains, late R.A.M.C.(S.R.), to be Lieutenants and to be temporary Captains, but not to reckon for pay or allowances prior to August 31st, 1920: J. S. B. Forbes, May 28th, 1917, with precedence next below J. M. Morrison; W. C. MacKinnon, July 26th, 1917, with precedence next below G. W. B. [illegible].

R. B. Jenkins, M.C., late Captain C.A.M.C., to be temporary Captain.

The following officers relinquish their commissions: Temporary Lieut.-Colonels, and retain the rank of Lieut.-Colonel: E. Goodall, C.B.E. (on ceasing to be employed at the Welsh Metropolitan Hospital); J. B. Byles (on ceasing to be employed at the Brook War Hospital). Temporary Majors, and retain the rank of Major: N. G. Cooper, R. H. [illegible]. Temporary Captains, and are granted the rank of Lieut.-Colonel: (Acting Major) C. J. West, O.B.E. (October 9th, 1919—substituted for notification in the *London Gazette*, November 8th, 1919), R. Svensson, D.S.O., M.C. (March 13th, 1920—substituted for notification in the *London Gazette*, April 12th, 1920). Temporary Captain [illegible], and is granted the rank of Major. Temporary Captains and retain the rank of Captain: F. C. Plummer, C. G. Burton (on account of ill-health contracted on active service), T. S. M. Horsfall, A. W. D. Magee, W. Garton, R. Hamilton, J. N. M. [illegible], J. R. Watson, T. [illegible], J. C. Robertson, W. H. [illegible], J. L. [illegible], P. L. [illegible] (on account of ill-health contracted on active service), temporary Captain F. Hannigan. Temporary Lieutenant [illegible] Allen, and retains the rank of Lieutenant.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain W. W. Sherten relinquishes the acting rank of Major.

The following officers relinquish their commissions: Captain K. D. Murchison, D.S.O., and is granted the rank of Lieutenant-Colonel. Captains and retain the rank of Captain: M. C. Cooper, T. H. Rhys, T. O'Mahoney, H. J. Blampied, S. H. de G. Pritchard, C. A. W. [illegible], G. F. Hurst, J. A. Panton, J. W. W. Baillie, M. O. [illegible], R. S. [illegible], F. J. Charlton, F. O. Goldsmith, F. R. Batho, M.C., P. S. G. Cameron, D. C. Beaumont, H. G. V. Mence, D. V. [illegible], J. S. B. Forbes, J. McKay, M.C., R. S. Aspinall, C. Shearer, [illegible], R. P. Smith, A. [illegible], J. W. W. Newsome, D. [illegible], J. C. [illegible], C. L. Somerville, J. B. S. Lewis, [illegible], L. C. Moore, J. A. Ross, M. [illegible], C. Wood, [illegible] Conybeare, M.C., W. L. M. Gabriel, W. [illegible], R. A. [illegible], A. D. [illegible].

Captain W. A. [illegible] resigns his commission and retains the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

[illegible] Lieutenant-Colonel [illegible] G. H. L. [illegible], C.M.G., D.S.O., T.D., [illegible] Field Ambulance, [illegible] M. [illegible], M.B.E., and to command [illegible].

[illegible] Lieutenant-Colonel [illegible]

[illegible] O.B.E., T.D., to be D.A.D.M.S., [illegible] London [illegible].

[illegible] T.D., and Captain [illegible]

[illegible] rank of Major [illegible] *London Gazette* [illegible]

[illegible] D.S.O., H. M. [illegible], M.C., W. [illegible] Adamson(?), D.S.O.

Captain J. M. Heron relinquishes his commission on account of ill health and retains the rank of Captain.

To be Captains: Captain A. Morris, from T.F.Res., with precedence as from April 1st, 1915; Captain W. H. Kiep (late temporary Captain R.A.M.C.), with precedence as from May 11th, 1918; Captain W. W. Hallchurch (late temporary Captain R.A.M.C.), with precedence as from June 16th, 1918; Major C. M. Kennedy, M.B.E. (late temporary Captain R.A.M.C.), with precedence as from April 5th, 1918, and to relinquish the rank of Major; Captain E. M. Cowell, D.S.O. (late R.A.M.C.S.R.), with precedence as from April 1st, 1915); J. H. Thompson (late temporary Captain R.A.M.C.); Captain J. D. C. Swan (late temporary Captain R.A.M.C.), with precedence as from June 10th, 1918; Captain H. H. L. Ellison (late temporary Captain R.A.M.C.); Captain S. J. [illegible], from T.F.Res., with precedence as from December 5th, 1915; Lieutenant J. M. Stalker.

To be Lieutenants: Captain J. W. Macfarlane, M.C. (late temporary Captain R.A.M.C.), with precedence as from May 4th, 1916, and to relinquish the rank of Captain; Captain R. Ward, M.C. (late temporary Captain R.A.M.C.), with precedence as from May 25th, 1917, and to relinquish the rank of Captain; Captain B. Kelly (late temporary Captain R.A.M.C.), with precedence as from June 11th, 1917, and to relinquish the rank of Captain.

The following officers resign their commissions: Captains, and are granted the rank of Major: T. B. McKee, M.C., A. M. Davie, A. M. Mackay, L. H. Wooton, M.C. Captains and retain the rank of Captain: D. A. Wilson, F. T. Boucher, H. E. Quick, D. M. Johnston, W. H. Smailes.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (3 *lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

6 **Wed.** London: **Council**, 10 a.m.

7 Thurs. Maidstone Division: West Kent Hospital, Maidstone, 3.30 p.m., British Medical Association lecture by Mr. A. Fleming on Vaccine Therapy.

21 Thurs. London: Conference of Representatives of Local Medical and Panel Committees, 10 a.m., Memorial Hall, Farringdon Street.

29 **Fri.** Sheffield Division: British Medical Association lecture by Mr. W. Sampson Handley, M.S., at the Church House, St. James Street, Sheffield, on The Lines of Advance in the Surgery of the Breast, 8.45 p.m.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE.—*Section of Surgery (Subsection of Orthopaedics)*: Tuesday, 5 p.m., Mr. E. Laming Evans: — Presidential Address: Functional Results of Unsuccessfully Reduced Congenital Dislocation of the Hip; Cases. *Section of Obstetrics and Gynaecology*: Thursday, 8 p.m., Dr. Henry Briggs: Presidential Address: The Female Pelvic Floor; The President: Birth Fracture of Frontal Bone; Dr. Munro Kerr: (1) Uterus Bicornis Unicollis, (2) Vesico-vaginal Fistula; Dr. A. J. McNair: Placenta Praevia; Mr. Douglas Drew: Fibro-sarcoma. *Section of Neurology*: Thursday, 8.45 p.m., Dr. Henry Head: Hughlings Jackson Lecture: A New Conception of Aphasia. *Clinical Section*: Friday, 5 p.m., Cases; 5.30 p.m., Mr. Zachary Cope: Shoulder Pain in Upper Abdominal Lesions.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Mr. Barrington-Ward: Glands of the Neck.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Mr. A. H. Burgess: Diagnosis of Acute Abdominal Crises.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

BAIN, John, M.A., M.B., Medical Superintendent, Derby Borough Mental Hospital, Rowditch, Derby.

LLOYD, W. A. T., L.S.A., Medical Officer of the Institution of the Llandilofawr Union.

MURPHY, J. T., M.R.C.S., L.R.C.P., District Medical Officer of the West Ham Corporation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

CANNON.—On September 25th, 1920, at 26, Spencer Street, Carlisle, the wife of Captain J. W. Cannon, Royal Army Medical Corps, a daughter.

FERGUSON.—At South Hill Nursing Home, Birmingham, on September [illegible], 1920, to Dr. and Mrs. J. Bell Ferguson, a daughter.

GOSS.—On September 25th, at Mount Pleasant Nursing Home, [illegible], to Dr. and Mrs. W. [illegible] Goss, a son.

LAWSON.—At [illegible], Murtle, Aberdeenshire, on September 19th, 1920, to the wife of Dr. James Lawson, a son.

DEATH.

NOTT.—On August [illegible]th, suddenly, from heart failure, while on a visit to the [illegible], Arthur Holbrook Nott, Lieut.-Colonel Indian Medical Service, retired, of [illegible], Drayton Court, Drayton Gardens, London, S.W., second son of the late William Nott of Devizes, aged [illegible].

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 9TH, 1920.

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British Medical Association.

CURRENT NOTES.

Conference of the Voluntary Hospitals' Staffs in the Midland Area.

A conference of the members of the medical staffs of voluntary hospitals in the area of the Midland Branch was held at Nottingham on September 23rd, when the following resolutions, proposed by Sir Richard Luce of Derby, and seconded by Dr. Astley Clarke of Leicester, were unanimously approved:

1. That this conference approves of the principles defined by the British Medical Association relative to the recognition by a monetary payment made to a medical staff fund for medical services rendered to State or municipal patients received for treatment at the voluntary hospitals.
2. That this conference is of opinion that the minimum scale of remuneration proposed by the Hospitals Committee of the British Medical Association, and agreed to by the Annual Representative Meeting, should be adopted by all voluntary hospitals in the Branch area—namely, that it should represent an addition of not less than 25 per cent. to the cost of maintenance of in-patients, and not less than 25 per cent. of the ascertained cost per patient per attendance for out-patients, the additional sum to be placed at the disposal of the medical staff; that in the case of special clinics (for example, aural and ophthalmic) the fee payable to the medical practitioner should not be less than the fee payable by the Ministry of Pensions for identical or similar services—namely, £2 2s. per session.
3. That the Secretary of the Branch be instructed to forward copies of the two previous resolutions to the secretaries of the honorary staffs of the voluntary hospitals and to the chairmen of the boards of management of the hospitals in the area, asking them to consider the matter with a view to bringing about a condition of uniformity of remuneration in the area in accordance with the resolution of the British Medical Association.

Copies of these resolutions have been sent to the boards of management of the various hospitals in the area.

Metropolitan Asylums Board and its War Bonuses.

In December, 1919, the Medical Women's Federation called the attention of the Association to the fact that the Metropolitan Asylums Board was giving a higher rate of war bonus to its male than to its female assistant medical officers, although they were engaged upon the same class of work. The Federation asked the Association to join it in a protest to the Metropolitan Asylums Board. Accordingly a letter of protest was sent in pointing out that the policy of the Association was that for similar duties the remuneration of both male and female doctors should be equal. Considerable delay was experienced in obtaining a definite decision, but on August 5th, 1920, the Board notified that it had been decided to pay the same bonus to female as to male assistant medical officers, and that the revised rates would date from March 1st, 1920.

Medical Treatment of School Children at Hornsey.

In at least one area the terms recently approved by the Representative Body for the treatment of school children have been accepted and are to be put promptly into operation. The secretary for education at Hornsey is circularizing the local doctors to inform them that the Education Committee proposes that the treatment of children suffering from adenoids and tonsils shall be carried out by local medical practitioners at a fee of £1 11s. 6d. per case, which will include payment to the anaesthetist. As the accommodation at the clinic is limited, arrangements will be made for not more than four cases to be dealt with at any one session. Applications are invited from all local practitioners able and willing to undertake this work. Applications are also invited from the medical practitioners in the borough for the posts of assistant school medical officers for carrying out the medical inspection in the secondary schools of the borough at a fee of £2 2s. per session.

In addition, we are informed that the treatment of "minor ailments" had been previously arranged for on exactly similar lines. The fees for doctors acting as anaesthetists to the school dentist have been revised as follows:

For isolated case, 10s. 6d.

For two or more cases, 7s. 6d. for the first case and 5s. for each subsequent case, the number of cases per session not to exceed 12, and the payment for any one session not to exceed £2 12s. 6d.

This information should serve as a useful precedent for Divisions which are now seeking to make such arrangements with the local education authorities as will ensure that the work is placed in the hands of the local profession, and not in those of whole-time officers.

Colliery Practice in Nottinghamshire.

The offer by the miners' representatives of 20s. per annum to be paid by the head of the family for medical attendance and medicine for the dependants of mine workers has been refused by the representatives of the Association in Nottingham. The colliery surgeons are willing to do this work for 26s. per annum, and now that the miners' representatives have refused these terms an offer has been made by the Notts Division to refer the whole question of remuneration to arbitration. In order to give the miners' representatives time to consider the matter the date of the termination of agreements has been postponed for another month.

Fees for Coroners' Inquests.

At an inquest at the City Coroner's Court on October 1st, Dr. Willis, house-physician at St. Bartholomew's Hospital, protested against being refused the usual fee given to all medical men except those attached to hospitals and other institutions. He said, quite correctly, that if the man upon whom the inquest was held had died before entering the hospital, the doctor would have been entitled to a fee of £1 1s. for making a *post-mortem* examination, and £1 1s. for giving evidence. The Coroner, Dr. Waldo, said that in his opinion the law as it stood was iniquitous and most unfair to hospital doctors, and the jury added a rider to their verdict requesting the Coroner to write to the Minister of Health and the Home Secretary to get the law changed. This is one of the points on which the Association has been making protests for years, hitherto without avail. A reform can only be brought about by legislation, for which the Government, so far, has never yet found time. Its willingness to do so will be stimulated if all hospital residents will follow the example of Dr. Willis whenever the opportunity arises.

Association Notices.

VACANCIES ON COUNCIL.

EAST YORKS AND NORTH LINCOLN AND MIDLAND BRANCHES.

NOTICE is hereby given that a vacancy has been created on the Council by the resignation of Dr. G. K. Smiley, O.B.E. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any such Branch, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded upon application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

NORTH OF ENGLAND AND NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCHES.

Notice is hereby given that a vacancy has been created on the Council by Dr. R. A. Bolam, O.B.E., becoming an *ex officio* member on his election as Chairman. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any Branch therein, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded on application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

ELECTION OF MEMBERS OF COUNCIL, 1921–22, BY BRANCHES OUTSIDE THE UNITED KINGDOM.

NOTICE is hereby given that, in accordance with By-law 49, nominations of Candidates for election as Members of Council by the grouped Branches outside the United Kingdom (please see below) for a period not exceeding three years, as prescribed by By-law 52 (2), must be forwarded in writing so as to reach the Medical Secretary on or before February 12th, 1921.

Nominations must be signed by not less than three Members of any Branch in the group, and must be in the form prescribed below or in one to the like effect.

The elections, where contests occur, will be by voting papers, containing the names of all duly nominated Candidates, issued from the Head Office, 429, Strand, London, W.C.2, to each member of each Branch in the group.

NOMINATION FORM

[illegible] of the Grouped Branches.

We, the undersigned, hereby nominate

of *[illegible] name and address [illegible]*,

for [illegible] the [illegible]

group [illegible] as a Member of the Council of the Association.

[illegible] …

[illegible]

Date 19

The nomination form should be forwarded so as to reach the Medical Secretary, 429, Strand, London, W.C.2, not later than February 12th, 1921. In or about the second week in June, 1921, a notice of the result of the elections will be published in the JOURNAL.

In the case of the New Zealand Branch no nomination is required, the Representative for that Branch having been appointed for 1919–22.

GROUPING (ABOVE REFERRED TO) OF BRANCHES NOT IN THE UNITED KINGDOM FOR REPRESENTATION ON THE COUNCIL OF THE ASSOCIATION, 1921–22.

	Members of Council.
South Australian, Tasmanian, Victorian, Western Australian	1
New South Wales, Queensland	1
New Zealand	1
Barbados, Bermuda, British Guiana, Grenada, Halifax (Nova Scotia), Jamaica, Leeward Islands, Montreal, St. John (New Brunswick), Saskatchewan, Toronto, Trinidad and Tobago	1
Assam, Baluchistan, Bombay, Burma, Ceylon, Hyderabad and Central Provinces, Punjab, South Indian and Madras	1
Hong Kong and China, Malaya	1
Border (South Africa), Cape of Good Hope (Eastern), Cape of Good Hope (Western), East Africa, Egyptian, Gibraltar, Griqualand West, Malta, Natal Coastal, Natal Inland, Nyasaland, Orange Free State and Basutoland, Pretoria, Rhodesia, Uganda, Witwatersrand	1

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The autumn meeting will be held at the Hotel Metropole, Bournemouth, on Wednesday, October 13th. 1.30 p.m., the practitioners in the Bournemouth district invite members to luncheon at the Hotel Metropole. Dr. Norman Flower (Vice-President) will read a paper on "Some abdominal problems." Dr. P. A. Ross kindly invites members to tea after the meeting.

YORKSHIRE BRANCH: SHEFFIELD DIVISION.—A British Medical Association lecture will be given to this Division by Mr. W. Sampson Handley, M.S., on Friday, October 29th, at the Church House, St. James Street, Sheffield, at 8.45 p.m., on "The lines of advance in the surgery of the breast."

Meetings of Branches and Divisions.

BORDER COUNTIES BRANCH.

THE autumn meeting of the Branch was held at the Dumfries and Galloway Royal Infirmary on September 24th. Dr. LIVINGSTONE, President, was in the chair. It had been resolved by the Branch Council, which had met earlier in the day, that it was highly desirable that at the meetings of the Branch and Divisions clinical and pathological work should take a prominent part, and the Secretary was instructed to forward the recommendation to the Divisions.

Dr. GLOVER gave short notes on cases of (1) rupture of the liver; (2) urinary fistula in loin, in which removal of the right kidney gave a satisfactory cure; (3) active inflamed Meckel's diverticulum.

The PRESIDENT then vacated the chair, which was taken by Sir James Crichton-Browne, and read a short paper on head injuries, illustrated by a case of extensive scalping due to the hair being caught in machinery, and also various specimens of bone removed from the skull after fracture. A discussion followed, in which Sir JAMES CRICHTON BROWNE gave interesting reminiscences of being present at the first operation for trephining after the introduction of cerebral localization by Dr. Ferrier.

Dr. LIVINGSTONE also exhibited the method of irrigation of wounds which was adopted by him in Egypt.

The *X*-ray and Orthopaedic Departments were then visited, and Dr. ROBSON gave an interesting account of the work done there among pensioners. Dr. LIVINGSTONE and Mr. NORMAN MACLAREN showed pathological specimens. By the kind invitation of the President, tea was afterwards served by the nursing staff of the hospital.

SUSSEX BRANCH: CHICHESTER AND WORTHING DIVISION.

THE annual meeting of the Chichester and Worthing Division was held at Warne's Hotel, Worthing, on September 14th, when Dr. W. A. GOSTLING was in the chair.

A letter was read from Earl Winterton respecting the motor tax as affecting medical men.

Dr. D. EWART was unanimously elected chairman of the Division for 1920–21, and thereupon took the chair, and Dr. W. A. Gostling was elected vice-chairman. Dr. Milbank Smith was unanimously elected Honorary Secretary for 1920–21.

The arrangements for the Branch reception in 1921 were discussed, and left in the hands of Drs. Hinds and Daly.

On consideration of the autumn programme it was decided that there should be at least one scientific meeting as part of the programme, the choice of a lecturer being left to the Chairman of the Executive Committee. It was also resolved that this meeting be held in conjunction with the Brighton Division. The subject of a social evening was referred to the Executive Committee.

It was decided to ask the British Medical Association to send a political lecturer, and that every doctor practising in the Division be invited to attend the lecture.

INSURANCE.

CAPITAL VALUE OF PRACTICES.

The Brighton Scheme.

The scheme to which Dr. Fothergill refers in his letter on this page will come before the Panel Conference on October 21st, for which purpose it has been circulated as Document M 9. It is intended to protect the interest of an insurance practitioner in his insurance practice in the event of the sale or disposal of his practice, or on his death. The main provisions are as follows:

1. In the event of the sale or disposal of his practice by, or on the death of, a practitioner to whom the provisions of this scheme apply, the remaining practitioners to whom this scheme applies agree that the fees which but for the operation of this scheme would be credited to them by the Insurance Committee in respect of such insured persons as were included in the list of such outgoing or deceased practitioner, and who, after such sale, disposal, or death are duly added to their lists, shall for a period of four clear quarters commencing on January 1st, April 1st, July 1st, or October 1st next after such sale, disposal, or death, as aforesaid, be credited by the Insurance Committee to the account of such outgoing or deceased practitioner, or to such persons as may be entitled to receive same by virtue of the provisions of any partnership agreement to which the outgoing or deceased practitioner was a party at the time of the disposal of his insurance practice, or at his death.

2. Each practitioner to whom this scheme shall apply will agree that on the sale or disposal of his practice, or on his death, 5 per cent. shall be deducted from the amount standing to his credit with the Insurance Committee under the provisions of this scheme to defray the cost of the discharge of the functions of the Insurance Committee in connexion with the terms of this scheme.

3. This scheme shall be administered by the Transfer of Insurance Practice Committee for the time being in office, and each practitioner who has received the assent of that committee to his participation in the scheme shall thereupon enter into a binding agreement with that committee and shall pay a fee of   towards the expenses of the scheme, and the preparation and execution of the agreement.

4. Each practitioner desiring to become subject to this scheme shall give notice in writing of such desire to the Transfer of Insurance Practice Committee, whose decision as to the admittance or non-admittance of an applicant shall be final. In the event of the committee deciding that an applicant be not admitted, the committee shall be under no obligation to disclose the reason for its decision.

5. This scheme shall come into operation on January 1st, 1921, and any practitioner who, being on the panel for the county borough of Brighton on October 1st, 1920, shall fail to apply for permission to join this scheme prior to December 1st, 1920, or the estate of any practitioner, shall receive no advantage or benefit from the scheme until after the expiration of six months from his admission.

6. Any practitioner who shall join the panel for the county borough of Brighton on or after January 1st, 1921, and shall fail to apply for permission to join this scheme within a month of his joining the panel, or the estate of any such practitioner, shall receive no advantage or benefit from the scheme until after six months from his admission to the scheme.

CORRESPONDENCE.

Capital Value of Insurance Practices.

SIR,—The desire of insurance practitioners to preserve the capital value of their insurance practice has resulted in at least two schemes being prepared in order to carry this into effect. As chairman of the Brighton Panel Committee, which is responsible for one of these, I am particularly interested in the alternative scheme known as "the Dartford scheme," and consequently would like to have for general benefit explanations of certain points. I hope, Sir, that you will be able to publish the Brighton scheme, and thus allow all insurance practitioners to contrast the two; the latter scheme, in its administration, needing, I am informed, very few additional duties on behalf of the staff of the Insurance Committee beyond those now required on the decease or ceasing to practise of any insurance practitioner; which duties, subject to the approval of the Ministry of Health, the Insurance Committee has agreed to carry out.

Some of the points in the "Dartford" scheme which would seem to require explanation are these:

1. According to scheme, every insurance practitioner in a district would contribute proportionately every quarter toward a pool in order to purchase in the future the practice of a deceased or retiring practitioner. What guarantee is there that a practice so purchased will be distributed proportionately to such contributions, if "free choice of doctor" is maintained? Is such a bought-out practitioner debarred from selling his insurance practice at the time, and, if so, why? What happens if the successor to the private practice decides to undertake insurance practice? What security is there that the pool when required will contain sufficient funds to purchase the practice? Is it really intended to "purchase" the practice, or is it intended to make a present of money?

2. A practitioner who has practised in the district less than twelve years is not to receive a year's purchase for his insurance practice because if he did "he would be induced to leave the district to practise elsewhere"! Why this desire to protect "elsewhere"? He may have bought a long-established practice and needs to leave under twelve years subsequently. He leaves at a financial loss. Why?

3. Does not the whole scheme, when looked into, read as if a group of practitioners wished to form "a ring" in their district in insurance practice and to deprive the insured of any free choice of doctor outside of same as well as to prevent a young doctor starting in practice in an industrial area?

The Brighton scheme requires no pool; the payment to a retiring practitioner is made by each remaining insurance practitioner in exact proportion to the number of insured patients that choose him and for twelve months, the patients going to any practitioner preferred (the successor or an old or newly established doctor).—I am, etc.,

Hove, Oct. 2nd. E. ROWLAND FOTHERGILL.

The National Insurance Scheme.

SIR,—The article on the American View of the National Insurance Scheme, which appeared in the JOURNAL of September 18th, p. 444, was most interesting reading, and it is a pity that more publicity is not given in this country to Dr. Hoffman's report.

That the Insurance Acts are, under the present arrangement, unworkable and unnecessary is an indisputable fact. If a plebiscite were taken in this country, I venture to suggest that the existing scheme would be voted distasteful by the large majority of practitioners and insured persons. Possibly at the time of the passing of the Acts a degree of necessity for some such scheme may have existed in some minds, but that necessity has ceased to exist. The salaries in the class which was supposed to benefit by the insurance scheme have been enormously augmented, in some cases out of all proportion even to the present high cost of living. Many of the working class pay income tax. The working man of to-day is well able to pay for his doctor's services, and many would prefer to do so. It has been said that the national insurance scheme has proved of value in minimizing bad debts; but bad debts can at any time be eliminated by the insistence of cash payments in the case of known defaulters.

Recently there was much heated controversy in a large manufacturing town in Scotland concerning the limitation of individual panel lists, the local authorities contending that a doctor could not possibly do justice to 2,500 panel patients over and above his private practice and appointments, which fact was emphatically denied by medical men coming under that category. Without in any way entering into the argument, one feels that the doctors were much to be sympathized with, for the present iniquitous system only provides a profit on the work that is *not* done.

One hears and reads much of the decline of the "dignity" of the profession. Is it to be wondered at when the existing system allows that the less one does the bigger the profit, and vice versa? Take the unenviable position of the average country practitioner whose practice is mostly private and whose panel averages 500 or under. If he does his own dispensing, he receives as remuneration 1s. a patient per annum, out of which he has to supply all drugs and appliances. It is needless to comment on the fact that the doctor with a small panel attends the majority, if not all, of his insured patients at some time during the year—some, in fact, he is rarely away from. With the present enormous increase in the cost of drugs and medical and surgical appliances, such a state of affairs is a crying scandal.

In his letter in the SUPPLEMENT to the same issue of the JOURNAL, Dr. E. H. Worth suggests the appointment of a Royal Commission to decide some new schemes. To my mind, the only satisfactory solution in the present state of chaos is the wholesale repeal of the Acts.—I am, etc.,

R. DOUGLAS HOWAT, L.R.C.P., L.R.C.S.Ed.

Denholm, near Hawick, Sept. 22nd.

The Salford System.

SIR,—Dr. Hodgson states that the Ministry of Health expressed a determination to destroy vested interests in insured persons. May I inquire when and where this expression took place? A new Regulation was introduced to destroy certain patent abuses created by the Insurance Act, but a panel practice still will remain more readily transferable under it than under the Salford system. Moreover, if the profession had had the prudence to contest this regulation on the grounds of its injury to insured persons, as was done by Mr. Anderson in an admirable letter to which I drew attention at the time,[1] I believe that any abuses could have been removed without damage to us at all. The results of the first twelve months of National Insurance under the Salford system in Manchester were, as I have shown[2]:

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[1] BRITISH MEDICAL JOURNAL SUPPLEMENT, December 20th, 1919.
[2] Ibid., February 21st, 1920.

1. Excess of attendances in the proportion of 6.12 to 3.24 in other towns and 1.8 in private practice, consequently about half the pay per attendance and much discontent among the doctors.

2. Demoralization of the insured population, sufficient to reduce their case value from 90.76 to 56.53, such reduction limited to Salford and Manchester, and indicating nearly double the number of sick to attend without increase in total pay, and serious loss to the community as a whole.

3. A heavy overdraft on the drug fund, to be made good by the doctors, after quarrels with the chemists.

4. A service admittedly bad and roundly condemned by Dr. Hoffman.

Finally, a system which necessarily discourages preventive medicine, which must foster the fussy incompetent doctor at the expense of his more busy and capable neighbour, and which renders malingering and invalidism not only easier for the insured, but profitable to his medical attendant, is not likely to commend itself either to the student of public health, or to the educated layman. So long as doctors and insured persons remain human, such a system must tend to produce, in greater or less degree, precisely such results as I have shown to have actually occurred in Manchester. I do not anticipate its extension beyond its present home.—I am, etc.,

Chichester, Oct. 2nd. G. C. GARRATT.

Medical Fees for Miners' Families.

SIR,—Some thirty years ago, while holding the post of surgeon to the Duxbury Park Collieries, Lancashire, I was paid 20s. per annum by each miner for attendance upon himself, his wife and family. The present value of the sovereign is about 7s. 6d. as compared with pre-war rates, therefore the medical men in Nottingham and Derbyshire are asking much too little for similar service.—I am, etc.,

[illegible], Sept. 25th. F. W. PILKINGTON.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty: Surgeon Commanders R. J. [illegible] to the *Philomel*, and as Staff Medical Officer to New Zealand Squadron; R. M. Richards to the [illegible], for 2nd Reserve Group; J. O'Hea to the *President*, [illegible] Medical Department as assistant to M.D.G.; H. P. [illegible] to the *Barham* as Squadron Medical Officer on recommissioning. Surgeon Lieutenant-Commanders T. C. Patterson to the *Chatham*, R. K. Shaw and F. V. Hunot to the *Barham* on recommissioning. Surgeon Lieutenants A. McCallum to the *Sandhurst*, [illegible] to the *Tamar* additional for duties on China station, [illegible] to the *Queen Elizabeth*. Surgeon Lieutenant (temporary) W. [illegible] to the [illegible].

Surgeon Lieutenant-Commander A. A. Sanders, O.B.E., has been promoted to the rank of Surgeon Commander.

ARMY MEDICAL SERVICE.

Colonel F. Kiddle, C.M.G., is placed on half pay.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel R. A. Cunningham retires on retired pay.

The following relinquish the acting rank of Lieutenant-Colonel:—Majors [illegible] L. A. A. Andrews, [illegible] J. Wright, D.S.O., E. B. Lathbury, O.B.E., [illegible]. Captain and Brevet Major M. J. Williamson, M.C.

To be acting Lieutenant-Colonels: Temporary Major J. Turton, V.D. ([illegible]) from April 22nd to May 6th, 1920. Captain W. [illegible], M.C., from June 12th to September 17th, 1919.

The following relinquish the acting rank of Major: Captain and [illegible] W. [illegible] (August 3rd, 1919, substituted for notification in the *London Gazette*, December 8th, 1919), Captain A. W. Dennis. [illegible] Captains H. B. Wilson, O.B.E., H. L. Fidy, G. Marshall, [illegible] C. B. [illegible].

[illegible] Majors [illegible] Captains (Brevet Major) A. G. J. MacIlwaine, C.I.E., H. R. [illegible], O.B.E.

[illegible] Captain E. [illegible], M.B.E., to be Captain, July 20th, [illegible] for pay and allowances prior to September 1st, [illegible] M. [illegible].

The notification in the *London Gazette* of February 12th, 1920, [illegible] S. [illegible], M.C., is cancelled.

[illegible], D.S.O., M.C., resigns his commission on appointment [illegible].

Temporary Captains J. H. Fenn and R. D. [illegible] relinquish their commissions and retain the rank of Captain.

OVERSEAS CONTINGENTS.

[illegible] Medical Corps.

Captain [illegible] to be Major, [illegible] September [illegible], 1918.

[illegible] 1920 [illegible] retains the rank [illegible] Captain [illegible] October 4th [illegible] February 6th [illegible] *London Gazette* [illegible] 1920 [illegible] 1918 [illegible] November 1st, 1918 [illegible] December [illegible], 1919 [illegible] February [illegible] A. M. [illegible] April 17th, 1919, substituted for notifications in the *London Gazette* of May 5th, 1920.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

12 Tues. London: Scrutiny Subcommittee, 2 p.m.
13 Wed. Dorset and West Hants Branch, Hotel Metropole, Bournemouth, 5 p.m. Luncheon, 1.30 p.m.
14 Thur. London: Contract Practice Subcommittee, 2.30 p.m.
15 Fri. London: Central Ethical Committee, 2 p.m.
London: Ministry of Pensions Subcommittee, 2.30 p.m.
20 Wed. London: Insurance Acts Committee, 8.30 p.m.
21 Thur. London: Conference of Representatives of Local Medical and Panel Committees, 10 a.m., Memorial Hall, Farringdon Street.
29 Fri. Sheffield Division: British Medical Association lecture by Mr. W. Sampson Handley, M.S., at the Church House, St. James Street, Sheffield, on The Lines of Advance in the Surgery of the Breast, 8.45 p.m.

DIARY OF SOCIETIES AND LECTURES.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8 p.m., Annual General Meeting; 8.30 p.m., Ordinary Meeting. Presidential Address by Sir William Hale-White, K.B.E., on Then and Now.

ROYAL SOCIETY OF MEDICINE.—*War Section*: Monday, 5.30 p.m., Wing Commander Martin Flack, R.A.F.: Medical Requirements for Air Navigation. *Section of Neurology*: Thursday, 8.30 p.m., Presidential Address by Dr. Ernest S. Reynolds: Causes of Nervous Diseases. *Section of Electro-Therapeutics*: Friday, 8.30 p.m.: Presidential Address by Mr. S. Gilbert Scott. Exhibition of skiagrams of renal and hepatic calculus.

POST-GRADUATE COURSES AND LECTURES.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Mr. A. H. Burgess: Diagnosis of Acute Abdominal Crises (continued).

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Monday, 5.30 p.m., Dr. Russell Wells: Aortic Regurgitation.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Daily (except Wed. and Sat.), 2 3.30 p.m., Out-patient Clinic. Mon., 3.30 p.m., Dr. K. Wilson: Focal Lesions of the Cerebrum. Tues., 3.30 p.m., Mr. Armour: Spinal Tumours. Wed., 2 p.m., Dr. Hinds Howell: The Afferent Path; 3.15 p.m., Mr. Scott: Nasal Disease and Disturbances of the Nervous System. Thurs., 3.30 p.m., Dr. Saunders: Examination of Nervous System. Fri., 3.30 p.m., Dr. Tooth: Ward Cases. Sat., 9 a.m., Surgical Operations.

SALFORD ROYAL HOSPITAL.—Thursday, 4.30 p.m., Dr. Heywood: Pleural Effusion.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Monday, 5 p.m., Inaugural Address by Sir William Bull, P.C., M.P.: Relation of the State to the Hospitals. Tuesday, 5 p.m., Mr. Tyrrell Gray: Peritonitis. Wednesday, 5 p.m., Dr. Simson: Tuberculous Salpingitis. Thursday, 5 p.m., Dr. W. Langdon Brown: Internal Secretion. Friday, 5 p.m., Mr. Baldwin: Tuberculous Diseases of Intestines.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **7s. 6d.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

HANCOCK.—On September 29th, at 30, St. Giles Street, Norwich, the wife of [illegible] W. Hancock, O.B.E., F.R.C.S., a son.

JOHNSON.—On October 2nd, at 131, Walmersley Road, Bury, to Dr. and Mrs. A. M. Johnson, a son.

DEATHS.

COLLIER.—On September 22nd, at Bangor, co. Down, R. J. Collier, M.R.C.S., L.R.C.P. (late of Manor Park, Essex), aged 60.

ROBERTS.—On September 28th, at his residence, Ravenswood, Broughton Park, Manchester, David Lloyd Roberts, M.D., F.R.C.P., F.R.S.E. Interred at St. Paul's Church, Kersal, Manchester, on the 1st October, 19 0.

[illegible].—At Aberdeen on October 5th (from septicaemia), Raymond [illegible], O.B.E., M.B., F.R.C.S.Edin., aged 34, Captain R.A.M.C. (T.F.), late of Scottish Horse Brigade Field Ambulance, E.E.F., and of Citadel and Nasrieh Hospitals, Cairo.

[illegible] No. 429, Strand, in the Parish of St. Martin in the Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 16TH, 1920.

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SPECIAL NOTICE TO MEMBERS.

Every Member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he or she belongs.

British Medical Association.

CURRENT NOTES.

Annual Meetings of the Association.

AT the meeting of Council held on October 6th, with Dr. R. A. Bolam in the chair, it was decided that the Annual Representative Meeting in 1921 at Newcastle-on-Tyne should begin on Friday, July 15th, and that the statutory Annual General Meeting should be held on Tuesday, July 19th. From this it would follow in the ordinary course of events that the Scientific Sections will meet on Wednesday, Thursday, and Friday, July 20th, 21st, and 22nd. As already announced, the Annual Meeting in 1922 will be held in Glasgow, and the Council has now decided to recommend to the Representative Body that the Annual Meeting in 1923 shall be held at Portsmouth, in response to the invitation of the Portsmouth Division. The Chairman of Council was authorized to send to all those who contributed to the success of the recent Cambridge meeting the cordial thanks of the Association for their services.

The Panel Conference.

THE annual conference of representatives of Local Medical and Panel Committees called by the British Medical Association will be held, as already announced, on Thursday, October 21st, at 10 a.m., and on the following day if necessary, at the Memorial Hall, Farringdon Street, London, E.C. Dr. H. G. Dain, of Birmingham, will again act as chairman. The final agenda paper is being issued as we go to press: it includes all motions received up to the first post on October 11th. While the appearance of motions and amendments on the final agenda necessarily obtains for them greater publicity and opportunity for consideration, relevant motions or amendments received later will be dealt with at the conference. The principal motions are grouped under the headings: Remuneration, transfer of practices, dispensing, procedure of appeal, medical records, certification rules, election of Panel Committees, National Insurance Defence Trust, and the report of the Consultative Council on Medical and Allied Services. The report of action taken by the Insurance Acts Committee since the 1919 Conference, together with a memorandum on the Defence Trust and an account of the Brighton scheme for compensating insurance practitioners for the loss of capital value of their practices, have been circulated to the secretaries and chairmen of Local Medical and Panel Committees in Great Britain.

Assistants in Insurance Practice.

In connexion with the decision of the Ministry of Health to insist that Insurance Committees shall place the names of permanent assistants to insurance practitioners on the panel list, it is essential that all principals should take special care to have proper agreements with their assistants from the beginning. If an assistant who had originally been on the list as an assistant requested the Insurance Committee to place his name as a principal in the appropriate section of the list, the Committee would have no option but to do so, but any agreement into which the assistant had entered with his principal would debar the assistant from practising as a principal himself. There is certainly no reason to believe that the power of placing an assistant on the panel list would abrogate the ordinary legal agreement between principal and assistant—that is, if the agreement is properly drawn up.

Prison Medical Officers.

The special subcommittee set up by the Association to consider the position of prison medical officers, both whole-time and part-time, met on Friday, October 8th, at 429, Strand. It was decided to forward a memorandum to the Home Secretary setting forth proposals as regards the remuneration of both services and at the same time to ask for an opportunity of meeting the Secretary of State in deputation with a view to discussing the position.

Medico-Sociological Committee.

On the recommendation of the Organization Committee the Council, on October 6th, agreed that a Medico-Sociological Committee should be appointed experimentally, with the following reference:

> "To consider social and economic questions affecting the public welfare as to which the medical profession has special knowledge, and to take such steps as may be found necessary in order to create and develop public opinion thereon. The Committee shall add to its number for special purposes representative persons specially qualified to assist in any branch of its reference."

The Council instructed its Chairman, together with the Chairmen of the Organization and Scrutiny Committees, to consider the constitution of the new Committee and report to the next meeting of Council in December.

MATTERS REFERRED TO DIVISIONS.

Memorandum and Questions

ON

THE REPORT OF THE CONSULTATIVE COUNCIL ON MEDICAL AND ALLIED SERVICES.

[NOTE.—*All Division Secretaries have been asked to convene meetings in the last week in October or the first week in November to consider this Report and answer the accompanying questions. This* SUPPLEMENT *should be kept for reference.*]

1. The establishment of a Ministry of Health (largely in accordance with the wishes and suggestions of the British Medical Association) justifies the assumption that the State proposes to undertake that there shall be available for the community a complete systematised provision for the preservation of the health of the public and for its medical treatment. This assumption underlies the Reports of the various Consultative Councils and the Report (A.R.M. 23) of the Ministry of Health Committee which was presented to the Representative Body.

2. It is recognised that the Report of the Consultative Council on Medical and Allied Services alluded to hereafter as "the Report" is an interim report only, and that there are many matters, particularly those relating to finance and administration, that are not dealt with therein, or are referred to in a very vague or tentative fashion. These matters are, however, in the opinion of the Council, of such importance that they ought not to be ignored in the consideration which the Association and the profession give to the subject matter of the Report, though they will have to be dealt with in detail at a later stage. A full synopsis of the Report (English and Welsh) reprinted from the *B.M.J.* of May 29th, 1920, will be found in Appendix B, and it is intended here only to draw attention particularly to some points of fundamental importance. These are grouped under the following headings:—

A. Domiciliary Attendance.
B. The Relation of Curative and Preventive Medicine.
C. The Primary Health Centres.
D. The Communal Services.
E. The Secondary Health Centres.
F. The Relation of Practitioners to Administration.
G. The Composition and Powers of the Local Health Authority.

PRINCIPLES UNDERLYING THE REPORT.

3. But before dealing *seriatim* with these more fully it is considered advisable to enumerate the principles, which appear to underlie the Reports of the Consultative Councils:—

(i.) That any scheme of services must be available for all classes of the community (para. 7 of the Report).

(ii.) That the general practitioner should participate in the three forms of service (a) Domiciliary, (b) Institutional, and (c) Communal (pars. 11, 18, 66).

(iii.) That preventive and curative medicine cannot be separated on any sound principle, and must be brought together in close co-operation (par. 6).

(iv.) That domiciliary service should under ordinary circumstances be carried out either at the home of the patient or at the doctor's surgery, as at present (par. 19).

(v.) That Primary Health Centres are essential to an efficient general practitioner Service, both urban and rural, and that general practitioner treatment should be centred on them (par. 15).

(vi.) That the general practitioner would attend at the Primary Centre such of his patients as require hospital treatment, irrespective of their status, though under varying terms and conditions of service (par. 17).

(vii.) That the three methods of payment of the general practitioners are (1) by the patient, (2) through some method of insurance, or (3) by the Health Authority (par. 47).

(viii.) That the consultants attached to Secondary Centres should be part time officers paid on a time basis, and should also visit the Primary Centres at fixed intervals; visits to patients' homes and special visits to the centres would be met by extra fees (pars. 62, 63).

(ix.) That a doctor would be able to arrange for his patient to be transferred to a Primary Health Centre under his care (par. 19). Secondary Centres would receive cases referred to them from Primary Centres (par. 1).

(x.) That the staffs of Secondary Hospitals should be elected by a Committee of Selection formed by representatives of (a) the Hospitals; (b) the Health Authority; (c) the University; and (d) the local doctors, on which the medical members would form a majority (pars. 67 and 68).

(xi.) That services should be administered by a Health Authority established in each area on which there should be an effective representation of the medical profession (par. 98).

These principles, as well as some others, are further dealt with in the appropriate paragraphs of this memorandum.

In these paragraphs there are set out the essential statements of the Report on the subjects dealt with, together with any opinion on the matter that has been expressed by the Council of the Association or Representative Body. This has been done for the information of the Divisions, but it should be understood that such opinions are not binding upon the Divisions in any way, nor are they intended to restrict the freedom of the Divisions in any answers they may give to the questions asked, or in any remark they may wish to make on the matters under consideration.

4. It is proposed both by the Report and by the Council that the whole country be divided into suitable administrative health areas, each having its Local Health Authority. Each Local Health Authority will be responsible for seeing that medical services, preventive and curative, are available for every person in its area. The services—preventive and curative in each case—are divided into: A. Domiciliary, B. Institutional, and C. Communal. In discussing each division regard must be had to the three groups into which the population falls:—(a) those for whom provision must be made without the requirement of any personal contribution; (b) those who may be expected to make some contribution by an insurance scheme or otherwise; and (c) those who are able to make provision for themselves. To which of these groups any individual should be assigned may well vary according to the particular service required. Finally, under each division it is necessary to bear in mind (1) the administration (2) the availability of the services to each group of the population, and (3) the methods of remuneration of the medical profession.

(A) *Domiciliary Attendance.*

(Questions 1-3.)

5. The Report states that "domiciliary service is the first element in any scheme of systematised medical services," that this service "must be available for all classes of the community under conditions to be hereafter determined," and that availability "does not mean the services are to be free."

6. The Report does not propose any necessary or immediate change in the provision of domiciliary treatment. If and when such changes are proposed, resolutions which the Ministry of Health Committee has already passed with regard to the attitude of the Association towards such changes will come up for consideration.

7. The Welsh Consultative Council's Report states "that in some form or other for every household in the land a family doctor should be available" (par. 6).

8. In the English Report certain additional facilities are suggested to aid domiciliary service, such as the power to summon consultant or specialist assistance to the patient's house, and the provision of nurses for all illnesses and all persons when the doctor deems these to be necessary.

9. The Council and Representative Body have expressed the opinion that "general practitioner attendance and treatment is the only foundation on which any systematic provision of other kinds of treatment can properly be based; and that, generally speaking, it should be only on the recommendation of a general practitioner that additional services should be available." The Council is further of opinion that any other persons while employed in the giving of domiciliary attendance (*e.g.* nurses, midwives, health visitors) should be under the supervision of the general practitioner connected with the case.

10. The Council is of opinion that domiciliary services should only be provided by the State, in whole or in part, for those who are considered, after due enquiry, to be unable to provide the same for themselves.

B. *The Relation of Curative and Preventive Medicine.*

(Question 4.)

11. The Report states that "preventive and curative medicine cannot be separated on any sound principle, and in any scheme of medical services must be brought together in close co-operation. They must be both brought within the sphere of the general practitioner."

12. The Representative Body has expressed the opinion that "in order to attain the objects of an ideal system of medical and allied services, it is necessary that the prevention of the occurence of disease, as well as the provision for its treatment, should be based on the domiciliary medical service, and that general practitioners should be actively engaged in the practice of both." The Council is further of opinion that this should apply not only in the sphere of domiciliary service but as far as possible in the sphere of all additional services.

C. *Primary Health Centres.*

(Questions 5-9.)

13. The Report proposes the establishment of Primary Health Centres administered by or under the auspices of the Local Health Authority, and states that "in the Primary Health Centres there would be gathered together the health services and activities of the districts they served; the distinguishing features of those centres would be that they would be staffed by general practitioners; there would be wards of varying sizes for varying purposes, including provision for midwifery. The Primary Centre would provide the patient (on terms) with food, nursing, and all the equipment of efficient treatment but not with medical attendance, which would be paid for either by the patient, or through some method of insurance, or by the Health Authority." It is understood that the staffing by general practitioners means that it shall be open to any general practitioner of the district to treat any of his patients therein, under varying conditions of service.

14. The Representative Body has expressed the opinion "that in any scheme of medical reconstruction arrangements should be made for auxiliary hospitals in which general practitioners could treat their own patients," and has accepted the view "that the establishment of Primary Health Centres is the pivotal idea of the changes recommended in the Report."

15. The Report of the Welsh Consultative Council appears to suggest the establishment of fully-equipped out-patient departments at Primary Health Centres, but the functions of these departments are not strictly defined.

16. The Council is of opinion that the establishment of out-patient departments for purposes of general treatment would be entirely unnecessary and undesirable.

Common Surgeries.

(Questions 10 and 11.)

17. The Report agrees that the custom whereby each general practitioner has his consulting rooms at his own house, should under ordinary circumstances continue, but suggests that in certain congested areas where it is "impossible for a doctor to provide adequate accommodation at his own expense, it should be possible, if the public interest demands it, for the Health Authority to provide such accommodation at the Primary Health Centres or elsewhere on such terms as are reasonable and after previous consultation with a Local Medical Advisory Council. Where local conditions and medical opinion favoured the plan collective surgeries might with advantage be tried."

18. The Council and the Representative Body have expressed the opinion that Common Surgeries for general practitioners under the ægis of the State should not be approved.

D. *Communal Services.*

(Questions 12 and 13.)

19. The Report states that "there would be accommodation for communal services such as those for pre-natal care, child welfare, medical inspection and treatment of school children, physical culture, examination of suspected cases of tuberculosis and occupational diseases, etc.; these services should, where possible, be aggregated at the Primary Centre; a dental clinic would be an important feature."

20. The Council is of opinion that for the correlation of treatment, for the convenience of the public, general practitioners and consultants, and for economy in administration, it is desirable that such communal services should be arranged at common centres; that if treatment of a non-specialist character at such a clinic is provided by a public authority, it should be carried out in all cases by, or under arrangements approved by, practitioners who are attending the patients or their families at their own homes, the ordinary treatment of tuberculosis, the ordinary work of a maternity and child welfare clinic, and the treatment of minor ailments at a school clinic, being always regarded as being of a non-specialist character; and that in course of time these as well as other communal services (*e.g.*, adenoids, refractions, venereal diseases) should be handed over to the general practitioner.

E. *Secondary Health Centres.*

(Questions 14 and 15.)

21. The Report states that "Secondary Health Centres would be mainly of a consultative type, receiving cases referred to them by the Primary Centres either on account of difficulties of diagnosis or because a highly specialised equipment was needful," that "cases referred for consultation or treatment would attend at Out-Patient Clinics or would occupy In-Patient Beds; the medical staff of the Secondary Centre being responsible for those cases while at the Centre, but every facility being afforded for general practitioners to keep in touch with their patients"; that "consultants would be appointed for these services, paid on a time basis, with extra fees for special visits; general practitioners should be eligible for these posts," certain tests of eligibility being taken into consideration. The members of the staff of the Secondary Centre would attend the Primary Centre for purpose of consultation at fixed intervals, and in urgent circumstances on special summons. The Report suggests that they should be appointed by a Committee of Selection on which the profession would have a majority of members, the Committee being composed of representatives of (a) the Hospitals; (b) the Health Authority; (c) the University; and (d) the local doctors. General practitioners would be eligible for election to the staff.

22. As part-time officers paid by the Health Authority (probably on a time basis), these consultants would be liable to be called into consultation on the case of any member of the community, whatever his status, who, being a patient in the Primary Centre, was willing to accept them as consultants, and to be seen by them at the time of their regular visits to the Centre. In this way their position would differ from that of the general practitioner attending the patient, as it is contemplated that the fees for attendance on patients other than those attended on some form of insurance or for State payment, shall be a matter of arrangement between the patient and the general practitioner.

23. The Council is of opinion that hospitals for cases of a special character should be established in larger areas which should be linked up with the Primary Hospitals, and that this provision would largely be made by utilising the present voluntary hospitals and poor-law infirmaries, though some additional provision might be required. The Representative Body has expressed the opinion that "the clinical medical staffs should be remunerated on a time basis or on a payment by attendance basis; that a medical committee should play an important part in their selection; and that in every case general practitioners, if possessed of the necessary special qualifications, should be eligible in the same way as consultants or specialists."

F. *Practitioners and Administration.*

(Question 16.)

24. Under the heading "Administration," the Report deals very tentatively with the composition of the Health Authority and the relation of the profession thereto. Upon the difficult question of the relation of the medical practitioner, as clinician, to the medical administrators it says very little, and that little is by no means clear. This, however, is a matter of immediate practical importance. The Report says that "the present trend of the public health service towards the

inclusion of certain special branches of curative work is tending to deprive both the medical student and the practitioner of the experience they need," and this transference of departments of clinical work from private practitioners to whole-time salaried officers under the Medical Officers of Health is still going on. It is an urgent matter to agree on the respective spheres of the administrative officer and the private practitioner, general or consultant.

25. Within any given hospital or clinic there are matters of what may be called internal medical administration, involving such things as the relationship to one another of the practitioners attending the hospital or clinic, the number of beds or cases allotted to each of them, the time the beds are occupied, and possibly some measure of control over the methods of treatment adopted. Such matters may, for each institution or clinic, be in the hands of the ordinary clinical staff, one of them perhaps being in the position of "director" within these limits. The general provision and organisation of the health services of an area, however, involving the relation of parts to the whole, and of every part and the whole to the Local Health Authority, must be in the hands of an Administrative Medical Officer and his subordinate officers. It is the respective spheres of such administrative medical officers and of the private practitioner that it is so important to determine.

26. The Council is of opinion that, while preventive work must be participated in by both clinicians and administrators in the fullest co-operation, it is, generally speaking, desirable:—

(a) That purely administrative work should be kept distinct from clinical attendance and should be in the hands of whole-time salaried medical officers;

(b) That the giving of advice and treatment to individuals should not be in the hands of such administrative officers, and that (unless in a few exceptional cases) such advice and treatment should be given by part-time medical practitioners;

(c) that the work of medical inspection (apart from advice and treatment) should according to circumstances, be undertaken either by administrative medical officers or by part-time practitioners.

G. *Composition and Powers of the Local Health Authority.*

(Questions 20 and 21.)

27. The Report states that "as regards the nature of the new Health Authority there are some who favour a Statutory Committee of an existing Local Health Authority, whereas there are others who favour the establishment of an *ad hoc* independent body for the purpose of administering health services alone: the question which of these courses is preferable is one upon which we would rather defer any final expression of opinion." No doubt this is not wholly, or even primarily, a professional question, but it is important to gather the opinion of the profession with regard to it. The Report and the Council and the Representative Body are, however, in agreement as to certain essential points, whatever the nature of the Local Health Authority may be.

28. The Council is of opinion that since a full medical and health provision for any area must be associated with institutions necessarily situated in a town of some considerable size, the most convenient area for health administration would be such a town together with so much of the surrounding district as can be properly and effectively associated with it, regardless of the present local government divisions of counties, county boroughs, municipal boroughs and urban districts; but that whether or no such complete rearrangement of area be regarded as possible, either for general local government purposes or for health purposes only, it is essential that all matters of health administration should stand referred preferably to a Local Health Council, or failing that to a Statutory Health Committee of the Local Government Authority.

29. The Representative Body and Council have expressed the opinion that on such Local Health Council or Statutory Health Committee there should be adequate representation of the medical profession of the area and of other persons or bodies engaged in public health work in the area; that for each area there should be established a Statutory Medical Committee directly elected by the medical practitioners resident in the area; that the duties of such Medical Committee should be to advise the Local Health Authority on all medical matters, and to appoint the medical representatives on the Local Health Authority; that the administrative expenses of such Medical Committee should be a charge on public funds; and that such Medical Committee should have the right, whenever it thought desirable, to present its views not only to the Local Health Authority but also to the Ministry of Health and to the public.

30. Questions as to all these points are set forth in Appendix A.

Ministry of Health (Miscellaneous Provisions) Bill —Municipal Hospitals.

31. The Council desires to call attention to Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill, introduced into the House of Commons on August 16th last. This clause gives to the Councils of Counties and County Boroughs power (already possessed by urban and rural sanitary authorities under the 1875 Public Health Act, but, with one or two exceptions, not exercised by them) to supply and maintain hospitals (including outpatient departments) of a general or special character; to contribute on terms and conditions to be approved by the Minister of Health to any voluntary hospital or similar institution in their area; and to maintain any poor-law hospital or infirmary in their area.

32 The Council is of opinion, and is making representations accordingly, that there should be such amendments made to the Bill, and to the 1875 Public Health Act, as will require all local authorities to obtain the sanction of the Ministry of Health to its proposals before exercising any of its powers thereunder. Before such powers are conferred at all it is essential that the conditions on which patients can be received into such aided or maintained hospitals and the terms and conditions of the appointment of the staffs of such hospitals should be made the subject of consultation with the profession. The Report of the Medical Consultative Council points out that "many hospital schemes are likely to be defective because their promoters fail to realise that a modern hospital should be part of a more comprehensive organisation."

APPENDIX A.

QUESTIONS.

Domiciliary Attendance.

(Paras. 5-10.)

(1) Should the State assume responsibility for seeing that for every household in the land a family doctor is available?

(2) Should State provision of a domiciliary service on a free or contributory basis be limited to those who are considered to be unable to provide such service for themselves?

(3) In any further State provision of a domiciliary service upon a contributory basis, should the method of contributing be by an insurance scheme or otherwise? If otherwise, in what way?

The Relation of Curative and Preventive Medicine.

(Paras. 11 and 12.)

(4) Should practitioners associated with the State provision of a domiciliary service be required to undertake duties in relation to (a) personal and domestic, and (b) industrial hygiene and other spheres of preventive medicine?

Primary Health Centres

(Paras. 13-16.)

(5) Are Primary Health Centres as described in the Report, or Centres similar thereto, an essential part of an efficient general practitioner service?

(6) Should all the general practitioners practising in the area have the right to use them?

(7) What variation, if any, as between the metropolitan, urban and rural areas should be adopted in their organisation?

(8) Under what conditions ought Primary Centres to be available for the different classes of the population?

(9) Is it desirable that out-patient departments for the purposes of general treatment should be established in connection with such centres?

Common Surgeries.

(Paras. 17 and 18.)

(10) Are Common Surgeries for general practitioners under the aegis of the State or a Local Authority desirable, and if so, under what conditions?

(11) Are Common Surgeries established and controlled by general practitioners themselves desirable, and if so, under what conditions?

Communal Services.

(Paras. 19 and 20.)

(12) Should the communal services (e.g. school clinics, tuberculosis clinics, venereal disease clinics, infant welfare clinics) be aggregated, whenever possible, at the Primary Health Centre?

(13) Is it essential that the work of these services, when it is not definitely of a specialist character, should be in the hands of the general practitioners of the locality? If so, in what way should the work be distributed and organised?

Secondary Health Centres.

(Paras. 21-23.)

(14) What is the most appropriate method of selecting the staff of a Secondary Health Centre or Hospital?

(15) Under what conditions should consultant and specialist facilities be made available under Health Authorities to the different classes of the population?

Practitioners and Administration.

(Paras. 24-26.)

(16) Have you any practical suggestions to make with regard to the line of differentiation of the administrative officer from the clinician?

Composition and Powers of the Local Health Authority.

(Paras. 27-29.)

(17) Do you regard the points set out as to adequate representation of the profession on the Local Health Authority, and the establishment of a Statutory Medical Committee in each area, of the type and with the powers indicated, as absolutely essential?

(18) What do you regard as the most desirable form of constitution for the Local Health Authority, having regard to practical considerations, both of health administration and of local government?

Consultant and Specialist Services.

(19) Are there any objections to the scheme proposed with regard to consultant and specialist services from the point of view of:—

(a) the General Public,
(b) the General Practitioner,
(c) the Consultant?

APPENDIX B.

SUMMARY OF THE REPORT OF THE MEDICAL CONSULTATIVE COUNCIL FOR ENGLAND.

(Extract from B.M.J., May 29th, 1920.)

When the Medical Consultative Council for England of the Ministry of Health was appointed, on October 1st, 1919, it was instructed

> "To consider and make recommendations as to the scheme or schemes requisite for the systematised provision of such forms of medical and allied services as should, in the opinion of the Council, be available for the inhabitants of a given area."

The Minister of Health asked for an interim report at an early date. The Council has met on many occasions, and an interim report, signed by the Chairman, Lord Dawson of Penn, and the vice-chairman, Mr. C. J. Bond, C.M.G., F.R.C.S., on behalf of the Council, has been issued, and has been placed on sale as from May 28th.*

The other members of the Council are Mr. N. G. Bennett, M.B., L.D.S.Eng., Dr. R. A. Bolam, Mr. Victor Bonney, F.R.C.S., Dr. H. G. Dain, Dr. A. Fulton, Sir William S. Glyn-Jones (secretary to the Pharmaceutical Society), Dr. T. A. Goodfellow, Dr. G. E. Haslip, Dr. T. Eustace Hill, Professor F. Gowland Hopkins, Miss M. H. F. Ivens, M.S., Miss Janet Lane-Claypon, M.D., D.Sc., Dr. A. Linnell, Dr. J. A. Macdonald, Mr. E. W. Morris (House Governor of the London Hospital), Dr. John Robertson, Dr. T. W. Shore, and Sir William A. Tilden, D.Sc., F.R.S.

We are indebted to the courtesy of the Chairman of the Consultative Council for an advance copy, from which the following sketch of its arguments and recommendations has been prepared. The report itself fills 28 foolscap pages, and is illustrated by a diagram, a map, and plans showing designs for Primary Health Centres of three types—small, intermediate, and large.

To illustrate the character of the scheme evolved by the Consultative Council we have reproduced a diagrammatic sketch† given in the report, showing the disposition of the Primary Centres it proposes should be established, and their relation to a Secondary Centre, and, through it, to a Teaching Hospital Centre. Facing this diagram we have printed the "Summary of Recomendations" contained in Section VII. of the report.

GENERAL PRINCIPLES AND A PARTICULAR APPLICATION.

The earlier part of the report points out that medical treatment must be both individual and communal, and that individual treatment may be either domiciliary or institutional. By communal treatment is to be understood pre-natal and maternity care, child welfare, the inspection and treatment of school children, dental treatment, clinics for early tuberculosis, and facilities for physical culture.

The general conception is that domiciliary treatment in each district should be based on a "Primary Health Centre." This institution would be conducted by the general practitioners of the district, and would be provided with an efficient nursing service. It would be linked with a "Secondary Health Centre" in some town conveniently placed in relation to the means of communication. Opportunities would be provided for consultation, either at the primary centre or at the homes of the patients, with physicians, surgeons, and specialists of the secondary centre, which would itself be brought into corresponding relation with a medical school hospital.

The general nature of the scheme proposed is illustrated by reference to that for Gloucestershire, described by Dr. J. Middleton Martin, county medical officer of health, in our columns of February 22nd, 1919, p. 218. The report states that the scheme has been approved by the county authorities, and by the authorities of the towns and hospitals, and that all the doctors in the county have agreed to the plan of service as framed. Details are given of the application of the scheme to the area of which the city of Gloucester is the centre. The area measures about thirty miles from north to south, and about twenty-four from east to west. It is nearly bisected by the River Severn, over which there is no road bridge below Gloucester, though there is a railway bridge fourteen miles down the river. The area contains various types of population: the mining district of the Forest of Dean, the tin-plate works at Lydney, cloth factories at Cam, and engineering works at Dursley. It includes also large rural districts, some of them sparsely populated. The report is illustrated by a map showing the places considered suitable for primary health centres, having regard to the distribution of the population and the means of communication. It indicates existing cottage hospitals and the provision proposed for supplementary services. The secondary centre would be in the city of Gloucester, which has a population of 50,000; it would be linked with the teaching hospitals and medical school of Bristol. A scheme on similar lines has, it is stated, been prepared by the North Eastern Hospitals Association for the counties of Durham and Northumberland.

DOMICILIARY SERVICE.

The domiciliary service, which is regarded as the first link in the chain of systematised treatment, would be rendered by the general practitioner, dentist, pharmacist, midwife, nurse, and health visitor.

Domiciliary nursing is regarded as an essential part of a health service, and the Consultative Council holds that nursing should be available for all illnesses and all persons when the doctor deems it necessary. The nursing services of a district should be based on the corresponding primary and secondary health centres, and existing organisations should be made use of for this purpose by the Health Authority. It is proposed that this subject should be referred to a special committee.

A PRIMARY HEALTH CENTRE.

The size and standard of equipment of a primary health centre would depend on the local conditions and needs of a neighbourhood. The distinguishing feature of the primary health centre in contradistinction to a secondary health centre would be that it would be staffed by general practitioners. Each centre would have general wards, with an appropriate number of beds, also a midwifery ward. There would be provided also an operating room, radiography room, a laboratory for simple investigations, a dispensary, baths, and equipment for massage, electricity and physical culture, and a public mortuary. It is proposed that the general practitioner should attend at the primary health centre such of his patients as require hospital treatment, irrespective of their status. The centre would provide the patient with food, nursing, and all equipment for efficient treatment, but not with medical attendance, which would be paid for either by the patient, or through some method of insurance, or by the Health Authority. The centre would also contain a common room to serve as a meeting place for the general practitioners of the district, and for the storing of clinical records on a standardised system. Not all these various departments would be established at once at all the smaller centres, and it is hoped that the more fully equipped centres would render aid to those less well provided.

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* H.M. Stationery Office; through any bookseller, price 1s. Messrs. Eyre and Spottiswoode, East Harding Street, Fetter Lane, E.C. 4, will supply a copy post free on receipt of a postal order for 1s. 3½d. (under the new postage rates).

† Not reproduced in this document. See p. 740, BRITISH MEDICAL JOURNAL, May 29th, 1920.

The primary health centre would have preventive as well as curative functions. The communal services, such as those for pre-natal care, child welfare, physical culture, and the examination of suspected cases of tuberculosis, would be gathered together at the primary centre. Domiciliary nursing is recognised to be an essential part of a health service, and residential accommodation would be provided at the primary centre, not only for nurses employed in it but also for those working in the district it serves and for midwives. An essential feature of the scheme is that the primary centres should be staffed by general practitioners, but that there should be opportunities for obtaining the assistance of consultants and specialists on the staff of the secondary health centres, who would attend at fixed intervals or make a special visit in an emergency. In suitable cases, of course, patients would be transferred to the secondary centre, and the scheme contemplates an ambulance service to maintain communication, on the one side between the home and the primary centre, and on the other between it and the secondary centre.

The dental clinic, forming part of the primary centre, would have a staff of visiting dental surgeons employed either on a part-time or whole-time basis. It would provide for patients of all ages all ordinary treatment, including extractions under anæsthesia, conservative dentistry, the treatment of inflammatory infections of the jaws and gums, simple orthodontal cases, and the fitting of dentures. Where possible the present school dental service would be transferred to the clinic.

In the scheme the work of the general practitioner would be partly domiciliary and partly institutional, for at the primary centre he would treat such of his patients as attended or were referred to him there; in this way it is hoped to secure the advantage of organisation, combined with the preservation of liberty of thought and action. The alternative of a whole-time salaried medical service was carefully considered by the Council, but the report expresses its conviction that the public would be serious losers by the adoption of such a plan for the clinical worker, especially if a general practitioner, requires a knowledge not only of the disease, but of the patient. His work must be individual. The confidence of the patient, which is of vital importance to treatment, must rest not only on sound knowledge, but on personal harmony. On the other hand it was considered that laboratory workers and medical administrators who do not come into personal contact with the sick could with advantage be paid entirely by salary.

As has been said, it is proposed that there should be accommodation for communal services at the primary centres; each communal clinic would be directed by a doctor, or more than one, practising in the area who had specially qualified himself for the post. The directorships of these communal services would be part-time posts, and paid on that basis. The report expresses the opinion that in the beginning it might be possible in many instances to adapt existing buildings, such as cottage hospitals or Poor Law infirmaries, to the purpose of a primary health centre, but extensive alterations to buildings are deprecated, since the adapted buildings could only be makeshifts. Health centres and hospitals require adequate ground to permit of extension and for open air clinics, convalescent treatment and physical culture. Many war memorial hospitals, it is said, are likely to be defective because their promoters have not made such provision and have failed to realise that a modern hospital should be part of a more comprehensive organisation.

Secondary Health Centres.

Secondary health centres must be situated in towns where adequate equipment and an efficient staff of consultants and specialists exist, and to which means of communication are convenient. The secondary, like the primary health centres, would have both a preventive and a curative side. On the latter their services would mainly be consultative; they would receive cases referred from the primary centres for diagnosis or special treatment. It is recognised that in some towns it would be necessary that primary services also should be rendered at the secondary health centres. The equipment of a secondary health centre would provide general services (medicine and surgery), and special services of midwifery and gynæcology, ophthalmology, laryngology, rhinology and otology, dermatology, genito-urinary surgery, orthopædics, and dentistry, and for radiology, electrotherapy, hydrotherapy, physical culture, massage, and nursing. They would possess also fully equipped pathological laboratories.

Existing institutions would form the nucleus for the curative services of secondary health centres, but as their functions were extended present buildings would not be large enough. Their accommodation might in many instances be supplemented by linking them with existing Poor Law infirmaries, the beds in the allied institutions forming one field of work for an associated medical staff. It is considered, however, that in many areas it would be necessary to establish complete and model secondary health centres, and that where possible they should be built on open ground just outside the town. Patients referred from the primary centres would either attend the out-patient clinic of the secondary centre or be admitted as in-patients. The medical staff of the secondary centre would be responsible for their treatment, and every facility would be afforded to general practitioners to keep in touch with their patients while they were attending the centre, and to resume their supervision on discharge. The clinical consultants at the secondary health centres would attend out-patient clinics regularly to see cases referred to them, would attend the referred cases in the wards, would pay periodical visits to the primary health centres allotted to them, and would be available to make special visits of emergency in consultation with general practitioners to the primary centre, or, if necessary, to the home of the patient. These consultants would be paid on a part-time basis, with extra fees for special visits. The non-clinical consultants—pathologists, radiologists, and the officers connected with the communal and preventive services of the secondary health centres—some of whom would be whole-time officers, would also visit in a consultant capacity the primary health centres allotted. The members of the consultant services would in practice be on the staff of the hospital or the institutions associated with it; they would be appointed on the recommendation of a committee of selection, representing the medical profession of the locality, the health authority, the hospitals themselves, and the medical faculty of the university within whose sphere of influence the secondary health centre was. To be eligible for such an appointment the applicant must produce evidence of special training and experience, such as would be afforded by (1) special academic distinction and post-graduate study; (2) tenure of hospital and other appointments affording special opportunities for acquiring experience; and (3) local professional recognition of competence in a consultative or expert capacity. It is intended that general practitioners shall be eligible for these posts, and it is considered that their representation in the consultant services and on the staffs of the secondary health centres would be an advantage.

Paying Wards.

The report expresses the view that it would probably be advisable to provide private self supporting wards at health centres. The reasons given are, first, that the plan would be conducive to efficient and economic working, and, secondly that the more the serious cases are limited to one place the more time is a doctor able to spend in caring for them and the less in travelling. The essential services in the public and private wards would be identical. The charges in these private wards would vary according to the accommodation and local conditions.

Payments at Health Centres.

The report does not advise that curative services should be provided by the health authority free of charge. Illness, it is said, is a direct and personal concern, and the patient should contribute in some form or another to the cost of cure; experience shows that he is willing to do so. He could contribute only a portion of the cost, for efficient treatment will often be beyond the means of most citizens to provide in its entirety. It is recommended that standard charges should be fixed for treatment in the public wards and other curative services, but it is recognised that the charge might vary in different parts of the country. It is suggested that the charges would usually be met by some method of insurance, though private patients recommended by their doctors would have a right to avail themselves of the services by direct payment.

The standard rate of payment at a primary health centre would include residence, food and nursing, but not medical attendance. At the secondary centre, acting in its consultant capacity, the charge would include medical attendance, and would be defrayed by moneys allotted to such services. The patient would possess the right of selecting the consultants and specialists assisting in his treatment, and in the secondary centre would be entitled to request additional advice from a consultant or specialist of his selection, the patient being responsible for the fee.

Supplementary Services.

It is proposed that certain institutional services should be correlated with both primary and secondary health centres; as examples of these supplementary services the following are indicated: Sanatoriums for tuberculosis; recuperative centres (convalescent centres); hospitals for curable and incurable mental disease; institutions for the feeble minded: epileptic colonies; orthopædic centres; hospitals for certain infectious diseases.

Voluntary Hospitals.

It is considered that the nucleus of a health centre, especially in a town, will be the existing voluntary hospital. The incomes of these hospitals are less and less commensurate with their needs, owing to the increased complexity of equipment now required, so that a patient to-day costs twice as much as a patient twenty years ago. The opinion is expressed that grants for equipment and maintenance of communal clinics would, with the payments already mentioned for admission of patients, bring much-needed assistance to voluntary hospitals without interfering unduly with their management.

Medical School Hospitals.

Where possible every secondary centre should be brought into relation with a teaching hospital; the academic influence and the spirit of inquiry and progress associated with such a hospital would permeate the system of secondary, primary, and domiciliary services within the allotted sphere of influence of the school or hospital. It would receive cases of unusual difficulty requiring specialized knowledge and equipment, and its laboratories and special departments would be a court of reference.

The Health Authority.

In the section of the report dealing with administration it is advised that a new type of health authority is needed to bring about unity of local control for all health services, both curative and preventive, and to ensure continuity of idea and purpose and a complete system of reciprocal communication between the associated teaching hospitals, secondary centres, primary centres, and all domiciliary services, whether in town or country. The Council states that it has not been able to arrive at any final opinion on the question whether the new health authority should be an independent body set up for the purpose of administering health services alone or whether it should be a statutory committee of an exisiting local authority. It is, however, laid down that the success of the health service will depend upon the co-operation of the medical profession, so that its members must play a responsible part in the administration of the health authority. It is therefore recommended that the medical profession should be represented on the new health authority, and that a local medical advisory council should be associated with each such authority. It is recommended that the members of the authority should, as to two-fifths, be medical representatives nominated by the local Medical Advisory Council and other persons specially skilled in health questions; the other three-fifths of the authority would be representatives elected by popular vote.

The local Medical Advisory Council, it is recommended, should consist of ten to twenty members, according to the needs of the area. The members of this council would be elected periodically by and from among all the registered practitioners resident in the area by means of a postal vote conducted by the Health Authority. The principal medical officer and the two chief assistant medical officers would be *ex-officio* members of the advisory council. The council should have power, for special purposes, to appoint committees, which would have the right to co-opt persons specially skilled in the subject under consideration. The Health Authority would be expected to invite the advice of the local Medical Advisory Council, which would be in a position to act as a medium for communicating to the Health Authority the collective opinion of the practitioners in the area.

Medical Officers of the Health Authority.

The duties and responsibilities of the chief medical officer to the Health Authority would be more extensive than those possessed by existing medical officers of health, and it is therefore proposed that he should be called the Principal Medical Officer. He would be the administrative head of the medical services in the area of the authority and would have two chief assistant medical officers, the one specially concerned with the administration of the curative, and the other more especially with the preventive service. Under these would be assistant medical officers, their number varying with the size and needs of the area concerned. On the staff of the Principal Medical Officer would be the principal dental officer, principal matron, and so on.

Laboratories.

A sketch is given of a scheme for laboratory services. The first and essential function of the laboratory at a primary centre would be to give facilities to the general practitioner; it would be so equipped as to enable him personally to make any examinations he desires to undertake. The equipment would be supplied from the secondary centre and adapted to meet any increase in knowledge, skill and interest displayed by the practitioners concerned. Some person must be placed in charge of such a laboratory; it is thought that his qualifications might vary with the size, geographical situation, and special needs of the centre. At the smaller primary centres the part-time services of a moderately skilled attendant might suffice; at larger primary centres persons with more training should be provided, and it is suggested as a matter for consideration whether, in certain cases, such persons might not combine the duties of the pharmacist with those of the laboratory worker. At the largest primary centres two laboratory workers might be required, especially at centres far remote from a secondary centre, to report, at least provisionally in case of urgency, as, for instance, when diphtheria is suspected. It is suggested that the laboratory workers at the primary centres should spend occasional periods in the laboratory of the secondary centre, for the improvement of their knowledge and skill. The responsibility for staffing primary centres would lie with the director of the laboratory of the secondary centre. In case of emergency, as on the outbreak of an epidemic, it would be possible to concentrate laboratory assistance in the locality by the transfer of workers. Certain types of work, as for instance histological examinations, might as a matter of routine be sent to the secondary centre. When materials must be taken from the patient, especially when quantitative methods are involved, a visit by a consultant might be necessary. The laboratory of a primary centre must be in communication by telephone and by motor transport with the related secondary centre.

The laboratory of a secondary centre should provide ample accommodation and equipment, and its senior staff should be highly qualified to do clinical laboratory work, both for the primary centre and for the hospital of the secondary centre; it would also do post-graduate teaching. The head of the laboratory would be a well qualified pathologist, and the staff would comprise specialists in morbid anatomy, bacteriology, and pathological chemistry. Some of the assistants would be preparing for the higher posts in the service; others in an intermediate class, would furnish recruits for the staff of the primary centres.

The laboratory of the secondary centre would be linked with the chief or university centre, which would have a special laboratory for health services distinct from a professorial department, though in close contact with it. A separate health services laboratory would protect the academic staff from routine, leaving it free for teaching and fundamental research work. The staff of the health services laboratory would be recruited from that service and be dependant upon meritorious performance within it. At the same time it is recognised that no rigid barrier should be erected between the academic pathologist and those engaged in the health services. Though there would be two distinct careers, circumstances would often cause individuals to pass from one to the other.

The health services laboratory of a university centre in addition to the routine work, would carry out the more difficult investigations referred to it from the subsidiary centres, but it might also undertake much of the routine work for the university hospital. The director of such a laboratory would rank with a university professor, but would usually be a distinguished pathologist with tastes inclined to organization and administration rather than teaching.

Research.

With regard to research, it is suggested that the organization throughout the proposed health service would facilitate inquiry into the causes of disease. It is suggested that the facts showing the need for inquiry might often be brought together in the first place by the medical practitioners in a locality; the manner in which it should be further prosecuted would depend upon the subject, but research into fundamental problems would still continue to be conducted through the university and the Medical Research Council. A national organization of laboratories in touch with every branch of the health services would, it is believed, provide opportunity for systematic investigation and team work. The director of the health services laboratory at the university centre would be in a position to start machinery for the intensive investigation of any urgent problem, and with the goodwill of the general practitioners the investigation would include cases never available in the wards of a hospital. In particular, the earliest stages of disease might be made the subject of organized research, which, it is hoped, might be subsidised and perhaps supervised by the Medical Research Council.

Dental Services.

The object of dental treatment is to secure normal formation of the jaws and dental arches and a clean and healthy mouth. While many of the impediments to the attainment of this ideal are to be found in pre-natal conditions, others are due, to the environment of early childhood; the ill effects of dental disease and oral sepsis in adult life are well recognized. As dental treatment, therefore, comes into close relation with medical care, a dental clinic should form part of every primary health centre. It would provide ordinary treatment for young children under school age, school children, expectant and nursing mothers, and for the adult population generally. It would be staffed by one or more dental visiting surgeons, and a dental service would be attached to each centre.

At secondary health centres there would be similar dental clinics, but on a larger scale, especially as regards the fitting of artificial dentures, which would be made in an attached dental laboratory. Its staff would consist partly of part-time officers and partly of visiting dental surgeons, and it would have a staff of nurses and mechanics. Members of the dental staff would act as consulting dental surgeons at the primary centres, to which they would pay periodic visits. Arrangements should be made for the dental treatment of all persons admitted to convalescent homes, sanatoriums, and other institutions belonging to the supplementary services. All forms of dental treatment provided at the clinics of the primary and secondary health centres would be regarded as part of the necessary medical treatment, and would be arranged on an insurance basis or according to a scale of fees. The remuneration of dental surgeons would be on a time basis, and it is suggested that arrangements might be made to use the clinics for private patients. The payment of dental surgeons for consultations would be on the same basis as that of other consultants.

Maternity and Child Welfare.

It is the intention of the Council to appoint a committee to consider questions of maternity and child welfare services, but the report makes an outline of what it is considered should be provided. The services would be domiciliary and institutional, the latter being given in primary and secondary health centres and teaching hospitals.

The domiciliary treatment would include advice and treatment for pregnant women unable to attend the health centre, and provision for attendance at the labour at the women's home. A doctor and a midwife should be available for every labour, and also when necessary an anaesthetist. A midwife trained to know when a doctor is needed would attend normal labours, etc. It is suggested that additional assistance might be obtained from a service of home helps, consisting [illegible] trained [illegible] and working under proper supervision. Sterilized maternity outfits should be obtainable from a primary health centre, and a practitioner should be able to summon an expert obstetrician with the necessary assistance and outfit in a case of difficult labour. The service should also include the supervision at the home of the welfare of mother and infant and any necessary medical attendance, should the mother be unable to attend at the primary health centre.

The institutional treatment provided at the primary health centre should include beds for labour and after-care and arrangements for isolating any case of sepsis after delivery. The number of beds available for ante-natal, maternity, and post-natal cases would at first be limited, but should be increased by adding to the centre or by a separate institution, should the demand arise. The services of a consultant from a secondary centre would be available. Women suffering from gynaecological disorders, the result of child-bearing, would either be admitted to the wards of a primary health centre or sent to the secondary centre, being treated as in-patients or out-patients, as the practitioner might determine. The residential accommodation should make it possible for mothers to be accompanied by their infants, and an infant welfare department should be part of the primary centre.

Standardised Clinical Records.

It is proposed that a uniform system of records of illness should be established and filed on the card index method. At the primary health centres they would be simply to avoid an undue tax upon the staff, but at the secondary health centres and teaching hospitals the aim would be to have a complete record, clinical, pathological, and communal. When a patient was transferred from one centre to another a copy of the record would accompany him. It is advised that an officer should be appointed at each secondary health centre and teaching hospital to take charge of the records, which it is believed would be very valuable for research into the nature of disease and the results of treatment. General direction would be in the hands of the teaching hospital, subject to the final control of the Ministry of Health in consultation with the Medical Research Council.

Physical Culture.

After reference to the policy of the Board of Education with regard to physical education in the schools, the Consultative Council expresses the opinion that every community should possess grounds for physical training, provided and maintained at the public expense, and so planned as to meet the needs of children, adolescents, and adults. It is recommended that a doctor specially skilled in the subject should be attached to each secondary health centre to supervise the work and training of masseurs and masseuses, and to act as consultant and adviser throughout the area. It is pointed out that though at present there is provision for the training of women, there is no training college for men. The Council proposes to set up a committee to consider this question of physical culture.

Recuperative Centres.

The establishment of recuperative centres is advised to serve the double purpose of restoring persons to health, either after illness or before their ill health has become disease. Such institutions are declared to be essential to any scheme of medical service, and would, it is said, be a great field for preventive medicine and for the study of the early manifestations of disease. The site should be sufficiently large and in an open situation, but elaborate buildings would not be required. It is pointed out that the experience of the Army Medical Service during the war in the establishment and conduct of convalescent and rest camps will be of great value to the civilian organisation proposed.

Prefatory Note by the Minister of Health.

The following is the text of a note prefixed to the Report by the Minister of Health

"1. This Report, the first to be received from the Consultative Council on Medical and Allied Services established under the Ministry of Health Act, 1919, is published in order to facilitate discussion of the questions raised in it.

"2. Action is being taken by the Minister of Health and the local authorities in relation to a number of matters touched upon in the Report, and proposals for action in other directions are in process of formulation.

"3. Many of the Council's recommendations must necessarily be considered in relation to a comprehensive policy for the extension and development of health services (including the question of the future administration of services at present entrusted to Poor Law authorities), which will be submitted to Parliament by the Government in due course.

May, 1920. C. ADDISON."

SUMMARY OF THE REPORT OF THE WELSH CONSULTATIVE COUNCIL.

(*Extract from B.M.J., June 5th*, 1920).

The Welsh Consultative Council is not a medical body, although it contains medical members; the chairman is Sir Edgar R. Jones, M.P., and among the members are representatives of nurses, friendly societies, county and rural district councils, Insurance Committees, and of labour organisations. The medical members are Professor D. Hepburn, C.M.G. (Cardiff), Dr. Rocyn-Jones (county M.O.H., Monmouthshire), Dr. Hugh Jones (Dolgelly), Dr. Ewan J. Maclean (Cardiff), Dr. E. Ll. Parry-Edwards (county medical officer, Carnarvonshire), and Dr. W. E. Thomas (chairman of the Glamorgan Panel Committee).

The first report of the Council was formally laid on the table of the House of Commons on May 19th, but has not yet been published. Its substance, however, can be stated. In the introduction to the scheme submitted by the Council the principle is laid down that the object to be sought is to maintain the people in good health, and that such maintenance should begin before birth and be actively promoted throughout life. It is laid down that a family doctor should be available for every household and that he should be kept in effective touch with the household through the scheme.

Health Visitors.

The first matter dealt with is the adequate supply of health visitors, but the new type of health visitors recommended is not to be taken as meaning merely extended service for those now employed by local authorities. The scheme of proposed duties is as follows:—

Male Health Visitors.—To render (i.) Nursing aid for men in early nerve cases threatening to become mental. (ii) Necessary help at clinics for children. (iii.) Attendance at male venereal diseases clinics or ablution stations. (iv.) Incidental assistance in general sanitary work and removal of infectious cases, if and when required. (v.) Services under the Children's Act. (vi.) Services under the Juvenile Employment Act. (vii.) Services under the Mental Deficiency Act—when necessary.

Female Health Visitors.—(i.) Domiciliary visits for (*a*) ante-natal work; (*b*) work arising out of notification of births; (*c*) visitation of schools, and following up school cases of defects; (*d*) tuberculosis cases from institute or visiting station; (*e*) mental deficiency cases which are under supervision or observation. (ii.) Clinic work in connection with (*a*) maternity (ante-natal and post-natal work) and infant welfare; (*b*) treatment of school children found defective; (*c*) tuberculosis cases at visiting station; (*d*) to notify the evidence of venereal diseases and give advice.

Special Health Visiting.—(i.) Fever nursing—epidemic or fever nursing by way of domiciliary visits and help. (ii.) District nursing. (iii.) Whole-time nursing for special cases.

The minimum number of qualified female health visitors for carrying out enlarged duties in connection with infant welfare work and school medical inspection should be 1 per 1,000 houses in the larger centres and 1 per 500 to 750 houses in the smaller towns and rural districts.

Dental Service.

The Council holds it of urgent and paramount importance that properly qualified dental treatment should be available for all, with priority for young children and expectant mothers. Attention is directed to the serious inadequacy of qualified dentists in Wales and to the mischief wrought by unqualified persons. A minimum provision of qualified dentists, if available, would probably be 1 to 4,000 of the population. The Council urges immediate action.

Medical Service.

Acting with the assistance of the various officers whose duties had thus been outlined, one doctor should, as a general rule, the report suggests, be available for 400 homes in urban communities and for 300 in rural. The unequal distribution of the population complicates the problem of specialists and consultants, which, it is said, should be approached on national rather than on purely local lines; a full report on the subject is to be prepared.

The Council holds that all health institutions, including voluntary hospitals, should form part of the future public services, but considers that, until the general question of health administration in Wales has been fully considered, the formulation of proposals as to the highest grade of institutions should be postponed. Subject to this, the various institutions to be included in the national scheme would be:—

(i) Central institutes for general medical and surgical purposes; local institutes (on a smaller scale) for the same purposes; subsidiary hospitals; various kinds and grades of clinics; provision for invalid cooking.

(ii) Asylums and mental deficiency homes, with suitable subsidiary institutions for cases showing early signs of mental trouble.

(iii) Fever, small-pox, plague, cholera, and dysentery hospitals; isolation hospitals with appropriate provision for dealing with contacts; seaport quarantine stations.

(iv) Tuberculosis sanatoriums and hospitals.

(v) Various kinds and grades of rest (or holiday) homes, convalescent homes, health centres, open-air schools, health colonies for children.

(vi) Institutions for the blind and deaf, epileptics, and cripples.

Motor Transport.

The success of the whole scheme for health visitors, home helps, midwives, registered nurses, doctors, dentists, and institutions will depend for efficient administration upon a large systematic motor transport service. Telephonic communication for all concerned is also insisted upon as highly necessary.

Application to Industrial and Rural Areas.

The Council gives reports from three of its committees who visited typical areas.

Industrial.

The Aberdare committee estimates the requirements for an industrial and urban area, in presenting the needs for this district, as follows:

The General Hospital at Aberdare, as the principal local centre, should comprise—

(*a*) 100 beds for general medical and surgical conditions.

(*b*) A maternity and child welfare department and clinic, affording 40 additional beds, with a proportion for pre-natal cases and isolation.

(*c*) A school clinic with a lien on, say, 15 further beds.

(*d*) A fully equipped radiological section, including apparatus for electrical treatment and massage.

(*e*) Various clinics—for example, dental, tuberculosis, venereal, pediatric, psychiatric, etc.

(*f*) A fully equipped out-patient department both for casualties and the usual departments.

(*g*) A separate block in close proximity containing 50 beds to which cases requiring after care and supervision might go, thus relieving the primary beds.

(*h*) An essential requirement would be a medical institute and laboratory, including a library and facilities for dealing statistically with health records of the area.

At Mountain Ash, a similar centre on half scale would be required, omitting the medical institute and laboratory.

A Mixed Area.

East Carmarthenshire was taken as typical of both an industrial and rural area. The Council suggests that Swansea should, as at present, be regarded as the centre for a large and fully equipped institution, and that at Llanelly also there should be a central institute to serve as a hospital for the south-eastern portion of the area, with subsidiary hospitals at Ammanford and Pontyberem respectively. The establishment of a hospital at Ammanford subsidiary to that of Llanelly would depend largely on the construction of an arterial road. After mentioning that there should be a fever hospital for the whole area. the Council advises that provision should be made in the area for public baths, pithead baths, and douche baths in connection with factories and works. It is held that open-air schools should be established in every district, not only for defective children but for normal children also.

A Rural Area.

Merionethshire is reported upon as the type of a purely rural area. The Committee is of opinion that such a county with a scattered population of only 50,000, should have its needs met by the provision of central institutions in association with other areas and not for this county alone, and by the provision of local institutions to serve local needs. They advise that large hospitals or institutes be provided at three central places—for example, at Bangor, Wrexham, and some other place—to serve parts of Merionethshire, Montgomeryshire, and parts of mid-Wales.

Minister's Comment.

Dr. Addison has pointed out that the recommendations must be considered in relation to the whole scheme of health services to be submitted to Parliament for the different parts of the United Kingdom—or at any rate of Great Britain. This observation is necessary in view of the financial changes the scheme would involve, to whatever degree the aid of the general practitioner be sought—the employment of so many other persons being contemplated.

MEDICAL DEPARTMENT,
BRITISH MEDICAL ASSOCIATION,
429, Strand, W.C.2,
October, 1920.

Association Notices.

VACANCIES ON COUNCIL.

EAST YORKS AND NORTH LINCOLN AND MIDLAND BRANCHES.

Notice is hereby given that a vacancy has been created on the Council by the resignation of Dr. G. K. Smiley, O.B.E. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any such Branch, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded upon application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

NORTH OF ENGLAND AND NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCHES.

Notice is hereby given that a vacancy has been created on the Council by Dr. E. A. Bolam, O.B.E., becoming an ex officio member on his election as Chairman. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any Branch therein, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded on application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

BRANCH AND DIVISION MEETINGS TO BE HELD.

[illegible] BRANCH [illegible] [illegible] at the Royal [illegible] October 21st at [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] in the chair. [illegible]

[illegible] BRANCH [illegible] DIVISION.—A [illegible] will be given to the Division by [illegible] on Friday, October 29th, at [illegible] at 8.15 p.m., on "[illegible]."

Meetings of Branches and Divisions.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.

A MEETING of the South-Eastern Counties Division was held at Newtown St. Boswells on September 22nd, when Dr. A. D. FLEMING was in the chair. Letters were read from Drs. Brackenbury and Cox thanking the Division for the letters of appreciation sent them in accordance with instructions at the last meeting. Dr. BLAIR submitted his report as Representative of the Division, and described the action taken with regard to the points raised at the last meeting. He referred members to the published report for the general account of the meeting, but with reference to the proposals of the Consultative Council of the Board of Health he emphasized the fact that they meant revolution in the time-honoured methods of private country practice. He submitted a sample record card to the meeting, and directed attention to the appointment of referees and consultants.

A cordial vote of thanks was accorded to Dr. Blair.

Drs. W. Blair (Jedburgh), P. C. MacRobert (Innerleithen), and M. Dewar (Edinburgh) were nominated for election to the Scottish Committee.

Dr. S. DAVIDSON, in an interesting paper on acute appendicitis, pointed out the advantages of early operation, this opinion being supported by his experience of a number of cases. A discussion which followed showed that the general opinion was in the main in accordance with Dr. Davidson's views. The Chairman expressed the thanks of the meeting to Dr. Davidson for his valuable contribution.

ESSEX BRANCH.

THE annual meeting of the Essex Branch was held at Southend-on-Sea on September 23rd, when the President, Dr. H. CLEVELAND SMITH presided. The PRESIDENT read a paper, "Some remarks on certain abdominal conditions," embodying his experiences as a surgeon of many years' standing. The paper was of great interest and was much appreciated. Dr. HENRY MACCORMAC, C.B.E., read a paper on "Syphilis," giving the results of some recent investigations into the treatment of the disease. The paper was followed with close attention, as several new points were brought out, and at the close Dr. MacCormac was warmly thanked for his able and interesting address. On the proposition of Dr. FORSYTH, a hearty vote of thanks was accorded to Dr. Cleveland Smith for holding office during the past year and for his services to the borough as senior surgeon. At the conclusion of the meeting tea was provided for members at the kind invitation of the President.

During the afternoon Messrs. Allen and Hanburys gave an exhibit of surgical instruments, etc.

The following officers were elected: *President*, Dr. S. W. Curl; *President-elect*, Dr. Charles Forsyth; *Honorary Secretary and Treasurer*, Dr. Nolan Fell.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

THE autumnal meeting of the Branch was held at Malvern on September 30th. After the ordinary business was transacted, Dr. RUSSELL ANDREWS, obstetric physician to the London Hospital, read a most instructive and interesting paper on the treatment of uterine fibroids. At the conclusion Drs. BATES, POLLARD, HOLBECHE, JACOB, FINLAY, STEED, SMYTH, BURD and AINSLIE asked questions and offered criticism.

INSURANCE.

CORRESPONDENCE.

Capital Value of Practices.

SIR,—I have read the details of the Brighton and Dartford schemes. Both are complicated, dependent upon a degree of co-operation which cannot be guaranteed even now, much less indefinitely, and place a new-comer, honestly desiring to purchase, in no better position to do so. A simple and more equitable plan will also be brought before the conference, and I invite criticism upon it. It is based upon the article, to which I have referred, which appeared in the *National Insurance Gazette* of December 9th, 1919, by Mr. E. D. Anderson, Clerk to the Renfrew Insurance Committee, in which he effectively condemns the new Regulation from every point of view. The mistake constantly made by doctors in contesting new regulations before representatives of laymen has been to advance only their own interests. It is not the way to succeed, and I strongly recommend them to read that article. My proposal, which was unanimously endorsed by the West Sussex Medical and Panel Committee, and should appear on the final agenda, is simply to restore the old Regulation with the following precautions to prevent abuse:

1. That all insured persons automatically transferred be allowed option to change their doctor once at any time during the next six months, and be notified to that effect.

2. That no panel practitioner be allowed to resell a panel practice thus transferred within less than two years, unless satisfactory reason be first produced to the Insurance Committee.

These two precautions seem to me efficient. The first places the insured person in far better position than the new Regulation, under which he may belong to no one for three months. He will, from the first, know exactly how he is placed, and without any trouble on his part, know where to go when he is ill, yet will not be compelled to retain the services of a new doctor if, on acquaintance, he cordially dislikes him. The second prevents speculation in panel practices. The capital value of a practice will be almost, if not quite, as good as under the old Regulation unmodified, and the ordinary methods of sale and purchase will continue. Further, a simply immense amount of wholly superfluous administrative labour and expense, together with risk of favouritism by some influential member of the allocation committee, and of three months' touting among the unassigned by society agents on behalf of or against a particular doctor, will be avoided.

I strongly urge that arbitration be demanded in regard to this important question on the above lines. Let us insist specially on the practical difficulties and heavy expenses, injury to the insured and probable abuses of the new system, and not talk too much about vested rights, which do not appeal to the laity, many of whom regard with repugnance the sale even of a private practice. No reasonable objection could be taken by lay arbitrators to the above scheme.—I am, etc.,

Chichester, Oct. 9th. G. C. GARRATT.

SIR,—I should be obliged if I might reply to Dr. Fothergill's questions on the Dartford scheme. This scheme as now put forward is a much simplified form of the draft on which the Brighton scheme was founded. In it practices are sold to the county, to the practitioners as a whole, and there are no local administrative arrangements. If the payments to be made (which are such payments as one ordinarily ensures by the payment of insurance premiums) seem to Dr. Fothergill better referred to as "presents of money" I should not waste energy disputing the point. Now to his questions:

1. It is not proposed that a practice from which a practitioner has retired shall be distributed in any definite proportions, but only as free choice and the allocation scheme permit. The incentive to pay into such a scheme is the desire to realize one's own "capital value" when the time comes and to guard against catastrophe to one's wife or widow in case of illness.

2. A "bought-out" practitioner can sell anything for which he can get a price at any time.

3. A successor buying a private practice will not find his position affected by the fact that the retiring practitioner has realized his capital value. If he undertakes to do panel practice, he will have his name placed on the list and, if lucky, will get a considerable number of his predecessor's patients forthwith and will commence to suffer deductions accordingly.

4. No money will be paid until it is there to pay.

5. It is not intended to deal in the individual practice as a commodity which can be the object of sale or barter.

6. The sliding scale applies only to practitioners retiring for reasons other than old age, ill health, or death. This is necessary to prevent the right to a capital value payment in full operating as an incentive to speculation in practices. Dr. Fothergill's question, "Why this desire to protect 'elsewhere'?" does not convey any very definite meaning to me.

7. A practitioner will leave at a financial loss only in the case of voluntary and preventable retirement—that is, for his own benefit and well knowing that such loss may be incurred.

8. The signs of a "ring" of practitioners are obscure. Will Dr. Fothergill kindly specify what feature of the Dartford scheme seems to him to limit free choice of patient or to operate unfairly to "a young doctor starting in practice in an industrial area"? Since the Dartford scheme provides that the young doctor's practice shall have a definite and *realizable* value so soon as he gets his first cheque from the Insurance Committee, it provides a very real benefit and inducement for the young practitioner to settle in any area in which the scheme is adopted. The great objection to the Brighton scheme is that a single recalcitrant practitioner prevents the others applying the scheme, and much administrative work is entailed. The two schemes both originated in Dr. Renton's first draft, and have been elaborated on slightly varying lines. The Dartford scheme now claims to have reached a workable simplicity; the Brighton scheme is still entangled in the first draft.—I am, etc.,

Sevenoaks, Oct. 9th. GORDON WARD.

SIR,—The "Dartford scheme" is a mutual insurance scheme metamorphosed into such by the Kent Local Medical and Panel Committees from the original Dartford scheme by various amendments. The Brighton scheme is the original Dartford scheme couched in correct legal form, with a "bond," between the parties concerned, included.

The Dartford scheme provides a year's panel income to dependants of a deceased practitioner or to a practitioner retiring through age or serious ill health or retiring from any cause after twelve years (a less sum in proportion to years of service). This sum of money is to be paid from the Areal Pool, so that each practitioner (unconsciously) contributes in proportion to the size of his panel and receives in like proportion. The Dartford scheme must include every panel practitioner in the area; the Brighton scheme is voluntary.—I am, etc.,

Dartford, Oct. 11th. M. W. RENTON.

Minor Surgery and the General Practitioner.

SIR,—I am writing to draw the attention of your readers to a recent decision of the Local Medical Committee of the County of London, that "the removal of haemorrhoids is not within the ordinary competence and skill of a general practitioner." Surely, by these repeated attempts to limit the general practitioner's functions to the prescribing of bottles of medicine, we are stultifying ourselves in the eyes of the public and removing all claim we may have had to be regarded by the lay authorities as expert craftsmen. There seems to be a growing tendency among panel doctors to send to hospital every case which presents any features of interest or calls for the slightest manipulative skill.

The particular case which gave rise to this decision of the Local Medical Committee was that of a panel patient of my own; and was brought to the notice of the Panel Committee through my sending in an account for one guinea, which is the fee allowed under the new Regulations for the provision of an anaesthetist. Owing to a condition of thrombosis in one of the haemorrhoids, the patient was in great pain; and, in the present overcrowded condition of the hospitals, it certainly would have been difficult to get him immediately admitted, even had one so wished. Moreover, what would to this patient have been a prohibitive expense would have been entailed, since the London Hospital has been compelled to demand a preliminary payment of two guineas. Under the Insurance Act no provision is made for any surgical treatment beyond that which the panel doctors care to give. Surely, therefore, in addition to the ignominious position in which the Committee's decision places the general practitioner in affirming his incompetence to perform even this minor operation, a great hardship is inflicted on working people.

Moreover, though I regard this as the least part of my complaint, panel doctors are required by their terms of service to give to their patients "such treatment as can properly be undertaken by a general practitioner of ordinary professional competence and skill," and for such treatment are "not permitted to receive any fee or other remuneration" from their patients. No definition of what operations come within that competence has been laid down; and, as in the case I have quoted, a doctor is confronted by the dilemma either of leaving his patient to his fate, at the risk of the pricks of conscience and the censure and possible penalties of the Ministry of Health, or of doing his duty and providing an anaesthetist at his own expense.

Closely related to the principles involved in this decision of the Local Medical Committee is the attitude of the Panel Committee for the County of London to minor surgical operations in general. I am in partnership with six other practitioners, and between us we have 11,000 persons on our panel. Our attendances on insured patients number about 45,000 a year. Naturally, we perform a large number of trivial operations without anaesthetics, or with local anaesthesia merely. Our major operations we send to the London Hospital. Between these two classes there are, of course, a large number of cases well within our surgical competence, calling for the use of a general anaesthetic. Until this year we performed these operations as part of our panel service, without extra fee. Under the new Regulations a fee of one guinea is provided for the services of the anaesthetist. Our operations under anaesthetics average about one a week. Surely a small number, in proportion to the size of our panel. But the Panel Committee will have none of it. And accordingly we are summoned to appear before it to "explain the large number of accounts submitted by us (thirteen in all), as compared with those submitted by other practitioners." So that, in addition to the time spent on the operations (for each of which I and my partners hope to receive the magnificent sum of 3s. 6d. apiece), an afternoon will have to be wasted in explaining to the Panel Committee why we have done our duty; and, at the end of it all, we stand a good chance of being, what most workmen would call, defrauded. Needless to say, we shall continue to do what we think best for our patients, whether we are paid the agreed fees or not. We propose to leave sabotage to those sections of the community which have at any rate the excuse of living a little nearer the bone. But I think you will readily see that the dignity and good repute of the medical profession are involved.

I am, etc.,

London, E., Oct. 4th. HARRY ROBERTS.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Captain R. A. Ross to the *President*, additional, for three months' medical officers' course. Surgeon Commanders A. Wellcombe, J. H. Lightfoot, G. C. Cross, J. McA. Holmes, D.S.O., and T. E. [illegible] to the *President*, additional, for medical officers' course; E. D. L. O'Malley to the *Colossus* (temporary); A. J. Wernet to the *Furious*; [illegible] Walker to the [illegible], for voyage to Gibraltar and Malta [illegible] with relief crew and return. Surgeon Lieutenant Commanders F. C. Wright to the *Afrikander* for R.N. Hospital, Cape of Good Hope; R. N. N. W. [illegible] to the *Thunderer* (temporary); H. E. R. Stephens, O.B.E., to the *President*, additional, for three months' medical officers' course.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

[illegible] Colonel F. W. Hardy relinquishes the temporary rank of Colonel.

Temporary Captains relinquish the acting rank of Major: J. H. [illegible], M.C., L. Scott, D.S.O., P. N. Vellacott, F. B. Winfield.

To be temporary Captains: H. H. Crickitt, late temporary Captain, with seniority from June 22nd, 191[illegible], H. L. C. Noel, late Captain, with seniority from March 9th, 1916, R. Hodson, M.C., with seniority from [illegible], 1915, F. Dallimore, M.C., late temporary Captain, with seniority from March 19th, 1919, M. Shipsey.

INDIAN MEDICAL SERVICE.

The services of Colonel J. Jackson, C.I.E., M.B., a member of the [illegible] Committee, have been replaced at the disposal of His Excellency the Commander-in-Chief in India.

[illegible] M.D., has been confirmed in the appointment of [illegible] General Civil Hospital, March 29th, 1920.

[illegible] B. L. Singh, C.I.E., has been permitted to retire from [illegible] 1920.

Lieut.-Colonel W. H. Dickinson, M.B., has been appointed to officiate [illegible], Bengal, and Professor of Chemistry, Medical College, [illegible].

[illegible], on return from leave, has been posted as [illegible] Surgeon, [illegible] States, July 1920.

[illegible] and Major C. A. [illegible], M.C., have been placed permanently at the disposal of the Government of Bengal, October 25th, 1919.

[illegible] Major P. P. Seymour Sewell, Officiating Superintendent, [illegible], have been replaced at the disposal of [illegible].

[illegible] R. Knowles have been placed temporarily at the disposal of the Government of Bengal.

[illegible] present rank of Major H. W. Acton has been antedated from July 27th, 1919, to January 27th, 1919.

Captain J. L. R. Philip, M.B., has been permitted to resign the [illegible].

DIARY OF SOCIETIES AND LECTURES.

[illegible] Society, 20, Leicester Square, W.C. [illegible], Sir William Collins, K.C.V.O.: Man *versus* the [illegible].

[illegible] London, Pall Mall East, S.W. [illegible], Sir Frederick Andrewes, [illegible].

[illegible] Inn Fields, W.C. [illegible] History [illegible] Medicine.

[illegible]

[illegible]

POST-GRADUATE COURSES AND LECTURES.

[illegible] Tuesday, 3.30 p.m., Dr. [illegible].

[illegible] Hospital. [illegible] 4.15 p.m., Dr. [illegible] Common [illegible].

[illegible] Tuesday, 3.0 p.m., Dr. [illegible].

[illegible] Hospital [illegible] Westmoreland Street, W. [illegible] p.m., Dr. [illegible] Cardiovascular [illegible].

[illegible] Hospital for Paralysis and Epilepsy, Queen Square, W.C.—Daily, except Wednesday and Saturday, 3.30 p.m., Out-patient Clinic. Monday, 5 p.m., Dr. A. [illegible]: Ward [illegible]. Tuesday, [illegible] p.m., Mr. [illegible]: Spinal Tumours. Wednesday, [illegible] p.m., Dr. [illegible], [illegible] p.m., Dr. Stewart: Disorders of Sympathetic System. Thursday, 3.30 p.m., Dr. Saunders: Physical Signs. Friday, 3.30 p.m., Dr. Taylor: Ward Cases. Saturday, 9 a.m., Operations.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Monday, 2 p.m., Dr. Simson: Diseases of Women; 5 p.m., Dr. Saunders: Tuberculosis in Children. Tuesday, 10 a.m., Dr. McDougal: Electrical Department; 5 p.m., Dr. Pernet: Skin Affections and Tuberculosis. Wednesday, 11 a.m., Mr. MacDonald: Cystoscopy; 5 p.m., Dr. Owen: Pulmonary Tuberculosis. Thursday, 2 p.m., Mr. Bishop Harman: Eyes; 5 p.m., Mr. H. Tilley: Foreign Bodies in the Lower Air Passages and Oesophagus. Friday, 12.15 p.m., Dr. Burnford: Pathology; 5 p.m., Mr. Baldwin: Tuberculous Diseases of Intestines. Saturday, 10 a.m., Dr. Saunders: Diseases of Children; 12 noon, Mr. Sinclair: Diseases of Abdomen.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

15 Fri. North of England Branch, College of Medicine, Newcastle-on-Tyne, 2.15–5.15 p.m., Scientific Demonstrations.

20 Wed. London: Insurance Acts Committee, 8.30 p.m.

21 Thur. London: Conference of Representatives of Local Medical and Panel Committees, 10 a.m., Memorial Hall, Farringdon Street.

South-Western Branch: British Medical Association Lecture by Professor G. R. Murray, M.D., at the Royal Devon and Exeter Hospital, Exeter, on The Diagnosis and Treatment of the Diseases of the Endocrine Glands, 3.15 p.m. Annual Exeter and District Medical Dinner, Deller's Café, Exeter, 6.45 for 7 p.m.

29 Fri. Sheffield Division: British Medical Association lecture by Mr. W. Sampson Handley, M.S., at the Church House, St. James Street, Sheffield, on The Lines of Advance in the Surgery of the Breast, 8.45 p.m.

NOVEMBER.

2 Tues. London: Public Health Committee, 2.30 p.m.

APPOINTMENTS.

LEVICK, G. Murray, M.R.C.S., L.R.C.P., to have charge of the Electrical Department at St. Thomas's Hospital.

LEWIS, J. L. D., M.R.C.S., L.R.C.P., Medical Officer of the Institution of the Amesbury Union.

PINTO-LEITE, Hubert, B.A.Cantab., M.R.C.S., L.R.C.P., Honorary Assistant Administrator of Anaesthetics to the Westminster Hospital, and Anaesthetist to the Hospital of St. John and St. Elizabeth.

WHALE, H. Lawson, M.D.Camb., F.R.C.S.Eng., Visiting Consulting Otolaryngologist to the Ministry of Pensions Hospital, [illegible] Park.

WILLAN, R. J., M.V.O., O.B.E., F.R.C.S., Consulting Surgeon to [illegible] Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

LOVELL.—On October [illegible], at Alnwick Villa, Oxford Road, [illegible], the wife of [illegible] Lovell, M.R.C.S., L.R.C.P., D.P.H., [illegible].

WOODSIDE.—On September [illegible], at "[illegible]," Stoneyford Road, Sutton-in-Ashfield, Notts, the wife of Dr. R. Woodside, [illegible].

MARRIAGE.

ARMSTRONG—SPAFFORD.—On October 6th, at St. Mark's Church, [illegible], by the Rev. A. Spafford, rector of [illegible], cousin of the bride, Hubert Armstrong, M.D., Rodney Street, [illegible], eldest son of Mrs. and the late Joseph Armstrong, [illegible], to Mignon [illegible] Langworthy, youngest daughter of Mrs. and the late Fred Spafford, Manchester and [illegible].

DEATHS.

JONES.—On September 28th, at Bronheulog, Llanrhaiadr, Oswestry, John [illegible] Jones, J.P., L.R.C.P., L.R.C.S., aged 61 years. Deeply regretted. Interred at Llanrhaiadr, October 4th, 1920.

MURRAY.—On October 2nd, suddenly, at Scourbank, Longtown, Cumberland, William Murray, M.D.Durh., F.R.C.P.Lond., formerly of Newcastle-on-Tyne, aged 81 years.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 23RD, 1920.

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British Medical Association.

CURRENT NOTES.

History of the Association.

MEMBERS will be glad to hear that the Council, at its meeting on October 6th, sanctioned arrangements whereby a History of the British Medical Association is to be prepared by Dr. S. D. Clippingdale. The History will be illustrated. Any members who possess records of the work of the Association of special importance from the historical point of view are asked to communicate with the Medical Secretary on the subject, indicating exactly the nature of the records in their possession. Further information with regard to the History will be published at a later date.

Retired Pay of R.A.M.C. Officers.

The long promised Army Order amending the Pay Warrant of September 13th, 1919, was issued last week (BRITISH MEDICAL JOURNAL, October 16th, 1920, p. 613). The Warrant referred to came as a shock to the senior majors, particularly those of twenty years' service, who found that they would lose £44 per annum by what had been looked forward to as a scheme for the general increase of pensions. This was explained in a leading article in the JOURNAL of October 18th, 1919, and the need for early revision of the scale was insisted upon. The Naval and Military Committee of the Association at once called the attention of the War Office to this obvious injustice, and received a promise that the matter should be reconsidered. Since then frequent reminders were sent to the War Office pointing out that there was a great deal of anxiety and irritation at the long-delay in getting this matter put right. The net result of the revision of retired pay is a gain of £75 all round, thus confirming the statement, made on the authority of the War Office, in the Educational Number of the JOURNAL published on September 4th, 1920. It will be seen that under the new Warrant the retired major of twenty years' service gets back his lost £44, and is £31 a year better off. The general effect of the amended scale of retired pay for R.A.M.C. officers will be watched closely by the British Medical Association.

Election of Scottish Committee.

The Scottish Committee of the Association consists of all members of the Central Council who represent Scottish Branches thereon, togther with members appointed direct by the Scottish Divisions as grouped by the Council from time to time.

In Group I, consisting of the Divisions comprised within the Aberdeen and Northern Counties Branches, the only candidates nominated for the two seats are Drs. Thomas Fraser (Aberdeen) and Thomas Alexander (Elgin).

For Group II, consisting of the Divisions in the Dundee, Perth, Fife and Stirling Branches, returning two members, Drs. John Hume (Perth) and D. Elliot Dickson (Lochgelly) have been nominated.

In Group III (which elects three members), comprising the Divisions in the Edinburgh Branch, there are the following seven candidates: Dr. Wm. Blair (Jedburgh); Dr. Michael Dewar (Edinburgh), Dr. John Hunter (Edinburgh), Dr. Joseph Hunter (Dumfries), Dr. J. Lamond Lackie (Edinburgh), Dr. Peter C. McRobert (Innerleithen), and Dr. Robert Thin (Edinburgh).

In Group IV (which consists of the Glasgow City Divisions) there is also a contest for the two seats, Drs. A. Kennedy Glen (Glasgow), William Lawson (Glasgow), and John Ritchie (Hillhead, Glasgow) having been nominated.

For Group V (which elects two members), comprising the remaining Divisions in the Glasgow and West of Scotland Branch and the Dumfries and Galloway Division, the following, being the only candidates, are elected: Dr. William D. Frew (Kilmarnock) and Dr. James B. Miller (Brownswood, Bishopbriggs).

Voting papers have been issued in connexion with Groups III and IV, and are returnable to the Scottish Medical Secretary, 6, Rutland Square, Edinburgh, not later than October 23rd, 1920.

Scottish Insurance Acts Subcommittee.

The Scottish Subcommittee of the Insurance Acts Committee consists of those members of the Committee resident in Scotland, together with four members elected by the members of the Scottish Burgh Panel Committees and four members elected by the members of the Scottish County Panel Committees of Scotland.

The following have been nominated for the four county seats: Dr. G. M. Adam (Brechin, Forfarshire), Dr. W. Blair (Jedburgh), Dr. W. F. Brown (Ayr), Dr. D. E. Dickson (Lochgelly, Fife), Dr. C. E. Douglas (Cupar, Fife), Dr. James Edwards (Perth), Dr. J. Hill (Renfrew), Dr. J. W. Little (Newmains, Lanarks), and Dr. A. Scott (Broxburn).

For the four burgh seats nominations have been received in respect of Dr. James Andrew (Coatbridge), Dr. Michael Dewar (Edinburgh), Dr. James Dunlop (Glasgow), Dr. A. Kennedy Glen (Glasgow), Dr. John Hume (Perth), Dr. W. Lawson (Glasgow), Dr. J. MacDonald (Motherwell), Dr. G. W. Miller (Dundee), Dr. C. Nairn (Greenock), Dr. J. S. Y. Rogers (Dundee), Dr. G. A. Rorie (Dundee), Dr. Jessie J. Thom (Dundee), and Dr. James Todd (Glasgow).

Voting papers will be issued on October 21st to every member of Scottish Panel Committees of whom the Medical Secretary has been notified, and are returnable to the Medical Secretary, 429, Strand, London, not later than Friday, October 29th, 1920.

Darlington Assistant School Medical Officer.

An advertisement appeared in a London daily newspaper on October 14th for a female assistant school medical officer for the county borough of Darlington at a salary of £400 a year. The salary offered is £100 a year less than the recognized minimum salary for posts of this kind, and the advertisement does not appear in the medical journals. It is hoped that after the success which has attended the efforts of the British Medical Association in Devon and Worcestershire no member of the profession will be found to accept the underpaid post at Darlington. It was at Worcester that the chairman of the county council had to admit that, after his advertisement for a number of school medical officers at a salary £50 a year below the recognized minimum had been refused by the medical journals, he had tried the lay press, and that, although he had obtained a number of applications, they were not from suitable persons. In consequence of this statement the local Education Committee abandoned the contest, raised the salary, and came back once more to the medical journals. It is an axiom that caution should be observed as to advertisements of medical posts that are not advertised in the medical papers.

Association Notices.

VACANCIES ON COUNCIL.

EAST YORKS AND NORTH LINCOLN AND MIDLAND BRANCHES.

NOTICE is hereby given that a vacancy has been created on the Council by the resignation of Dr. G. K. Smiley, O.B.E. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any such Branch, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded upon application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

NORTH OF ENGLAND AND NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCHES.

Notice is hereby given that a vacancy has been created on the Council by Dr. R. A. Bolam, O.B.E., becoming an *ex officio* member on his election as Chairman. Nominations either (*a*) by a Division comprised in the above Group, or (*b*) by not less than three members of any Branch therein, must reach the Medical Secretary not later than Saturday, October 23rd. Forms of nomination will be forwarded on application.

In the event of a contest voting papers will be circulated from the Central Office to every member of the Branches concerned on October 27th, and must be returned to the Medical Secretary not later than Monday, November 1st, 1920.

CHANGES OF AREAS.

Transfer of Civil Parish of Dore from Chesterfield Division of Midland Branch to Sheffield Division of Yorkshire Branch.

NOTICE is hereby given by the Council to all concerned that the following adjustment of areas has been made in accordance with the Articles and By-laws, and takes effect as from the date of this Notice:

> That the Civil Parish of Dore be transferred from the area of the Chesterfield Division of the Midland Branch to the Sheffield Division of the Yorkshire Branch.

Representation in Representative Body.—Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.—A meeting of members and non-members will be held on Tuesday, October 26th, at 8.30 p.m., at St. Andrew's Parish Hall, site behind church, High Road, Willesden Green, N.W. Agenda: Report of Representative. Motion: "That rates for contract work in Willesden be not less than the insurance rates, that is, 5d. per week per person." Those holding clubs are specially requested to attend. Consideration of report of Consultative Council to Ministry of Health. Those attending the meeting are asked to bring BRITISH MEDICAL JOURNAL SUPPLEMENTS of September 25th and October 16th and 23rd.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A special meeting of the Division will be held at the Metropolitan Hospital on Friday, October 29th, at 4.15 p.m. Agenda: Report of the Consultative Council on Medical and Allied Services (members are asked to bring the SUPPLEMENT of October 16th, 1920). To consider the attitude of the Shoreditch Borough Council towards their district medical officers. Social entertainments. Tea and coffee.

NORFOLK BRANCH: EAST NORFOLK DIVISION.—A meeting of the Division will be held in the Medical Library, Guildhall Hill, Norwich, on Wednesday, October 27th, 1920, at 2.30 p.m.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—A meeting of the Division, open to all members of the medical profession, will be held in conjunction with the annual meeting of practitioners called by the Local Medical and Panel Committee, at the Royal Bucks Hospital, Aylesbury, on Friday, October 29th, at 3 p.m. Members are requested to obtain and study the *Interim Report on the Future Provision of Medical and Allied Services* (H.M. Stationery Office, price 1s. and postage).

YORKSHIRE BRANCH: SHEFFIELD DIVISION.—A British Medical Association lecture will be given to this Division by Mr. W. Sampson Handley, M.S., on Friday, October 29th, at the Church House, St. James Street, Sheffield, at 8.45 p.m., on "The lines of advance in the surgery of the breast."

INSURANCE.

CORRESPONDENCE.

Capital Value of Practices.

SIR,—Every insurance practitioner must appreciate Dr. Ward's lucid explanation of the "Dartford" scheme, given in ample time for consideration before the Panel Conference.

It seems to be quite clear from this explanation (*a*) that the scheme does not purport to be a business proposal, but a way by which to make a present of money; (*b*) that the payment out of the pool formed of undefined amounts, if any, depends on there being any money there when required; (*c*) that the insured persons concerned can go where they prefer; (*d*) that the successor to the practice may (and probably will) obtain the majority, paid for by his new colleagues; (*e*) that in due course he will become entitled to be bought out by his colleagues, and his successor will likewise obtain ninepence for fourpence; and (*f*) that the Ministry of Health is to be asked to compel by regulations all insurance practitioners in the district, whether they approve the proposal or not, to contribute to the pool by a deduction in order to finance this philanthropic proposal.

This being so I have nothing further to say; one must not look a gift horse in the mouth.—I am, etc.,

Hove, Oct. 16th. E. ROWLAND FOTHERGILL.

The Salford System.

SIR,—As Dr. Stanley Hodgson's description of the working of the Salford system of payment by attendance under the Insurance Act mainly corroborates that given by his colleague, Dr. Taylor, and particularly as he does not claim for it superiority over the capitation system—the point at issue—his letter scarcely calls for criticism from one attempting to voice the opinions of the panel practitioner. It is only when the exponent becomes advocate that he courts opposition.

Dr. Hodgson recalls Dr. Bradley's campaign against the Insurance Act on the question of the insurance risk, whether it should be "individual" or "collective," and relates how the adoption of the latter method, "collective responsibility," led to the Salford system being established. How futile all that wordy warfare seems now, after the lapse of nine years, and the experience of collective practice under the Insurance Act gained in that time! The old party cries raised at the time against contract practice are now discredited or, for the most part, have lost their significance. The bane of contract practice in the old days was due not, as Dr. Hodgson avers, to the fact that the practitioner had to assume "unlimited" individual responsibility for the medical attendance of his contract patients, but (1) to the poor payment for the work done, (2) to the "insecurity of tenure" (no club appointment being safe), and (3) to the humiliating and irritating conditions of service inseparable from lay control. When these defects were removed, as under the Insurance Act (panel system), the objectionable features of contract practice for the most part disappeared.

It is interesting to note that the misconception of the risks and responsibilities of panel practice, voiced in the party cry, "Unlimited responsibility for a limited fee," led indirectly to the adoption of the Salford system. But, except in a theoretical sense, "unlimited" responsibility for the individual practitioner never existed. His responsibility is strictly limited by the sickness incidence among his insured patients, which varies within definite limits. As every contract practitioner knew, and some of us maintained at the time the Insurance Bill was under discussion, given a contract fee based on a datum line fairly adjusted to the sickness incidence of adult persons, ascertained from reliable data, the insurance risk to the individual practitioner was comparatively small. Experience of the Insurance Act during the past nine years has proved this, as regards the general run of panel practices. How many practitioners worry about their "unlimited" responsibility nowadays? It is an exploded myth.

Dr. Hodgson will not have it that there is any "free choice." It is "simply nonsense," he states, and asks derisively, "Is a man undergoing six months' hard labour 'free'?" The retort to this absurd analogy is so obvious that I refrain from making it. But surely when an insured person signs and hands over his medical card to his panel doctor he is exercising his "free choice." Apparently Dr. Hodgson thinks it a fault or defect in the panel system that the insured person has not the right to change his doctor at any time he thinks fit and under any pretext. He ignores the bond or contract implied in the signing of the medical card which renders such liberty of change unnecessary.

Regarding the intention of the Ministry of Health to destroy vested interests in insured persons, I admit that under the Salford system this will be defeated, as it deserves to be. But is it really so great a danger to the panel practitioner as has been suggested? Is it not another bogey raised to frighten the timid? Experience goes to show that, in the past, panels have been transferred almost *en bloc* to an acceptable purchaser when reasonable precautions were taken in the transfer. Such is the "psychology of groups" that there is every likelihood that the experience of the past will be repeated in the future, despite the best (or worst) that the Ministry may do. In any case the risk can be insured against under the "Brighton" or some similar system. I still maintain that while the insurance patients in Salford are quite as transferable as private patients, a private practice (of the usual middle or working class type) when buttressed by a considerable panel is a better marketable asset than a practice in which the insured and private patients are merged together as in Salford.

Dr. Hodgson dwells on the psychological aspect of the Salford system as regards the relationship of doctor and patient, and reminds us that the empty surgery means no money from the Insurance Committee. The capitation system has also its psychology, but it works differently from the Salford system. The empty surgery causes the panel doctor no misgivings, rather it is a source of satisfaction, for he knows that, despite the healthy state of his insured *clientèle*, his income continues undiminished. Surely a comforting reflection in these days of heavy rates and increasing income tax.

To sum up: the Salford system has two serious defects which veto it for general adoption: (1) It is in no sense a preventive system (as the panel system undoubtedly is); (2) its cost, based on a reasonable payment per attendance, would be prohibitive. If the desired goal is an efficient national system of medical service, why take the "Salford" road? It is a bypath which leads to nowhere. Why should the Salford practitioners not join us panel men who are thronging the main road? It is direct, easier to travel, and we can make the pace whatever we like.—I am, etc.,

J. CHARLES, M.D.,

Honorary Secretary, Consett Division; Member of the Durham Insurance Committee and Durham Panel Committee.

Stanley, co. Durham, Oct. 11th.

NORTH RIDING LOCAL MEDICAL AND PANEL COMMITTEES.

MEETINGS of the North Riding of Yorkshire Panel Committee were held on August 19th and September 2nd, and of the Local Medical Committee on September 2nd. It was decided to recommend, in view of the increased cost of living and expenses of practices, that a general increase of 100 per cent. be made on the medical fees of 1914 as from July 1st, 1920, the increase being liable to alteration in the event of the cost of living either rising or declining.

The mileage scheme for 1920 was approved with the following basis of payment:

Between	2	and	3 miles	... ... 1 unit.
,,	3	,,	4 ,,	... ... 2 units.
,,	4	,,	5 ,,	... ... 6 ,,
,,	5	,,	6 ,,	... ... 8 ,,
,,	6	,,	7 ,,	... ... 12 ,,
,,	7	,,	8 ,,	... ... 13 ,,
,,	8	,,	9 ,,	... ... 14 ,,
,,	9	,,	10 ,,	... ... 15 ,,
,,	10	,,	11 ,,	... ... 16 ,,
,,	11	,,	12 ,,	... ... 17 ,,
,,	12	,,	over	... ... 18 ,,

It was resolved that no mileage should obtain with regard to temporary residents and emergency cases.

The financial statement of accounts for 1919-20 was presented and accepted. Any North Riding panel practitioner can obtain a copy of the audited financial statement on application to the Treasurer, Dr. T. I. Mills, Easingwold, Yorks.

HACKNEY PANEL ASSOCIATION.

AT the annual meeting of the Hackney Panel Practitioners' Association, held on September 22nd, the following resolutions were unanimously agreed to:

1. That the election of representatives on the Panel Committee should be by postal vote, [illegible]
2. That fees for emergency treatment of patients out-ide their panel doctors' [illegible] should be paid out of the general fund.
3. That any pension scheme should be purely voluntary.
4. That the capitation fee to be asked for 1921 should be 15s., on account of increasing expenses and work.

EMPLOYMENT OF ASSISTANTS.

AT a meeting of the London Insurance Committee on September 23rd it was reported that a deputation had been received from the London Panel Committee to urge the removal of the condition whereby the name of every permanent assistant to an insurance practitioner has to be included in the medical list. The Ministry of Health, however, had since stated that while the inclusion of an assistant's name in the list in no way affected the responsibility of the principal for all acts and omissions of his assistant, it enabled the committee, where a serious breach of the terms of service had occurred, to make representations for removal of the assistant's name from the list; were the assistant not subject to this penalty he would be free, as a registered medical practitioner, to require his name to be included in any medical list, notwithstanding any established charges against him, showing that his inclusion would be prejudicial to the efficiency of the service. The London Insurance Committee agreed that the condition requiring a permanent assistant to place his name on the medical list should remain, and that some means of indicating in the list that a given practitioner was acting as assistant to another should be adopted.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders R. H. McGiffin, O.B.E., to the *King George V* on recommissioning, K. H. Jones to the *Emperor of India* on recommissioning; Surgeon Lieutenant Commander L. A. Moncrieff to the *Pembroke* for R.N. barracks; Surgeon Lieutenants J. J. Carroll to the *Pembroke*, W. A. Joliffe to the *Emperor of India* on recommissioning.

ARMY MEDICAL SERVICE.

Temporary Colonel Sir W. Taylor, K.B.E., C.B., relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel S. O. Hall retires on retired pay.

F. L. Vaux, late Lieut.-Colonel C.A.M.C., to be temporary Lieut.-Colonel.

Major V. C. Honeybourne retires receiving a gratuity.

The following relinquish the acting rank of Major: Captain J. M. Weddell; Temporary Captains J. T. McCullagh, A. W. Uloth, A. C. Sturrock.

To be acting Majors: Captain W. M. Dickson (from February 25th to October 25th, 1918, and from June 7th to September 8th, 1919), P. G. Tuohy (from June 23rd to August 3rd, 1920).

Major T. F. Ritchie, D.S.O., retires on retired pay, August 18th, 1920, and is granted the rank of Lieutenant-Colonel (substituted for notification in the *London Gazette*, August 17th, 1920).

Captain G. K. Fulton, late R.A.M.C.(S.R.), to be Lieutenant and to be temporary Captain August 9th, 1917, but not to reckon for pay or allowances prior to October 1st, 1920, with precedence next below J. C. Burns.

To be temporary Captains: Temporary Lieutenant W. F. Gardener, S. P. Hyam, late temporary Captain, with seniority from July 15th, 1918.

To be temporary Lieutenants: R. M. Walker, J. W. Duncock Steil, S. E. Price.

The following officers relinquish their commissions:—Temporary Major F. A. A. Holmden, and retains the rank of Major. Temporary Captains, and are granted the rank of Major: W. E. Graves, H. M. Vickers, H. S. Laird. Temporary Captains, and retain the rank of Captain: A. E. Wood, D. Manson, T. A. O'Brien, C. I. Stockley, J. A. C. Smith, J. W. Harvey, D. P. Thomas, R. L. Wilcox, T. B. Dakin, H. E. Alexander, E. G. Sworder, A. J. Adkins, A. R. Rendle, G. A. Mavor (on account of ill health contracted on active service), A. C. Freeth, J. Elliott, R. M. Hume. Temporary Captain R. M. Clarke. Temporary Lieutenant W. E. Shipsey, and retains the rank of Lieutenant.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following officers relinquish their commissions:—Captains and are granted the rank of Major: C. S. Staddon, M.C., W. J. Webster, M.C., (Brevet Major) B. Shires. Captains and retain the rank of Captain: I. D. Dickson, M.C., A. K. Gibson, R. Isbister, R. C. Davenport, I. Aubrey, M.C., J. B. Leigh, H. B. Dykes, A. E. Jenkins, J. S. White, W. J. Harvey, A. W. Smith, A. F. Cook (since deceased), W. Williams, P. Shillito, G. E. Tilsley, T. A. Butcher, O.B.E., A. C. Hill, A. Bullied, H. J. Parish, E. B. Hickson, G. F. Mitchell, W. Adams, W. A. Jackson, J. S. McL. Gray, J. A. Martin, A. Blackstock, R. P. Jack, W. L. Yell, K. J. A. Gillanders, A. S. Westmorland, E. D. Spackman, J. A. Dawson, A. G. Shadlock.

Captain O. Williams relinquishes the acting rank of Major.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel A. E. Kidd, O.B.E., T.D., from 3rd Highland Field Ambulance, to command 1st Scottish Casualty Clearing Station.

Major G. W. Miller, D.S.O., T.D., to be Lieut.-Colonel and to command 3rd Highland Field Ambulance, vice Lieut.-Colonel A. E. Kidd, O.B.E., T.D., to 1st Scottish Casualty Clearing Station.

Lieut.-Colonel H. W. Bruce to be Captain, with precedence as from May 1st, 1919, and to relinquish the rank of Lieut.-Colonel.

Major (acting Lieut.-Colonel) R. B. Purves, D.S.O., relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

Major J. M. Gover, D.S.O., to be Lieutenant-Colonel and to command 1st Northern Casualty Clearing Station.

Major O. H. Mavor (late R.A.M.C.S.R.) to be Captain, with precedence as from April 1st, 1915, and to relinquish the rank of Major.

Captain (acting Major) T. W. S. Paterson relinquishes the acting rank of Major on ceasing to be specially employed.

Captain C. W. Ponder to be Lieutenant-Colonel, and to command 1st Home Counties Field Ambulance.

Captain T. S. Elliot, M.C., to be D.A.D.M.S., North Midland Division.

To be Majors: Major C. V. Bulstrode, D.S.O., T.D., from R.H. and R.F.A., with precedence as from February 10th, 1918; Captain (Brevet-Major) J. Ewing, Captains A. E. P. McConnell, M.C., J. W. Craven, M.C., A. H. Pinder, E. Knight, O.B.E., F. K. Smith.

Captain J. A. Henderson vacates the appointment of D.A.D.M.S.

Captain E. Osborne to be acting Major whilst specially employed.

The following officers are restored to the establishment: Captains J. J. C. Hamilton, J. E. Lascelles (May 14th, 1919—substituted for notification in the *London Gazette*, February 11th, 1920.)

To be Captains: Captain C. W. Ponder, from 1st London (C. of L.) Sanitary Company, with precedence as from August 1st, 1915; Captain R. S. Morshead, M.C. (late temporary Captain R.A.M.C.), with precedence as from September 28th, 1918; Captain A. H. Norris, M.C. (from T.F. Res.), with precedence as from December 21st, 1912; Captain J. M. Postlethwaite (from T.F. Res.), with precedence as from August 2nd, 1913; Captain L. G. Parsons (from 1st Southern General Hospital), with precedence as from September 30th, 1914; Captain J. H. Cobb (from 3rd Northern General Hospital), with precedence as from October 1st, 1914; Captain J. Rowland, M.C. (late Captain R.A.M.C. S.R.), with precedence as from August 2nd, 1918; Captain T. C. Clare, from 5th Northern General Hospital, with precedence as from August 30th, 1914. Captain I. J. Williams, late temporary Captain R.A.M.C., with precedence as from May 9th, 1918.

The announcement regarding Captain E. Alderson, D.S.O., which appeared in the *London Gazette* of September 13th is cancelled.

Lieutenant J. F. O'Grady (late Lieutenant 7th Battalion Lancashire Fusiliers) to be Lieutenant, with precedence as from January 17th, 1916.

The following officers resign their commissions: Lieut.-Colonel E. J. Cross, and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform. Major J. B. Yeoman, and is granted the rank of Lieutenant-Colonel; Major G. Ashton, T.D., and retains his rank, with permission to wear the prescribed uniform; Captains and are granted the rank of Major: A. E. Huxtable, M.C., May 22nd, 1920 (substituted for notification in the *London Gazette*, May 21st, 1920), W. H. Manson; Captains and retain the rank of Captain: C. T. Matthews, September 4th, 1920 (substituted for notification in the *London Gazette*, September 3rd, 1920), D. M. Grant, W. S. B. Bensted-Smith, R. McAdoo, G. McConnell, J. W. McKeggie, S. S. Meighan, J. A. Sellar, F. A. Dick, W. M. Cox, M.C.

Supernumerary for Service with the Officers Training Corps.—Belfast University Medical Unit Contingent (Senior Division): Captain G. G. Lyttle to relinquish his commission and to retain his rank, September 10th, 1920 (substituted for notification in the *London Gazette*, September 9th, 1920). Temporary Colonel Sir W. Taylor, K.B.E., C.B., from A.M.S., to be Major and to command Royal College of Surgeons in Ireland Contingent (Medical Unit), Senior Division, Officers Training Corps. Lieutenant W. L. H. Duckworth resigns his commission and is granted the rank of Captain.

1st London Sanitary Company.—Lieutenant F. Reed to be Captain.

1st Eastern General Hospital.—Captain H. A. Cookson resigns his commission and is granted the rank of Major.

2nd Eastern General Hospital.—Captain R. Sanderson having attained the age limit is retired, and retains the rank of Captain.

DIARY OF SOCIETIES AND LECTURES.

HUNTERIAN SOCIETY, 11, Upper Wimpole Street, W.—Wednesday, 9 p.m.: Presidential Address by Dr A. C. Jordan on Stasis and the Prevention of Cancer.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m.: Discussion: The Determination of Degree of Renal Function, to be introduced by Professor J. B. Leathes, followed by Dr Langdon Brown, Mr. Thomson Walker, O.B.E., Mr Frank Kidd, Dr. H. MacLean, and Dr. W. H. Willcox, C.B., C.M.G.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.—Demonstrations: Monday, 5 p.m., Professor Shattock: Lipoma. [illegible], 5 p.m., Professor Keith: Malformations of Rectum, Anus, Vulva, and Vagina.

ROYAL SOCIETY OF MEDICINE.—*Section of Odontology*: Monday, 8 p.m., Casual communication by Mr. Montagu Hopson. Presidential Address by Dr W. H. Dolamore: Clinical Observation in Dental Surgery. *Section of Medicine*: Tuesday, 5.30 p.m., Dr [illegible]: Differentiation of Secondary Forms of [illegible]; Dr Paterson: Transient Paroxysmal [illegible]. *Section of Surgery*: Thursday, 8.30 p.m., Sir Thomas [illegible]: Treatment of [illegible]; Mr [illegible]: [illegible]. *Section of Epidemiology and State Medicine*: Friday, 8.30 p.m., Presidential Address by Dr A. K. Chalmers: The [illegible] Hospital in a General Scheme of Hospital Provision.

POST-GRADUATE COURSES AND LECTURES.

[illegible] HOSPITAL.—Thursday, [illegible] p.m., Dr. A. [illegible]: [illegible] Treatment of some Common Gynaecological Conditions.

[illegible].—Tuesday, [illegible] p.m., [illegible].

[illegible]

[illegible]

[illegible] Gynaecological. Tuesday, 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. Hayton: Ear, Nose, and Throat. Wednesday, 2.30 p.m., Dr. Oliver: Skin. Thursday, 2 p.m., Mr. N. Fleming: Eyes; 3 p.m., Surgical Cases: Mr. Carson. Friday, 2.30 p.m., Dr. Sundell: Children; 3 p.m., Surgical Cases: Mr. Gillespie.

SALFORD ROYAL HOSPITAL.—Thursday, 4.30 p.m., Mr. Garnett Wright: Chronic Intestinal Obstruction.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Monday, 12.15 p.m., Dr. Burnford: Pathological Demonstration; 5 p.m., Dr. Saunders: Tuberculosis, Enteritis and Peritonitis. Tuesday, 10 a.m., Mr. Steadman: Dental; 5 p.m., Dr. Pernet: Skin Affections and Rheumatism. Wednesday, 2 p.m., Mr. Gibb: Eyes; 5 p.m., Dr. Simson: Tuberculous Salpingitis. Thursday, 2 p.m., Mr. Bishop Harman: Eyes; 3.45 p.m., Sir James Galloway: External Manifestations of Visceral Disease. Friday, 2 p.m., Dr. Morton: X Rays; 5 p.m., Mr. Baldwin: Tuberculous Disease of Intestines. Saturday, 10 a.m., Dr. Saunders: Diseases of Children; 12 noon, Mr. Sinclair: Diseases of Abdomen.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

25 Tues. London: Scrutiny Subcommittee, 2 p.m.

27 Wed. East Norfolk Division: Medical Library, Guildhall Hill, Norwich, 2.30 p.m.
Willesden Division: St Andrew's Parish Hall, High Road, Willesden Green, N.W., 8.30 p.m.

29 Fri. London: Science Committee, 2.30 p.m.
Buckinghamshire Division: Royal Bucks Hospital, Aylesbury, 3 p.m.
City Division: Metropolitan Hospital, 9.15 p.m.
Sheffield Division: British Medical Association lecture by Mr. W. Sampson Handley, M.S., 8.45 p.m.

30 Sat. Edinburgh, North British Station Hotel: Conference on Payment of Hospital Staffs, 2.30 p.m.

NOVEMBER.

2 Tues. London: Public Health Committee, 2.30 p.m.

APPOINTMENTS.

FELDMAN, W. M., M.B.Lond., Temporary Assistant Physician to the East London Hospital for Children, Shadwell.

HEWER, C. Langton, M.B., B.S.Lond., M.R.C.S., L.R.C.P., Anaesthetist to the Queen's Hospital for Children, Bethnal Green.

PEARSON, J. D., M.R.C.S., L.R.C.P., District Medical Officer of the Cheltenham Union.

ROXBURGH, A. C., M.B.Cantab., M.R.C.P., Assistant Medical Officer to the Venereal Department, St Bartholomew's Hospital.

EDINBURGH ROYAL INFIRMARY.—*Resident House Physicians:* D. L. M. Tod, M.B., Ch.B., to Professor Gulland; J. Davidson, M.B., Ch.B., to Dr Fleming; A. G. MacGillivray, M.B., Ch.B., to Dr. Rainy; J. C. Morris, M.B., Ch.B., to Dr. Edwin Bramwell; [illegible] Crawford, M.B., Ch.B., to Professor Meakins. *Resident House Surgeons:* [illegible], M.B., Ch.B., to Sir David Wallace; J. [illegible], M.B., Ch.B., to Professor Thomson; K. M. Purves, M.B., Ch.B., to Mr. Miles; N. M. Dott, M.B., Ch.B., to Mr. Dowden; R. L. [illegible], M.B., Ch.B., to Mr. Brewis; Miss Janet Grant, M.B., Ch.B., to Dr Barbour. *Clinical Assistants:* H. L. Arbuckle, M.D., Ch.B., F.R.C.S.Ed., D.P.H., to Dr. Norman Walker; C. [illegible], M.B., Ch.B., F.R.C.S.Edin., and J. W. G. Hogg, M.B., B.Ch., B.A.O., to Dr. Logan Turner.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

[illegible].—To Dr. and Mrs. Malcolm Donaldson, on October 6th, [illegible].

S[illegible].—[illegible], Walsall, to Violet Mollie, the [illegible] F.R.C.S.E., [illegible].

MARRIAGE.

[illegible], M.B., Ch.B., D.P.H., [illegible] M.A., M.B., Ch.B.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 30TH, 1920.

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British Medical Association.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, on October 6th, 1920, with Dr. R. A. BOLAM in the chair. There were present:

Dr. T. W. H. Garstang (Chairman of Representative Meetings), Dr. G. E. Haslip (Treasurer), Dr. T. Ridley Bailey (Bilston), Dr. J. A. P. Barnes (London), Colonel T. D. Barry, R.A.F. (London), Dr. H. B. Brackenbury (Hornsey), Dr. H. C. Bristowe (Wrington), Dr. C. Buttar (London), Mr. Russell Coombe (Sidmouth), Dr. J. S. Darling (Lurgan), Lieut.-Colonel W. McAdam Eccles (London), Lieut.-Colonel R. H. Elliot, I.M.S. (ret.), (London), Dr. D. Ewart (Chichester), Dr. A. Forbes (Sheffield), Dr. E. R. Fothergill (Hove), Dr. J. Giusani (Cork), Dr. J. Goff (Windlesham), Mr. N. Bishop Harman (London), Dr. R. Langdon-Down (Hampton Wick), Dr. David Lawson (Banchory), Dr. S. Morton Mackenzie (Dorking), Dr. H. C. Mactier (Wolverhampton), Surgeon Captain E. H. Meaden, R.N. (ret.), (London), Dr. C. M. Pearson (Edinburgh), Dr. F. Radcliffe (Oldham), Dr. C. E. Robertson (Glasgow), Dr. D. Ross (London), Dr. D. A. Sheahan (Portsmouth), Dr. W. Johnson Smyth (Bournemouth), Dr. W. Snodgrass (Glasgow), Dr. G. Sprott (Inverness), Dr. F. O. Stedman (Weybridge), Dr. John Stevens (Edinburgh), Dr. W. B. Crawford Treasure (Cardiff), Mr. E. B. Turner (London), Dr. E. O. Turner (Great Missenden), Sir Jenner Verrall (Bath), Dr. D. Walshe (Kilkenny).

The congratulations of the Council were offered to Sir Clifford Allbutt, President of the Association, on his being sworn a member of the Privy Council. The Chairman was authorized to forward letters of condolence to the families of Professor Sinclair White, Lieut.-General Sir W. Babtie, Sir John Byers, and Dr. J. H. Ewart. It was resolved that steps be taken to fill the vacancies on the Council caused by the resignations of Drs. A. Fulton and G. K. Smiley, by the death of Sir William Babtie, and by the election of Dr. Bolam as Chairman.

The Chairman of Representative Meetings, the Chairman of Council, Mr. E. B. Turner, Dr. H. B. Brackenbury, Dr. T. Ridley Bailey, Dr. E. H. Snell, Sir Jenner Verrall, and the Chairman of the Public Health Committee, were appointed to represent the Association on the Joint Committee with the Society of Medical Officers of Health, formed to take charge of the case for improvement in the salaries of medical officers in the Public Health Services. In response to an invitation from the Air Ministry, Colonel T. D. Barry and Surgeon Captain E. H. Meaden were appointed to represent the Association at the Aerial Conference (held in London last week).

Finance.

The Council resolved to recommend to the Representative Body that the concession of a reduced subscription of 2 guineas to retired practitioners be restricted to members of the Association of not less than ten years' standing who sign a declaration that they have definitely and permanently retired from active service. The exemption of members of forty years' standing from the increased subscription was approved, and this and the foregoing matter were remitted to the Organization Committee, with instructions to draft the necessary alterations in the by-laws.

It was resolved that the Medical Secretary's salary be £1,500 a year from October 1st, 1920, rising by £100 per annum to £1,800; that the Deputy Medical Secretary's salary be £1,000, rising by £50 per annum to £1,400; and that the salary of the Scottish Medical Secretary be £950, rising by £50 a year to £1,250. The question of the salaries and duties of the Assistant Medical Secretaries was deferred for a report from the Office Committee.

It was resolved as from January 1st, 1921, to increase the price of the JOURNAL to 1s. 3d. a copy, and to increase the subscription rates, including postage, for non-members to three guineas a year in the United Kingdom and £3 7s. abroad. The Council adhered to its former decision to exclude advertisements from German and Austrian sources from the pages of the JOURNAL.

The Finance Committee reported the acceptance of a tender for carrying out alterations in the basement and decorative repairs to the Head Office. Owing to the great pressure of business at the Head Office it was decided that the present Common Room be handed over for use for office purposes.

Ministry of Health.

The Council decided to make representations to the Minister of Health regarding Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill, which was introduced into the House of Commons on August 16th last and is expected to come up again early in the session. This particular clause gives councils of counties and county boroughs the power to supply and maintain either special or general hospitals (including out-patient departments), or to contribute to such hospitals, or to maintain any Poor Law hospital or infirmary in their area. The Council has informed the Minister of its opinion that there should be such amendments as will require all local authorities to obtain the sanction of the Ministry to its proposals before exercising any of the powers above mentioned, and that before such powers are conferred at all the conditions on which patients can be received into, and the terms and conditions of the appointment of the staffs of, such hospitals should be made the subject of consultation with the profession.

In reply to an invitation from the Federation of Medical and Allied Societies to co operate in arranging for a joint deputation to the Minister of Health regarding municipal control of hospitals, it was resolved to inform the Federation that on this occasion the Association preferred to take its own representations.

The question of holding a special Representative Meeting to consider the Consultative Council's report in the light of the answers of the Divisions, was postponed until the December meeting of the Council.

Representations were instructed to be made to the Ministry of Health regarding the threatened supersession of existing Poor Law district medical officers by young resident medical officers.

Organization.

The Chairman was authorized to call a special meeting of Council, if deemed desirable by him, to receive the report of the Organization Committee on (1) the existing local and central machinery of the Association and the By-laws controlling this, and (2) the taking of further powers under the constitution of the Association whereby it might become in part a federation of medical bodies.

Fees for Workmen's Compensation Cases.

Instructions were given to draw the attention of the Treasury to the fees payable to medical practitioners under the Workmen's Compensation Acts, and to urge that such fees, including mileage, be increased by 50 per cent.

Conference of Oversea Representatives.

It was decided that in future at each Annual Representative Meeting a conference of oversea representatives, members of Council representing Oversea Branches, and visitors from overseas, shall be held prior to the discussion of matters specially affecting the Association overseas.

Tasmanian Medical Act.

It was resolved to ask the General Medical Council if it were possible for that body to take any action in regard to the state of affairs existing in Tasmania; in particular as to the possibility of (*a*) repealing or rendering void certain clauses in the Medical Act recently passed in Tasmania, and (*b*) taking steps to prevent the passage into law of a bill now before the Tasmanian House which would proclaim as a duly registered medical practitioner an unqualified man, and render his position unassailable in the future. The Council further offered to assist the General Medical Council in any way possible in the collection of evidence on this matter, and resolved to draw the attention of the American Medical Association to the fact that, by a recent Medical Act of Tasmania, American medical graduates are allowed to practise medicine in Tasmania after a four years' course.

Arrangements for the Annual Meeting, 1921.

The following have been appointed to serve, together with the officers of the Association, on the Arrangements Committee for the session 1920–21 in connexion with the Annual Meeting next year at Newcastle-on-Tyne:

(*a*) Elected by the Newcastle-on-Tyne Local Committee: Dr. David Drummond (President-elect), Professor Thomas Beattie, Dr. James Don, Dr. H. L. Rutter, Dr. J. W. Smith, Mr. R. J. Willan.

(*b*) Elected by the Council: Sir Humphry Rolleston, Lieut.-Colonel R. H. Elliot, Mr. Bishop Harman, Professor W. E. Dixon, Dr. J. F. Gaskell, Dr. W. Snodgrass.

CURRENT NOTES.

Medical Practitioners and Secret Remedies.

THE Central Ethical Committee at its meeting on October 15th had before it the following resolution, passed by the Annual Representative Meeting this year:

> Resolved: That a registered medical practitioner should not make use of, or recommend, any remedy the principal constituents of which are not disclosed to the profession.

The Committee decided that the attention of members of the profession should be drawn to this resolution through the medium of the BRITISH MEDICAL JOURNAL.

Fee for Notification of Infectious Disease.

The British Medical Association has again addressed the Minister of Health in regard to the fee for notification of infectious diseases. The feeling of the medical profession on this matter scarcely need be recorded again in these columns. Dr. Addison has already given an assurance of sympathy with his profession, and stated that he would have restored the fee before now were it not for the terms of Clauses 5 (2) and 24 (2) of the Local Government (Emergency Provisions) Act, 1916. On December 20th, 1919, the Ministry of Health in its Circular 37 stated that the fee for notification of infectious diseases would revert to 2s. 6d. at the date of the termination of the war as fixed by Order in Council. There is still no indication of when that Order is likely to be issued. Thus the medical profession has had to wait many months for the restoration of the half-crown fee because the "end of the war" in the official sense has not been declared, although nearly two years have passed since the signing of the armistice. The British Medical Association therefore now asks Dr. Addison to take steps to include provision for the restoration of the notification fee in the Ministry of Health (Miscellaneous Provisions) Bill now before Parliament. The Minister is further requested to ensure that all necessary postage on notification certificates of infectious diseases shall be prepaid by the local authority responsible.

The Association and the I.M.S.

A number of communications have been received, both by the Medical Department of the Association and by the Chairman of the Naval and Military Committee, showing how much the officers of the Indian Medical Service appreciate the efforts of the British Medical Association on their behalf. Perhaps the most gratifying of all of these has been the following letter, which was signed by a number of prominent officers of the Service, and was addressed to the Chairman personally:

> "We, the undersigned I.M.S. Officers of ——— (including some of your old colleagues) dining together at the ——— Club, wish to take this opportunity of expressing to you our hearty thanks for the great success which you, as Chairman of the Naval and Military Committee, B.M.A., have achieved after a struggle of several years. We feel that any chance of survival that the I.M.S. now has is entirely due to the services rendered by yourself and your Committee."

Such a tribute to the work of the Association for a Service which has a great record behind it is extremely gratifying to all concerned. It is not surprising that other services are now approaching the British Medical Association with the request that it will take up their cause "as it took up and won that of the I.M.S." No such request, if fair and reasonable, will be made in vain, but those most interested must always remember that in such matters it is essential to "make haste slowly," and to proceed along lines which experience has shown give the best results in the end.

Railway Medical Officers in India.

The success of the British Medical Association in dealing with the grievances of the Indian Medical Service has brought a reminder that there is another section of the profession in India whose unfavourable position requires the attention of the Association. This is the group of railway medical officers, who, according to the last edition of the *Directory of Railway Officials*, number 68 medical officers in the "official grade." There is no direct evidence as to the total number of qualified men (Indian, European or Eurasian, whose names do not appear) serving as assistants, but it will probably be within the mark to set the figure at 250 to 300 additional practitioners. The total length of railway operated by the nineteen undertakings concerned appears to be nearly 25,000 miles. We are not in a position to estimate even roughly the population dependent, wholly or in part, upon the services of this body of medical men, but it must of necessity be large. The group concerned is therefore considerable; it is discharging an important public service, and the members of it are widely scattered and employed under no less than nineteen undertakings. The British Medical Association, which has always considered itself to be in a special sense the guardian of the interests of medical men in official positions who are not able to make direct representations on their own account, and particularly those abroad, will of course do all it can to improve their conditions; but there are special difficulties in the way. The widely scattered nature of the employment renders it difficult for the railway medical officers to combine in one unit. The ordinary Divisional or even Branch organization of the Association is impossible in their case. The difficulty might be overcome by an adaptation of the method used by the Association at home to deal with certain numerically small and scattered medical interests. Ship surgeons, assistant asylum medical officers, and laboratory workers, are cases in point, for whom the Association formed a special subcommittee to deal with each section and asked that the medical officers concerned should nominate to it members who could be looked upon as directly representative of the views of the class. The precedent cannot be applied exactly, because it would be impossible for the railway officers in India to appoint representatives to a subcommittee in England; but, provided that most of the railway medical officers are members of the British Medical Association, it would be quite possible for them to get together, either by meeting or by correspondence, to formulate their views and to ask the Association to deal with them through the medium of a few of their members appointed to represent their interests. We hope shortly to hear that such a step has been taken. Such an organization would enable them to consider matters affecting the service generally, and the various scientific and clinical problems that present themselves to a technical service of this kind. It is quite clear that the Indian railway medical officers are at present suffering from want of organization, and it seems equally clear that they are not likely to improve their position except by means of such a body as the British Medical Association.

State Provision and Maintenance of Hospitals.

In response to a request from the Council of the Association the Minister of Health has offered to receive a deputation on Monday, November 1st, to discuss the views of the Association on Clause 11 of the Miscellaneous Provisions Bill, which permits county and county borough councils to supply and maintain general hospitals of their own, or to contribute to voluntary hospitals in their area, or to maintain Poor Law hospitals.

Ministry of Pensions Subcommittee.

The Ministry of Pensions Subcommittee met on October 15th and considered in detail a number of letters which had been sent to the office complaining of the manner in which Board work under the Ministry of Pensions is apportioned. It was felt that the information received warranted further action, and the Subcommittee decided to apply to the Division secretaries in some of the large towns in which complaints had been made in order to obtain some further details so that, in the event of a deputation to the Ministry, the Association might be able to put forward an unassailable case. Meanwhile correspondents when calling the attention of the Medical Secretary to what appears to be an unfair apportionment of the work in their areas will greatly assist him by stating if they have had any Board work; if they are desirous of obtaining Board work; if employed, how many Boards a week they are getting, and if they are desirous of more. The following list of addresses of Regional Commissioners (taken from A.C.I. 567 of August, 1920) is published for the information of those ex-officers who are desirous of applying for Board work. The names of the Commissioners are not included here, as they are liable to variation.

MINISTRY OF PENSIONS: REGIONAL COMMISSIONERS.

1. Scotland: Balmoral Hotel, Edinburgh. (All Scotland.)
2. Northern: 14, Clayton Street West, Newcastle-on-Tyne. (Northumberland, Durham, Cumberland, Town of Berwick.)
3. North-Western: 76, Newton Street, Manchester. (Lancashire, Cheshire, Westmorland, Isle of Man.)
4. Yorkshire: 7, Boar Lane, Leeds. (Yorkshire.)
5. Wales: Angel Hotel, Westgate Street, Cardiff. (All Wales and Monmouthshire.)
6. West Midlands: 55, Lionel Street, Birmingham. (Staffordshire, Shropshire, Warwickshire, Worcestershire, Herefordshire.)
7. East Midlands: Black's Building, Stoney Street, Nottingham. (Leicestershire, Lincolnshire, Nottinghamshire, Derbyshire, Northamptonshire, Rutlandshire.)
8. South-Western: Cliftondown Buildings, Bristol. (Gloucestershire, Wiltshire, Dorsetshire, Somersetshire, Devonshire, Cornwall.)
9. Eastern: Burton Court, Chelsea. (Norfolk, Suffolk, Cambridgeshire, Huntingdonshire, Essex, Bedfordshire, Hertfordshire, Buckinghamshire, Oxfordshire, Berkshire, Middlesex.)
10. London: Burton Court, Chelsea. (Administrative County of London.)
11. South-Eastern: Burton Court, Chelsea. (Kent, Surrey, Sussex, Hampshire, Isle of Wight, Channel Islands.
12. Ulster: Grand Central Hotel, Belfast. (Ulster.)
13. Ireland, South: Dunlop House, Lower Abbey Street, Dublin. (Munster, Leinster, Connaught.)

Civilian Posts at a Military Hospital.

The honorary secretary of the Plymouth Division informs us that a number of medical men in Plymouth and Devonport have recently been asked by the military authorities to take duty at the local military hospital on the following terms: 15s. a day for part-time duty (9 a.m. to 1 p.m.), 25s. a day for whole-time duty. So far, we learn, no one has replied accepting the offer, which is considered quite inadequate, having regard to the value of a medical practitioner's work at the present time. The military hospital duties take precedence of private work, and the posts are terminable at the will of the military authorities. It is to be noted, further, that the morning hours of duty are in general the most remunerative part of a practitioner's day.

Meetings of Branches and Divisions.

THE BORDER COUNTIES BRANCH.

DR. GEORGE R. LIVINGSTON, in his presidential address to the annual meeting of the Border Counties Branch of the Association, took as his subject "Practitioners of to-day—their opportunities, responsibilities, and policy."

It behoved the profession, Dr. Livingston said, to consider its opportunities of guiding the evolution of the plans for medical reform which, held in a temporary abeyance during the war, were being, and would continue to be, brought forward in great number. Within the last twenty-five years the State had slowly, surely, stealthily, and steadfastly placed its tentacles in every sphere of life, and medicine in all its departments had not escaped. Practitioners to-day were faced by new conditions of practice under the Ministry of Health, and as members of the British Medical Association they held powerful tools in their hands. It must be remembered that the Association could only be a useful machine if those who used it would oil the wheels with the oil of practical interest. It was gratifying to find in the Midwives Bill for Scotland recognition of the Scottish Committee as a statutory body, electing representatives to the Midwives Board. Medical reform, as set forth in Sir George Newman's Memorandum to the Minister of Health, was to be instituted in connexion with maternity welfare, infant welfare, industrial hygiene, the prevention and treatment of disease, and investigation in relation to preventive medicine. The success or failure of any, or all, of these matters depended on the daily work of the practitioner. Without expressing an opinion as to whether the life of a general practitioner had improved, Dr. Livingston recognized that the powers of the practitioner had become greater and more explicitly defined than in former years. There were before the profession many schemes which aimed at co-ordination and co-operation; to many medical men the value of these factors had been brought home in connexion with military service, in which many general practitioners had proved themselves to possess great administrative ability, and in which the importance of team work had been abundantly recognized. Dr. Livingston doubted if any medical man conversant with the work of general practitioners and of provincial hospitals would be found to disagree with the statements made by Dr. Ferdinand Rees in his letter in the BRITISH MEDICAL JOURNAL of March 20th (p. 418), with reference to the subject of co-operation between hospitals. He was not so sure, however, that the formation of new committees would meet with the unanimous support of the profession. Committees were already almost sufficiently abundant, and there were already in existence two bodies having a record of work performed in the interests both of the hospitals and of the profession. As recorded in the SUPPLEMENT of June 12th, the British Medical Association and the Hospitals Association had conferred regarding certain hospital matters. Throughout the country there was need of intelligent co-operation between hospitals and administrative bodies connected with medicine; it was a duty of the profession to criticize schemes for venereal clinics, maternity hospitals, child welfare, etc. Only as the result of open and frank criticism could it be hoped to have smooth working; yet in many areas the Divisions and Branches of the Association were dumb, at a time when collective expressions of opinion would be most valuable. Divisions should insist that local schemes should be submitted to, and fully considered by, the corporate body locally representing the profession. Turning to the interim report of the Consultative Council on Medical and Allied Sciences, Dr. Livingston quoted with approval the explanation given by Sir James Mackenzie in his letter to the JOURNAL of June 5th, 1920, of the conditions which are to be remedied if the suggestions of the report are to be carried out; he doubted, however, if anything that yet had happened had brought a workable system of post-graduate study within the reach of the majority of panel practitioners. The present arrangements for post-graduate work were scarcely suitable for the thoughtful practitioner who on entering practice had found, as Sir James Mackenzie said, that his education was wofully deficient; nevertheless, clinical meetings at primary and secondary health centres might be useful, and would bring forth free discussion. A factor of which little cognizance had been taken was the lack of existing incentive for the improvement of medical service, more especially in the case of the rural practitioners and the practitioners of the smaller towns.

Unless together with schemes for reform in post-graduate training there came into operation some system holding out to the village doctor the possibility of rising in his profession, attempts towards improvement on the lines of post-graduate lectures and study was doomed to failure. There must be not merely the possibility, but a fair prospect, that a man settling in village practice could pass on to the staff of the hospitals in primary or secondary centres; the speaker did not think that the teaching centres would lose by such a system. It was not altogether satisfactory that present-day medical training was developing a tendency to too early specialization. Dr. Livingston said that the time had come when local medical Branches and Divisions should continually urge on the public the necessity of facing the question of the consumptive poor, discharged from institutions to die in the home; in the majority of these cases isolation should be provided. Dr. Livingston concluded by pressing individual members of the profession to take an active part in the work of their local Branches and Divisions; organized bodies could, and would, be heard, when individual expressions of opinion were useless. The practitioner of to-day had opportunities never accorded to previous generations; in their hands lay their fate and that of their successors.

DORSET AND WEST HANTS BRANCH.

THE autumn meeting of the Dorset and West Hants Branch was held at the Hotel Metropole, Bournemouth, on October 13th, when Dr. WETHERALL occupied the chair, and there was a good attendance. Dr. NORMAN FLOWER read a paper, full of clinical interest, entitled "Some abdominal problems."

The officers for next year were elected as follows:

President: Dr. F. C. Bottomley. *Vice-Presidents:* Dr. A. B. Rooke, Dr. T. C. Meggison. *Honorary Secretaries:* Dr. W. Asten, Dr. C. Grey Edwards.

The Bournemouth practitioners entertained the members to luncheon at the Hotel Metropole, and Dr. P. A. Ross kindly provided tea at the close of the meeting.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.

A MEETING of the Division was held in the infirmary at Alnwick on October 13th, when Dr. BADCOCK was in the chair. It was decided to arrange for Dr. Cox to address the Division at Alnwick. Dr. DON (Newcastle) was unanimously nominated for the vacancy of the Central Council.

It was decided to hold a special meeting of the Division in Alnwick on Thursday, November 4th, to consider the report of the Consultative Council on Medical and Allied Services.

Professor R. A. BOLAM, O.B.E., assisted by Dr. THOMPSON, gave an address and practical demonstration on the diagnosis and treatment of syphilis by modern methods. This was much appreciated by those present, and Professor Bolam and Dr. Thompson were very heartily thanked for their address and demonstration. Tea was provided afterwards by the matron of the infirmary.

Association Notices.

VACANCIES ON COUNCIL.

EAST YORKS AND NORTH LINCOLN AND MIDLAND BRANCHES.

THE only nomination received for the filling of the vacancy on the Council (created by the resignation of Dr. G. K. Smiley, O.B.E.), being that of Major General Sir Richard H. Luce, K.C.M.G., C.B., Derby, the latter thereby becomes a Member of Council representing the above Branches for 1920-21.

NORTH OF ENGLAND AND NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCHES.

The following have been nominated in connexion with the vacancy on the Council created by the appointment of Dr. R. A. Bolam, O.B.E., as Chairman of Council: Dr. Robert Gordon Bell (Sunderland), Dr. James Don (Newcastle-upon-Tyne), Dr. H. Falconer Oldham (Morecambe), and Lieut.-Colonel D. F. Todd (Sunderland). Voting papers were issued on October 27th to every member of above Branches and are returnable to the Medical Secretary, 429, Strand, London, not later than Monday, November 1st, 1920.

EAST YORKS AND NORTH LINCOLN, MIDLAND, CAMBRIDGE AND HUNTINGDON, ESSEX, SUFFOLK, NORFOLK, AND SOUTH MIDLAND BRANCHES (GROUP C).

It is the duty of the Chairman of Representative Meetings to fill casual vacancies arising among the Members of Council elected by the Representative Body. He has consulted the Representatives of Constituencies in the above Group as to filling the vacancy on the Council caused by the resignation of Dr. Adam Fulton, and Dr. R. W. Bone (Luton) and Lieut.-Colonel D. G. Thomson, C.B.E. (Thorpe, Norwich) have been nominated. The Chairman of Representative Meetings is again consulting the Representatives concerned before appointing Dr. Fulton's successor.

ELECTION OF SCOTTISH COMMITTEE.

As the result of the postal vote for election of Direct Representatives, the following have been elected:

Group III (*Glasgow*).—Drs. A. Kennedy Glen and John Ritchie.

Group IV (*Edinburgh Branch and Dumfries and Galloway Division*).—Drs. J. Lamond Lackie (Edinburgh), Robert Thin (Edinburgh), and Joseph Hunter (Dumfries).

In Group III 56 per cent. of the electors voted, and in Group IV 54 per cent.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

LEICESTER AND RUTLAND DIVISION.—A special meeting of the Division will be held at the Medical Club, Bond Street, Leicester, on Wednesday, November 3rd, at 4 p.m., to consider the report of the Medical Consultative Council. The meeting will be addressed by Lord Dawson of Penn, G.C.V.O., K.C.M.G.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.—A meeting open to all medical men in the neighbourhood will be held at St. Andrew's Parish Hall, High Road, Willesden Green, N.W., on Tuesday, November 2nd, at 8.30 p.m. Lord Dawson of Penn will speak on the report of the Consultative Council on Medical and Allied Services (Ministry of Health).

YORKSHIRE BRANCH: SHEFFIELD DIVISION.—A general meeting of the Division will be held at the rooms of the Literary and Philosophical Society, Church Street, Sheffield, on Friday, November 5th, at 8.30 p.m. Agenda: Report of Representative; consideration of report of Consultative Council to Ministry of Health. Members are requested to bring with them the BRITISH MEDICAL JOURNAL SUPPLEMENTS for September 25th and October 16th.

PROVISION FOR EX-SERVICE MEN.

THE Ministry of Pensions states that meetings of the Standing Joint Committee for Ex-Service Questions have been held lately. The Other Ranks Panel met at Montagu House, under the chairmanship of Major TRYON, M.P., Parliamentary Secretary to the Ministry of Pensions. A request was made that an impartial tribunal should be set up to consider the present rates of pension in relation to the cost of living. On the question of accommodation for border-line, shell-shock, and neurological cases the representatives of the Ex-Service Men's Associations welcomed a statement made on behalf of the Ministry of Pensions, which showed that 2,809 beds had been provided for neurasthenic cases, and that of 700 beds proposed to be provided 120 would be ready by November 1st; that further proposals to increase bed accommodation were being considered; and that out-patient treatment was provided at twenty-nine clinics. The chief difficulty, it was stated, was still the shortage of suitable medical officers. The conditions under which special diet is provided to pensioners were discussed, and a promise was given that alleged delays would be immediately inquired into and removed as far as possible. Among other subjects raised was the difficulty of providing employment for seriously disabled men.

A meeting of the Officers' Panel, also under the chairmanship of Major TRYON, was held at the Ministry of Pensions. The Main Committee met at Cromwell House, Millbank, on October 22nd, under the chairmanship of the Right Hon. IAN MACPHERSON, M.P., Minister of Pensions. In reply to questions, Sir MONTAGUE BARLOW (Parliamentary Secretary to the Ministry of Labour) intimated that the committee which was considering the provision to be made for the employment of ex service men was still sitting, and the Ministry of Labour were doing all that was possible to deal with the situation. The employment of seriously disabled men was a question of great urgency and difficulty, and a special committee had been set up; the matter was being considered with the greatest possible care, and would be pressed on rapidly. He invited the representatives of the Ex Service Men's Associations to make suggestions to the committee.

ANNUAL CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES.

London, Thursday, October 21st, 1920.

THE annual conference of representatives of Local Medical and Panel Committees, arranged by the British Medical Association, was held at the Memorial Hall, Farringdon Street, London, on October 21st. Dr. H. G. DAIN (Birmingham) took the chair. There were present representatives from 99 English insurance areas, 11 Scottish areas, and 8 Welsh areas.

The CHAIRMAN at the outset expressed the hope that the proceedings might be concluded in one day. The industrial situation made many of those present who came from long distances anxious to return as early as possible. (The Chairman's wish was fulfilled; the business of the Conference was finished by 6.30 p.m. on the one day of its meeting.)

PROCEDURE.

The standing orders of the previous Conference were adopted, together with a new order to the effect that a motion to rescind any resolution of a previous Conference should not be taken unless fourteen days' notice had been given to the Insurance Acts Committee, so as to allow of its insertion in the printed agenda, and that such notice must be given by not less than five Panel Committees. The CHAIRMAN pointed out that some such standing order was necessary if the Conference was to have any continuity of policy. A motion that the number of committees by which such notice must be given should be two instead of five was negatived.

Dr. E. BURCHELL (Brighton) moved an addition to the standing orders whereby a chairman of the Conference should be elected to hold office from the end of one annual Conference until the end of the one following, such elected chairman to be an insurance practitioner and not a member of the Insurance Acts Committee, but to be a member of the Agenda Committee during his term of office. He said that no personal suggestion was intended against the present chairman, but as practically the whole proceedings of the Conference arose out of the work and recommendations of the Insurance Acts Committee, an outsider might bring to the subjects under discussion a fresher and less biassed mind.

Dr. BRACKENBURY said that he personally, and the Insurance Acts Committee also, hoped the Conference would accept a certain part of the resolution. There was something a little anomalous in the Insurance Acts Committee nominating a chairman for the Conferences. But the Committee did not think it would answer to have a chairman who was not intimately familiar with the questions to be discussed. The proposal that the Conference for one year should appoint the chairman for the next might well, in the opinion of the Committee, be accepted, but in the event of a chairman being unable or unwilling to act, it might be better to allow the Committee, as hitherto, to suggest a chairman to the Conference. The Conference should be free to have anybody it liked as its chairman, so long as the person selected was a duly appointed representative, whether a member of the Insurance Acts Committee or not. In fact, he would like the chairman of the Conference to be *ex officio* a member of the Committee. The better procedure would be to agree that the chairman should be elected to hold office from the end of one Conference to the end of the next, but to reject the proposition that in the event of the previously elected chairman being unable or unwilling to act, a chairman should be appointed when the Conference met, to preside over its immediate discussions, to reject also the proposition that the annually elected chairman should not be a member of the Insurance Acts Committee, and to refer to the Committee further details for a report at the next Conference.

This was supported by Lieut.-Colonel D. F. TODD (Durham), accepted by Dr. BURCHELL, and agreed to by the Conference.

Nominations for the chairmanship were then asked for, to be handed in by noon, and the result of the election was announced by the MEDICAL SECRETARY at a late stage of the Conference. The candidates receiving votes, in the order of number, were:

Dr. H. G. Dain,
Dr. H. J. Cardale,
Lieut.-Colonel D. F. Todd,
Dr. G. B. Hillman.

Dr. Dain was therefore declared elected Chairman.

THE INSURANCE ACTS COMMITTEE.

Dr. H. B. BRACKENBURY, Chairman of the Insurance Acts Committee, presented the annual report of the Committee as to action taken since the last annual Conference. He said that there seemed to have been a little misunderstanding as to one or two of the items in the report. The arrangements with regard to remuneration and the Regulations stood last year to be accepted or rejected as a whole. It was not possible to divide them up, accepting one part and rejecting another. The Committee never had accepted as desirable in themselves three things in the Regulations—namely, the provisions with regard to transfer of practices, with regard to dispensing in rural areas and the choice in that matter by the patient, and with regard to the judicial or semi-judicial procedure required before a doctor was removed from the panel. Those the Committee wanted to alter, and it was not prepared to sit down under them in their present form. Certain other matters required careful watching, such as the arrangements for emergency treatment, for putting names of assistants on the panel, for inquiry into the suitability of surgery and waiting-room accommodation, and so forth. These the Committee accepted as reasonably satisfactory, provided that in administration they were carried out properly. The Committee desired the radical alteration of the first three things he had instanced, and as for the others it desired to see that their administration was as satisfactory as was promised when the arrangements were made.

Dr. G. H. L. HAMMERTON (Dewsbury) moved that the present Insurance Acts Committee be abolished, and in its place a committee appointed to be composed entirely of members of Panel Committees, the present system of grouping to remain, but the number of representatives for each group to be doubled. He said that the motion did not reflect upon the individual members of the Insurance Acts Committee. ("Oh!") For some time his committee had been of the opinion that the Insurance Acts Committee as at present constituted did not properly represent the Panel Committees. Out of 38 members of the Insurance Acts Committee only 18 were elected by the Panel Committees. In no circumstances could the nominees of the Panel Committees obtain a majority. The Committee should consist entirely of nominees of Panel Committees. The Committee also was always subject to the veto of the Council of the British Medical Association. The Minister of Health had distinctly stated that he would accept only one negotiating body from medical practitioners; he would not have the interferences of two or three. Now was the time to have a properly constituted body to represent panel interests.

Dr. H. J. CARDALE (London) pointed out that London had a similar amendment. He could only repeat what Dr. Hammerton had said. Though London felt strongly on the matter, they wished to cast no reflection whatever upon the personnel of the present Insurance Acts Committee. They looked upon this as a matter of principle. As had been already said, they had grown up; thus the Conference was now able to elect its own chairman. The same arguments would surely apply in this motion. They thought in London that it was of the greatest importance that the negotiating body for the panel practitioners should be outside the realm of medico-politics. They would gain added authority by going to the Government unattached and simply representing directly the Panel Committees of the country. He did not support the amendment because of any opposition to the British Medical Association or to the Insurance Acts Committee, but as a matter of principle.

Dr. E. R. **Fothergill** said they ought to remember something of the past history of this body. In 1914 the profession was suddenly thrown into the war. Almost by intuition, just before, the British Medical Association decided that it should try to act for the panel doctors through its Insurance Acts Committee, broadening its basis of election, and doing all it could to keep things going. He put it to them that if that had not been done, if some body had not accepted this duty, they would not be in the position in which they were. This amendment proposed to abolish the Insurance Acts Committee. If they dissociated themselves from it, the British Medical Association would still go on. It intended to go on, and it would look after the interests of panel doctors as much as those of any others. (Applause.) Panel doctors could not dissociate themselves from the rest of the profession. They must stand together. The Insurance Acts Committee had done its best for them and would continue to do so. (Hear, hear.) Let them look at it as business men. They could not expect perfection in any body, but it could not be denied that the British Medical Association, after many years of hard work, had obtained for them a recognition from the Government and outside bodies, not only in this country but all over the world, which no other body had ever obtained, or could have obtained. (Applause.) Therefore he asked them to stand by the body that had protected them so far. These alternatives might look very attractive, but they led to destruction.

Dr. A. **Lyndon** (Surrey) said he was instructed by his committee to oppose this in every way. They had confidence in the Insurance Acts Committee. It had done good work for them, and they believed the prestige of the British Medical Association was a most valuable asset to the profession. It would be a retrograde step to dissociate themselves from the parent body.

Dr. E. A. **Gregg** (London) suggested that the wording of the motion might be altered. He was not a member of a "disgruntled" Panel Committee, but he believed the negotiating body should be one directly elected by the Local Medical and Panel Committees of the country. This was a democratic age and they had a right to ask that. It did not imply ingratitude to the British Medical Association at all. He quite agreed that they owed a great deal to the Association for the way in which it stepped into the breach when the war began. But because of what happened in the past they must not decline to move now. He was anxious that a free and directly elected body should negotiate, and suggested that instead of proposing to abolish the present Committee they should insert the words: "That an independent and directly elected body be appointed."

Dr. J. **Nelson** (Kingston-on-Hull) asked if the new committee which was suggested was to consist entirely of panel practitioners. The whole profession, surely, was interested, directly or indirectly. The Ministry of Health was dealing with a body that represented the whole profession, and in future the position and interest of men who were not now panel practitioners would be more and more affected. It was most important that they should all be represented.

Dr. J. **Holmes** (Bury), as an old member of the British Medical Association, said it would be a great mistake to go to the Government representing one section only. They must speak with the voice of the whole profession. (Applause.)

Dr. E. H. M. **Stancomb** (Southampton) quite agreed that they must not confine the interests of this Conference merely to panel practitioners. General practitioners must be involved. He was in favour of the resolution, without the slightest reflection upon the magnificent and devoted work of individual members of the Insurance Acts Committee. The latter had served them well. This was entirely a question of principle. They did not want the Committee to commit suicide. It was not proposed to abolish the Committee. ("It is," and laughter.) Well, they need not trouble about the wording. Medical men [illegible] wrote in Latin, and bad Latin, so they could not be expected to write good English. (Laughter.) They [illegible] simply [illegible] that the Conference should appoint [illegible] and [illegible] a new principle.

Without doubt it should have the right to appoint its own representatives.

Lieut.-Colonel D. F. **Todd** (Durham) hoped the resolution would neither be supported nor carried. The most democratic body that ever existed was the British Medical Association, and to put forward such a proposal as this was disgraceful. It would do away with the very principle for which they were all fighting—that of co-operation, co-ordination, and the combination of the profession as a whole. Without those three things they could never succeed. It was owing to lack of co-ordination in the profession that they had not succeeded as much as they should have done in the past. It was said they should get rid of medico-politics; they wanted more medico-politics. Their great weakness in the past had been that they had no clear, definite, political line. Let them get closer together under the wing of the British Medical Association and they would be a much more powerful body. What was the position to-day? The Association allowed them to elect members who were not members of the Association on this Committee. It was to that Association alone they must look if they wished to go ahead.

Dr. R. H. **Wagner** (Plymouth) condemned the motion as retrograde, and opposed it most strongly, and Dr. **Frank Challans** (West Ham) also urged its rejection. Was this the moment (he asked) to make such a change? He hoped there would be no change, at any rate this year or next, in the constitution of the Insurance Acts Committee.

Dr. **Brackenbury** said that Dewsbury was misinformed. The present constitution of the Committee did not provide 18 direct representatives out of 38. There were now 32 nominal members of the Committee; in effect and in practice the membership was 27, and of these no fewer than 22 need not have any connexion with the British Medical Association. Eighteen of them were directly elected by Local Medical and Panel Committees and the other four were also elected free from any restriction with regard to membership of the Association. The resolutions of the Insurance Acts Committee, as the executive body of the Conference, were not subject to the veto of the Council of the Association. The Committee reported to the Council what it had done, and there were certain matters connected with its procedure which might or might not require to be passed by the Council. From the beginning he himself had been on the Committee in no other capacity than as a direct representative of Panel Committees. The British Medical Association was, after all, a living reality. During the last few months it had been receiving recruits at a rate of not less than 200 a month. Of the 13,000 insurance practitioners in this country, two-thirds were members of the Association. On the question of finance, apart from secretarial expenses and establishment charges, the cost of the Insurance Acts Committee was £1,300 a year on an average of some years.

Dr. **Hammerton**, replying, said that Dewsbury was not a disgruntled committee, but it was of opinion that insurance practitioners should have an independent executive. It was not at all depreciating the work of the British Medical Association. (It turned out, after explanations, that Dr. Hammerton had arrived at his figure of 38 as the membership of the Insurance Acts Committee by incorrectly including certain co-opted members of subcommittees.)

The motion by Dewsbury was then put to the vote, and was lost by an overwhelming majority. Fourteen hands were held up in its favour.

Dr. E. A. **Gregg** (London) moved, and Dr. **Lauriston Shaw** seconded:

> That, in place of the Insurance Acts Committee as the negotiating body, an independent and directly elected body be constituted, this body to be nominated by the Annual Conference of representatives of Local Medical and Panel Committees.

This also was lost by a great majority, 16 voting in its favour.

Direct Representatives on Committee.

Dr. E. Lewis **Lilley** (Leicester) moved that the grouping of insurance areas to elect direct representatives be subdivided to secure that no group could select more than one representative.

Dr. **Brackenbury** pointed out that if there were single-membered constituencies much more inequality in representation would have to be put up with.

The motion was lo

Dr. Crawford Treasure (Cardiff) moved that there should be two representatives for Wales on the Insurance Acts Committee, one for North Wales and one for South. The distance from North to South Wales was a day's journey, and the difference in the manner and character of practice between the two areas was also great. North Wales was purely agricultural; South Wales was a centre of industrial activity with large works and huge colliery undertakings.

The Chairman said that the suggested increase for Wales could only be brought about by diminishing the representation for some other district. Dr. Brackenbury pointed out that up to last year, in order to get as equal a distribution as possible, North Wales and South Wales were each combined with portions of England, but the Committee was appealed to on behalf of Wales to treat that country as a whole, and did so. Now Wales came again and asked that it might be divided. There were only eighteen representatives, and if Wales had two the insurance practitioners there would have twice the representation of their colleagues in Scotland.

Dr. W. E. Thomas (Glamorgan) urged the claims of South Wales to separate representation.

The amendment was lost.

Remuneration.

Dr. Brackenbury, on behalf of the Insurance Acts Committee, moved:

> That it be an instruction to the Insurance Acts Committee to take into consideration the economic conditions prevailing twelve months after the award as compared with those obtaining at the time of the award, and to take such action as may seem desirable.

He said that the Committee believed it was right to raise again in some form the question of the amount of remuneration for 1921. Instead of reopening the whole question of the capitation fee, it might seem advisable to put it forward that any alteration in the economic conditions ought to be taken into consideration in an adjustment of the total remuneration for 1921. That being so, the Committee would ask the Conference entirely to reject certain amendments on the paper which called for an immediate increase in the capitation grant. His own motion left the question to the discretion of the Insurance Acts Committee. At the same time he was friendly to certain other amendments which aimed to limit the discretion in certain respects.

Dr. G. H. L. Hammerton (Dewsbury) moved as an amendment an increase of the capitation fee to 15s., coupled with the intimation that in the event of the Ministry of Health refusing this sum the Committee should recommend all insurance practitioners to refuse to work the Act. The present capitation fee of 11s. was neither adequate nor reasonable, considering the amount of work which had to be done for it. Every commodity was advancing in price, and yet, apparently, the doctor's remuneration was going down.

Dr. Brackenbury appealed to the mover of the amendment to withdraw it. He did not think that the insurance practitioners who had sent representatives to the Conference desired to have the whole question in the melting-pot during the first three months of next year.

Dr. Hammerton consented to withdraw the amendment; but he hoped Dr. Brackenbury would give an undertaking that the Committee would not allow the question of remuneration to slide.

The Chairman (Dr. Dain), speaking as a representative, said that his committee was as keen as most others in desiring that insurance practitioners should receive full value for their services, but it regarded the reopening for any purpose whatever of the question of bonus or capitation fee as dangerous at the present time. He reminded them that the civil servant had been put upon a sliding scale; he did not think that they desired this principle to be introduced into their remuneration. The payment fixed for insurance practitioners in April last was fixed for services estimated at a pre-war rate, *plus* an increase to meet the altered conditions. Was it wise to instruct the negotiating body to raise the whole question at the end of next March, whatever the conditions might be? It would be better to carry on at 11s. than to have a sliding scale offered them.

Dr. Brackenbury did not agree with the Chairman as to the danger of raising the question of bonus. Nor did he think that Dr. Dain had first-hand authority for saying what he did about the manner in which the award was fixed. No doubt economic conditions did enter into the calculation of the arbitrators, but there was no reason to suppose that the arbitrators went to work on the principle of taking 7s. 3d. as the pre-war remuneration and adding to it an allowance for the new economic conditions. He went on, as a representative of Middlesex, to move an amendment:

> That if the Board of Trade index figures for the cost of living for January, February, and March, 1921, should, on the average, exceed those for January, February, and March, 1920, the amount to be placed to the credit of the Practitioners' Fund in each insurance area for the year 1921 should be increased as a bonus in proportion to such excess.

Dr. E. R. Fothergill considered the Middlesex amendment dangerous. He urged the Conference not in any way to tie the hands of the Insurance Acts Committee in dealing with this tricky problem.

Dr. Lilley (Leicester) made the point against the Middlesex amendment and in favour of the original motion of the Insurance Acts Committee that the higher cost of living was not the only factor in the case; travelling and professional expenses had also gone up, and these were not accounted for in the Board of Trade returns. Dr. F. B. Thornton (Surrey) said that an increased bonus would not be claimed solely on the cost of living, but also on the increase in practice expenses. Dr. J. Holmes (Bury) and others opposed the Middlesex amendment.

Dr. Brackenbury was wholly against reopening the question of the capitation fee as such. All sorts of matters entered into the computation of the capitation fee, and as to only one of them was there any generally accepted criterion—namely, the Board of Trade figures showing the cost of living. To introduce any of the other considerations brought up the whole question of the capitation award; whatever the cost of living might be, he did not want insurance practitioners to receive less than the 11s., and he did not believe that they would accept less without a fight for it. But for the year 1921 it seemed right to ask that this particular criterion of the Board of Trade returns might be applied to their case.

The Middlesex amendment was then put and lost.

Dr. Sidney Matthews (West Sussex) moved that instead of the Insurance Acts Committee being instructed to take such action as might seem desirable, it should be instructed to appeal to arbitration if that seemed desirable.

This was rejected, but the Chairman explained that its rejection did not forbid the Committee to go to arbitration if that seemed desirable.

The motion instructing the Committee to take into consideration the economic conditions prevailing twelve months after the award as compared with those obtaining at the time of the award, and to take appropriate action, was then put and carried unanimously.

Dr. E. Burchell (Brighton) moved to instruct the Insurance Acts Committee to make inquiry of the several Panel Committees with a view to securing the following information:

> 1. The amount of the Central Pool credited to the area.
> 2. The number of insured persons on the index register as at July 1st, 1920.
> 3. The number of names of insured persons on the list of insurance practitioners of the area as on the above-mentioned dates.
> 4. The number of additional units, if any, credited to the insurance practitioners in respect of temporary residents, etc., as provided by the local allocation scheme.

Dr. Burchell explained that there were certain inequalities at Brighton, which was a county borough, and Hove, which was a portion of the administrative county of East Sussex. He was sure the Insurance Acts Committee would be only too glad to secure the information asked for and to see if some different arrangement could not be made. Brighton did not wish to act behind the backs of other committees, but to have the satisfaction in the future of knowing exactly where they stood.

Dr. Dain, as a member of the Distribution Committee, said the Central Pool was fixed by an agreed method which he believed to be substantially fair and accurate. If any area felt there was any injustice the proper course was to send its case to the Distribution Committee. The Committee would reconsider the awards it had made between the different areas in the light of the figures available. There might be a small balance with which to redress one or two inequalities which possibly had arisen. It must be remembered that each area had its own method of keeping doctors' lists. What the Committee tried to do was to make a perfectly fair distribution. He did not think it was a matter for the Insurance Acts Committee to take up at this moment.

Dr. W. STEVEN (West Riding) said Yorkshire was much interested in this matter. The amount in one area was 2s. 4d., and in another 2s. 9d. per quarter, and such discrepancies justified inquiry. They ought to be given figures on which they could form some conclusion. They wanted to know how the pool was divided. If there was a sum which could not be altered, how could they send in a claim for further payment? If they could be told how the pool was divided, they would make local inquiries to see if the areal pool was equally divided. All they were told was that the money had been sent down from London. Yet there was a difference between two areas of 5d.

Dr. J. P. WILLIAMS-FREEMAN supported the motion, remarking that the return asked for would be very valuable.

Dr. BRACKENBURY said he hoped the Insurance Acts Committee would get possession of these figures—(Hear, hear)—but he hoped this motion would not be carried. It would be very useful if the Distribution Committee had the figures before them. They could, however, be collected by the Ministry of Health. If the Insurance Acts Committee did this, it would not be in time to meet the case of Brighton, or of the West Riding. The question of so much per head on their lists had no relevancy. If the distribution to each area of the Central Pool was correct—and he was sure they would try to make it correct—then whether in any particular area it worked out at 2s. 3d. or 2s. 11d. did not matter. The whole system now was, not a figure which was to be calculated per head on the list, but a proportional distribution among the doctors of an area of a fixed pool for that area. The Central Pool for 1920 was a little difficult to calculate in consequence of the number of men still being demobilized. It was necessarily a conservative estimate. The figures were now being revised, and although there was no guarantee, a small extra sum might be available to correct any inequalities, or to increase the amount distributable proportionally among all of them. There might be places that deserved special consideration because of the mushroom growth of the population, but to talk of the amount per head was no argument for their consideration.

Dr. FOTHERGILL: Will the Chairman of the Insurance Acts Committee pledge himself to ask for the figures?

Dr. BRACKENBURY: Yes, certainly.

Dr. BURCHELL then withdrew his motion.

Dr. C. M. STEVENSON (Cambridgeshire) moved:

> That the final financial settlement for 1919, showing an inflation of doctors' lists of 15 per cent., is unsatisfactory, and that it be an instruction to the Insurance Acts Committee to press for a proper account from the Ministry of Health for that year and for each succeeding year, showing the method by which doctors' remuneration is calculated.

What they complained of, he said, was a most unbusinesslike arrangement; a business house would never be run on such terms. Why should these figures be refused? They would never convince all the doctors in the country that there was nothing behind the scenes until they got this information. They did not say inflation did not exist, of course, but a proper financial statement should be given to the profession.

Dr. J. R. GARROOD (Huntingdon) complained that they were always hearing the same story. He was tired of hearing Dr. Brackenbury's explanations. What they wanted was a clear statement of account, in figures.

Dr. BRACKENBURY said the motion dealt with the payments for 1919 which were on an entirely different calculation from those of 1920 and future years. Was it worth while going into a system that was now abolished and obsolete? A Cambridgeshire memorandum had been circulated which said no effective account was taken of four classes of persons, but it had been proved again and again, both by the Ministry in its publications to the profession and by the actuary appointed by the Insurance Acts Committee that those particular classes had been taken into consideration.

Dr. J. [illegible] said in this matter he must disagree with Dr. Brackenbury, and he hoped the resolution would be carried.

The CHAIRMAN pointed out that those who had read the report of the Distribution Committee would know exactly how the Central Pool was distributed. What the resolution asked for was being done; only a small proportion of the register remained to be completed, and this would probably be done by the end of the year. It was estimated that something like half the present inflation would disappear with this clearance of the register.

Dr. STEVENSON, in reply, said Dr. Brackenbury told them the system had been changed, but they had no evidence that any arrangement had been made for a financial statement such as any business man would ask for.

The CHAIRMAN repeated that the statement was now issued, and it was within the reach of any member.

The motion was lost.

Dr. E. LEWIS LILLEY (Leicester) moved:

> That this Conference is convinced that the inflation in index registers is largely due to the dilatory methods of some approved societies in returning the orange slips, and instructs the Insurance Acts Committee to urge upon the Ministry of Health the necessity of societies making the requisite returns more promptly and completely.

This was carried without discussion.

TRANSFER OF PRACTICES.

Dr. T. W. H. GARSTANG (Stockport) moved that the Conference should immediately take action with a view to securing abolition of the regulation relating to the transfer of practices. The reasons given were the serious capital loss which would accrue to many practitioners when the regulation became operative in 1922, and also the promise made by Mr. Lloyd George at the time the first National Insurance Bill was under discussion. Dr. Garstang pressed it on the attention of the Conference, not in the least because he had any criticism to make of the Insurance Acts Committee, but in order to strengthen the hands of the Committee by making it the resolution of the meeting.

Dr. BRACKENBURY assumed they were all entirely dissatisfied with the regulation dealing with transfer of practices. They wanted to get that out of the way, but if they got it out of the way, and did no more, they were simply asking the Government to go back exactly to where they were before. Stockport had put its reasons into this resolution; he would prefer a resolution without reasons.

Dr. Garstang gave way to a similar resolution moved by Dr. R. H. DIX (Sunderland) instructing the Insurance Acts Committee to continue its efforts to secure the rescission of the present regulation, and this was agreed to.

Dr. SIDNEY MATTHEWS (West Sussex) moved that the Conference should take action with a view to restoring the old regulation with regard to transfer of practices, with the following precautions to prevent abuse:

> 1. That all insured persons automatically transferred be allowed option to change their doctor once at any time during the next six months, and be notified to that effect.
>
> 2. That no panel practitioner be allowed to resell a panel practice thus transferred within less than two years unless satisfactory reason be first produced by the vendor to the Insurance Committee.

Dr. BRACKENBURY hoped the Conference would pass this amendment, whereby the two legitimate objections to the old procedure were met.

Dr. E. R. FOTHERGILL objected to an Insurance Committee, nine-tenths of whose personnel was lay, having a determining voice in the sale of a medical practice.

Dr. F. RADCLIFFE (Oldham) supported Dr. Fothergill, and urged that the Panel Committee should be substituted for the Insurance Committee.

Dr. CARDALE (London) said that his committee strongly supported the West Sussex amendment. He did not think there was any ground for objecting to the reasons for the selling of a practice being given to a lay body; they would not be medical reasons strictly. He would rather give his reasons to an outside lay body than to a committee of practitioners. (Laughter.) They had to read together the action of the Government with regard to the transfer of practices and with regard to the limitation of lists. Both were evidence of a policy on the Government's part which he believed to be a more general distribution of panel practice among a very much larger number of men.

Dr. P. MACDONALD (York) was quite sure that the Government would not accede to the decision in this case being made by a medical body.

The amendment was carried.

The Brighton and Dartford Schemes.

The Conference then turned to a discussion of schemes by Brighton and by Dartford, which had for their object the compensation of insurance practitioners for loss of capital value of insurance practice.

Dr. E. **BURCHELL** moved to recommend Panel Committees to take into consideration the principles of the Brighton scheme. The object of the scheme, he said, was to safeguard the financial interests of doctors who had to transfer their practices under the disabilities of the Regulations. In the event of the sale or disposal of his practice by, or on the death of, a practitioner, the remaining practitioners agreed that the fees which, but for the operation of this scheme, would be credited to them by the Insurance Committee in respect of such insured persons as were included in the list of the practitioner and had now been added to their own lists, should for a period of twelve months be credited to the account of the outgoing practitioner or any person entitled to receive them by virtue of a partnership agreement. It was proposed that the scheme should be administered by a Transfer of Insurance Practice Committee for the time being in office. Dr. Burchell entered into several details of the scheme, and urged that there was no financial difficulty in the arrangement.

It was decided to take the Kent (or Dartford) scheme also, and discuss both together. Dr. M. W. **RENTON** (Kent) in introducing this scheme, said that what it proposed to do was to authorize a payment to every medical practitioner (or his legal representatives or executors) in any insurance area whose name was removed from the medical list otherwise than as a penalty. The payment should be a sum equal to four times the last quarterly payment to such medical man, and should be made on the authorization of the Local Medical and Panel Committees of the area so soon as the medical pool contained sufficient sums which would otherwise have been available for distribution to practitioners. If the removal of the practitioner's name was not due to age, infirmity, or death, only certain proportional payments should be authorized. Dr. Renton added that each panel practitioner would automatically come into the scheme as soon as he joined the panel. He hoped that some such mutual insurance scheme might be adopted in order to safeguard sufferers from the worst effects of recent enactments. Mutual insurance was long overdue in the profession. He asked that Dr. Gordon Ward, of Sevenoaks, who was not a representative, but who was largely responsible for the drafting of the Kent scheme, might be allowed to expound it to the Conference.

After a brief discussion the Conference decided that Dr. Gordon Ward should not be heard.

Dr. H. J. **CARDALE** said that these schemes must necessarily strengthen the regulation and make it improbable that they would ever get rid of it; therefore he hoped they would be rejected.

Lieut.-Colonel D. F. **TODD** heartily supported the last speaker. They would be providing weapons for those who were against them by discussing such schemes at the present time. Let them stick out for their rights and their principles, then if they were beaten on that issue the time would be more opportune to consider what scheme should be dealt with.

Dr. **STANCOMB** said he was of the same opinion. Why should they saddle the medical profession with responsibility for making good a loss for which the Government was responsible? They need not condemn or criticize these schemes, but it was waste of time to consider them.

Dr. **TODD** then moved—

> That the time is inopportune to discuss any scheme at this Conference.

Dr. J. **HOLMES** (Bury) seconded.

Dr. W. B. **CRAWFORD TREASURE** (Cardiff) said the schemes had been sprung upon them at the last moment, and they really had not had time to examine them.

Dr. Todd's amendment—that no scheme be considered—was then put and carried without dissent.

MEDICAL RECORDS.

Dr. G. H. L. **HAMMERTON** moved the following amendment by Dewsbury:

> That as the form of record proposed by the Ministry of Health has not been submitted to Panel Committees for consideration, involves an iniquitous amount of clerical work, and appears entirely unnecessary, such form be not accepted by practitioners, but a modified form to be agreed by Panel Committees be substituted therefor.

Dr. Hammerton believed it was intended that every trivial case that came into the doctor's surgery was to be entered on these cards. It would mean a tremendous increase in their clerical work.

Dr. **BRACKENBURY** pointed out that the proposition of the Insurance Acts Committee (Paragraph 41 of the Annual Report of the Committee) to which this was an amendment, was that, while accepting the obligation to keep records, the prime purpose of which should be clinical and not statistical, they were not prepared to express any opinion until after experience of the new records. The thing must be tried before it was condemned or approved. He could hardly imagine any form of record drawn up by any person or any committee which would be accepted without objection by insurance practitioners throughout the country. He did not say the form of record that had been agreed upon after prolonged discussions was the best, but he suggested they must give it a trial. The records would do away with one set of documents they had to keep. In any case, the obligation to keep records was there. They had agreed to do it. The Minister had fulfilled his obligation to appoint an expert committee to advise him on the matter. It was no use going to him now and saying certain records were of no use to them professionally. They must compromise between what the profession wanted and what the State wanted.

Dr. E. A. **GREGG** (London) said the whole matter ought to have been brought before the Panel Committees, who should have had a voice in regard to the form of record. A standard system was wanted.

Dr. L. J. **PICTON** (Cheshire) thought the Panel Committees ought to have been consulted. In view of the enormous amount of labour they were asked to put in they ought to have the fullest discussion and information.

The **CHAIRMAN** said there was no question of summaries of or extracts from the records being asked for. The record remained in the practitioner's possession so long as the patient remained his patient, and was forwarded when the patient chose another doctor. The records would, of course, be open for inspection when any information was required. Many members of the Conference seemed to think a simpler form could be devised. It would be very difficult to find anything simpler. They could never get a standard unless they made experiment. They must give the form a chance.

Dr. C. P. **LANKESTER** (Surrey) could not see that the resolution would do any good. They must try the thing first, before they expressed any opinion.

In answer to a question, the **CHAIRMAN** said complete professional secrecy would be maintained. This was fully provided for in the report of the Records Committee.

Dr. **HAMMERTON** having replied, the Dewsbury amendment was put, and was lost by a large majority.

Dr. D. **FERGUSON** (Warrington) urged that more reliable statistics of insurance work would be obtained by selecting two or three practitioners in each area to keep accurate records (for extra payment) of a fair sample of the insured population. A proposal to this effect, however, found no support.

Dr. **WOOD LOCKET** (Wiltshire) said that the obligation to record every attendance and visit was not only irksome but valueless and wrong in principle. If they were compelled to keep these records of attendances and visits, the only sensible policy to take was to insist on a "datum line" of average medical attendances, and then if, as a result of combined efforts and preventive work, preventable sickness was reduced below that line they should claim a bonus. He proposed that the Insurance Acts Committee be instructed to take steps to obtain the necessary amendment of the Regulations.

Dr. **BRACKENBURY** said that an argument had been used in this connexion by citing the case of Scotland, where records of attendances and visits were not required. But if the Scottish Board of Health did not require these records it required other things, and in the speaker's own view the English system was the less open to criticism. He did not object to Dr. Wood Locket's resolution provided it only described the obligation as irksome.

Dr. F. B. **THORNTON** (Surrey) pointed out that the last Conference passed a resolution accepting the responsibility of keeping records.

Dr. **Wood Locket** said that his objection was not to the keeping of clinical records, whose value he emphasized, and he agreed that the date of the first and final certificates ought to be recorded; but he objected to the obligation to record every attendance and visit.

The amendment was lost, as was a further one by Dr. **Genge** (Croydon), urging that record-keeping should not begin until July, 1921, instead of in January, which was the doctor's busiest time.

Dr. **Candler-Hope** (North Riding) pointed out that the records involved a good deal of postage, sealed envelopes being necessary in every case, and he proposed that the Ministry be asked to bear the cost of transmission.

Dr. **Brackenbury** said that an official communication from the Ministry of Health, making it clear that the Ministry would bear the cost of transmission, had been expected long before this, and he did not know why it was delayed. He wanted to strengthen Dr. Candler-Hope's resolution, to the effect that the Conference was of opinion that no part of the expense of forwarding record cards should fall upon the practitioner, and that unless this was arranged, practitioners should be advised not to accept this obligation.

In this form the resolution was agreed to.

ELECTION OF PANEL COMMITTEES.

Dr. **Brackenbury** moved approval of the memorandum (M. 15) on the election of Panel Committees, detailing the provisions which, in the opinion of the Insurance Acts Committee, should apply to all schemes for the election of Panel Committees throughout the country. It proposed, among other matters, three years as the term of office, the elections to take place in sufficient time to enable the new committees to come into office on July 1st of the year of election, so that they would be in a position to deal with any matters for discussion at the October Conference, and the leaving of the method of election, as between meetings and postal vote, to local option. It was also left to local option to determine whether the whole committee should retire together every third year or whether one-third of the members should retire every year. There were certain things which ought to be uniform throughout the country, and others which ought to be left to local option. A further matter of importance was dealt with. At present there was a provision requiring a two-thirds majority of the Panel Committee, not for the purpose of altering the existing model scheme, but of submitting the question to the constituents whether they should be altered. It was now proposed that a bare majority, instead of the present two-thirds majority of the members of the committee, should decide the matter. In conclusion, he begged that no one would press for the universal application of what in his own locality was the best procedure. It was proposed that it be left also to local option to decide as to differential representation of insurance practitioners according to the size of the panel, and as to whether the election of members of Panel Committees should be by the proportional representation method.

Dr. **H. F. Oldham** (Lancashire) moved that the Insurance Acts Committee be instructed to advise the Ministry of Health to conduct elections of Panel Committees on certain lines which he detailed at some length. He said, however, that there were really only two points in his scheme which differed from the scheme of the Insurance Acts Committee. One was the insistence in his scheme that the postal vote should be universal, and the other that the expenses of election should be borne as part of the administrative expenses of Insurance Committees, and not by Panel Committees at all.

The **Chairman**, as a representative, opposed a compulsory postal vote. He preferred local option in this matter. He did not think it a desirable plan, either, to fill casual vacancies by the circularization of every doctor on the panel list.

Dr. [illegible] Oldham opposed Dr. Oldham's scheme, and on being put to the vote the amendment to advise the Ministry of Health to conduct elections on the lines laid down by Lancashire was rejected.

Several amendments were withdrawn in the light of Dr. Brackenbury's explanation of the Committee's scheme, and the Conference then gave its approval, without dissent, to the document setting out the scheme in detail.

DISPENSING, DRUGS, AND MILEAGE.

Dr. **D. O. Twining** (Devonshire) moved that the Insurance Acts Committee should seek a return to the procedure under the old Regulations so far as concerned the supply of drugs in rural and semi-rural areas. He said that the new Regulations were not working at all smoothly, and led to confusion and inefficiency of service. He asked whether it was not a fact that, in the case of patients who lived more than a mile from the chemist and who chose to have their drugs dispensed by a doctor, the doctor was bound to dispense for them.

Dr. **Brackenbury**: If he does not dispense for his private patients he need not do so for his insurance patients.

Dr. **Twining**: He may never have dispensed for his insurance patients, but under the present Regulations he is bound to do it.

Dr. **Brackenbury**: If he is a dispensing practitioner.

Dr. **Twining**: It does not seem to me fair that he should have no right of refusal.

Dr. **Larking** (Buckinghamshire) asked if a doctor in an urban district could be forced to dispense for his insured patients, even if he dispensed for his private patients.

Dr. **C. H. Panting** (Essex) stated that so great was the confusion and inefficiency under the new Regulations in this respect that in his area the Insurance Committee had gone back to the old Regulations.

Dr. **Brackenbury** replied that that was exactly what the Insurance Acts Committee had put before the Ministry of Health as likely to happen. In the opinion of the Committee from the first, this Regulation was likely to lead to wholesale administrative confusion. The only thing he was certain about was that it wanted altering; the exact way in which it should be altered he would rather leave to his colleagues, Dr. Wood Locket and Dr. Williams-Freeman, on the Rural Practitioners Subcommittee. As to the question of rural or urban areas, the words in the section were "rural areas," and if the case Dr. Larking had brought forward could properly be said to be not in an urban area, even though under an urban district council, the point did not hold.

Dr. **Candler-Hope** (North Riding) said that a deputation from the North Riding lately went to the Ministry of Health on certain matters. They were able to show by figures that the scheme as laid down in the Regulations was absolutely unworkable. He described the scheme that was now working, with the consent of the chemists, in his area, whereby differences in practice obtained according to the distance at which the patient lived. Every patient up to one mile had to go to the chemist; from one to three miles he had to notify whether he wished to be put on the doctor's or the chemist's list, and for those over three miles the scheme made certain special provisions.

Dr. **Hugh Jones** (Merioneth), Dr. **J. R. Munro** (Lincoln, Holland), and other practitioners from rural areas described the conditions prevailing in their own localities. Dr. **J. O. Summerhayes** described how he worked in two counties—Buckinghamshire and Oxfordshire. In Buckinghamshire they were under the old system, and everything seemed to go smoothly; in Oxfordshire the new system was in force, and was full of confusion. He thought the old system ought to be reverted to.

Dr. **Wood Locket** (Wiltshire) said that the rural members of the Insurance Acts Committee told the Government that it would be administratively impossible to carry out the Regulation. What was now the best policy to get over the difficulty? He did not think there was any chance of getting back the old Regulations, because, he believed, the Government had entered into some arrangement with the chemists behind the doctors' backs.

Dr. **Twining**, replying on the discussion, repeated that the state of confusion which existed was complete. The present Regulations had proved impossible and unworkable, and he urged the Insurance Acts Committee to try to get the old Regulations reinstated. His amendment to this effect was carried.

Dr. **J. C. S. Burkitt** (Leicestershire) moved:

> That it be an instruction to the Insurance Acts Committee to press for the inclusion of plain wooden splints for the lower extremity and elbow splints in the tariff of prices for drugs and scheduled appliances, as supplied under the National Insurance Act.

Dr. J. Holmes (Bury) said he moved a similar resolution at the last Conference, but it was rejected. The present arrangement was very unfair.

Dr. Brackenbury suggested that the resolution be referred to the Insurance Acts Committee. The procedure was not the same in England as in Scotland. Any practitioner could order from the Drug Fund any splint he considered necessary and no Insurance Committee had a right to put any obstacle in the way of it being obtained. The rural practitioner was liable, if he had accepted the capitation system of 2s. for each person, to supply all these splints, except such as were named in a separate schedule as being specially expensive. The Insurance Acts Committee might look into this matter and consider any peculiar methods adopted in certain localities.

Dr. Burkitt agreeing, the motion was referred to the Insurance Acts Committee.

Dr. W. B. Crawford Treasure moved:

> That in view of the greatly increased cost of drugs and appliances the amount of the Drug Fund at 2s. per insured person is inadequate, and requires revision.

What might formerly seem reasonable was no longer reasonable. If many town practitioners could not keep within the 2s., how could rural practitioners do so? This was, he agreed, essentially a rural practitioners' matter.

Dr. Brackenbury remarked that in England and Wales the Drug Fund now was an unlimited amount. With regard to rural practitioners it was different, and he suggested that the motion should read:

> In view of the greatly increased cost of drugs and appliances the capitation fee of 2s. for rural practitioners is inadequate, and requires revision.

With the agreement of the mover, the motion, thus amended, was carried *nemine contradicente*.

Dr. Candler-Hope (North Riding) moved:

> That in the opinion of the Conference the Distribution Committee should not require details of private visits in connexion with mileage record cards.

Dr. J. P. Williams-Freeman pointed out that £300,000 was a considerable sum, and the Treasury did not consent to the constitution of the central mileage fund at this amount without very prolonged arguments and considerable struggle on the part of the representatives of rural practitioners, who were called upon, very properly, to show a case for this fund. The Treasury could not be blamed for that, and if it were simply a question of sending in returns to the effect that there were so many patients who lived at certain specified distances the matter would be very simple. But, of course, one was met with the unanswerable argument that if half a dozen of these patients were visited in a morning the practitioner did not make separate journeys out and in for each of them, but paid his visits in one round. The suggestion at one time was that the practitioner should work out his average distance per visit, but that would be troublesome, and a compromise was effected by asking a certain number of doctors to keep a record of their total mileage travel in the year, and so arrive at reasonably accurate figures; also a record of their total visits paid, and the visits to private patients had to be distinguished from the visits to insurance patients, because the percentage of visits to the insured population was not known. Last year they took the proportion of visits to insured patients at a third. From the general total of mileage travelled and the percentage of insured and uninsured patients they would work out accurate figures, which would be accepted by the Treasury.

Dr. Candler-Hope withdrew his amendment, but moved another expressing the opinion that mileage records as at present kept were of no use for the alleged purpose of the returns. Notwithstanding all that Dr. Williams-Freeman had said, he still thought that the records they were asked to keep were incorrect, in the respect that they did not furnish the Distribution Committee with any figures upon which could be calculated the work actually done. After the second mile there came in the increased difficulties of the rural practitioner. The £300,000 was being paid for work done over and above the two mile radius, and to require statistics for visits paid within two miles vitiated the whole return from the point of view of the Distribution Committee. On one day he saw 24 patients and travelled 36 miles. By the Ministry's figures that gave an average of 1.5 miles per patient; but 8 of those people were visited in the village where he lived, and therefore the other 16, for whom he was being paid extra from the Mileage Fund, showed an average of 2.25 miles per visit.

Dr. A. E. Larking (Bucks), having worked out the mileage records in his area for two or three months, disagreed with the view that they were of no use. In some practices the visits to insured were over 40 per cent., and approaching 50 per cent. of the whole. Evidence that insured patients required so large an amount of visiting was extremely useful in pressing their claims upon the Ministry.

Dr. J. Holmes (Bury) complained that in mileage records the character of the roads was not taken into account; but the Chairman said there was provision for the consideration of this factor.

Dr. F. B. Thornton (Surrey) said that the mileage figures for his area exactly corresponded with those Dr. Williams-Freeman put to the Government. Of the total number of patients seen by the doctors who were collecting the statistics, one-third were insured persons.

Dr. Candler-Hope still held to the view that unless statistics for mileage only took account of distances over the two miles limit any return so far as the Distribution Committee was concerned was vitiated.

His amendment was lost.

It was agreed, on motions from Cheshire and the West Riding, that in the calculation of the mileage grant for 1921 the increase in motor taxation and in the price of petrol should be taken into consideration, and that attention be called generally to the rapidly increasing costs of working in country practices, which justified taking into account a still further increase in the mileage grant.

NATIONAL INSURANCE DEFENCE TRUST.

The Medical Secretary made a statement on the position of the National Insurance Defence Trust. The report in the hands of the representatives had stimulated more committees to bring themselves into line. A sum of £1,134 over and above the amount given in the report sent out (£5,374) had since been received. Eleven more committees had contributed, and that day an individual subscriber, who was chagrined because he could not persuade his own committee to subscribe, had given him a cheque for £25. (Applause.) The London Panel Committee had withdrawn its promise to support the Fund, but other supporters were forthcoming.

Dr. Brackenbury hoped they would go on with the Fund. Its apparent lack of success was due not to hostility but to lethargy.

The Chairman said that although his own committee had been active in support of the Fund his fellow members were not altogether happy when they saw the apathy of other areas. The Fund could only be made successful by work, but, given that, he believed it would grow into a formidable weapon.

Dr. A. Leeming (West Suffolk) moved that unless a guarantee of support up to the amount required be obtained from at least 150 Panel Committees by March 31st next the Trust be wound up; and that should the requisite guarantee be obtained, initial contributions should be at once called for.

The motion was lost and the report of the trustees approved.

Dr. A. E. Larking remarked that no committee believed more strongly than Buckinghamshire in the Defence Trust, but it did not feel inclined to go on paying unless a very much larger number of other committees took a liberal share.

PROCEDURE ON APPEAL.

Dr. E. A. Gregg (London) moved:

> That in the opinion of this Conference an amendment of the National Health Insurance Acts, allowing appeal to the common law, is desirable.

Apart from actual removal from the list, circumstances might surely arise in which injustice, in the nature of an unusually severe penalty, had been done, when resort to common law would prove most desirable, though the privilege should not be rashly used.

Dr. Brackenbury appealed to London to withdraw this proposition, on the assurance that the Insurance Acts Committee was quite in sympathy with it, and proposed during the next year to do as much as or more than it had done in the past. But were the procedure extended to other matters than the removal of the name it immediately became difficult. In his own view they ought to insist on a different procedure—a largely professional procedure—before these penalties were inflicted at all.

Dr. E. R. **Fothergill** also appealed to London to refer the matter to the Insurance Acts Committee to consider it fully and report with recommendations.

The London representatives, however, declined to withdraw or modify their rider.

Dr. E. K. **Le Fleming** (Dorset) wished to remove some misapprehensions. It had fallen to his lot to serve on four committees of inquiry into the conduct of insurance practitioners which had been commented on adversely by Insurance Committees or coroners' courts. It might interest them to know exactly what the procedure was. A court of inquiry consisted of a barrister and two medical men. The barrister and the two medical men were absolutely independent of the Ministry, in his experience, and the medical men were insurance practitioners. Counsel for complainant and for the defence brought their case before the tribunal, witnesses were sworn, a stenographer took down everything that was said, and the inquiry was held in public. At the end of that inquiry the two medical representatives and the barrister had to draw up an agreed report, which report had to state exactly what facts were found by evidence to be proved, and any comments on those facts that the committee liked to make. In his experience the whole of the evidence turned on medical technicalities, and could only be really appreciated by medical men themselves. And he thought that, certainly at the inquiries on which he had sat, there had been the most earnest endeavour on the part not only of the general practitioners—that was assured—but of the barrister to do justice to the man who had been placed before them. If the legal representatives of bodies like the Medical Defence Union were asked whether they would rather plead their case before a tribunal such as that or before a court of law, they would, he knew, choose the tribunal already set up by the Ministry. He would like to ask the Conference if it was wise entirely to throw over a system which, in his opinion, at present worked most fairly for the medical man.

Dr. C. F. T. **Scott** (Middlesex) believed the profession to be unanimous in thinking that there should be a final appeal to a judicial or administrative court.

The London resolution was then put to the vote, and lost by a large majority. Dr. **Brackenbury** explained, in answer to a question, that this decision did not revoke the instructions given by previous Conferences to attempt to secure an appeal to the High Court in the case of proposed striking-off the panel.

Emergency Treatment.

Dr. **Christopher Mayhew** (Portsmouth) submitted a motion expressing the opinion that the difficulty in carrying out the Regulations as to emergency treatment arose because there was no guide as to when the insurance practitioner on whose list the patient's name appeared was available. In Portsmouth the practitioners worked very well together, and there were very few claims indeed. Of course, it was sometimes perfectly clear that a practitioner was out, or otherwise not available, but in other cases, as, for instance, when a doctor's house was far from his surgery, a clearer understanding was needed.

Dr. **Brackenbury** said it was not their business, fortunately, to give a definition of the word "available." The Panel Committee of the area had to determine that, in considering the circumstances of each case. If the Panel Committee did not pass the account, the Insurance Committee could not pay it. Surely all such matters were best left in the hands of the local medical representatives of the two bodies concerned, for them to determine whether the regulation applied or not.

Dr. **Mayhew** then withdrew his motion.

Dr. **Frank Challans** (West Ham) moved:

> That, in the opinion of this Conference, the ruling by which "an insured person, requiring emergency treatment outside the area in which his insurance practitioner resides, is regarded as a temporary resident," is inequitable in its operation, and liable to grave abuse, and should be amended.

He fully recognized that these cases had to be dealt with, but he entirely objected to the Ministry getting out of its difficulties by defining these people as temporary residents. In his borough there was an island area which consisted mainly of factories, with a small resident population so cut off from the rest of the community that the doctors were allowed to dispense their own medicines as in rural areas. Many thousands of workpeople poured into this locality every morning and out again every night. Were they properly described as "temporary residents"? Certainly they were not so within the original meaning of that term. He was certain that no Panel Committee would have accepted the principle had it known that hundreds of thousands of people, who were never in this class before, were going to be put among the temporary residents. ("Hear, hear.") He believed that the future attendance on these people would come under a system of payment by attendance. The great stumbling-block was the production of the medical card. In these emergency cases the man seldom had it with him. By a system of docketing which the practitioner could use, the dockets being sent on to the Insurance Committee, a machinery might be devised to obviate the difficulty.

Dr. **Brackenbury** agreed. He hoped the amendment might be referred to the Insurance Acts Committee, together with the information Dr. Challans had given, so as to form part of the argument in dealing with this matter when the Ministry was approached. He did not agree in the least with the interpretation of temporary residence so well challenged by Dr. Challans. The question was discussed with some fullness at the last meeting of the Insurance Acts Committee, and it became so complicated and appeared so important that it was decided to adjourn its further consideration and to make it the most important business of the next meeting, after which the Committee could go to the Ministry of Health with its fully considered opinion thereon.

It was agreed to refer the motion to the Insurance Acts Committee.

Miscellaneous.

The **Chairman** at this point allowed Dr. W. R. **Martine** (Haddington) to move that in view of the greatly increased cost of drugs and appliances the amount of 2s. per head in Scotland for the Drug Fund was inadequate. This was agreed to unanimously.

Several riders were carried as references to the Insurance Acts Committee or as expressions of opinion to be pressed upon the Ministry. One by Leicester was that the provisions of the certification rules should be made obligatory on approved societies; another, that suspense slips be issued by the use of which, in cases where the medical record had not been received, the insured person should be placed on the list of the new doctor from the date on which the latter first saw the patient; Birkenhead carried a motion that steps be taken to require every practitioner on the panel, who did not reside on the premises where his insurance patients consulted him, to notify on the outside of the premises the address of his residence; Swansea, that all communications from the Insurance Committee, Ministry of Health, and other official bodies which required a reply, should have a franked cover enclosed.

Expenses of Insurance Acts Committee.

Dr. J. P. **Williams-Freeman** moved that the expenses of Panel Conferences and such expenses of the direct representatives on the Insurance Acts Committee as were now paid by the British Medical Association should be paid from the funds of the National Insurance Defence Trust. The expenses of the Insurance Acts Committee averaged £1,300 a year. He would himself like to go further and see other expenses of the Association defrayed out of specific insurance funds. There was everything to be said for beginning to use this fund by paying legitimate expenses. It would answer those who complained of Association ascendancy in insurance. The actuarial difficulties, he thought, could be easily adjusted by the setting apart of a special fund, and he did not believe many Panel Committees would refuse this allocation, while the fact that it was being made would stir up negligent Panel Committees to make contributions to the general fund as well.

After discussion, Dr. Williams-Freeman's motion was carried.

Insurance Practitioners' Pharmacopoeia.

Dr. A. E. **Larking** moved that a pharmacopoeia for insurance practitioners be compiled. The differences between areas were often inconvenient. Dr. **Le Fleming** said that his group was considering the advisability of having a pharmacopoeia for the group, but was awaiting the fate of the motion before the Conference. One or two representatives expressed opinions in favour of local pharmacopoeias; and the motion was lost.

Joint Committee of Representatives.

Dr. J. P. WILLIAMS-FREEMAN urged the establishment of a permanent council consisting of members representative of the Ministry of Health and of insurance practitioners in equal numbers, its purpose to be the discussion of conditions of service. He believed that such a "Whitley Council" would be welcomed by the Ministry, if it could be shown that it really represented the profession. The members representing panel doctors should be selected by the direct representatives on the Insurance Acts Committee.

Dr. A. LYNDON (Surrey) and Dr. BRACKENBURY opposed the motion, and it was lost.

Other motions were on the agenda, in particular three from London relating to the report of the Consultative Council on Medical and Allied Services, but the CHAIRMAN pointed out that these were not specifically matters of national insurance, and in view of the lateness of the hour and the depleted state of the meeting, he asked the Conference whether or not it desired to continue on the following day. The Conference decided not to do so. A hearty vote of thanks to the Chairman concluded the proceedings.

DINNER TO THE INSURANCE ACTS COMMITTEE.

AT the conclusion of the Panel Conference on October 21st he representatives assembled at the Holborn Restaurant or a dinner given by them in honour of the Insurance Acts Committee of the British Medical Association. The absence of some representatives was due to uncertainty regarding railway facilities, but about 120 were present. The chair was occupied by Dr. H. J. CARDALE, Chairman of the London Panel Committee, and among the visitors present was Lord Dawson. Sir Clifford Allbutt wrote regretting inability to attend.

The CHAIRMAN, in proposing the toast of "The Insurance Acts Committee," which he coupled with the name of Dr. Brackenbury, said that all controversy had been left behind at the Memorial Hall. It was fitting that the representatives attending the Conference should recognize the good work that had been done for the insurance medical service and for the profession by the Insurance Acts Committee. He was anxious that there should be no misapprehension with regard to the gathering. They did not meet to celebrate the triumph of any particular policy, but simply in order to express their gratitude to the gentlemen who, on the Insurance Acts Committee, had sacrificed so much time and done so much good work on their behalf. The Medical Secretary (Dr. Cox) had given him a few figures regarding the work entailed by the recent negotiations with the Government. The record showed twenty-one meetings of the full Committee and forty-nine meetings of subcommittees, twenty-three round-table conferences with the Commissioners or the Ministry, and one final meeting with the Minister of Health, which was, he gathered, of quite an exhausting character. And in addition to these there were the conferences of representatives, annual and special. It would be understood what preparation and argument, not to speak of travel, these meetings involved. What Dr. Brackenbury had done for the profession could not be over-estimated. (Applause.) Dr. Brackenbury's interests in public life were varied, and his ubiquity was astonishing. All that they could do—they could never repay him—was to acknowledge in this small way their gratitude for all he had accomplished. (Applause.)

The toast was accorded musical honours.

Dr. BRACKENBURY expressed his grateful sense of this tribute of appreciation. It had really been embarrassing to Dr. Cox and himself during the last few months to receive so many resolutions of thanks. They felt very deeply the appreciation shown by those best able to judge of the character of the work they had tried to do. For his own part he was very proud of the Insurance Acts Committee. It was a magnificent committee. (Applause.) He knew how much care and thought and energy had been put into the work, not only by present members, but by all who had been members during the last three or four years. Their zeal for the good of those for whom they acted could not be surpassed. What mattered even more was the spirit in which the work was done. They had declined from the beginning, and would go on declining, to consider any Government or Government department as a necessary enemy. (Hear, hear.) When dealing with Ministers or eminent civil servants they did not think that because they were sitting on different sides of the table they must therefore try to get the better of the people on the other side. They expected both sides to give all they could of their wisdom and experience, fairly and freely, so that unitedly they might come to conclusions which would be for the good of the public without being harmful to the profession they represented. He hoped they would always enter upon any conferences in that spirit. Another thing emphasized by the very composition of the Committee was that they did not act for insurance practitioners as though these were a body of men apart from the rest of the profession. They tried to act on behalf of medical men and medical women as a whole, for although the work of those in the profession was varied in character it could not be divided or dealt with separately. He thought they could claim to have achieved a reasonable amount of success; they could not get all that they wanted; but when they got that, there would be no necessity for the continuance of the Committee. It had been calculated that the monetary result of the work during the last twelve months, if it could be put into figures, would total to not much less than one million pounds. (Applause.) In the course of his reply Dr. Brackenbury referred amidst much amusement to the Insurance Acts Committee's bewilderment at finding itself alternately stroked and punished by the same hands.

LORD DAWSON OF PENN, in proposing the health of the Chairman, said that, like Dr. Brackenbury, Dr. Cardale had demonstrated that it was possible to be distinguished in his calling, and at the same time to render most valuable public service. It was much too commonly thought that if a doctor ventured outside the round of his practice he was either inefficient in his work or was stooping to politics, although, to be sure, the very people who made such suggestions had often been raised to fame by those same politics. Very many in the profession were looking to the Chairman and others like him to help them in guiding the medical profession into the new era at whose portal they stood. Their gratitude, as Rochefoucauld said, was a lively sense of favours to come. Such men would lead them from the ultra-individualism of the past into the fuller life of communal medicine, wherein the profession would gain greater opportunities as well as increased prosperity, and, what was more valuable than anything else, a higher and increasing esteem in the eyes of the public.

This toast also received musical honours, and Dr. CARDALE, in reply, said that it had been all the greater pleasure to preside on an occasion of such general congratulation, because at other times he had had to undertake quite a different part.

A delightful musical programme added to the amenities of a most pleasant social evening.

CORRESPONDENCE.

Capital Value of Insurance Practices.

SIR,—Dr. E. R. Fothergill will, I am sure, concede that the Brighton scheme is the original Dartford scheme, couched in legal form with a bond between the parties concerned included. We put this not as claimants, but to indicate to readers that the propositions put forward in the Brighton scheme have been already considered, found wanting, and amended.

The original Dartford scheme was accepted unanimously by the practitioners in the Dartford area, and copies of the scheme were sent to the Kent Local Medical and Panel Committees and to the Insurance Acts Committee, both of which later discussed it with a deputation from Dartford.

The Insurance Acts Committee expressed its willingness to reconsider the scheme when fully developed, and if sent up by a larger area, represented by the Kent committees, which latter have discussed it on several occasions, but are unable to accept the scheme in its original form as the Brighton Committee have done.

I have before me a lengthy criticism of the original Dartford scheme by Dr. Fothergill in April last, but belief in his own criticisms cannot have been very deeply rooted, since the original Dartford scheme has, I am glad to note, been exactly reproduced as the Brighton scheme. Dr. Fothergill's criticisms of the recent Dartford scheme, in the SUPPLEMENT of October [illegible], are a complete travesty of facts. Dr. Gordon Ward, wholly responsible for the amendments which produced the present Dartford scheme, dealt with these criticisms in the SUPPLEMENT of October 16th, but Dr. Fothergill this week reiterates and adds further travesties, too futile and toilsome to deal with. Perhaps, given time, the amended scheme may sink in also and blossom forth as Brighton scheme No. 2, in which case it will have the whole-hearted support of practitioners from these parts.

I regret that at the conference on October 21st Dr. Gordon Ward did not have the opportunity of dealing with the details of the amended Dartford scheme; I would have done so, but I realized that the delegates, not having had the details of the scheme circulated amongst them and wishing to complete the agenda in one day, preferred to concentrate wholly on the motion dealing with the abolition of the obnoxious Rule 4, Schedule 1, Part I, Regns. 1920, rather than to discuss remedies to alleviate the hardships certain to follow its enforcement. Anxious as any other area to press for this repeal, the promoters would not wish any scheme pushed which could at any time be used by the Ministry of Health as an argument against its repeal or which would in any way hamper this effort to get Rule 4 rescinded. Should the attempt again fail, let us hope that no time will be lost in evolving some remedy.

Such a scheme as the Dartford scheme would be administered by the Local Medical and Panel Committees, not by the Ministry of Health, whose sanction would be asked simply to utilize official machinery for actuarial purposes.

There need be no interference with the sale of a practice, nor with the transference of patients.

Proportional contributions by panel practitioners with unanimity are essentials, and in the Dartford area we were agreed on these points, and it was not unreasonable to hope for such unanimity elsewhere.

We venture to state that the amended Dartford scheme —a mutual insurance scheme—might be adopted by panel practitioners with distinct advantage to all participants, whether the obnoxious rule be repealed or not, some form of mutual insurance or modified pension for the general practitioner being long overdue.—I am, etc.,

M. W. RENTON.

Dartford, Oct 25th.

SIR,—The Dartford scheme to maintain the value of insurance practices is most alluring, but an impartial examination will show that it is actuarially unsound for the following reasons:

Such a scheme must be compulsory, as otherwise the young men will not join. In any case it must favour the men of advanced age. The provision for payment of the whole sum after twelve years, and proportionately for shorter periods, is very dangerous indeed; there is an incentive to change one's practice. The retirement of a few practitioners with exceptionally large lists would cause a severe strain on any particular year. The fact that no reference is made to the present age of the doctors is evidence that much is left to chance.

The assumption seems to be that all panels are equal, all practices the same size, all doctors the same age, and all retirements equally likely. The flat rate of premium must of necessity be inequitable. It is extremely likely that, in the course of time, the scheme will become unpopular because of the ultimate increase in the charge and of the violent fluctuations possible from year to year. The premium of £14 per £500 is just about equivalent to that required to ensure this sum being paid on death (only). This is on the assumption of an average age of 45.—I am, etc.,

London, S.W., Oct 18th. E. F. O'FERRALL, L.R.C.P.Lond.

Disposal of Practices.

SIR,—It is of course a truism to state that giving up practice concerns every medical practitioner. But the conditions are not very clearly understood. A man may cease practice from ill health, or owing to his taking a month's holiday. What is expected of him? He obtains the services of another, a neighbour or a locumtenent. When he returns in fit health, he resumes his practice. In the meanwhile it is essential that his work should be carried on. His duty to himself and to his patients require this. If from prolonged illness or any other cause, he ceases to carry on, his *duty* is to appoint a deputy, who will be his successor. His responsibility is the same, to his patients and to himself or dependants.

His patients are of course free to go to the substitute, or to go to another. The same freedom must necessarily be given to the patients enrolled under the Insurance Act Regulations. But it is essential that these should record a definite choice. They should be at liberty to demand immediate treatment if required. And a certain notice should be given to every one on the list, so that the insured person may enrol himself or herself on his list, or on the list of any other in the district. There should be no transfer in bulk, as has been practically the case hitherto. Your correspondent, Dr. G. C. Garratt, puts the method rightly (SUPPLEMENT, p. 102):

> That all insured persons automatically transferred be allowed option to change their doctor once at any time during the next six months, and be notified to that effect.

Practices that changed hands some years ago, simply slumped the lot to the new-comer, perhaps an entire stranger to the place. A month's notice was given—many did not receive any notice. Some brought their card to me even a year after, asking to have part B signed, as A had given up the practice, and they did not know whom to go to for treatment. I referred them to their agent, through whom their stamp cards went. But this is surely not right, that patients should be left without a properly signed medical card.—I am, etc.,

London, S.W., Oct. 20th. GEORGE CRICHTON, M.D.

The Salford System.

SIR,—I have no real desire to convert Dr. Charles to the Salford system, but I should like to break him of the habit of making didactic statements under the misapprehension that he is enunciating a logical conclusion from undisputed premisses.

His "summing up" contains two articles only, both of which are incorrect:

1. The approved societies are satisfied that the Salford system does not inflate the amount of sickness benefit payable. This was proved statistically after an inquiry of an exhaustive nature by a special subcommittee of the Salford Insurance Committee. They are also of opinion that the Salford system materially reduces the number of complaints against practitioners that they have to forward to the proper quarters.

2. The final settlement for 1919 shows that we pay just on 96 per cent. of our credit rates!

I have had sixteen years' experience of capitation practice at 8s. 6d. and 9s. per head and seven years of payment-per-attendance insurance practice, and I am a whole-hogger for the latter. Dr. Charles's experience is one-sided. As I say, let him remain unconverted, but let him also refrain from rhetorical flights into the realms of imagination. We Salford practitioners do not want to join those who are thronging the main road. They are always howling and protesting at the discomforts of that road, and their efforts to make the pace have been crowned with singularly small success. We prefer the "by-path," the "secluded path" along which we travel in comfort and peace.—I am, etc.,

STANLEY HODGSON,
Chairman, Salford Division, etc.

Salford, Oct. 23rd.

The London Panel Committee.

SIR,—I am directed to forward for publication in your journal the following resolutions adopted by the London Panel Committee at a meeting held on October 19th, 1920:

(*a*) That the Committee are of opinion—

(1) That it is essential for the proper protection of panel practitioners that they should be represented by an independent committee or body, responsible to and directly elected by the Local Medical and Panel Committees.

(2) That the Insurance Acts Committee of the British Medical Association does not comply with this standard of an independent body responsible to and directly elected by the Local Medical and Panel Committees, and the Committee therefore resolved not to nominate or be represented on the Insurance Acts Committee of the British Medical Association.

(*b*) That the Secretary be instructed to communicate this action on the part of the Committee to the Local Medical and Panel Committees of Great Britain and to invite them to consider the holding of a conference and the forming of an independent body, and further to request those Committees which are affiliated to the Association of Panel Committees to take common action with the London Panel Committee as an elected body for the representation and protection of panel practitioners and as the body to appoint an authority to negotiate with the Government.

(*c*) That the Committee's representatives to the Conference of Local Medical and Panel Committees be instructed to inform the delegates at that conference of the resolution of the Committee and the reasons therefor, and to urge on these delegates the importance of following the lead of the London Panel

Committee for the establishment of an independent body for the protection of the interests of panel practitioners.

(*d*) That copies of the resolutions be forwarded to the Minister of Health and to the medical journals, and be printed in the next issue of the *London Panel Committee Gazette*.

—I am, etc.,

ROBERT J. FARMAN,
Secretary.

London, W.C.2, Oct. 22nd.

EXPENDITURE UNDER THE NATIONAL INSURANCE AND OTHER ACTS.

A RETURN to the House of Commons states that the total expenditure, other than that out of loans, in connexion with the National Health Insurance Act amounted during the year ending March 31st, 1919, for England and Wales, to £17,330,000, of which administrative expenses accounted for £3,630,000. Of the total receipts of £26,408,000, the sum of £7,515,000 was from parliamentary votes and grants and £18,893,000 from contributions, fees, and other receipts. The total expenditure on maternity and child welfare work was approximately £350,000; the expenditures in connexion with the Lunacy Acts and the Mental Deficiency Act were respectively £1,760,000 and £108,000; these figures do not include the administrative expenses of the Lunacy Commissioners or the Board of Control.

LOCAL MEDICAL AND PANEL COMMITTEES.

DEVONSHIRE.

A MEETING of the Devonshire Panel Committee was held at Exeter on October 8th, when Mr. RUSSELL COOMBE was in the chair. It was decided to obtain the Ministry of Health's ruling as to whether fees for anaesthetics in connexion with operations outside an insurance practitioner's agreement were allowed out of the Local Practitioners' Fund. A report was received of the tour of the county of the representative of the Ministry in connexion with the question of mileage. The provisional agenda of the Conference of Local Medical and Panel Committees and the annual report of the Insurance Acts Committee were considered and instructions given for the tabling on the final agenda of motions in the name of the Committee. A proposal to submit a motion to the Conference to the effect that the negotiating body on behalf of insurance practitioners should be an independent body directly elected by Panel Committees was lost by a large majority.

THE CANADA MEDICAL REGISTER.

THE following announcements are made by the Medical Council of Canada under the provisions of the Canada Medical Act, endorsed and supplemented by the Acts passed by the various Provincial Legislatures of Canada.

(*a*) Any person who secures registration on the Medical Register of Canada by examination is entitled to register without further examination, in any Province of Canada, on complying with the necessary regulations pertaining thereto, including the payment of the Provincial registration fee.

(*b*) Any person who was duly registered in any Province of Canada prior to November 7th, 1912 (the date under which the Medical Council of Canada was first legally constituted under the Canada Medical Act), but who was not so registered ten years prior to November 7th, 1912, may be registered on the Medical Register of Canada, either by examination, or without examination, on the completion of ten years after the date of his Provincial registration.

(*c*) Any person whose first Provincial registration is subsequent to November 7th, 1912, can become registered under the Canada Medical Act only by passing the examinations of the Medical Council of Canada.

(*d*) Any person who secured registration on the Medical Register of Canada by Provincial registration of ten years' standing is entitled to register without further examination in any Province of Canada on payment of the necessary fee, and subject to the following proviso of Section 18, Clause 2, of the Canada Medical Act.

> "Provided that if the Medical Council of any Province is not satisfied with the period of years prescribed by the subsection, such Medical Council may, as a condition to Provincial registration, exact an examination in final subjects from practitioners registered under this subsection, and the said examination shall be held according to the provisions of the by-laws or rules of the respective Provincial Councils."

Registration.

Any person who on or before November 7th, 1912, was the holder of a licence or certificate in any Province of Canada and who has been in active practice in Canada shall, ten years after such Provincial registration, be entitled to register without examination. Certificates in blank will be provided by the Registrar of the Medical Council of Canada upon application.

Examinations.

The autumn examinations for 1920 were held at Montreal and Halifax on October 12th, 1920. An examination has also been ordered by the Council to take place at Toronto, Winnipeg, and Vancouver on June 14th, 1921. Registration for these examinations closes at the Registrar's office two weeks before the date of the examination.

Candidates for the examinations of the Council must present either (*a*) licence of a Provincial Medical Council or Board of Examiners or (*b*) a certificate from the Registrar of a Provincial Medical Council or Board that the requirements of that Council or Board in regard to preliminary education, matriculation, medical curriculum, and graduation have been complied with. Candidates who hold diplomas obtained outside Canada must present certificates from the Registrar of a Provincial Medical Council, the same as is required of graduates of the Canadian universities. The qualification granted by the Medical Council of Canada will be known as the "Licence of the Medical Council of Canada" (L.M.C.C.). The Registrar of the Council is Dr. R. W. Powell, 180, Cooper Street, Ottawa, Ontario. The *Canada Medical Register* on July 9th, 1920, contained 587 names.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Surgeon Lieutenant G. G. Newman to Haslar Hospital; Surgeon Sub-Lieutenant G. G. Newman (late R.N.) to be Surgeon Lieutenant.

Surgeon Lieutenants O. D. Brownfield, O.B.E., J. A. Watson and P. W. Carruthers have been promoted to the rank of Surgeon Lieutenant Commanders.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS

Temporary Major J. Turton (Colonel T.F. Res., A.M.S.) relinquishes his temporary commission.

Temporary Captain W. Angus relinquishes the acting rank of Lieutenant-Colonel.

The following relinquish the acting rank of Major: Captains C. Nicholson, M.C. (May 1st, 1919, substituted for notification in the *London Gazette* of May 3rd, 1920), L. B. Clarke. Temporary Captain H. A. Tillman.

Captain and Brevet Major J. D. Bowie, D.S.O., to be acting Major.

The notifications regarding temporary Captains Edwin G. A. Smith and Henry T. O'Neill, which appeared in the *London Gazette* of December 4th and 6th, 1919, respectively, are cancelled.

Captain D. G. Evans, late R.A.M.C.(S.R.), to be Lieutenant, and to be temporary Captain, March 19th, 1918, but not to reckon for pay or allowances prior to October 1st, 1920, with precedence next below C. P. Chambers.

Temporary Captain R. S. Strachan to be Lieutenant and to be temporary Captain, June 15th, 1917, but not to reckon for pay or allowances prior to October 1st, 1920, with precedence next below E. Masson.

The following late temporary Captains to be temporary Captains: T. B. A. Haggard, with seniority from September 14th, 1916; C. G. Monro, with seniority from June 4th, 1916; J. G. Castellan, with seniority from April 18th, 1916.

The following officers relinquish their commissions: Temporary Major W. H. G. Aspland, and is granted the rank of Lieutenant-Colonel. Temporary Captain R. A. Steven, and is granted the rank of Major. Temporary Captain (Brevet Major) W. B. Purchase, M.C., and retains the brevet rank of Major. Temporary Captains and retain the rank of Captain: N. N. Haysom, J. J. Foley, T. S. Paterson, R. W. Brown, E. H. Jones, A. G. Welsford, H. L. Sells, H. Blundell, P. H. S. Smith, G. V. Allen, J. H. Moore, A. W. Propert, P. P. Galea, W. K. Bigger, M.C., G. N. Brandon, H. R. Mayo, J. Byrne, J. L. Stewart, D.S.O., M.C., H. J. Cundell, J. C. Davies, G. G. Ferguson, C. F. Strange. Temporary Lieutenant G. R. Waller and retains the rank of Lieutenant.

Lieutenant F. D. Ross-Keyt resigns his commission.

C. P. Ruel to be temporary Lieutenant.

ROYAL AIR FORCE.

MEDICAL BRANCH.

R. J. Aherne (late Captain R.A.M.C.) is granted a temporary commission as Captain, November 7th, 1918 (substituted for notification in the *London Gazette*, December 13th, 1918).

Captain E. T. McElligott is transferred to the unemployed list.

INDIAN MEDICAL SERVICE.

Lieut.-Colonel A. E. Walter, O.B.E., Superintendent, *X*-Ray Institute, Dehra Dun, has been granted six months' privilege leave (October 1st).

Captain S. M. Hepworth, Orthopaedic Surgeon, Orthopaedic Institute, Dehra Dun, has been appointed to hold charge of the duties of Superintendent of the *X*-Ray Institute in addition to his own during the absence of Lieut.-Colonel A. E. Walter.

Major E. S. Phipson, D.S.O., Health Officer, Simla, has been granted combined leave for eight months (March 4th).

Major H. Falk, M.B., has been appointed to act as Health Officer, Simla (March 4th).

The undermentioned officers have retired from the service with effect from the dates noted: Major J. J. Robb (July 30th), Lieut.-Colonel F. W. Gee, C.I.E., M.B. (August 5th), Lieut.-Colonel W. D. Hayward, M.B. (August 5th), Major V. B. Nesfield (September 15th).

Major N. E. H. Scott, C.I.E., has been granted combined leave for one year (July 9th).

Major J. Smalley has been appointed to officiate as an Agency Surgeon, and has been posted as Residency Surgeon, Gwalior (September 9th).

Lieut.-Colonel W. H. E. Woodwright has been permitted to retire from the service (July 10th).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following Captains relinquish their army commissions on appointment to permanent commissions in the R.A.F.: Kenneth Biggs, M.C., W. W. Shorten, R. E. Bell, F. J. Murphy, D'Arcy Power, M.C.

OVERSEAS CONTINGENTS.

SOUTH AFRICAN MEDICAL CORPS.

The name of Captain J. R. White is as now described, and not as in the *London Gazette* of May 14th, 1920.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

To be Majors: Major B. Aldenbrooke, T.D., from T.F.Res. Captains J. C. Grieve, M.C., J. D. C. Swan.

Captain J. Paton (late temporary Captain R.A.M.C.) to be Captain, with precedence as from September 30th, 1918.

Captain A. S. L. Malcolm (late temporary Captain R.A.M.C.) to be Lieutenant, with precedence as from January 7th, 1916, and to relinquish the rank of Captain.

Captain J. H. P. Fraser, D.S.O., M.C., from 5th Southern General Hospital, to be Captain, with precedence as from July 21st, 1908.

Captain G. Bailey (late Captain R.A.M.C.T.F.) to be Captain.

The following officers resign their commissions: Major R. W. Brimacombe, and is granted the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform. Captain C. P. Woodstock, and retains the rank of Captain.

2nd London Sanitary Company.—Captain A. M. Brown resigns his commission and retains the rank of Captain.

1st Scottish General Hospital.—Captain G. Stuart is restored to the establishment.

3rd Southern General Hospital.—Lieut.-Colonel (Brevet Colonel) W. J. Maurice is restored to the establishment.

TERRITORIAL FORCE RESERVE.

ARMY MEDICAL SERVICE.

Lieut.-Colonel (temporary Colonel) H. T. Challis, V.D., from 3rd East Anglian Field Ambulance, to be Colonel on vacating post of A.D.M.S., April 18th, 1916 (substituted for notification in the *London Gazette*, August 28th, 1919, under R.A.M.C.).

ROYAL ARMY MEDICAL CORPS.

Major R. S. Taylor, D.S.O., from 1st West Lancs Field Ambulance, to be Lieutenant-Colonel.

Major A. P. H. Simpson, from West Lancs Casualty Clearing Station, to be Major.

The announcement regarding Captain G. F. R. Smith, which appeared in the *London Gazette* of December 31st, 1918, is cancelled.

DIARY OF SOCIETIES AND LECTURES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Monday, 5 p.m., Demonstration by Professor Shattock: Fibroma; Chondroma.

ROYAL SOCIETY OF MEDICINE.—*Section of Surgery (Subsection of Orthopaedics)*: Tuesday, 5 p.m., Cases; 5.30 p.m., the President: Multiple Congenital Dislocations; Mr. R. C. Elmslie: Further Report on Case of Cyst of Tibia; Discussion (deferred from last meeting) on Mr. Fairbank's Case of Deformities associated with Chronic Nephritis. *Section of Pathology*: Cancer Research Laboratories, Middlesex Hospital, Tuesday, 8.30 p.m., Professor S. Russ and Dr. Helen Chambers: Action of X Rays on Rats; Professor Swale Vincent: Relation between Cortex and Medulla in the Adrenal; Mr. B. H. Walters: Accidents during Manipulation of H.C.N. Demonstrations by Dr. E. L. Kennaway and Mr. Somerville Hastings: Three Rare Neoplasms; Mr. L. H. Clarke: Ultra-violet Light; Professor J. McIntosh: Experimental Encephalitis. *Section of Surgery*: Wednesday, 5.30 p.m., Discussion on Unusual Cases of Gunshot Injury to Blood Vessels, to be opened by the President, Mr. W. G. Spencer, followed by Sir George H. Makins and others. *Section of Balneology and Climatology*: Thursday, 5.45 p.m., Dr. C. F. Sonntag: Action of Baths on the Skin and Nervous System. Members of the Section, with guests, will dine together at the Welbeck Palace Hotel, Welbeck Street, W., at 7 p.m. Those intending to be present should send their names to Dr. C. F. Sonntag, 80A, Belsize Park Gardens, N.W.3, not later than the first post on November 3rd. *Section of Obstetrics and Gynaecology*: Thursday, 8 p.m., Mr. J. D. Barris and Mr. M. Donaldson: Acute Inversion of the Uterus. Treatment by Blood Transfusion and Late Replacement; Papers by Drs. R. A. Hendry, Arnold Renshaw, and John Adams on Latent Syphilis during Pregnancy, to be followed by Discussion by Mr. Charles Gibbs, Mr. McDonagh, Mr. Kenneth Walker, Dr. Eardley Holland, and Dr. Morna Rawlins. *Section of Laryngology*: Friday, 4 p.m., Cases. *Section of Anaesthetics*: Friday, 8.30 p.m., Dr. Dudley W. Buxton: Psychology of Anaesthesia.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL MEDICAL COLLEGE.—*Surgical Unit*: Mon., 12 noon, Mr. A. J. Walton: Surgical Anatomy of the Abdomen. Monday and Friday, 4 p.m., Mr. J. Sherren and Mr. A. J. Walton: Surgery of the Upper Abdomen. *Medical Unit*: Tuesday and Thursday, 4 p.m., Dr. O. Leyton: Blood Pressure.

MANCHESTER ANCOATS HOSPITAL.—Thursday, 4.30 p.m., Dr. Reid: Diabetes.

MANCHESTER FRENCH HOSPITAL.—Thursday, 4.15 p.m., Dr. N. C. [illegible]: [illegible] Throat Diseases and their Treatment.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Mr. J. Howson [illegible].

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Monday, 5.30 p.m., Dr. Moon: Heart Disease in Children.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Daily, except Wednesday and Saturday, 2.30 p.m., Out-patient Clinics. Monday, 3.30 p.m., Dr. Turner: Subacute Combined Degeneration of Cord. Tuesday, 3.30 p.m., Dr. [illegible]: [illegible]. [illegible], 2 p.m., Dr. Gordon Holmes: Cerebellar Disease; 3.30 p.m., Dr. Collier: Nervous Manifestations in [illegible] Disease. Thursday, 3.30 p.m., Dr. Buzzard: [illegible]. Friday, 3.30 p.m., Dr. Tooth: Ward Cases. Saturday, 10 a.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., Operations, In- and Out-patient Clinics, etc. Monday, 2.30 p.m., Mr. Banister: Gynaecological [illegible]; 3 p.m., Dr. [illegible]: Diseases of the Nervous System. Tuesday, [illegible] a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 4.30 p.m., Mr. Hayton: Mastoid Disease. Wednesday, 2.30 p.m., Dr. Oliver: Skin; 3 p.m., Mr. Benians: Bacteriology of Bronchial Infections. Thursday, 2 p.m., Mr. N. Fleming: Eyes; 3 p.m., Dr. Metcalfe: Examination of Chest Cases by X Rays. Friday, 3 p.m., Dr. Sundell: Children's Diseases; 5 p.m., Dr. Provis: Venereal Department. Saturday, 3 p.m., Mr. Carson: Surgical Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient and Out-patient Clinics and Operations. Monday, 2 p.m., Dr. Stewart: Out-patients; 5 p.m., Dr. Saunders: Rheumatism in Children. Tuesday, 2 p.m., Mr. Davis: Throat, Nose, and Ear; 5 p.m., Dr. Burnford: Infective Endocarditis. Wednesday, 11 a.m., Mr. MacDonald: Cystoscopy; 5 p.m., Dr. Owen: Organic Heart Disease. Thursday, 2 p.m., Mr. Armour: Operations; 5 p.m., Dr. Carr: Tuberculous Meningitis. Friday, 2.30 p.m., Mr. Addison: Wards; 5 p.m., Mr. Page: Anaesthesia in Heart Disease. Saturday, 12 noon, Mr. Sinclair: Abdominal Disease; 2 p.m., Dr. Owen: Out-patients.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 6d. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

NOVEMBER.

2 Tues. London: Public Health Committee, 2.30 p.m.
Kensington Division, Kensington Town Hall, 4 p.m.
Willesden Division: St Andrew's Parish Hall, High Road, Willesden Green, N.W., 8.30 p.m. Lord Dawson of Penn will speak on the Report of Consultative Council on Medical and Allied Services (Ministry of Health).
3 Wed. London: Journal Committee, 2.30 p.m.
London: Conjoint Committee on Minimum Salaries for Public Appointments, 3 p.m.
Leicester and Rutland Division: Medical Club, Bond Street, Leicester, 4 p.m. Lord Dawson of Penn will address the meeting.
4 Thurs. London: Naval and Military Committee, 3 p.m.
5 Fri. Sheffield Division: Rooms of Literary and Philosophical Society, Church Street, Sheffield, 8.30 p.m.
18 Thur. London: Insurance Acts Committee, 2.30 p.m.
19 Fri. North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15—5 p.m., Scientific Demonstrations.

APPOINTMENTS.

DUKES, C. E., O.B.E., M.D., D.P.H., Pathologist and Bacteriologist to the Western Skin Hospital, Hampstead Road, N.W.1.

PARKER, C. S., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Institution of the Walsall Union.

PRYNNE, Harold V., C.B.E., D.S.O., F.R.C.S., Chief Medical Officer to the Post Office, *vice* John Sinclair, M.D., resigned.

SWINDELLS, S. W., M.B., Ch.B.Vict., Medical Officer of the Institution and Children's Homes of the Grimsby Union.

QUEEN'S HOSPITAL, BIRMINGHAM.—*Casualty Surgeon*: William Gemmill, M.B., Ch.B., F.R.C.S. *Surgical Registrar*: R. G. Abrahams, M.B., Ch.B.Birm. *Dental Surgeon*: Harold Round, M.D.S.Birm., L.D.S.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—*Registrar*: Miss M. A. Blandy, M.B. *Resident Medical Officer*: Miss Mary R. Barkas, M.B. *Senior House-Physician*: A. G. Morison, M.B., Ch.B. *Junior House-Physician*: George A. Shepherd, M.B., Ch.B.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

WRIGHT.—On October 18th, at 49, Great Cumberland Place, London, W.1, to Helena R. Wright, M.B., B.S., and Henry W. S. Wright, F.R.C.S., a son.

DEATHS.

HASLEWOOD.—On October 25th, in London, Clarence Haslewood, M.B., C.M.Aberd., son of the late Rev. W. M. Haslewood, Great Harwood, aged 53.

SLOAN.—On October 17th, at 13, Royal Terrace, Glasgow, after a few days' illness, Samuel Sloan, M.D., F.R.F.P.S.Glasg., aged 77.

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SUPPLEMENT

TO THE

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British Medical Association.

CURRENT NOTES.

Colonial Medical Services.

A DEPUTATION from the British Medical Association as to the general organization of, and the terms and conditions of service of officers in, the Colonial Medical Services was received at the Colonial Office on October 28th, by Sir H. J. Read, K.C.M.G., C.B., and Mr. G. E. A. Grindle, C.B., C.M.G., Assistant Under-Secretaries of State, and Mr. A. Fiddian, Principal Clerk. The deputation consisted of Dr. R. A. Bolam, O.B.E., Chairman of Council, Sir Anthony Bowlby, K.C.B., K.C.M.G., K.C.V.O., Lieut.-Colonel R. H. Elliot, I.M.S. (ret.), Dr. David Ewart, O.B.E., Chairman of the Dominions Committee of the Association, Dr. T. Duncan Greenlees, Dr. Alfred Cox, Medical Secretary, and Dr. A. D. Macpherson, Assistant Medical Secretary. A number of matters affecting the Colonial Medical Services, raised in a letter sent by the Association on October 15th, 1920, to the Secretary of State, were discussed, and the question of the steps to be taken to carry out the recommendations of the Association. The Association is now awaiting the reply of the Secretary of State on the various questions raised. It is hoped to publish the Association's letter and the reply of the Secretary of State in an early issue.

The London Panel Committee and the Insurance Acts Committee.

The Panel Committees of the country are being asked by the London Panel Committee to drop the Insurance Acts Committee as the central negotiating body, to hold a conference with the view of forming an independent body, and to revive the activities of the Association of Panel Committees. Panel Committees when considering these representations, will not fail to note that since the passing by the London Panel Committee of the resolutions on which other Panel Committees are now asked to act, there has been a Conference of Representatives of Local Medical and Panel Committees at which these ideas of the London Panel Committee were fully discussed and decisively rejected (see SUPPLEMENT, October 30th, 1920, p. 114). The London Panel Committee could get no more than sixteen votes, in a meeting of 120, in favour of a new independent negotiating body; and as that Committee itself controlled four votes, the inference is that only twelve other Panel Committees were of its way of thinking. With regard to the present attitude of the London Panel Committee it is worthy of note that this Committee has lately undergone a great change in composition; in a recent election it was practically captured by the Medico-Political Union, which is hostile to the Insurance Acts Committee and the British Medical Association. Panel Committees who take all the facts into consideration should have little difficulty in framing an appropriate reply to the London Panel Committee.

The Library of the Association.

The Science Committee, at its meeting on October 29th, was gratified to learn that during the last six months there had been as many as 2,532 attendances at the Library, and that 1,221 volumes had been borrowed. Members are again informed that on application to the Librarian books may be had on loan from the Library of the Association. The only charge payable is the cost of postage of the books to the members, which to meet the new postal charges is now 1s.

The Unemployment Insurance Act.

Several letters have reached this office from medical practitioners who are in doubt as to what effect the Unemployment Insurance Act will have in the case of domestic servants, part of whose duty it is to attend to the door during surgery hours. Certain hypothetical cases were submitted to the Ministry of Labour during September, and the Ministry was asked to give a ruling in order that it might be published for the benefit of members of the British Medical Association. A reply has just been received from the Ministry stating that no ruling can be given until specific detailed applications have been made for exemption of domestics from the tax. The Ministry supplies Form U.I.A., 1 b., on which applications for exemption can be made. It is understood that a number of cases have been put direct to the Ministry, and that these cases are at present under consideration with a view to a ruling. Those who are in doubt as to their position under the Act should at once apply direct to the Ministry of Labour for the Form. Any decision communicated by the Ministry to the Association will be reported at once in "Current Notes."

The Metropolitan Asylums Board and its War Bonus.

In January last the Medical Women's Federation called the attention of the British Medical Association to the fact that the Metropolitan Asylums Board was paying a lower war bonus to its female than to its male medical officers although they were engaged on exactly the same duties. The amount of the bonus was £33 10s. for male and £18 for female medical officers. The Medical Women's Federation suggested that a joint protest should be sent to the Metropolitan Asylums Board. This was done, and the Board has now notified the Federation and the Association that as from March 1st, 1920, the same rate of bonus will be paid to all its medical officers.

Subcommittees of the Science Committee.

The Science Committee of the Association, at its recent meeting, appointed the following subcommittees:

Therapeutic Subcommittee.

To promote, supervise, or direct research in pharmacology and therapeutics, and to consider the subject of proprietary articles and the relation of the Association thereto. The following were appointed members: Dr. H. J. Campbell, Dr. H. H. Dale, Professor W. E. Dixon, Professor C. R. Marshall, Professor C. J. Martin, Professor Ralph Stockman, Professor R. B. Wild.

Medical Research and Laboratory Workers Subcommittee.

To concern itself with the welfare of those members of the profession engaged in laboratory and research work. The following were appointed members: Professor C. H. Browning, Professor W. Bulloch, Professor E. P. Cathcart, Dr. Helen Chambers, Dr. J. S. Edkins, Dr. J. S. Haldane, Dr. R. T. Leiper, Dr. Archibald Leitch, Professor Benjamin Moore, Dr. J. C. Mottram, Dr. F. G. Parsons, Professor E. H. Starling, Professor W. Wright, and the Editor.

The Consultative Council's Report.

Dr. William Paterson, honorary secretary of the Willesden Division, has received from the chairman of the Willesden Urban District Council a letter inviting three representatives of the Willesden Division of the British Medical Association to a conference to consider the interim report of the Medical Consultative Council. The other members of the conference will be the chairman and six representatives of the district council, six representatives of the board of guardians, and three of the cottage hospital.

THE MINISTRY OF HEALTH (MISCELLANEOUS PROVISIONS) BILL.

Deputation to the Minister of Health.

A deputation from the British Medical Association waited on the Minister of Health on November 1st to bring before him certain considerations with regard to Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill now before Parliament. The deputation was headed by Sir Clifford Allbutt (President of the Association), and included Dr. R. A. Bolam (Chairman of Council), Dr. H. B. Brackenbury, Dr. Charles Buttar, Dr. H. J. Cardale, Mr. W. McAdam Eccles, Dr. C. E. S. Flemming, Mr. J. Basil Hall of Bradford, Mr. N. Bishop Harman, Dr. G. E. Haslip, and Mr. E. B. Turner, with Dr. Alfred Cox (Medical Secretary), Dr. G. C. Anderson (Deputy Medical Secretary), and Dr. N. G. Horner (Assistant Editor of the British Medical Journal). Dr. Addison was accompanied by Sir George Newman, Sir Arthur Robinson, Sir Aubrey Symonds, Mr. Gwyer, and Mr. L. G. Brock.

Sir Clifford Allbutt said that the deputation came in no spirit of controversy, and he thought the Minister would be aware, from previous conversations and counsels, that the speaker and all of those present were deeply in sympathy with his scheme as a whole. But some demurs and cautions there must be. What he would like to point out was that on account of the war and other adverse and delaying circumstances, progress in public health matters had been checked during the last six years, or even longer. They were off the main line of progress, and consequently any sufficient proposals to meet the situation must partake in some measure of a revolutionary character, and must affect—if they did not cut at the root of—a number of interests of various kinds. The only way to ameliorate this necessary difficulty was to ascertain the feeling of those closely concerned in a practical way with the matters in hand. Two main points of view had to be considered in this connexion—the point of view of the general practitioner, and that of the honorary staffs of hospitals. The latter, he thought, would agree with him in putting the interests of the general practitioner first. There were a number of points to which they were not taking any immediate objection, but which they hoped would be thought over and very fully considered. For himself he was most concerned with the general development of public health scheme. The general practitioner was getting left behind, not through any fault of his own, but simply for want of some such organization as was now being foreshadowed. He knew that the desire of the Minister was to assist the general practitioner and put him in a position in which he could do his best work.

Mr. E. B. Turner said that he had to indicate the main things which the deputation wanted to discuss, and he would leave details to his colleagues. They were exceedingly anxious that the Ministry of Health should consider the advisability of introducing amendments which (1) would render it necessary for any local authority to obtain the consent of the Minister before embarking upon a hospital scheme, and (2) would ensure that in no case should a scheme be brought into being without consultation with the local profession. In reply to a question by Dr. Addison, Mr. Turner said he meant by "the local profession" all those practising in the area concerned, not the local Division of the British Medical Association merely. To take the case of Bradford: every doctor in that town, whether consultant, general practitioner, or medical officer, should have an opportunity collectively of discussing the matter with the lay bodies, so that the course of events might be within the knowledge of the profession, and the profession might as far as practicable influence the public authority in formulating the scheme which would finally come to the Minister for endorsement. It was very important that the profession should have an effective voice while a scheme was still fluid.

Dr. H. B. Brackenbury said that the deputation wanted to make the Minister aware of certain apprehensions which they felt with regard to Clause 11. At the present stage their concern was not with consultations between the local authority and the profession in the locality, but with consultations between the central authority and the profession as a whole. It was most important that the general lines of instruction should be settled so far as the central administrative body was concerned, apart from the question of specific schemes to be hammered out locally. They held it to be most important that the Ministry of Health should have the first and final word in this matter, because, as the report of the Consultative Council made clear, the establishment of local hospitals was only one part of a general health scheme. They were all aware of the hospital position at the present time, and of the need for something to be done in this direction, but it was now becoming possible to see the general outlines of future development. The foundation would be domiciliary service, and from this base there sprang what the Consultative Council called Primary Health Centres, and around these other organizations were grouped. The deputation was somewhat apprehensive lest, if the Ministry of Health did not make its hand firmly felt, hospital development might get a little out of focus. But if the Ministry kept control of the situation, it would be an assurance to them that nothing would be done in this respect which did not fit in properly with the whole construction. It was also possible that the authorities mentioned in Clause 11 might use their powers to establish hospitals with reference purely to their own localities, without regard to the need of a larger area for the establishment of secondary centres. Both with regard to the place of the hospital in the scheme and to that of each scheme in relation to a larger area than the scheme itself covered, there were difficulties to be apprehended, unless the Ministry of Health was paramount from the beginning. The profession would like to help, and would ask for an opportunity of consultation on some of the points that were vital to it and to the public. Before they got to the stage of consultation between the local health authority and the local profession, they would like to ask for consultation between the central authority and the profession as a whole when the general lines of policy were being laid down. He supposed that in the ordinary administrative course, before any schemes were forwarded to the Ministry for approval, the Ministry would send down some kind of explanatory memorandum mentioning various things to which local bodies would have to conform. At that stage, when certain principles not subject to local variation were determined, it was desirable that professional opinion should be heard. It would be necessary to lay down the conditions of admission to the municipal hospitals, and, what was perhaps equally important, the methods to be followed in staffing. Here again the profession was apprehensive. It was contemplated that one third of the beds in the Poor Law institutions would be made use of in one way or another, and he did not need to remind the Minister that the staffing of Poor Law institutions was radically different from that of voluntary hospitals. Those for whom he spoke were anxious that the tendency should be to staff the municipal hospital rather on the lines of the voluntary hospital than on those of the Poor Law infirmary. But whatever the details of such an arrangement might be, if the regulations both as to the admission of patients and the appointment of staffs could be discussed generally between the Minister of Health and the profession it would make for a conformable scheme. When that had been settled by central consultation, they would go on to ask for adequate local consultation. Whether specific amendments of the clause would be required to effect this he did not know, but he could conceive that if a county or borough council felt itself wealthy enough to establish and maintain a hospital out of its current revenue there would be no need for it to get the Minister's consent; such consent need only be sought if it was necessary to get a grant in aid or to raise a loan. They were anxious, therefore, for such amendments as would make the consent of the Minister of Health necessary in every case.

Dr. R. A. **Bolam** said that, as Chairman of Council, he would like to offer the co-operation of the British Medical Association in the two things which they thought essential: one the central consultation with the profession on the main grounds of policy, and the other the local consultation, which was possible by utilizing the Divisions and Branches of the Association. In this way the Association would be willing to help the Ministry in the same way as it helped other Government departments during the war through the Central and Local Medical War Committees. The Divisions and Branches in any area were willing to call together the whole profession, whether members of the British Medical Association or not, and to make it easy for local authorities to ascertain professional opinion. As a member of a hospital staff, Dr. Bolam spoke of the serious apprehension among his colleagues throughout the country lest the utilization of Poor Law hospitals should prejudice voluntary hospital arrangements. They felt that the best way to approach the matter would be to graft on to the voluntary hospital system some of the Poor Law hospitals rather than that a new set of hospitals should spring up which required staffing *ad hoc*.

Dr. **Addison**: Your objection, Dr. Bolam, is not to the Poor Law hospitals, but to the extension of their principle of staffing to the existing voluntary hospital system?

Dr. **Bolam** said that if he might put it very curtly, they did not look forward with pleasure to a hospital run on Poor Law infirmary lines. They were afraid that the Bradford case might be taken widely as a precedent, though this did not always follow, and he went on to describe how in his own district one board of guardians had the idea of setting up a general hospital within their walls and asking the teaching hospital to associate with it certain members of its voluntary staff.

Mr. **Basil Hall** thought the Bradford case might have some bearing upon the general question. The establishment of a municipal hospital in Bradford was not a piece of post-war reconstruction; it was part of a definite socialistic programme which had been working out in Bradford for fifteen years to his knowledge. The Minister had said that it would be a great calamity if the voluntary principle were wiped out in this country, but there was no doubt at all that the establishment of a municipal hospital in Bradford as it was proposed to establish it would wipe out the voluntary hospitals there. Even Bradford, with all its reputed wealth, was not going to pay rates of 20s. or 30s. in the £ and still keep its voluntary charities going. One thing his colleagues in Bradford were extremely anxious to ensure was that nothing should be definitely decided without real consultation with the local medical profession. In Dr. Addison's speech on the subject to the Medical Committee of the House of Commons he was reported to have said that the local profession had acquiesced in the scheme save for insistence on one or two minor modifications.

Dr. **Addison**: The local Branch of the British Medical Association.

Mr. **Hall** said that there had never been any local consultation. The local Division of the Association had applied to the Health Committee with this in view as recently as June last, but no notice was taken beyond a bald acknowledgement. He thought there had been a little misunderstanding, and that a letter putting forward certain points which the local profession must see altered had been construed as conveying an endorsement of the scheme. It had been announced in Bradford that a municipal hospital of 1,100 beds would be provided, and the public had been led to believe that it would be a general hospital where the surgical and medical work of the city would be done. But the chairman of the Health Committee had stated in a meeting of the council that all the beds were already ear-marked for other purposes; they merely hoped it might be possible to put aside 100 beds for general surgical and medical cases. It did not appear, therefore, that much was going to be given to the public as the result of the municipal hospital. The hospital would continue doing the old Poor Law work while at the same time posing as a general infirmary. The argument had been used that the municipal hospital was necessary because voluntary institutions were on their last legs; on the contrary, Bradford Royal Infirmary had £200,000 at command for new building; it treated over 3,000 in-patients; its income in 1919 was £28,000, and its expenses £31,000, while its annual subscription list was £10,000 last year, and had gone up considerably since. Yet it was openly stated in Bradford that voluntary charitable institutions should be done away with. But whether the municipal hospital came or not, the medical profession did ask that there should be real consultation with medical opinion, and he was charged with the suggestion that local advisory committees be formed for this purpose.

Dr. **Charles Buttar** said that he had had the opportunity of visiting Bradford and seeing at close quarters the municipal hospital scheme. He could not discover that any really effective consultation with the local profession, on either the consultative or the general practitioner side, had been provided for. Nor could he find any evidence that the possibility of maintaining and extending the present voluntary hospital system to meet the need had been considered. This seemed to bear out what Mr. Hall had said about the desire of the Bradford authorities to get rid of all voluntary and charitable effort. Again, there was no evidence that the future of Bradford Royal Infirmary in relation to the new municipal hospital had been brought into the reckoning. This was very important, because the staff of the infirmary ought really to provide the staff of the new municipal hospital. But the city council, in advertising for a staff for the latter, had laid it down that members of the staff must not hold any other hospital appointment, except with the approval of the local Health Committee.

Mr. W. **McAdam Eccles** said, with regard to Clause 11, that many thought that if the Minister retained in his own hands the powers he was apparently putting into the hands of county or borough councils, he would be safeguarding best the interests of the community and of the profession. Mr. Eccles suggested that it would be very helpful if that portion of (*b*) relating to the sanction of the Minister of Health were transferred to the preamble, and some words put in to the effect that

> The Council of the County shall have power, on such conditions and terms as may be approved by the Minister, and after conference with medical men in the neighbourhood and with the medical staffs of the institutions concerned. . . .

With regard to the members of voluntary hospital staffs, he thought he had most of them with him when he said that they were desirous of continuing to do all the work they had done, and even more if they could, for those who needed their services; but, if they were to be placed in any way under county councils and certain payments were to be made to voluntary hospitals, they would like to have a voice before such arrangements were made. They might desire some monetary recognition of their services, although adequate payment was neither possible nor expected; but that contributions should be made to voluntary hospitals without consultation (or before consultation) with members of the medical staff was an error which he was sure the Minister would remedy.

The Minister's Reply.

Dr. **Addison** said he was very glad to meet the deputation. He had looked forward to this visit from the British Medical Association. He was the more glad to see them that day because the bill was down for the second reading three days later. He welcomed the expressions which more than one member of the deputation had used in recognition of the urgency of the question and the fact that it would not brook postponement. He welcomed also the constructive nature of the suggestions which had been laid before him. He was sure that they would prove thoroughly useful in the discussions in Standing Committee. Perhaps he might, in the first place, take the opportunity of that visit to say a word or two as to the attitude of the Ministry of Health towards the voluntary hospitals. The Ministry had used—and successfully used—its utmost efforts to support the voluntary hospitals. The hospitals were seriously embarrassed financially, and were facing rapidly rising costs, but with the help of King Edward's Hospital Fund and the National Relief Fund the Ministry had been endeavouring to make their position more secure. Notwithstanding the headlines in the papers, he could assure them that nowhere was there more anxiety to keep voluntary hospitals off the rates than at the Ministry of Health: first, because if the hospitals came on the rates it would mean an increase in the rates, and in the next place—the larger reason in the long run—because the maintenance of voluntary hospital traditions was of the highest possible consequence in medical advance. After a most critical examination of the increased costs that would fall upon rating authorities, he found that the complaints hurled against the Ministry of Health by uninformed persons were singularly misdirected. In an analysis, of which full details would be given to Parliament, an average of the expenditure of certain local authorities which showed a large increase in rates for the current year had been taken, and the increase, so far as it related to health services, had been examined. The average increase of rates for the year in these authorities amounted to 8s. 0½d. in the £, and of that the total additional expenditure in respect of public health services amounted to 4¾d. The increased burden, therefore, was not due, beyond this fractional extent, to the Ministry of Health; it was due, of course, mainly to increased wages, salaries, and cost of materials. The Ministry had not been endeavouring to force expenditure on authorities in any unnecessary or arbitrary fashion; on the contrary, it had curtailed much extravagant and useless expenditure. The policy he had tried to set forth had been to secure first an improvement in the quality of existing services, such as the provision of better trained staffs of nurses, midwives, and so forth, which had already yielded very important results with practically, in many cases, stationary expenditure. Those who urged the Ministry to avoid bringing the voluntary hospitals on to the rates were pushing an open door.

He came now to Clause 11, dealing with the power of county councils to provide hospitals. There were two most important considerations to bear in mind—the needs of the community, and the proper and legitimate requirements of the profession. The accommodation which Poor Law institutions had to offer was much greater than that of the voluntary hospitals; many of the former were very well equipped institutions, and the question to examine was as to the best way of making use of them. He quite agreed with Dr. Bolam that it was unreasonable to expect them to be made available to the general public as Poor Law institutions; but the fact was that one third of their beds were empty at the present time, while there was an immense demand for bed accommodation. The wiser policy would be to formulate some scheme, free from material objection, whereby these existing beds, now standing empty, might be properly equipped to meet the present need, rather than at a time when the cost of building was so high to encourage the building of new institutions. Unfortunately a number of Poor Law authorities had sought to make their beds available as general hospital beds; that was not the right course to take, nor a thing to be encouraged. But in view of the many expedients urged upon them from different parts of the country, they were bound at the first opportunity to have some provision touching on this subject inserted in the bill.

The definite suggestion which the deputation had brought forward he thought quite reasonable. He had no hostile criticism to make. It had been suggested that these schemes should, before they were put into operation, receive the sanction of the Ministry of Health and that the Minister might require the fulfilment of certain conditions, and so forth. He thought that was quite a fair thing to urge, and he would be prepared in the Committee to accept some wording—he would not pledge himself to the wording suggested by Mr. McAdam Eccles, but something to that effect—to secure that end. That was a thing he could quite accept. The second point put forward by the deputation had been a request for consultation with the profession. On several occasions he had said in public, "If you want us to consult you, get busy, and set up some machinery whereby you can readily be consulted." He had seen clearly what was coming; in the case of Bradford it had come, and there would be more of it in the near future in respect of the matters raised by this clause. He quite agreed as to the reasonableness of consultation, in the formative stages, regarding regulations or conditions or general principles, if some machinery for consultation were available; but he would not consult half a dozen different bodies, each claiming to represent the profession. No body of medical men was more competent than those before him that day to state a case for the profession, and he would be very glad to see them in consultation. He was speaking, of course, of consultation with an exterior body in respect of the profession generally; he was leaving out of account for the moment the Consultative Council which was now a part of the machinery of the Ministry. As soon as practicable he or an officer acting on his behalf would be willing to discuss the general principles with some body representing the profession. He could imagine no organization better qualified than the British Medical Association to get together a representative body; but he repeated that he was not going to make an agreement of that kind with a number of different bodies each claiming to be representative. The same difficulty arose in connexion with the local authorities. There was a local Branch or Division of the British Medical Association in each area, and there were other local medical associations and societies as well, and there were also a number of doctors who stood outside all organization and criticized what was done; these men accounted for the most difficult part of the problem. They were like the ratepayers who grumbled at the extravagance of their councils while they themselves had never troubled to go to the poll. He had always to remember that neither centrally nor locally was it reasonable to expect preliminary consultation to be of such a nature as to stand in the way of effective executive action. Consultation had to be on general principles rather than on detail. With regard to Bradford, although he did not contest the statements made by Mr. Hall, he thought there must have been some consultation with such bodies of the profession as existed there. He referred to some correspondence on this matter, and said that he had not seen any sign of such radical objections to the general scheme on the part of the profession in Bradford as Mr. Hall seemed to suggest. He wrote to the authorities on October 22nd, deferring his sanction to the scheme, and asking for a definite assurance as to the views of the medical profession in Bradford, and the means which had been taken to keep the profession informed of the situation. He had not yet received a reply, but he was inclined to think that the Bradford Council was quite disposed to keep the profession informed. In connexion with these schemes a practical suggestion had been made that a local advisory committee should be set up. Without prejudice to subsequent discussions which might take place, he thought this a good suggestion. He was quite with them in trying to work out some practical scheme which would not prejudice executive action, whereby there would be an opportunity of consultation on general principles, and also a scheme whereby local consultative action might be secured, not only at the start, but continuously. There must, of course, be no delay in executive action, and he had further to bear in mind the fact that local authorities sometimes resented interference from the Ministry of Health as well as from other quarters. It was desirable to carry local authorities with them in this matter. It was a case for arriving at some sensible arrangement with the local governing bodies, and he was quite sure from what he had seen of the municipal authorities that they would be willing to fall in with some reasonable scheme which would secure the necessary co-operation. The discussion on detail was better deferred.

Dr. Brackenbury asked whether a clause could be introduced into the bill whereby medical advisory committees could be set up on parallel lines to the Local Medical Committees which were statutory bodies under the National Insurance Act.

Dr. ADDISON said he would much prefer to discuss some agreed scheme of procedure which could be embodied in regulations rather than something which must be put in an Act of Parliament. He added that all that had been said that afternoon was, of course tentative, and he hoped for a more comprehensive and detailed discussion before long.

Sir CLIFFORD ALLBUTT thanked the Minister for receiving the deputation.

Association Notices.

VACANCIES ON COUNCIL.

NORTH OF ENGLAND AND NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCHES.

THE result of the voting by the members of the above Branches for a member of Council to fill the vacancy created by the appointment of Dr. R. A. Bolam, O.B.E., as Chairman of Council, is that Dr. James Don (Newcastle-on-Tyne) has been elected. The other candidates were Dr. R. Gordon Bell (Sunderland), Dr. H. Falconer (Oldham, M.B.E., (Morecambe), and Lieut.-Colonel D. F. Todd (Sunderland).

EAST YORKS AND NORTH LINCOLN, MIDLAND, CAMBRIDGE AND HUNTINGDON, ESSEX, SUFFOLK, NORFOLK, AND SOUTH MIDLAND BRANCHES.

After consulting the Representatives of Constituencies in the above Group, the Chairman of Representative Meetings has appointed Dr. J. W. Bone (Luton) to fill the vacancy upon the Council created by the resignation of Dr. Adam Fulton.

SUGGESTED CHANGES OF AREAS.

AMALGAMATION OF ASHTON-UNDER-LYNE AND HYDE DIVISIONS.

NOTICE is hereby given to all concerned of a proposal made by the Hyde Division of the Lancashire and Cheshire Branch, for amalgamation of the Division with the Ashton-under-Lyne Division of that Branch, to form one "Ashton-under-Lyne and Hyde Division." Written notice of the proposal has been given to the Ashton-under-Lyne Division and the Lancashire and Cheshire Branch, and the matter will be determined in due course by the Council. Any member affected by the proposed change and objecting thereto is requested to notify the fact, and the reason therefor, to the Medical Secretary, 429, Strand, W.C.2, not later than December 4th.

ADJUSTMENT OF AREAS OF EDINBURGH AND LEITH, AND LOTHIANS DIVISIONS.

NOTICE is hereby given to all concerned of a proposal made by the Edinburgh and Leith Division for transfer of Colinton, Corstorphine, Cramond, Juniper Green and Liberton, from the Lothians Division to the Edinburgh and Leith Division, the five places named having been merged by the Edinburgh Boundaries Extension Act, 1920, in the City of Edinburgh and Leith. Written notice of the proposal has been given to the Lothians Division and the Edinburgh Branch, and the matter will be determined in due course by the Council. Any member affected by the proposed change and objecting thereto is requested to notify the Medical Secretary, 429, Strand, W.C.2, of the fact and the reason therefor, not later than December 4th, 1920.

BRANCH AND DIVISION MEETINGS TO BE HELD

FIFE BRANCH.—Dr. H. Wade, C.M.G., D.S.O., will deliver a British Medical Association Lecture to the Fife Branch on Wednesday, December 8th, on the "Modern Treatment of Fractures." All practitioners in Fife are cordially invited to be present at the meeting.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.—A meeting of the Division will be held on Wednesday, November 10th, 1920, at 3 p.m. at the County Hospital, Hertford. Dr. G. C. Anderson, the Deputy Medical Secretary, will speak on the Report of the Consultative Council on Medical and Allied Services.

SOUTH MIDLAND BRANCH: BEDFORD DIVISION. A general meeting of the Division will be held at the Bedford County Hospital on Tuesday, November 9th, at 3 p.m., to which all practitioners are invited. Agenda: To discuss the report to the Divisions on the Consultative Council's report (see BRITISH MEDICAL JOURNAL SUPPLEMENT, October 16th, p. 94 (which those attending are requested to bring with them). To discuss the advisability of raising fees for contract practice. As these questions are of great importance to the future of the medical profession, it is hoped that every practitioner will endeavour to attend the meeting. Tea will be provided.

Meetings of Branches and Divisions.

ABERDEEN BRANCH.

THE annual meeting of the Aberdeen Branch was [illegible] the Grand Hotel, Aberdeen, on October [illegible], when Professor MARNOCH, President-elect, occupied the chair. The following office-bearers were appointed for the year 1920–21:

President: Professor [illegible] Marnoch, C.V.O. *President-elect*: Dr. Dalfus, [illegible]. *Vice-President*: Dr. Beattie [illegible]. *Treasurer*: Dr. [illegible]. *Hon. Secretaries*: Dr. J. [illegible], Mr. [illegible] Smith.

Thirty-one new members were admitted during the year, and the Treasurer's report showed a credit balance of £12 12s. 9d.

Before the annual meeting a clinical meeting was held in the Royal Infirmary. Cases were shown by Professor MACKINTOSH, Dr. W. R. PIRIE, Professor J. MARNOCH, Sir HENRY GRAY, Mr. SMITH, Mr. COLT, Mr. W. ANDERSON, and Mr. MITCHELL. This was the first clinical meeting since 1913, and the demonstration was much appreciated, and it was remitted to the Council to consider the advisability of holding such meetings in the Royal Infirmary more frequently. Under an arrangement with the Aberdeen Medico-Chirurgical Society members of the Branch are invited to attend clinical meetings held in that society's rooms during the session, but it is felt that additional meetings held in the wards of the Royal Infirmary should prove of value to members of the Branch.

After the meeting the members present lunched together, and a pleasant social hour was spent.

METROPOLITAN COUNTIES BRANCH: HARROW DIVISION.

A MEETING of the Harrow Division was held on September 28th when it was resolved to hold regular meetings on the last Tuesday of the month throughout the winter, at some of which scientific subjects will be discussed. It was decided to ask all panel practitioners to support the panel practitioners' defence fund. A resolution was passed dealing with baby clinics. A further meeting was held on October 26th, when the report of the Consultative Council of the Ministry of Health was considered, and the answers to the questions from the Ministry of Health Committee of the Association were discussed and agreed to. At the meeting of the Division on November 30th the question of mutual assistance in panel emergencies will be discussed, and a paper will be read on Lord Lister and his times.

MIDLAND BRANCH: DERBY DIVISON.

AT a meeting of the Derby Division, held on October 8th, the following resolutions were adopted:

1. That owing to the increased cost of living and professional expenses this Division considers that the level of fees generally should be raised by 100 per cent. over pre-war standard.
2. That no person should be attended by contract at a capitation fee less than that paid under the National Insurance Act that is, 13s. a head per annum, including medicine.

ON GENERAL PRACTICE.

Presidential Address to the South-Western Branch.

BY HERBERT C. JONAS, M.D.Lond.

MR. ACKLAND AND GENTLEMEN,—I must in the first place thank you most sincerely for the very great honour you have conferred on me by electing me President of the South-Western Branch of the British Medical Association at this its eighty-first annual meeting. During all these years the Association has done a great deal of invaluable work for our profession, and it rests with each individual member to see that its usefulness continues, and, if possible, increases as the years go by. Any honour conferred by his professional colleagues on a medical man is extremely gratifying to the recipient, and I am deeply grateful to you for this mark of your confidence, and promise on my part to do my utmost for the success of the Branch during my year of office.

Every practitioner—at any rate, every general practitioner—ought to be a member of the Association no matter what other societies he may join. Just at the present time it is of the utmost importance that every one of us should be not merely a member but a live member, and take an active part in its work, since the near future is full of serious problems, and, let us hope, great possibilities for our profession.

Eighteen years' work in one general practice I think entitles me to call myself if not an old practitioner at least a middle-aged one, and I think everyone will agree that the newly qualified man comes from his hospital every year better equipped for his profession than his immediate predecessor. The war has proved this up to the hilt. In the R.A.M.C., as elsewhere, it was a young man's war, and look at the result. As a profession we have every right to the thrill of pride we feel when we consider the medical, surgical, or public health work of the war years. The general public recognize the fact, and there is no doubt that our profession stands higher in the public estimation in 1920 than it did in 1914. Gentlemen, this fact lays on us a serious responsibility, and it is the duty of every one of us to see that we maintain the position so gained, and hand it on intact to our successors. The medical profession is unending, and we are only the life tenants of its traditions and its benefits.

Benefits may not always be so very evident. Sometimes it would seem that many of us, perhaps overweary with necessary routine, perhaps hipped a little by a case which has forcibly reminded us of the limitations of our knowledge of, and our power over, disease, are inclined to be captious, and, like Job, curse our lot. I doubt if any one medical man can say that never in his life has he sat down and said, "Why was I ever a doctor?" But in our better moments every one of us is proud of his profession, and knows in his inmost thoughts that there is no other calling in the world quite so absorbing, or that gives a man so full a life as ours.

Most of us are in general practice, upon which some people affect to look down as an inferior plane of medical work. This attitude is changing fast, and again it is the younger men who are largely responsible for the change. Personally I have always held that a first-class man can find in general practice unrivalled opportunities for doing good work, and, after all, that is the real test of a career.

We are told by the specialists "You get so much drudgery." A certain amount of routine is inherent in all work, professional or manual, but do we get more in general practice than is found in the other branches of the profession? What of the specialists? The surgeon in London has to do far more varicose vein operations than he likes. The eye man earns his living by doing refractions; and even the greatest specialist of them all, the pathologist, who above all is the scorner of general practice, might conceivably find some drudgery in the whole day he occasionally spends on Wassermann tests. Another accusation is that he is a jack of all trades and master of none. Is this quite fair? The general practitioner who has the confidence of his patients cures, and cures promptly, all the derangements of function he meets with, and is nowadays quite expert enough to know when he wants surgical assistance or the help of the pathologist. And who is it who saves the life of the acute abdominal emergency? Is it the general practitioner who gets, not sends for, a surgeon within twelve hours of the onset, or the surgeon who gets a good result owing to the doctor's promptness in diagnosis and the courage with which he acts on his opinion? It is the practitioner who saves the life, and the surgeon who gets the credit. Men who do their own surgery do not always appreciate their advantages in this respect. It is a far greater victory for the non-operating man to achieve what I have described than it is for the practitioner to do the operation himself within, say, six hours. And such victories are being achieved more and more constantly.

Might I be permitted to depart a moment from the business in hand, and give one word of advice (if there be any here who need it, and, needing it, will take it)? and that is: "Trust your first impression of an acute abdomen as you would your ice axe, act on it, and act without one moment's hesitation."

It is often said that people are ungrateful, and do not recognize what we do for them. In some few cases this may be true, but if we put on the other side of the account the unearned thanks and gratitude we receive when we get the credit and Nature saved the life, I do not think many of us will find ourselves with a credit balance of an overwhelming size. Lay opinion of our professional capabilities may have, and doubtless does have, a very large commercial value, but we must always remember that its purpose is a commercial one, and not translate it for [illegible] into a professional appreciation. And although [illegible] valuation of a colleague's merit is [illegible] very gratifying, and of some considerable [illegible] the doctor, if he can be honest with himself, [illegible] best judge of how praise and blame should be [illegible] and there is no severer critic of professional [illegible] than the man who convicts himself of a [illegible] of missing the importance of some [illegible] symptom. Like Marc Antony after the battle of Actium, on real[illegible] he had done, the doctor exclaims—

> I have offended reputation—
> A most unnoble swerving!

It must be admitted there is one drawback to general practice, and that is that a man has too much work to do to give him time to get all the information available from his material for the advancement of medicine; and it will be very interesting to see whether Sir James Mackenzie's venture in the direction of the scientific study of disease in general practice will turn out successfully. The results may be very valuable, but they certainly will not prove that the ordinary practitioner can do the work, and neither will they prove that we have been neglecting our opportunities in the past, and, make no mistake, both these statements will be very freely made.

Over eighteen years ago I found myself justifying my choice of general practice in North Devon to a friend who was pathologist at my hospital. My argument was thus: there is an enormous amount to be learnt about diseases in general practice, and exceptional opportunities for doing good work. Careful note-taking of family histories as they are made under one's own eye; records of the various ailments each individual has; full reports of obscure symptoms occurring in the early stages of chronic diseases before they can be diagnosed; notes on environment by some one who lives on the spot will form an invaluable fund of material after twenty years, and who knows what light might not be thrown on many obscure medical problems. The twenty years are now nearly gone, and, alas, all there is to show for them is the six inch ordnance maps I provided, and the carefully tabbed index cards, and a few of the notes taken during the first six months spent in North Devon. And I am certain that, under present conditions, it is utterly impossible for a general practitioner to find time to keep the notes of all cases, both serious and trivial, which are essential for any such work. Neither the doctor or his patient makes a complete loss this way. Some of the isolated facts accumulated in years of work stay in the memory, and form that mass of experience which alone keeps the older man from being ousted by the new comer, and which is also of the greatest value to the individual patients. But as far as science and the advancement of medicine are concerned all this material is unavailable. Look for a moment at the staff occupied in note-taking in hospital. About six dressers, or clinical clerks, and one house officer, give all their time to say fifty or sixty cases. The notes are kept under daily fear of the registrar and the visiting staff, and in the case of my own hospital there was also a resident assistant physician or surgeon who supervised them, and often made additions of his own. And even then they were not always flawless; nor are they now. Last winter I was at St. Thomas's and saw one of the surgeons operate upon a case of what the skiagram had shown to be an unmistakable hour-glass stomach. He explored, and finding no organic contraction, opened the stomach, examined visually the whole mucus surface for an ulcer, and found none. Three days later I read the notes, which ran thus: "Abdomen was opened, the bowels were taken out, and it was sewn up again." If these things be done in the green tree of hospital, what shall be done in the dry one of general practice?

The Future of Medicine.

If we are unable to do much to help in this way, there is one very important thing we all can and ought to do, and that is to take an active interest in all discussions of the future of medicine, and the first way to do so is to belong to medical societies, and religiously attend all meetings, both clinical and so called (I hate the word) medico political. Our Association has always been ready to take up and discuss any medical questions. It is a democratic body, as democratic as it is possible to make any society. Its policy is shaped by its members, and if, as is sometimes stated, that policy is not in accord with the views of the majority of the members, at any rate the policy is shaped always by the members present and voting. And there is the crux, for until men will bestir themselves and be present and vote and speak honestly and to the point on questions of policy, there will be no possibility of getting their point of view adopted by the majority. Just now this is a very important matter, and we need the help of every member of the profession in formulating medical opinion, and the first thing for every one to do is to attend meetings and set forth his views with courage, honesty and conviction. No matter how bad a speaker a man may be, if he has definite views and is obviously sincere, he is quite certain of a good audience and a fair hearing, and nowhere more so than among medical men who are on the average very poor speakers.

Questions such as the future of hospitals, voluntary or State-aid, State service of any kind, are matters which vitally concern every one of us—not necessarily for individual reasons, but because each one owes his share of our great inheritance unimpaired to his successor; and the man who stands by caring for none of these things, is first cousin to the spendthrift who squanders the unentailed portion of his estate.

The movement now on foot to get doctors to take up municipal and parliamentary work is a sound advance, and any one who gets the opportunity to stand for council or Parliament should do so, and do it not as a delegate or selfish representative of the profession, but rather to take his proper place as a citizen and to put his brains at the service of the nation. If he will do this, there will be ample opportunities for him to assist his profession. Medical men say they have not the time for these things. But in every walk of life it is only the busy man who is punctual to his appointments, and who can squeeze out the time necessary to do something which ought to be done. In the near future, the profession will have to absorb a great deal of new blood. These recruits will be strong, virile, well trained in their craft, and they will be drawn from many different social classes. They will all receive from us a very hearty welcome, but we shall owe them more than that. It will be more than ever important that we older men should set them a good and high standard of professional conduct, which, after all, is merely the daily application of the golden rule—"Do unto others as ye would men should do to you"—and since nine-tenths of the new men will have graduated in the greatest university of all time—I mean the new army in France—there is no doubt at all they will absorb the spirit of the profession as they learned their sterner lessons in the training camps of England and the battlefields of Flanders.

I have tried to say much in favour of our profession, but I have certainly not suggested that it is not a very exacting one; and holidays are essential to its proper fulfilment. In fact, if the General Medical Council decreed that it was infamous conduct in a professional respect to stay at work for more than eighteen months without a break, I would applaud them. But, to get the best out of a holiday, it is essential to put everything on one side, and concentrate one's whole energy on the business in hand. It makes no difference whether that business consists in the reduction of your golf handicap, the fishing of your favourite salmon pool in such a manner as to deserve a fish, keeping your place after a good start in a fast burst over a good country, or building sand castles for your children. And if a man can do this, and concentrate his mind on *the* one essential thing, he need have no fear; he will return to take up his hard-working but intensely interesting life with renewed zest and energy, "like a giant refreshed with wine."

INSURANCE.

CORRESPONDENCE.

The Number of Insurance Practitioners.

SIR,—I notice in your SUPPLEMENT of October 30th Dr. Brackenbury states that there are 13,000 insurance practitioners in this country; but on page 676 of the same issue of the BRITISH MEDICAL JOURNAL Dr. Addison in the House of Commons gives the number as 12,000; and I well remember Mr. Churchill in 1912 having the audacity to say that there were 20,000 doctors on the panel.

A few weeks ago you kindly allowed me to show in your columns that the large majority of London general practitioners are non-panel men. I have since received information which shows the same state of affairs in Edinburgh. The position of Glasgow is interesting, and the figures are as follows: Medical men in Glasgow, 845; specialists and consultants, 84; leaving 761 in general practice, made up as follows—on the panel, 350; non-panel, 411. As honorary secretary to the National Medical Union I would be very glad if anyone would send me the number of panel and non-panel men in the various towns and cities of the country.

May I conclude by asking the next Conference of Medical and Panel Committees to discuss the matter of whether it is dignified of panel doctors to receive capitation fees in respect of insurance persons who never have consulted and never mean to consult them. There are hundreds of thousands of such people. One-third of my practice is made up of them.—I am, etc.,

Streatham, Oct. 31st. E. H. WORTH.

London Panel Committee.

SIR,—The resolution of the London Panel Committee for a directly elected representative body to manage panel affairs might be theoretically sound if the British Medical Association did not exist, and if the medical profession did nothing but panel work.

To abstain from nominating a representative on the Insurance Acts Committee at the present time is feeble and petty.—I am, etc.,

London, S.E., Oct. 31st. H. G. COWIE.

INQUIRY INTO A PRACTITIONER'S CONDUCT.

WE were informed early in August last by the Ministry of Health that a public inquiry under Part VI of the Medical Benefit Regulations, 1920, would be held in the following week at the Town Hall, A., to investigate a representation which had been made to the Ministry by Mrs. B. and others that the continuance of Dr. C. of D. on the medical list was prejudicial to the efficiency of the medical service of insured persons. On October 27th we received from the Ministry a further communication with reference to this inquiry, enclosing copies of letters addressed by the department to Dr. E. and Mr. F., conveying the decision of the Minister after consideration of the reports made to him by the Inquiry Committee. These letters were apparently accompanied by copies of the report of the Inquiry Committee and formal documents embodying the Minister's decision. The letter to Dr. E. —whose position in the matter is not explained—states:

> "It will be observed that the Minister is not satisfied that the continuance of Dr. C. upon the medical list would be prejudicial to the efficiency of the medical service of the insured, and he has accordingly decided to take no further action in the matter. As regards costs, the Minister has accepted the recommendation of the Inquiry Committee in the case of Mrs. B., and ordered that two guineas be paid by her towards the costs of Dr. C. In the case of Mr. G. (deceased), the Minister has decided to make no order as to costs in view of the fact that the complainant is now deceased.

The letter to Mr. F. ends by informing him that

> "as regards costs, the Minister has accepted the recommendation of the Inquiry Committee, and has ordered that two guineas be paid by you towards the costs of Dr. C."

In reproducing these extracts for the information of insurance practitioners generally we have omitted names of people and places.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders J. C. Durston to the *Vernon*, J. M. Gordon to the *Excellent*, additional. Surgeon Lieutenant Commanders G. R. Cockrem to the *King George V*, on recommissioning, H. M. Whelan to the R.N. Hospital, South Queensferry, G. E. D. Ellis, O.B.E., to the *Champion*, G. R. McCowen to the *President*, additional, for Porton Experimental Station. Surgeon Lieutenants W. J. Colborne to the *Resolution*, A. G. McKee to the *Erin*.

ARMY MEDICAL SERVICE.

Colonel Lancelot P. More, from the half-pay list, is restored to the establishment.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel F. W. Hardy retires on retired pay on account of ill health contracted on active service, March 27th, 1919. (Substituted for the notifications in the *London Gazette* of March 26th and 31st, 1919.)

The following relinquish the acting rank of Major: Temporary Captain J. T. P. Wilson, Captain M. Morris.

Captain J. H. Sharpe resigns his commission.

To be temporary Captains: C. E. Hibbard, late temporary Captain, with seniority from November 2nd, 1914; S. A. McClintock, late temporary Lieutenant; H. E. M. Baylis, late temporary Captain, with seniority from May 14th, 1918; F. L. Dickson, R. W. Colman, B. H. Woodyatt, late temporary Captain, with seniority from May 28th, 1917; E. O. Gilkes, late temporary Captain, with seniority from May [illegible], 1916.

To be temporary Lieutenants: G. A. Clarkson, C. W. Bennett.

The following officers relinquish their commissions:—Temporary honorary Lieut.-Colonel P. Macdiarmid, O.B.E., and retains the honorary rank of Lieut.-Colonel. Temporary Major (acting Lieut.-Colonel) H. W. M. Tims, O.B.E. and is granted the rank of Lieut.-Colonel. Temporary Captains and are granted the rank of Major: P. McCool, H. M. Grey, G. W. B. Waters. Temporary Captains and are granted the rank of Captain: W. P. H. Lighthody, J. Maguire, J. N. Turnbull, A. E. Wynne, A. Chalmers, E. T. Larkam, J. K. Manson, R. R. Pirrie, W. S. King, J. J. McConnell, A. H. Priestley, E. F. O'Conner, C. S. Stolterfoth, S. F. Cheesman, D. Cowin, J. Macqueen, J. T. Macnamara, F. E. Johnson, T. H. F. Roberts, B. Laugram, C. W. C. Robinson, R. J. Allsopp, E. Duke, T. P. Noble, P. C. C. Smith, H. H. Castle, D. Gaston, W. Mercer, S. Oliver, J. O. Garland, A. H. Ward, E. F. Lawson, A. Leigh, J. T. R. MacGill, M.C., G. W. M. Smith, R. T. Raine, M.C., F. W. Harlow. Temporary Captain T. J. Richardson. Temporary Lieutenants and retain the rank of Lieutenant: J. V. Coghlan, M. J. Woodberg, D. P. Fitzgerald, A. M. Moll.

ROYAL AIR FORCE.

Medical Branch.

Flying Officer to be Flight Lieutenant: T. H. K. MacLaughlin.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Captain Charles A. Bignold resigns his commission, August 26th, and is granted the rank of Major. (Substituted for notification in the *London Gazette*, August 25th, 1920.)

TERRITORIAL FORCE.

Royal Army Medical Corps.

Major M. B. Ray, D.S.O., T.D., to be Lieutenant-Colonel, and to command 2nd London Casualty Clearing Station.

To be Majors: Major W. F. Munro, M.C., from Territorial Force Reserve, to be Major, with precedence as from March 28th, 1920; Captain J. Taylor, O.B.E.

Captain R. Davidson, R.A.M.C., to be Adjutant of the R.A.M.C. School of Instruction, South Midland Division (T.F.).

Captains W. B. Watt, J. MacG. Johnson, and W. Ainslie, M.C. (late R.A.M.C.), to be Captains, with precedence as from November 1st, 1918, November 13th, 1918, and March 19th, 1918, respectively.

Captain H. Mather (late temporary Captain, R.A.M.C.) to be Lieutenant, with precedence as from December 7th, 1915, and to relinquish the rank of Captain.

The following officers resign their commissions: Major Y. T. G. Moore, and retains the rank of Major; Captain E. L. Martin, and is granted the rank of Major. Captains and retain the rank of Captain: C. H. Gregory, A. L. Perl, R. Rattle, R. K. Merson.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Major A. T. Sissons, from 3rd Northumbrian Field Ambulance, to be Major.

Captain V. J. White, from 3rd Northumbrian Field Ambulance, to be Captain.

DIARY OF SOCIETIES AND LECTURES.

Hunterian Society, Sion College, The Embankment, E.C.—Wednesday, 9 p.m., Discussion on Hidden Sepsis. To be opened by Dr. A. White Robertson.

Medical Society of London, 11, Chandos Street, W.1.—Monday, 8 p.m., Clinical evening: Cases.

Royal College of Surgeons, Lincoln's Inn Fields, W.C.—Thursday, 5 p.m., Thomas Vicary Lecture by Sir D'Arcy Power: The [illegible] of a Surgeon under Thomas Vicary. Daily until November 19th, Exhibition of Specimens recently added to the Museum.

Royal Society of Medicine.—*War Section*: Monday, 5.30 p.m., Major [illegible]: Some Problems in Malaria, to be followed by [illegible]. *Section of Psychiatry*: Tuesday, 8.30 p.m., Presidential Address: Dr. [illegible]: Mental Hygiene. *Section of Surgery*, *Sub-section of Proctology*: Wednesday, 5.30 p.m., Presidential Address: Mr. [illegible]: Mr. Lockhart Mummery: Prolapse of Rectum in Adults. [illegible] *Section of Neurology*: Thursday, 8.30 p.m., Discussion on Aphasia, introduced by Dr. Henry Head and Dr. J. Collier. *Clinical Section*: Friday, 5 p.m., Cases. 5.30 p.m., Dr. F. Parkes Weber: Chronic Myeloid Leukaemia [illegible]. *Section of Ophthalmology*: Friday, 8 p.m., Cases and exhibit by Mr. Bishop Harman: A Direct Record Scotometer. Presidential Address, Dr. James Taylor: [illegible] Aspects of Ophthalmic Cases. Mr. Priestley Smith: [illegible]

[illegible], 5 p.m., Sir Almroth Wright: "Medical Research."

POST-GRADUATE COURSES AND LECTURES.

[illegible] Hospital.—Tuesday, [illegible] p.m., Dr. A. C. [illegible]: Treatment of Common [illegible]

[illegible]—Tuesday, [illegible] p.m., Dr. W. L. [illegible]

[illegible] Hospital, [illegible], Dr. [illegible]

[illegible] Hospital for the Paralysed and Epileptic, [illegible] Mr. [illegible] Wednesday, [illegible] Dr. [illegible]

[illegible] Prince of Wales's [illegible] Gynaecological; 4.30 p.m., Clinical Pathology in Gynaecology: [illegible]

Cases and Operations; 2.30 p.m., Mr. Hayton: Throat, Nose and Ear; 3 p.m., Mr. Howell Evans: Surgical Cases. Wednesday, 2 p.m., Mr. Hayton: Throat Operations; 3 p.m., Skin Cases: Dr. Oliver. Thursday, 2 p.m., Mr. N. Fleming: Eyes; 3 p.m., Anaesthetics: Dr. Hadfield. Friday, 3 p.m., Dr. Sundell: Children's Disease; 5 p.m., Dr. Provis: Venereal Department. Saturday, 3 p.m., Mr. Carson: Surgical Cases.

Salford Royal Hospital.—Thursday, 4.30 p.m., Dr. Ashby: Feeding of Infants.

West London Post-graduate College, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Monday, 2 p.m., Mr. Harman: Eyes; 5 p.m., Mr. MacDonald: Urinary Tubercle. Tuesday, 10 a.m., Dr. McDougal: Electrical; 5 p.m., Dr. Furnford: *Post-mortem* Appearances in Tuberculosis. Wednesday, 2 p.m., Mr. Gibb: Eyes; 5 p.m., Dr. Arthur Saunders: Prevention of Cardiac Disease in Rheumatism. Thursday, 2 p.m., Mr. Armour: Operations; 5 p.m., Dr. E. W. G. Masterman: Tropical Diseases of Palestine. Friday, 2 p.m., Mr. Gray: Out-patients; 5 p.m., Mr. Baldwin: Tuberculous Disease of the Intestine. Saturday, 12 noon, Mr. Sinclair: Diseases of Abdomen; 2 p.m., Dr. Owen: Out-patients.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

The Reading Room, in which books of reference, periodicals and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

Lending Library: Members are entitled to borrow books including current medical works; they will be forwarded if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

Subscriptions and Advertisements (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

Medical Secretary (Telegrams: Medisecra, Westrand, London).

Editor, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

Scottish Medical Secretary: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

Irish Medical Secretary: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

November.

9	Tues.	London: Standing Subcommittee, Central Ethical Committee, 2 p.m.
9	Tues.	Bedford Division: Bedford County Hospital, 3 p.m.
10	Wed.	London: Scrutiny Subcommittee, 2 p.m. (*provisional*). East Hertfordshire Division, County Hospital, Hertford, 3 p.m.: Dr. G. C. Anderson (Deputy Medical Secretary) will speak on the Report of the Consultative Council on Medical and Allied Services.
11	Thur.	London: Propaganda Subcommittee, 2.15 p.m.
18	Thur.	London: Insurance Acts Committee, 2.30 p.m.
19	Fri.	North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15—5 p.m., Scientific Demonstrations.

December.

8	Wed.	Fife Branch: British Medical Association Lecture by Dr. H. Wade, C.M.G., D.S.O., on Modern Treatment of Fractures.

APPOINTMENTS.

Armstrong, B. W., M.R.C.S., L.R.C.P., Medical Superintendent to St. Mary's Hospital, Paddington, vice M. M. Bird, M.D., retired.

Maclean, Hugh, D.Sc., M.D.Lond., appointed to the Professorship of Medicine in the University of London tenable at St. Thomas's Hospital.

Maurice, W. B., M.R.C.S., L.R.C.P., Medical Officer of the Institution of the Marlborough Union.

District Medical Officers: J. Brown, M.D. (Durham Union), H. S. Furness, M.D. (Melton Mowbray Union), T. O. Hulton, M.B.Toronto (King's Lynn Union), A. W. R. Pirie, M.B., Ch.B.Aberd. (Preston Union), D. S. Twigg, M.R.C.S., L.R.C.P. (Ashbourne Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTH.

Thomas.—On October 28th, at Kent Cottage, Solihull, Warwickshire, the wife of Donald Carmichael Thomas, M.B., B.S., of a daughter.

MARRIAGE.

Mitchell—Lark.—At St. Mary's, Beddington, Surrey, on October 27th, 1920, by the Rev. H. A. Hodgson, Rector of Beddington, David [illegible] Mitchell, M.B., Ch.B., Aberdeen, Mon., and late of the [illegible] to Irene Ruth Lark, daughter of Mrs. [illegible], Beddington.

[illegible] by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 13TH, 1920.

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British Medical Association.

CURRENT NOTES.

Annual Meeting: Newcastle, 1921.

THE Arrangements Committee for the annual meeting at Newcastle next year, consisting of an equal number of local representatives and of members appointed by the Council, has held a meeting and laid down a general plan for the meeting. The President, Dr. David Drummond, C.B.E., will deliver an address on the evening of Tuesday, July 19th, and the sectional meetings will be held on the three following days. It has been arranged to have seventeen sections; of these, five—Medicine, Surgery, Pathology and Bacteriology, Orthopaedics and Children's Diseases, and Preventive Medicine and Industrial Diseases—will meet on three days. Six sections, it is proposed, shall meet on two days, namely, Physiology, Pharmacology, Therapeutics and Dietetics; Urology; Obstetrics and Gynaecology; Ophthalmology; Oto-Laryngology; Venereal Diseases. The Committee has arranged that six sections shall meet on one day; these will be Ambulance and Red Cross; Dermatology; Radiology and Electro-therapeutics; Neurology; Proctology; Medical Sociology. Demonstrations will be arranged for each evening. Sir Thomas Oliver has been invited to deliver a special address on industrial hygiene on the evening of Wednesday, July 20th, and arrangements are being made for a Popular Lecture to be given on the evening of Friday, July 22nd. The annual dinner will take place on Thursday, July 21st. Plans are being made for excursions on Saturday, July 23rd, and as Newcastle is an excellent starting point for the most beautiful parts of the Border country, the only difficulty the local committee is likely to encounter is the choice of the locality to be visited. The Annual Representative Meeting will begin its session on the morning of Friday, July 15th.

Prison Medical Officers in Scotland.

The Scottish Committee of the British Medical Association, at its meeting on November 4th, had under consideration the conditions of service of Scottish prisons' medical officers. From information before the Committee it is evident that the conditions generally are very unsatisfactory, and the Scottish Medical Secretary was instructed to obtain detailed information with a view to the presentation of the case to the authorities.

Doctors as Members of Local Government Authorities.

The Medical Secretary is anxious to make a complete list of doctors who are members of various local government authorities—that is, aldermen and councillors in county, county borough, town, urban and rural district councils, members of education committees and of boards of guardians—and would be glad to have information from secretaries of Divisions or from individual members. We are informed that at the recent municipal election in Blackburn, Dr. Philip Prebble (a former Chairman and on many occasions a Representative of the Blackburn Division) and Dr. J. W. Keighley (the ex-Chairman of the Division) were returned to the Council.

Remuneration of Medical Teachers.

A special subcommittee has now been appointed to consider the question of the salaries of members of the medical profession who are professors or teachers at universities or teaching colleges. The subcommittee consists of Sir Frederick Andrewes, F.R.S., Dr. A. C. Farquharson, M.P., Dr. F. C. Martley, Dr. Ewen J. Maclean, Professor Benjamin Moore, F.R.S., Dr. J. C. Mottram, Mr. E. B. Turner, F.R.C.S., and two representatives of the Association of University Teachers.

Coroners' Inquest Fees.

The Coroner for South Herefordshire has recently taken up a position with respect to medical witnesses to which it is desired to call the attention of all medical men. The coroner's officer requested the medical officer of health (who is a whole-time officer) for the Herefordshire combined sanitary district, and the tuberculosis officer of the Herefordshire County Council, to attend an inquest four miles away from Hereford upon a woman who had died suddenly and in whose household there had previously been eight cases of phthisis with three deaths. Both these officers gave evidence, but the coroner refused to pay any fee to the medical officer of health, on the ground that he, being a whole-time officer, would have to hand the fee over to his authority. He also refused a fee to the tuberculosis officer on the ground that he was a whole-time officer of the county council. Both the officers concerned had to pay for motor hire to the village in which the inquest was held and were consequently out of pocket. As no subpoena had been served on either officer, it was impossible for them to claim a fee in a court of law. It behoves medical men, especially those who are whole-time officers, to insist upon being subpoenaed before attending an inquest.

Mashonaland Division of Rhodesian Branch.

The Rhodesian Branch of the Association has formed a Mashonaland Division, co-terminous with the Mashonaland Province of Southern Rhodesia. Surgeon-Major F. H. Ellis, M.C. (District Surgeon, Salisbury), has been appointed Honorary Secretary of the Division. The Rhodesian Branch now comprises two Divisions, Mashonaland and Matabeleland.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.

AT a meeting of the Kensington Division on November 1st the report of the Consultative Council was discussed, and replies to the questions from the Ministry of Health Committee of the Association were agreed upon. With regard to Question 19 some discussion took place as to what was meant by the term "consultant," and the following motion was adopted:

> In the opinion of this Division, it is most desirable that the Council of the British Medical Association should give a definition of the term "consultant" at the earliest possible date.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A MEETING of the Portsmouth Division was held on October 28th, when Dr. J. E. F. PALSER was in the chair. Dr. A. Bosworth Wright was unanimously nominated as President of the Southern Branch for 1921–22.

On the question of contract fees as set forth in the Medical Secretary's letter of September, 1920, the following resolution was, after considerable discussion, adopted:

> The Portsmouth Division of the British Medical Association endorses the policy of the Association, but finds that all contract work having been recently extended to 8s. 8d. per head for adults and juveniles in Portsmouth (though not under the auspices of the Association), the present time is inopportune for reopening the question of contract fees.

It was also resolved that the societies affected should be notified that the above rates are contrary to the policy and advice of the Association.

Dr. A. MACKEITH, President of the Southern Branch, attended the meeting as a visitor, and spoke on the subjects raised by Document 4.

It was resolved that owing to the magnitude of the issues raised by the Consultative Council's report, it was impossible to answer the questions contained in Document 4 without prolonged and deliberate consideration, and a subcommittee was appointed to go into the matter and report to the Division at a later meeting.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

FIFE BRANCH.—Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., will deliver a British Medical Association Lecture to the Fife Branch on Wednesday, December 8th, on the "Modern Treatment of Fractures." All practitioners in Fife are cordially invited to be present at the meeting.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.—A meeting of members and non-members will be held on Tuesday, November 16th, at 8.30 p.m., at St. Andrew's Parish Hall, High Road, Willesden Green, N.W. Agenda: To confirm resolution passed *nem. con.* on October 26th: "That rates for contract work in Willesden be not less than the insurance rates—that is, 3d. per week per person." Continue consideration of Consultative Council's Report (see SUPPLEMENT, October 16th). Appoint three delegates to conference with representatives of Willesden District Council, guardians, and cottage hospital. Consider Lord Dawson's proposal to form a local medical advisory council for Willesden.

CONFERENCE OF REPRESENTATIVES OF STAFFS OF VOLUNTARY HOSPITALS IN SCOTLAND.

THE adjourned conference of representatives of staffs of voluntary hospitals called by the Scottish Committee of the British Medical Association was held in Edinburgh on October 30th, when Dr. R. C. BUIST presided over a large attendance.

Reports were presented from various staffs, including Aberdeen Royal Infirmary, Royal Aberdeen Hospital for Sick Children, Edinburgh Royal Infirmary, Glasgow Royal, Western, and Eye Infirmaries, Dundee Royal Infirmary, Perth Infirmary, Kilmarnock Infirmary, Western Infirmary Inverness, Dunfermline Infirmary, Greenock Infirmary, and Leith Hospital, all of them indicating general agreement with the policy of the British Medical Association as expressed in the Memorandum, but with reservations in some cases on points of detail—as to the proportion to be paid, etc. In the case of the Glasgow Eye Infirmary it was reported that 50 per cent. of the money received from public bodies had been offered to the staff by the governors unasked.

Dr. NORMAN WALKER (Edinburgh) moved:

> That when a hospital receives payment from any public body for the treatment of individual cases, a reasonable proportion of the amount received be put at the disposal of the medical staff.

He said that the policy of holding two conferences had been amply justified, in that they had now attained to complete unanimity among the hospitals staffs in Scotland on this question; he advised that they proceed cautiously and moderately, and suggested the sending of a memorandum to the managing bodies of all voluntary hospitals in Scotland, with the names of all those attending the conference appended. Hospital managers might take joint action on that, just as the staffs had done, and a joint conference might be arranged to go into details.

Professor T. K. MONRO, in seconding, said that in the Glasgow Western Infirmary the outdoor staff were being paid 25 per cent. of all the money received by the hospital for pensioners. The number of pensioners treated indoor was very small, and the amount received was less than the actual cost of maintenance. While the staff approved of the principle of the memorandum they did not wish the hospital to be at any loss. He agreed with the suggestion of the mover of the resolution.

The resolution was carried unanimously, and it was further resolved to send a copy of the resolution, together with an explanatory memorandum, to the governing bodies and to the staffs of all voluntary hospitals in Scotland. It was remitted to Drs. Buist, Drever, and Walker to draw up the memorandum.

Several speakers expressed the hope that similar conferences might be held regularly, to discuss other hospital questions, and a motion to that effect, proposed by Dr. LEASK and seconded by Dr. LAURIE, was carried unanimously. The Chairman intimated that it was the intention of the Scottish Committee to make its Hospitals Subcommittee thoroughly representative of the staffs, and he had no doubt they would consider favourably the suggestion contained in the motion.

INSURANCE.

DUTIES OF THE REGIONAL MEDICAL STAFF OF THE MINISTRY OF HEALTH.

THE Ministry of Health has now made arrangements in certain areas to bring into operation the service, in matters connected with national insurance, of the recently appointed staff of medical officers. These thirty officers, who have been designated "regional medical officers," have been assigned to convenient regions in England and Wales, and in the course of time their work will be supplemented by part-time assistance from other practitioners. A Memorandum (Memo. R.M./1) has been issued to insurance practitioners in England and Wales stating that the plans of the Ministry are to be put into immediate operation with respect to (1) applications by approved societies for the regional medical officer's opinion in cases in which there is doubt as to an insured person's incapacity for work; (2) "vague" certificates of incapacity; (3) applications by insurance practitioners for reference to the regional medical officer of cases in which the practitioner is in doubt as to the continued incapacity of a patient whom he has hitherto certified as incapable of work.

It is provided that where there is doubt as to incapacity for work the regional medical officer shall examine any insured person who is referred by an approved society, and give the society his opinion on the question. In all cases the regional medical officer will communicate with the insurance practitioner who has certified the incapacity; the practitioner is thus enabled to furnish information which may assist the medical officer, and he will be afforded the opportunity of being present at the examination if he so desires. If, as the result of a communication from the insurance practitioner concerned, facts are brought to the notice of the regional medical officer which, in his opinion, render an examination by the latter unnecessary, the society will be so informed and further action will be postponed. After an examination has been made, the opinion formed by the examining medical officer will be notified both to the society and to the practitioner. These reports will not necessarily be confined to a bare statement of opinion on the question of incapacity, but may communicate to the society other points assisting its decision as to payment of sickness benefit, or to the practitioner any points ascertained by the medical officer which are thought likely to be of help in further treatment of the patient.

"Vague" certificates, which are dealt with in Rule 13 of the present rules of certification (scheduled to the Medical Benefit Regulations, 1920), may be given when a precise statement would, in the practitioner's opinion, be prejudicial to the health of the patient, or inflict on him unwarrantable injury. At the same time as such a certificate is given, notice must be sent in approved form to the society, and the precise description of the disabling condition, together with a statement of the reasons which have led to the giving of an imperfectly precise certificate, is to be communicated to the regional medical officer.

In cases in which the practitioner is in doubt as to continued incapacity of a patient, particulars of the case are to be forwarded to the regional medical officer on form R.M./7. It will be a condition of the examination that the practitioner shall definitely undertake to be present at the examination if the medical officer requires his attendance. It is anticipated that such attendance will not be found necessary in the majority of instances; in any case, however, the date and place of the examination will be notified to the practitioner, and he will have the opportunity of attending if he so desires.

The memorandum contains a list of areas in which the services of regional medical officers are already available; many of the more rural areas are omitted. It is proposed that so far as possible examinations shall be carried out at fixed centres and at definite sessions; in exceptional cases a patient may be examined in his own home. It is pointed out that the approved societies should in the interests of the sickness insurance funds make full use of the new service in suitable cases; the societies are enjoined, on the other hand, not to overburden the medical staff by referring to them patients of whose incapacity there can be little reasonable doubt.

Other matters which will be dealt with when the scheme (at a later period) is put into full operation are:

1. Reference to the regional medical officers by approved societies of insured persons whose sickness or disablement has lasted more than four consecutive weeks, and in regard to whom the society thinks it desirable that a second opinion should be obtained; in these cases "the medical officer's opinion will be communicated to the practitioner only," but facts relevant to the question of incapacity may be placed before the society.
2. Reference of insured patients, by practitioners, to the regional medical officers when a second opinion is desired, with regard to medical aspects of cases of undoubted capacity.
3. Reference to the regional medical officers of the questions defined in Rule 14 of the revised Medical Certification Rules.
4. The use of special intermediate certificates when, in the practitioner's opinion, a weekly visitation and certification, is not necessary for the treatment or supervision of a case of prolonged incapacity; on and after January 1st, 1921, regional medical officers will be prepared to deal with cases of this description referred to them by the practitioner after the society (in accordance with Rule 13 of the revised Regulations) has notified its objection to the proposed method of certification.
5. In cases of exceptional medical difficulty, arrangements for securing for insured persons the advice, but not the treatment, of specialists.
6. When the system of medical records is brought into operation it is intended that part of the duties of regional medical officers shall be to inspect the records from time to time and to confer and assist practitioners in respect of any difficulties that may arise in connexion therewith.

The memorandum adds that the function of the medical officers in respect of cases referred, will be that of giving opinions only, for the assistance of societies and practitioners respectively. The responsibility for deciding whether sickness benefit should continue to be paid in any case will remain with the society, who, however, will be clearly bound to have due regard to the opinion of the medical officer. Similarly, the responsibility will remain with the insurance practitioner of deciding what treatment should be given to his patient, but in his discharge of that responsibility he will act with the full knowledge of the medical officer's opinion. The fact that the regional medical officers are stationed at centres throughout the country will, it is said, facilitate personal interview whenever this is desirable and practicable, and they will welcome inquiries from practitioners on any points of doubt or difficulty occurring in their work in which it is thought that the medical officers can give assistance.

INSURANCE ACTS COMMITTEE AND SCOTTISH SUBCOMMITTEE.

Election of Direct Representatives.

THE following have been elected as direct representatives of Local Medical and Panel Committees on the Insurance Acts Committee and its Scottish Subcommittee for the session 1920–21:

Insurance Acts Committee.

Group "A."—Dr. M. Dewar (Edinburgh) and Dr. W. R. Martine (Haddington).

Group "B."—Dr. A. Smith (Whickham, Durham).

Group "C."—Dr H. F. Oldham, M.B.E. (Morecambe), Dr. W. Hodgson (Crewe), and Dr. F. Radcliffe (Oldham).

Group "D."—Dr. A. Forbes (Sheffield) and Dr. G. B. Hillman (Wakefield).

Group "E."—Dr. Hugh Jones (Dolgelly).

Group "F."—Dr. T. Ridley Bailey (Bilston, Staffs) and Dr. J. C. S. Burkitt (Whitwick, Leicestershire).

Group "G."—Dr. T. Cuming Askin, M.B.E. (Woodbridge, Suffolk).

Group "H."—Dr. T. Wood Locket (Melksham, Wilts).

Group "I."—Dr. J. P. Williams-Freeman (Andover, Hants).

Group "J."—Dr. C. P. Lankester (Guildford).

Group "K."—Dr. H. B. Brackenbury (Hornsey) and Dr. C. H. Panting (Leyton).

Scottish Subcommittee.

County Panel Committees.—Dr. W. Blair (Jedburgh); Dr. W. F. Brown (Ayr); Dr. D. E. Dickson (Lochgelly, Fife); Dr. C. E. Douglas (Cupar, Fife).

Burgh Panel Committees.—Dr. J. Andrew (Coatbridge); Dr. W. Lawson (Glasgow); Dr. G. W. Miller (Dundee); Dr. C. Nairn (Greenock).

The counting of the votes has been verified by the Proportional Representation Society as regards the Scottish Subcommittee and Groups A, B, C, D, E, and F, in all of which elections there was a contest.

CORRESPONDENCE.

Mileage Statistics.

SIR,—Dr. Candler-Hope and others at the Panel Conference took exception to furnishing figures of visits paid within the two-mile radius, holding that, since mileage is only paid for visits outside that radius, their inclusion must vitiate the statistics when it comes to estimating the relation between the visits paid and the total number of miles travelled. If it were possible to get at the number of miles travelled outside the radius only his contention would be sound and the problem would be much simplified; but, as in a single round one may cross the frontier several times on different sides, paying visits both within and without in irregular order, it is manifest that no practitioner could possibly disentangle the travelling done in a day and assign the proper number of miles to the two classes of visits. It appeared to the Committee that the only practical way was to obtain the whole statistics for the whole year's work, and then make a correction (1) for all travelling to insured persons who live within the two-mile radius, and (2) in respect of that part of the travelling to those outside the radius which is already covered by the general capitation fee.

Dr. Candler-Hope's point that the actual distance travelled per visit within the radius is less than that outside it, and that the inclusion of these visits on an equality would vitiate the statistics, is, I think, a perfectly good one: but it was not lost sight of by the Committee. The desirability of collecting statistics for typically urban practices was recognized in order that allowance may be made in the correction for any disparity that may exist. His reminder is very welcome.—I am, etc.,

Andover, Nov. 3rd. J. P. WILLIAMS-FREEMAN.

The London Panel Committee.

SIR,—I am enclosing copy of a letter sent by the Birmingham Panel and Local Medical Committees in reply to one received from the London Panel Committee containing resolutions passed by the latter Committee suggesting alterations in the constitution of the Insurance Acts Committee of the British Medical Association and asking for an expression of opinion by the former Committees on the same.—I am, etc.,

Birmingham, Nov. 4th. WILLIAM J. GARBUTT.

To the Secretary, Panel Committee, Staple House,
51, Chancery Lane, W.C.2.

4th November, 1920.

Dear Sir,

At their meeting on the 2nd inst. the Birmingham Local Medical and Panel Committees had under consideration your letter of the 25th ult., and in response to your request for an expression of opinion from them I am directed to reply:

(*a*) That they are satisfied that the Insurance Acts Committee, as at present constituted, does satisfactorily represent panel practitioners, and does this the more effectively because it contains practitioners other than insurance practitioners. Also, that the establishment of another body is not only not essential but would be injurious to their interests.

(*b*) That the calling of such a conference as is suggested can only have the effect of weakening the position of panel practitioners in future negotiations with the Ministry of Health.

(*c*) That the policy of the London Local Medical and Panel Committees in standing outside the Insurance Acts Committee is short-sighted, and in practice will only result in damaging the interests of practitioners in the metropolitan area.

In view of the vote at the recent Conference, my Committees would urge the London Local Medical and Panel Committees to reconsider their attitude, remembering that if a section finding itself in a minority were always to decide to stand out there would be an end to all effective representative and administrative action.

My committees further ask me to express their hope that the Insurance Acts Committee will continue to be able to have the benefit of the opinion and views of the London Local Medical and Panel Committees which have been so ably put forward in the past and so helpful to the work of the Insurance Acts Committee for panel practitioners.

It was decided to forward copies of this letter to the medical journals and the Ministry of Health.—Yours faithfully,

(Signed) W. J. GARBUTT, Hon. Secretary, Birmingham
Panel and Local Medical Committees.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

Surgeon Rear Admiral Sir Robert Hill, K.C.M.G., C.B., C.V.O., has been promoted to the rank of Surgeon Vice Admiral.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel J. W. West, C.M.G., to be a professor at the Royal Army Medical College, vice Colonel E. M. Pilcher, C.B., C.B.E., D.S.O., K.H.S (January 1st, 1920.)

Lieutenant-Colonels placed on retired pay: T. McDermott, O.B.E., C. T. Samman.

P. St. J. Wilkinson, late Major S.A.M.C., to be temporary Major.

The following late temporary Captains to be temporary Captains: C. L. Herklots (seniority from June 1st, 1915), A. Leach (seniority from October 14th, 1915).

J. H. Howitt to be temporary Lieutenant.

The following officers relinquish their commissions:—Temporary Captain (acting Major) B. J. Collingwood, O.B.E., and is granted the rank of Major. Temporary Captains, and retain the rank of Captain: J. R. Howitt, W. N. Leak, J. B. Mason, A. S. Webley, E. R. Tweed, J. McLaw (on ceasing duty with South African Native Labour Corps), H. Joslen, J. F. Blackett, A. F. Campbell, W. B. Honey, C. I. Hannigan, J. T. Reardon, H. F. Sheldon, T. Marlin. Temporary honorary Captain H. Halsted, and retains the honorary rank of Captain. Temporary Lieutenant T. W. Smart, and retains the rank of Lieutenant.

INDIAN MEDICAL SERVICE.

The services of Captain T. L. Bomford, M.B., have been placed temporarily at the disposal of the Government of Bengal (June 28th).

The services of Major J. H. Murray, C.I.E., Senior Medical Officer, Port Blair, will be placed permanently at the disposal of the Government of the Punjab (November 27th).

Major F. A. Barker, O.B.E., M.B., Superintendent of the Cellular and Female Jails, Port Blair, appointed to be Senior Medical Officer, Port Blair, with effect from the date on which he assumes charge of the duties.

The services of Lieut.-Colonel G. Tate have been placed temporarily at the disposal of the Government of the Punjab (September 25th).

Major C. H. L. Palk to be Lieutenant-Colonel (March 7th, 1917).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major (acting Lieutenant-Colonel) J. Scott, T.D., relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

To be Majors: Captains H. F. Wilkin, M.C., L. A. Harwood.

Captains (acting Majors) relinquish the acting rank of Major on ceasing to be specially employed: J. A. Cooke, A. Rankine, M.C.

Captain W. Blackwood, D.S.O., resigns his commission, and is granted the rank of Lieutenant-Colonel.

Lieutenant G. A. Fisher, M.C. (late K.R.R.C.) to be Lieutenant.

DIARY OF SOCIETIES AND LECTURES.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C. 2.—Tuesday, 4.30 p.m., Cases and Specimens. Presidential address by Dr. R. Prosser White: Some Autoinfections.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Thursday, 3 p.m., Annual meeting of Fellows and Members.

ROYAL SOCIETY OF MEDICINE.—General meeting of Fellows, Tuesday, 5 p.m. *Section of Therapeutics and Pharmacology:* Tuesday, 4.30 p.m., Major Acton, I.M.S.: Pharmacology of Cinchona Alkaloids. Dr. W. E. Dixon: Quinine Derivatives as Local Anaesthetics. Dr. Warren Crowe: Vaccines in Rheumatoid Arthritis. Dr. W. E. Dixon and Dr. D. Cow: Pituitrin-like Body in Cerebro-spinal Fluid. *Section of Pathology:* Tuesday, 8.30 p.m., Dr. H. Schutze: Blood Grouping with Dried Material. Dr. J. A. Murray: Autoplasty after Hot Air. Dr. Arthur Powell: A Flagellate Organism in Urine. *Section of History of Medicine:* Wednesday, 5 p.m., Mr. James Berry: A Roman Latrine. Dr. Major Greenwood: Galen as an Epidemiologist. *Section of Dermatology:* Thursday, 4.30 p.m., Cases. *Section of Otology:* Friday, 4.45 p.m., Cases and Specimens; 5 p.m., Sir William Milligan: Chronic Otitis Media. *Section of Electro-therapeutics:* Friday, 8.30 p.m. Discussion on Radiotherapy. Opening papers: Professor S. Russ: Physics. Dr. Batten: Superficial Therapy. Dr. Finzi: Deep Therapy.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Hospital for Sick Children.—Wednesday, 4.15 p.m., Demonstration by Dr. L. Findlay: Medical Cases.

LONDON HOSPITAL. *Medical Unit:* Monday and Thursday, 4 p.m., Dr. G. Riddoch: Neurological Manifestations of Cardio-vascular Disease. *Surgical Unit:* Monday, 12 noon, Mr. Walton: Surgical Anatomy of the Abdomen. Tuesday, 4 p.m., Mr. Walton: Gall Stones. Wednesday, 4 p.m., Mr. Sherren: Gastric Ulcer.

MANCHESTER ANCOATS HOSPITAL.—Thursday, 4.30 p.m., Mr. Morley: Gastric Ulcer.

MANCHESTER [illegible] HOSPITAL.—Thursday, 4.15 p.m., Dr. A. C. Magian: Surgical Treatment of Common Gynaecological Complaints.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Dr. A. E. Barclay: X ray Interpretation: X rays in Diagnosis and Treatment.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Monday, 5.30 p.m., Dr. Parsons Smith: Aortic Aneurysm.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Daily (except Wednesday and Saturday), 2 to 3.30 p.m., Out-patient Clinics. Monday, 3.30 p.m., Mr. Paton: [illegible]. Tuesday, 3.30 p.m., Dr. Greenfield: Pathological Demonstration. Wednesday, [illegible] p.m., Dr. [illegible]: Multiple Peripheral [illegible] Demonstration of Recorded [illegible]. Thursday, 3.30 p.m., Dr. Holmes: [illegible]. Friday, 3.30 p.m., [illegible] Surgery of the Nervous System. Saturday, 9 a.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., Operations, In- and Out-patient Clinics, etc. Monday, 2.30 p.m., Mr. Banister: Gynaecological; 4.30 p.m., Mr. Banister: Pyelitis in Pregnancy. Tuesday, 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. Hayton: Throat, Nose and Ear; 4.30 p.m., Nasal Obstruction. Wednesday, 2 p.m., Mr. Hayton: Throat Operations; 2.30 p.m., Dr. Oliver: Skin; 4.30 p.m., Mr. N. Fleming: Eyes. Thursday, 2 p.m., Mr. N. Fleming: Eyes; 3 p.m., Mr. Benians: Pathological Specimens. Friday, 2.30 p.m., Dr. Sundell: Children's Disease; 3 p.m., Mr. Gillespie: Hernia; 5 p.m., Dr. Provis: Venereal Department. Saturday, 3 p.m., Mr. Carson: Surgical Cases.

NORTH OF ENGLAND BRANCH, BRITISH MEDICAL ASSOCIATION, Royal Victoria Infirmary, Newcastle-on-Tyne.—Demonstrations, Friday, 2.15–2.45 p.m., Professor W. E. Hume: Tachycardia; 2.45–3.15 p.m., Mr. W. J. Harrison: Diathermy in Throat and Nose Diseases; 3.15–3.45 p.m., Mr. R. J. Willan: Destruction of Bladder Growths by Diathermy; 3.45–4 p.m., Tea; 4–4.30 p.m., Dr. G. Hall: Birth Palsies; 4.30–5 p.m., Dr. G. Davison: Osseous Maldevelopment in Childhood.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Monday, 2 p.m., Dr. Simson: Diseases of Women; 5 p.m., Mr. MacDonald: Tubercle of Genital Organs. Tuesday, 2 p.m., Mr. Davis: Throat, Nose, and Ear; 5 p.m., Mr. Gray: Peritonitis. Wednesday, 2 p.m., Mr. Addison: Operations: 5 p.m., Dr. Owen: Organic Heart Disease. Thursday, 2 p.m., Mr. Harman: Eyes; 5 p.m., Mr. Edwards: Rectal Surgery. Friday, 10 a.m., Mr. Buxton: Dental Department; 5 p.m., Dr. Burnford: Tuberculin. Saturday, 10 a.m., Dr. Saunders: Children; 12 noon, Mr. Sinclair: Surgical Diseases of Abdomen.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

NOVEMBER.

16 Tues. Willesden Division: St. Andrew's Parish Hall, High Road, Willesden Green, N.W., 8.30 p.m.
18 Thur. London: Insurance Acts Committee, 2.30 p.m.
19 Fri. London:—Arrangements Committee: Council Members, 2 p.m.; Full Committee, 2.45 p.m.
North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15—5 p.m., Scientific Demonstrations.
25 Thur. Lancashire and Cheshire Branch: Milton Hall, Deansgate, Manchester, 3.30 p.m., Discussion on Recommendations of the Consultative Council of the Ministry of Health. Lord Dawson of Penn will address the meeting.

DECEMBER.

8 Wed. Fife Branch: British Medical Association Lecture by Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., on Modern Treatment of Fractures.

APPOINTMENTS.

BEDSON, S. P., M.D., M.Sc.Durh., Assistant Bacteriologist at the Lister Institute of Preventive Medicine, London.

DATE, W. Horton, M.D., D.P.H., Assistant County Medical Officer of Health for Devon.

FELDMAN, W. M., M.B.Lond., Lecturer on Ante-natal and Post-natal Child Physiology at the London Hospital.

HARGOOD, Lieut.-Colonel A. H., D.S.O., M.B., D.P.H., Medical Director of Maternity and Child Welfare work in Rumania, Transylvania, Bucovina, and Bessarabia under the League of Red Cross Societies.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTH.

VANCE.—On October 25th, at 2, Richmond Terrace, Brighton, to Grace M. Vance, M.B., and John H. Vance, M.B., a daughter.

DEATH.

BAIRD.—At the residence of her brother, Dr. J. H. Baird, Wyndham, Southland, N.Z., on June [illegible], 1920, Annie Agnes Baird, M.A., M.B., Ch.B.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 20TH, 1920.

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British Medical Association.

CURRENT NOTES.

Representative Body, 1921-22.

THE Council has provisionally grouped the Divisions in the United Kingdom for election of the Representative Body, 1921-22, in the same way as for the present year (see SUPPLEMENT, January 24th, 1920, p. 21), except that the Council has made the Caithness and Sutherland Division of the Northern Counties of Scotland Branch an independent constituency. Any Division objecting, as regards itself, to this decision of the Council should send to the Medical Secretary, not later than January 8th next, a statement of its objection, of the reason therefor, and of what change the Division would desire the Council to make. In its letter to the honorary secretaries of the Divisions and Branches, the Council has urged the constituencies to elect their Representatives and Deputy-Representatives at once. It is a matter for each constituency to decide whether to elect them by general meeting or by postal vote. If by postal vote, a meeting of the constituency is required to be held afterwards (not later than June 24th) to instruct the Representative or Representatives. Under the by-laws of the Association the Representatives and Deputy-Representatives have to be elected not later than June 17th, and their names sent to the Medical Secretary *not later than June 24th, 1921* (the Annual Representative Meeting at Newcastle begins on July 15th). Now that the dislocation caused by the war is giving place to more normal conditions, the Council proposes to adhere strictly to these provisions of the by-laws.

Membership of Divisions.

A return has been prepared showing the membership percentages of the various Divisions in England and Wales. The members of the following Divisions number 70 per cent. or more of the total medical population of the Division area: Nuneaton and Tamworth, 84 per cent.; Sunderland, 81 per cent.; Salisbury, 78 per cent.; Ashton-under-Lyne, 76 per cent.; Leigh, Newcastle, and West Norfolk, 75 per cent.; Coventry, 74 per cent.; Swansea, 72 per cent.; Cleveland, Dudley, Hartlepools, South Essex, and Tyneside, 71 per cent.; Isle of Ely and Rotherham, 70 per cent. The respective figures are being sent to the honorary secretaries of all the Divisions, and will also be sent to other members applying for them. For England and Wales as a whole the membership percentage is 51.2, as compared with 49.2 in April last; but it should be pointed out that this is the percentage of members compared with all persons on the *Medical Register*, a large number of whom are not active members of the profession. Later it is hoped to publish some figures showing the percentage of members among those engaged in active practice.

Work of the Public Health Committee.

The Public Health Committee of the Association, at its meeting on November 2nd, dealt with a number of important points concerning the Public Health and Poor Law Medical Services.

(*a*) The question of supersession of district Poor Law medical officers by whole-time resident infirmary officials which is now going on in some parts of London was considered, and it was decided to represent to the Ministry of Health that in the opinion of the Association there should be no appointments of whole-time officers to do the domiciliary work of district medical officers where it had before been satisfactorily performed by general practitioners.

(*b*) Steps were also taken to secure the putting down of several amendments to the Ministry of Health (Miscellaneous Provisions) Bill now before the House of Commons in the matter of security of tenure for medical officers of health and sanitary inspectors.

(*c*) The Committee received reports of successful action in several cases concerning the salaries of medical officers of health and Poor Law medical officers.

In one instance a Poor Law medical officer had asked for a 33 per cent. increase in his salary, and had resigned because his request was refused. The Division considered that the medical officer's request was reasonable, and took up the case on his behalf. The appointment was advertised locally, and steps were taken to inform intending applicants of the exact position. The guardians obtained a successor, who, however, shortly after his appointment sent in his resignation. In the end the previous holder of the post was reinstated, and the full bonus was added to his salary.

(*d*) Successful action was also reported in the case of a medical officer of health whose salary had been raised from £600 per annum to £800 as a result of local and central action taken on his behalf by the Association.

(*e*) A report was received of a dispute concerning the manner in which payments should be obtained for notification of infectious diseases.

The medical officer of health of a large town had insisted that the medical men should send in periodical accounts, whereas it has been decided that, under Section 4 (2) of the Notification Act, 1889, the original notification itself is also the claim for the fee without any further demand. It was not until representations had twice been made to the Ministry of Health in this matter that the medical officer of health concerned could be persuaded that he had no legal right to insist upon accounts being rendered for this payment. The matter has now been brought to a satisfactory conclusion.

Motor Cycles used for Professional Purposes.

Within the past month two complaints, the first of the kind, have been received by the Association from medical men who were refused the petrol rebate by their local taxation officer on the ground that they used motor cycles and not cars for the purpose of doing their professional work. Representations were at once made to the Board of Customs and Excise, who have replied that centrally the expression "motor car" has always been held to cover motor cycles for this particular purpose. It seems that the trouble arose through excessive zeal on the part of the local taxation officers concerned. It is, of course, possible that other motor cycling doctors may have had the same experience and accepted the dictum of the local taxation officer without demur, and we are advised that any case of the kind should be reported direct to the Board of Customs and Excise, London. In connexion with this matter we are informed that the petrol tax comes to an end on January 1st, 1921, and with it will also pass away the whole question of petrol rebates.

Association Notices.

CHANGES OF AREAS.

Adjustment of Areas of Rotherham and Sheffield Divisions.

NOTICE is hereby given by the Council to all concerned that the following adjustment of areas has been made in accordance with the Articles and By-laws, and takes effect as from the date of this notice.

That the area of the Rotherham Division be as follows:

The County Borough of Rotherham, the Civil Parishes of Bramley, Brinsworth, Catcliffe, Dinnington, Greasbrough, Hooton - Roberts, Kilnhurst, Laughton, Maltby, Parkgate, Rawmarsh, Thrybergh, Treeton, and Wickersley.

BRANCH AND DIVISION MEETINGS TO BE HELD.

FIFE BRANCH.—Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., will deliver a British Medical Association Lecture to the Fife Branch on Wednesday, December 8th, on the "Modern Treatment of Fractures." All practitioners in Fife are cordially invited to be present at the meeting.

LANCASHIRE AND CHESHIRE BRANCH. A general meeting of members of the Lancashire and Cheshire Branch will be held at the Milton Hall, Deansgate, Manchester, at 3.30 p.m., on Thursday, November 25th, to discuss the recommendations of the Consultative Council of the Ministry of Health for the future provision of medical and allied services, and to hear Lord Dawson of Penn (Chairman of the Consultative Council). Medical practitioners who are not members of the British Medical Association are also cordially invited to attend, and will be admitted on presenting their cards.

Meetings of Branches and Divisions.

WILTSHIRE BRANCH.

A MEETING of the Wiltshire Branch was held, under the chairmanship of Dr. HAYDON on October 27th, to consider D 4. In opening a discussion on the Report of the Medical Consultative Council, Dr. C. E. S. FLEMMING examined certain principles and questions of policy. The public needed and desired, he said, the best possible medical service, both preventive and curative. It was well aware of the advances made during recent years in medical knowledge, and it wanted them to become available for all classes of the community. By "available" was meant not necessarily "free of cost" but "within reach." Members of the medical profession, from the consultant to the general practitioner, knew that, if given the means, they were capable of doing what was asked of them. They had long desired the opportunity, the means, and the time for research in diagnostic, curative, and preventive measures, so that their work might be more interesting, less tedious, and more effective, and that they might the better fulfil their purpose in the State. For years they had realized the inadequacy, in certain respects, of the service they had been able to give the public, and must often have felt inclined to give up in despair because of the hopelessness of obtaining adequate reform; but now they seemed to have almost within their grasp the realization of some, at any rate, of their desires.

The establishment of a Ministry of Health, and with it a Medical Consultative Council, and the issue by that Council at the request of the Ministry of a scheme of medical service (Dr. Flemming continued) show very definite progress, and give good cause to hope that even if that particular scheme is not carried out we may look on early reforms as possible, even probable. It is suggested that the whole country should be divided into areas, not with rigid and arbitrary boundaries, but such as may be found most convenient by patient and doctor, both in ordinary attendance and in using the institutions called "primary health centres." These areas, including the centres, are the units of the proposed service; they in their turn will be grouped, in the way found most convenient, into districts to be served by, and to serve the large central consulting or so-called "secondary" hospital. The area served by the primary health centre is essentially an area of domiciliary service. "Primary health centre" is the name given to an institution designed to provide the means of treatment, diagnosis, and research of which we have so long felt the need, a place where we can admit and attend with the help of such experts as we may require not only those patients whom we have long looked on as hospital patients, but also maternity cases, and that large and ever-widening class of patient which, as is daily becoming more evident, requires for early, prompt, and effective examination and treatment the help that can only be found in an institution properly staffed and equipped. The economy of time and labour [illegible] here foreshadowed must eventually be very great, and will no doubt be of much value in promoting the science and practice of medicine. In the larger towns the need of these institutions has been overshadowed by the proximity of the big hospitals, but there are the same patients under the same conditions and with the same needs in the town as in the country; for them and for the practitioner the primary health centre is as essential in the one place as in the other. It is proposed to attach to these centres the communal services, tuberculosis dispensaries, venereal disease, maternity and child welfare clinics, and school and dental clinics, etc., all of which are rapidly increasing in number; for their ultimate success it is essential that they should be as far as possible associated with the medical men who are responsible for the domiciliary service of the areas concerned, and when dependants are included in the national health insurance scheme this will be still more evident. So that even at some inconvenience to ourselves I think it important that we should support and encourage this part of the proposed service, especially as it will also bring us into closer touch with the actual practice of preventive medicine.

Curative and preventive medicine (Dr. Flemming continued) are so closely related that it is obvious that there should be the fullest possible interaction between the medical officer of health and the general practitioner. The medical officer of health regards patients chiefly as units of the community; the general practitioner treats each one as an individual. As in each case the same patient and the same disease are concerned, it is obvious that these two practitioners ought to work in close association. Beyond what is being done to-day by medical men in private practice in teaching and practising the prevention of disease, there is scope for considerable increase. The general practitioner's knowledge of the conditions and surroundings of the people is more complete, more intimate, more immediate than that of any official ever can be, and as insurance work increases he will find it proportionately more to his interest to use every power and opportunity to prevent disease and disability. With regard to remuneration, the profession has demanded such pay as shall enable it to do its work efficiently. The Government has rightly been anxious to ensure an efficient medical service in return for its expenditure of money. In the past we have been badly paid, though I think we ought to recognize that there has been reason for some, at any rate, of the apparent meanness of the public; this has at times been due to an uncertainty as to what sort of a return they were likely to get for their money. Having completed our scheme and persuaded the public of its need, we must realize that we shall not be valued at more than the price we put on ourselves. The importance to the public of our work, the length of our training, the strenuous and laborious nature of our practice, the great responsibilities we undertake—these justly demand generous remuneration, but it is incumbent on us to show that the quality of the work we offer is of the best.

Many members of the public are alarmed at the probable cost of the suggested reforms, but it is well to realize that much of the essential part of the work can be done at once without a very large expenditure of money—namely, that important part which deals with organization. Money is now being spent by local authorities and others in providing institutions and other facilities for treatment; it is important that work of this sort should be carried out with a view to adapting it to the contemplated services.

A matter that deeply concerns us, and is the cause in many of a natural reluctance to embrace this scheme, is the fear of "officialdom." We have a natural and proper fear for the loss of our independence and individuality. We need both of these so far as they are essential to efficiency and progress, but yet we do need in addition the help of the State. We cannot say that the State must do this or do that, and at the same time claim complete independence, which can never, in the circumstances of present day society, be complete, and would, in fact, become a form of anarchy. What we must aim at is that intraprofessional independence that exists in every guild, and which, so long as it is exercised for the public good, will not be subject to lay interference. If we wish to avoid officialdom we must act for ourselves, and ourselves take the initiative; just in proportion as we get on with the job ourselves, so soon shall we be our own masters. If we do not act ourselves for the public, the State must and will do so. The most certain way to promote a whole-time State medical service would be to oppose every suggested scheme of reform.

It is for us to enrol ourselves in a voluntary army or, alternatively to submit to conscription; while we maintain what is essential of our independence, we can show the world that the desire we have most deeply in our hearts is the welfare of mankind. Our course should be, not to wait for the tedious completion of a Government measure of reform, but to adopt those principles in this report on which there is general agreement and begin to put them into action without further delay. The report suggests not a revolution, but an orderly development and evolution of existing work and institutions. This demands reorganization and better co-operation between medical men, hospitals, the nursing services, ambulance services, local authorities, and the public. It is for us to lead the public, to influence public bodies, and to co-operate with the Government in the development of an organized health service.

At the close of the discussion it was resolved:

(1) That this meeting requests the Council to take steps at the earliest possible opportunity to ask the Divisions and Branches to adopt those principles in the Report on which there is general agreement, and to put them into action without further delay. (2) That this meeting of medical men representative of the County of Wilts asks the County Council to set up a laboratory for the County as soon as possible.

BIRMINGHAM BRANCH: COVENTRY DIVISION.

A MEETING of the Coventry Division was held at the Coventry and Warwickshire Hospital on November 2nd, when Dr. LOWMAN presided. The advisability of raising contract fees to the level of those under the National Insurance Act was discussed, but, owing to the prevalence of unemployment and "short time," it was decided to postpone any action for six months. The Dawson report was then discussed and the questions in form D 5 answered. The SECRETARY read a summary of the action taken by the central organization on the question of fees for examination for life insurance.

METROPOLITAN COUNTIES BRANCH: NORTH MIDDLESEX DIVISION.

A MEETING of the Division was held at Wortley Hall, Finsbury Park, on November 10th, when Dr. G. G. MACDONALD was in the chair.

The following matters were considered: (1) Report of Divisional representative; (2) direct parliamentary representation; (3) report of the Council of the Association on the report of the Consultative Council on medical and allied sciences. Only four members remained to complete the answers to the questionnaire on this matter.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.

A MEETING of the Division, attended by nearly one hundred members of the profession, was held at the Medical Club, Leicester, to discuss the report of the Consultative Council and hear an address from Lord Dawson of Penn.

Pending the arrival of Lord Dawson, who was delayed owing to the coal strike, Dr. WALLACE HENRY outlined the decisions of the Representative Meeting on the question of the Ministry of Health, and any proposed extension of health services in the country.

Lord DAWSON gave an address outlining the changes in medical practice resulting from the establishment of communal medical services during the past ten years; he explained the main principles underlying the report, and declared that the scheme suggested, or some similar constructive policy, was the only alternative to a whole-time State service.

A discussion followed, in which Drs. LOGAN, CLARKE, LILLEY, PRATT, SPRIGGS, BURKITT, BOND, and HENRY took part. A hearty vote of thanks was accorded to Lord Dawson on the proposition of the HONORARY SECRETARY. The meeting adjourned until November 12th for further discussion and consideration of the questions submitted to the Divisions by the Council.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.

A MEETING of the Buckinghamshire Division was held on October 29th, when Dr. KENNISH was in the chair. The meeting was called to discuss the report of the Consultative Council on the future provision of medical and allied services, and to answer questions sent from the Central Office of the Association (SUPPLEMENT to the BRITISH MEDICAL JOURNAL, October 16th, p. 96). After some discussion it was decided that the questions should be issued to individual members and answers requested within a week.

INSURANCE.

CORRESPONDENCE.

The Annual Panel Conference.

SIR,—The minutes of the Annual Conference of Representatives of Local Medical and Panel Committees, held at the Memorial Hall on October 21st, deserve careful study. Dr. Dain has earned, I am sure, the grateful thanks of all concerned for having disposed of 104 resolutions in one day. No panel practitioner could deal with an equal number of panel patients in that time. But, of course, marvels can be accomplished by method. The resolutions may be easily classified and dealt with in groups. There are motions referring directly to the Ministry of Health, such as those on remuneration, transfer of practices, medical records, motions demanding a simple answer to a simple question. It seems to have been Dr. Brackenbury's duty to tackle these. They were summarily thrown out. Other motions referred indirectly to the Ministry. They expressed pious opinions, but went no further. These were carried *nemine contradicente*. Such were motions 69, 72, and 73. Others there were which in addition to being pious opinions carried some suggestion. These were relegated to the Insurance Acts Committee, to take such action as may seem desirable. The London resolution concerning the Insurance Acts Committee, though lost at the Conference, seems, from circulars subsequently sent out, to have been found again. Those resolutions relating to the approved societies, to the chemists, and to truant members of our own profession, would naturally, in a conference of medical men, be carried.

If one admits this classification, the fate of the Dewsbury amendment, that of Sheffield, and that of Cambridgeshire become evident. Would it not save time if motions regarding the Ministry were ruled out of order at these conferences? The Conference could then finish its business in a forenoon.—I am, etc.,

Exeter, Nov. 4th. J. PEREIRA GRAY.

LONDON INSURANCE COMMITTEE.

Penalties Imposed on Practitioners.—The case of an insurance practitioner against whom a complaint had been made by an insured person that he had accepted fees for treatment provided was reported to the London Insurance Committee on October 28th. The Medical Services Subcommittee found the complaint substantiated, and recommended that the practitioner be required to refund the amount in question (£5 5s.) to the insured person. A copy of the report on the case was sent to the Minister of Health, and it was now announced that the Minister had taken so serious a view of the case as to order that £50 be withheld from the Exchequer grant payable to the Committee. The Committee thereupon decided that the £50 should be recovered from this practitioner by deduction from the remuneration payable to him. In another case of default, investigated by the Committee last year, the particulars of which were sent on to the Minister of Health, it was reported that the Minister had decided to withhold £100 from the grant, and it was agreed that this amount also should be recovered from the practitioner. A long discussion took place in the Committee on the conduct of a practitioner who had refused, without explanation, to attend on the evening on which he was called to a case which proved to be one of pleurisy, with pneumonia supervening. He had said that he would go on the following morning, but on calling then he was not allowed to see the patient, and was told that another doctor was in attendance. The Medical Services Subcommittee recommended that the Committee should deprecate the action of the practitioner, and that 10s. 6d. should be deducted from his remuneration to meet the expenditure incurred by the patient for the second doctor's first visit. The Committee, however, decided to censure the practitioner and to require that the whole amount paid for the second doctor's services (£3 15s.) be deducted from his remuneration.

Excessive Prescribing.—The new procedure for the investigation of excessive prescribing introduced since July 1st was explained to the Committee. Statistical analyses of the prescriptions are to be furnished by the Insurance Committee to the Panel Committee, and the latter will deal only with that part of the investigation of supposed excessive prescribing for which the exercise of professional judgement is needed. All prescriptions above a certain standard cost are to be extracted and the particulars contained in them entered upon schedules—a separate schedule for each practitioner—which will be submitted monthly to the Panel Committee. The standard figure of cost is a matter for arrangement between the two Committees, but the Minister has suggested that it be ascertained by adding 25 per cent. to the average cost per prescription for the whole area for the previous quarter. Analyses of all prescriptions are to be undertaken each quarter in the case of doctors whose averages substantially exceed the average for the whole area.

REGIONAL MEDICAL STAFF, MINISTRY OF HEALTH.

THE Minister of Health has appointed the following as Regional Medical Officers of the Ministry to fill vacancies which have arisen through inability of officers originally appointed to take up the duties of their posts:

England.—Dr. F. J. Blackley, Bristol; Dr. F. B. Thornton, Reigate; Dr. R. T. Worthington, Lowestoft.

Wales.—Dr. E. Parry Evans, Llantwit Vardre.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following announcements are notified by the Admiralty:

The following Surgeon Lieutenant Commanders have been promoted to the rank of Surgeon Commanders: F. G. Hitch, T. R. L. Jones, J. H. Burdett, F. G. H. R. Black, G. R. McCowen, O.B.E., W. Bradbury, D.S.O., A. V. J. Richardson, O.B.E.

Surgeon Commanders E. T. Meagher to the *President*, additional (temporary), for service on the War Office Committee on Shell Shock; T. Creaser to Haslar Hospital (temporary); Surgeon Lieutenant Commander F. Lewis Smith to the *Pembroke* for R.N. Hospital, Chatham, for general duties and for specialist duties as radiographer. Surgeon Lieutenants H. F. Stephen to the *Columbine* for Port Edgar Base; H. Hurst to the *Chrysanthemum*, on commissioning.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

The following Lieutenant-Colonels retire on retired pay: S. G. Butler, D.S.O. (and is granted the rank of Colonel), J. H. Campbell, C.B.E., D.S.O., J. Grech, D.S.O., F. Harvey.

The following relinquish the acting rank of Lieut.-Colonel: Major and Brevet Lieut.-Colonel C. H. Turner, D.S.O. (June 8th, 1919), Major T. J. Wright, D.S.O. (January 31st, 1920—substituted for notification in the *London Gazette*, September 30th, 1920), temporary Captain F. R. Kirkham (May 21st, 1920).

The following Majors retire on retired pay: A. B. Smallman, C.B.E., D.S.O., and is granted the rank of Lieut.-Colonel; A. W. A. Irwin, O.B.E., F. A. Stephens, D.S.O.

Major R. G. Gayer Anderson retires, receiving a gratuity.

The following Captains relinquish the acting rank of Major: W. E. Adam, M.C., H. R. L'Estrange, O.B.E., S. D. Robertson.

The following late temporary Captains to be temporary Captains: T. Brodie (seniority from October 10th, 1918), B. N. Sinclair (seniority from November 7th, 1915).

Captain T. E. Osmond retires, receiving a gratuity.

The initials of temporary Captain James I. P. Wilson are as now described, and not as in the *London Gazette* of October 27th, 1920.

Temporary Captain Guy Algernon Pratt is dismissed the service by sentence of a general court-martial, August 19th, 1920.

The following officers relinquish their commissions: Temporary Major H. M. Rashbrook, on ceasing to be employed with the Edmonton War Hospital, and retains the rank of Major; temporary Captain A. W. Wilcox, and is granted the rank of Major. Temporary Captains and retain the rank of Captain: F. Dugon, T. F. Griffin, C. E. A. [illegible].

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain L. S. Goss (Surgeon Lieutenant R.N.) relinquishes his commission on return to the R.N.

OVERSEAS CONTINGENTS.

SOUTH AFRICAN MEDICAL CORPS.

The following relinquish their temporary commissions on ceasing to be employed with the Union Imperial Service Contingent:—Captains (and are granted the rank of Major): W. D. Miller, O.B.E. November 14th, 1918), J. Evans (February 26th, 1919—substituted for notification in the *London Gazette*, May 15th, 1920), temporary Captain A. H. Bell (September 11th, 1916), and retains the rank of Captain.

Captain W. H. R. Sutton relinquishes his temporary commission on ceasing to be employed, February 26th, 1919, and is granted the rank of Major (substituted for notification in the *London Gazette*, July 1st, 1920).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following Captains relinquish their commissions and retain the rank of Captain: E. Kean, P. M. Neighbour, D. A. Dyer, J. Scott, A. A. Prichard, J. O. P. Smith, J. P. J. Jenkins, J. F. Campbell, J. W. Mackay, W. H. Simmons, W. Young, F. Portas, C. V. Braimbridge, A. Fowler, C. Simpson.

Captain P. J. Corcoran resigns his commission, and is granted the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major L. A. Avery, D.S.O., to be D.A.D.M.S., East Anglian Division.

To be Majors: Captains A. P. Watson, O.B.E., F. W. B. Young, J. McHoul.

The following officers resign their commissions:—Major A. W. Anderson, and is granted the rank of Lieutenant-Colonel. Captain A. J. Blaxland, and is granted the rank of Major. Captains, and retain the rank of Captain: J. P. I. Harty, I. G. Bisset, J. Saffley.

2nd London Sanitary Company.—Captain (acting Major) R. O. [illegible] relinquishes the acting rank of Major on vacating appointment as D.A.D.M.S.

DIARY OF SOCIETIES AND LECTURES.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m., A Study of an Outbreak of Acute Rheumatism in Children under 12 Years, by Dr. F. J. Poynton, Dr. D. H. Paterson, and Dr. J. C. Spence. Some Disorders of the Myocardium, Dr. G. E. S. Ward.

ROYAL SOCIETY OF MEDICINE.—*Section of Odontology*: Monday, 8 p.m. *Section of Medicine*: Tuesday, 5.30 p.m., Cases, to be followed by General Discussion. *Section of Urology*: Thursday, 3.30 to 5.30 p.m., at Guy's Hospital, S.E., Mr. A. R. Thompson, Demonstration; 8.30 p.m., Clinical and Pathological Meeting at 1, Wimpole Street, W. *Section for Study of Disease in Children*: Friday, 4.30 p.m., Cases; 5 p.m., Dr. D. Drury: Malformation in an Infant. *Section of Epidemiology and State Medicine*: Friday, 8.30 p.m., Dr. Arnold Chaplin: Measures for Preserving the Health of Seamen on Board Ship.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, London, W.1.—Friday, 8 p.m., Resumed Discussion on Professor Warrington Yorke's Paper on the Present Position of Trypanosomiasis Research. Paper by Mr. G. Dudgeon, Some Important Tropical Fruit Foods.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Maternity and Women's Hospital, Glasgow.—Wednesday, 4.15 p.m., Demonstration by Dr. J. H. Martin, Obstetrical Cases.

LONDON HOSPITAL.—*Medical Unit*: Dr. A. W. M. Ellis: Monday, 4 p.m., Excretion of Urine in Health and Disease; Thursday, 4 p.m., Results of Defective Excretion. *Surgical Unit*: Mr. Walton: Monday, 12 noon, Anatomy of Duodenum and Pancreas; Tuesday, 4 p.m., Gall Stones. Wednesday, 4 p.m., Mr. Sherren: Duodenal Ulcer.

MANCHESTER [illegible] HOSPITAL.—Thursday, 4.15 p.m., Dr. A. C. Magian: Surgical Treatment of Common Gynaecological Complaints.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Dr. A. E. Barclay: X-ray Interpretation; X Rays in Diagnosis and Treatment (continued).

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Monday, 5.30 p.m., Dr. Hamill: Auricular Fibrillation.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.1.—Daily (except Wednesday and Saturday), 2 to 3.30 p.m., Out-patient Clinics. Monday, 3.30 p.m., Dr. Greenfield: Pathological Demonstration. Tuesday, 3.30 p.m., Dr. Greenfield: Cerebro-spinal Fluid. Wednesday, 2 p.m., Frenkel Exercises. Thursday, 3.30 p.m., Dr. G. Holmes: Cerebro-spinal Syphilis. Friday, 3.30 p.m., Mr. Sargent: Surgery of Nervous System. Saturday, 9 a.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., Operations, In- and Out-patient Clinics, etc. Monday, 2.30 p.m., Mr. Banister: Gynaecological; 3 p.m., Mr. Tanner: Surgical Cases. Tuesday, 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. Hayton: Throat, Nose and Ear; 4.30 p.m., Dr. Alexander: Medical Cases. Wednesday, 2 p.m., Mr. Hayton: Throat Operations; 3 p.m., Dr. Oliver: Skin Cases. Thursday, 2 p.m., Mr. S. Fleming: Eyes; 3 p.m., Mr. Carson: Surgical Cases. Friday, 2.30 p.m., Dr. [illegible]: Children; 3 p.m., Mr. Tanner: Surgical Cases; 5 p.m., Dr. Provis: Venereal Department. Saturday, 3 p.m., Mr. Carson: Surgical Cases.

SALFORD ROYAL HOSPITAL.—Thursday, 4.30 p.m., Mr. Ollerenshaw: Demonstration of Orthopaedic Cases.

WEST LONDON POST-GRADUATE COLLEGE.—Daily, 10 a.m. Ward Visits; 2 p.m., In- and Out-Patient Clinics and Operations. Monday, 12.15 p.m., Dr. Burnford: Pathological Demonstration; 5 p.m., Dr. Stewart: Meningitis. Tuesday, 12 noon, Mr. Gray: Fractures; 5 p.m., Mr. Davis: Tonsillitis. Wednesday, 2 p.m., Dr. Morton: X Rays; 5 p.m., Mr. Armour: Arthritis. Thursday, 2 p.m., Mr. MacDonald: Out-patients; 5 p.m., Dr. T. M. Legge: Anthrax. Friday, 2 p.m., Dr. Pernet: Skin; 5 p.m., Mr. Steadman: Dental Sepsis and Rheumatism. Saturday, 10 a.m., Dr. Saunders: Children; 12 noon, Mr. Sinclair: Diseases of Abdomen.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

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Diary of the Association.

NOVEMBER.

19 Fri. London:—Arrangements Committee: Council Members, 2 p.m.; Full Committee, 2.45 p.m.
North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15—5 p.m., Scientific Demonstrations.

25 Thur. Lancashire and Cheshire Branch: Milton Hall, Deansgate, Manchester, 3.30 p.m., Discussion on Recommendations of the Consultative Council of the Ministry of Health. Lord Dawson of Penn will address the meeting.

DECEMBER.

1 Wed. London: Finance Committee, 2.30 p.m.

8 Wed. Fife Branch: British Medical Association Lecture by Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., on Modern Treatment of Fractures.

APPOINTMENTS.

CHISHOLM, John, M.B., Ch.B.Edin., Honorary Assistant Medical Officer to the Jessop Hospital for Women, Sheffield, vice D. Gray Newton, F.R.C.S.E., resigned.

COX, R., M.B., B.Ch.Camb., Medical Officer of the Institution and Cottage Home of the Yeovil Union.

LEWIS, C. J., D.Sc., M.D., F.R.C.P.E., Associate Professor of Public Health in the University of Birmingham.

MACFETRIDGE, W. C., M.D.Dubl.Univ., Assistant Surgeon Royal Victoria Eye and Ear Hospital, Dublin.

ST. THOMAS'S HOSPITAL.—Casualty Officers and Resident Anaesthetists: C. B. Cohen, B.A.Cantab., M.R.C.S., L.R.C.P., A. G. F. McArthur, B.A.Cantab., M.R.C.S., L.R.C.P., F. V. Squires, B.A.Cantab., M.R.C.S., L.R.C.P., A. R. Walker, M.A.Cantab., M.R.C.S., L.R.C.P., W. M. Anthony, M.R.C.S., L.R.C.P. Resident House-Physician: J. D. M. Cardell, M.R.C.S., L.R.C.P. Resident House-Surgeons: A. C. Halliwell, B.A., M.B., B.Ch.Cantab., D. B. Spence, M.R.C.S., L.R.C.P. House-Surgeon to Block 8: R. H. O. B. Robinson, B.A., M.B., B.Ch.Cantab. Obstetric House-Physicians: (Senior) J. Hale, M.A., B.Ch.Cantab.; (Junior) R. M. Humphreys, B.A., M.B., B.Ch.Oxon. Ophthalmic House-Surgeons: (Senior) E. D. T. Roberts, M.R.C.S., L.R.C.P.; (Junior) C. F. McLean, B.A.Cantab., M.R.C.S., L.R.C.P. Clinical Assistants: (Skin) J. A. P. Shaw, B.A.Cantab., M.R.C.S., L.R.C.P.; (Ear) G. M. Kendall, M.B.Cantab., M.R.C.S., L.R.C.P.; (Children's Medical) C. K. J. Hamilton, M.C., B.A.Oxon., M.R.C.S., L.R.C.P., J. T. S. Hoey, B.A.Oxon., M.R.C.S., L.R.C.P.; (Tuberculosis Department) C. K. J. Hamilton, M.C., B.A.Oxon., M.R.C.S., L.R.C.P., J. T. S. Hoey, B.A.Oxon., M.R.C.S., L.R.C.P.; (Electrical and X-Ray Department) A. T. Spoor, M.A.Cantab., M.R.C.S., L.R.C.P. Several other gentlemen have received extensions of their appointments.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **7s. 6d.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

PANTON.—On July 19th, at Famagusta, Cyprus, the wife of Captain and Brevet Major H. F. Panton, D.S.O., M.C., R.A.M.C., a son.

DEATH.

COSGRAVE.—On November 3rd, at his residence, Westfield, The Oaks, near Bolton, Alexander Cosgrave, M.R.C.S.Eng., M.R.C.P.I., L.M., second son of the late Alexander Cosgrave of Fairfield, Manchester, in his 70th year.

Printed and Published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 27TH, 1920.

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British Medical Association.

CURRENT NOTES.

Colonial Medical Services.

We publish in the SUPPLEMENT this week the British Medical Association's letter of October 15th to the Colonial Office as to various questions in connexion with the Colonial Medical Services, and the reply, dated November 15th, received from Sir H. J. Read, K.C.M.G., C.B., Assistant Under-Secretary of State. A full summary of the report[1] of the Colonial Medical Services (Departmental) Committee was published in the BRITISH MEDICAL JOURNAL of September 18th (page 448), and a note on the subject appeared in this column of the SUPPLEMENT of November 6th. The special attention of members of the Association serving in or retired from the Colonial Medical Services, and of those Branches of the Association containing members whose work comes within the purview of the Colonial Office, is drawn to the importance of the matters raised in the correspondence and in the report of the Departmental Committee. The work of the Association in developing the efficiency of the Colonial Medical Services and safeguarding the interests of the members of those services has already been greatly helped by information supplied by the Branches and members concerned. On behalf of the Council, the Dominions Committee of the Association will deal further at an early date with various questions arising, and it will be of material assistance to the Committee if the Branches and members concerned will send to the Committee their comments on the correspondence and report, together with any suggestions they may have to make.

The Medical Secretary's Visit to the North of England.

The Medical Secretary, Dr. Alfred Cox, left London this week for the purpose of visiting Divisions in the North of England Branch of the Association. He has addressed the Stockton and Cleveland Divisions at Stockton on the evening of Thursday, November 25th, and is visiting the Sunderland and Hartlepool Divisions and the Darlington Division on Friday, November 26th, and the Gateshead and Consett Division on the evening of Saturday, November 27th. The Divisions to be visited by Dr. Cox next week are as follows: Blyth and Morpeth on the evening of Monday, November 29th; Durham and Bishop Auckland in the afternoon of Tuesday, November 30th; Tyneside and South Shields at North Shields at 8 p.m. on November 30th; and North Northumberland at Alnwick on the evening of December 1st.

Treatment of Venereal Disease by General Practitioners.

We understand that the National Council for Combating Venereal Diseases is requesting medical officers of health to supply lists of practitioners in their areas who have applied for samples of salvarsan. The medical officers of health are asked to indicate those practitioners who are in the habit of treating venereal disease, in order that the National Council may be in a position to give the names of private doctors who are willing to undertake treatment of venereal disease to those persons who cannot, or will not, avail themselves of the treatment provided at a clinic. It is, of course, stated that the permission of the doctor will be obtained before his or her name is placed on such a list. The Standing Ethical Subcommittee is of opinion that the medical officer of health should approach *all* the practitioners in his neighbourhood, asking them if they are willing to undertake treatment of venereal disease; the names of those who reply in the affirmative will be forwarded to the National Council. The Subcommittee considers that there may be practitioners who have never applied to the medical officer of health for samples of salvarsan or other drugs but who are quite competent to undertake this method of treating venereal diseases. The National Council for Combating Venereal Diseases has been advised of the opinion of the Standing Ethical Subcommittee on this matter.

COLONIAL MEDICAL SERVICES.

The following correspondence has taken place between the British Medical Association and the Colonial Office in connexion with the Colonial Medical Services. Branches and members concerned are specially asked to send to the Medical Secretary, for the assistance of the Council in dealing further with the matter, any comments or suggestions which they may have to make.

British Medical Association,
Medical Department,
429, Strand, W.C.2,
October 15th, 1920.

Sir,

With reference to my letter to you of October 1st, and your reply of October 13th, confirming the arrangement made by telephone that Sir Herbert Read will see the deputation from the Association on Thursday, October 28th, at 3 p.m., I am instructed by the Dominions Committee of the Association to inform you of the conclusions arrived at by the Association in respect of the Colonial Medical Services and the recommendations contained in the report of the Departmental Committee, dated July 1st, dealing with the question of reform of these Services. In considering the subject, the Association has had the advantage of many interviews with medical officers and retired medical officers, much correspondence with individual officers, and representations from several of the

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[1] Cmd. 939. Obtainable from H.M. Stationery Office, Kingsway, London, W.C.2. Price 2d.

Branches of the Association in various Colonies and Dependencies.

Salaries of Medical Officers.

2. *Commencing Minimum Salary.*—The Association welcomes the recommendation of the Departmental Committee (paragraph 28 of its report) that an initial salary of at least £600 per annum should be offered if the right type of man is to be attracted to the Service. From its knowledge of the salaries now being given to young practitioners in analogous services at home, it is clear to the Association that the Colonial Office cannot expect to get the best men, or even the average men, to join the Service unless this minimum salary is recognized at once. Such recognition would, of course, entail a guarantee that private practice would bring in at least the difference between the small salaries offered in some Colonies and the £600 minimum.

3. In its evidence before the Departmental Committee in February last the Association recommended that there should be an increase of at least 50 per cent. on the pre-war salaries of medical officers, including emoluments. The Association welcomes the emphasis which the Departmental Committee (paragraph 28 of its report) lays on the necessity of making very substantial additions to the salaries now offered.

4. The Association would, therefore, most respectfully urge that steps be taken forthwith by the Colonial Office to secure that the salaries and emoluments of all officers of the Colonial Medical Services be increased by at least 50 per cent. over pre-war rates, such salaries to be consolidated and pensionable. The Association is firmly convinced that this is the minimum increase that will ensure a contented Service. No medical officer should draw a less consolidated pensionable salary than he was drawing, inclusive of war bonus and duty allowance, on March 31st, 1920. New posts should be paid in proportion.

5. On the principle already in force as regards the West Coast, a medical officer in any Colonial Medical Service who has served for three years on the maximum of that scale without obtaining promotion, should, if recommended, draw salary as senior medical officer. Similarly a medical officer of health after serving for three years on the maximum of that grade should, if recommended, draw salary as sanitation officer, or other higher grade salary.

6. In the case of the West African Medical Staff the commencing salary should, in the opinion of the Association, in fairness to the medical officers, be £720, representing an increase of 50 per cent. on the 1915 salary of £480 (inclusive of the duty pay of £80). This suggestion is made in view of the fact that the increase which came into operation in 1915 was on the point of being granted when the war broke out.

7. It is essential that each officer already in the Colonial Service should be placed in the new scale at the point he would have reached had he originally been appointed on that scale.

8. Guided by its experience in the negotiations which the Association has recently completed with the India Office in respect of the Indian Medical Service, the Dominions Committee would strongly urge that the salaries be so stated, in advertisements or publications of the Colonial Office, as to leave no room for doubt as to their amount.

Gratuity.

9. The Departmental Committee (paragraph 30 of its report) recommends that the gratuity now given to officers of the West African Medical Staff who desire to retire after nine years' service should be £1,500; that the gratuity payable after twelve years' service in that Staff be £1,875; and that similar gratuities be instituted in the proposed unified East African Medical Service, "or even made general throughout the Colonial Medical Service."

10. The Association is strongly of opinion that the provision recommended for the West African Medical Staff should be applied throughout the Colonial Medical Services.

11. It is understood that the Secretary of State has already made arrangements whereby the principle of optional retirement of medical officers, with gratuity, comes into operation in the East African Services in April, 1921. If not already done, it is hoped that full and immediate publicity will be given to this decision.

Pension.

12. The Departmental Committee points out (paragraph 29 of its report) how serious is the position created by the devaluation of money as regards the pensions of medical officers. Understanding that the question of the age of voluntary retirement and of rates of pension was under consideration, the Departmental Committee contents itself with expressing "the hope that the claims of the medical officers will be considered in a generous spirit, as they (the Departmental Committee) are convinced that upon the way in which the matters of pay and pension are now dealt with the future contentment of the existing personnel and the probabilities of obtaining a satisfactory flow of recruits will in great part depend."

13. The Association wishes to endorse this opinion, and in its view it is essential that such consideration be immediately given. All officers of the Colonial Medical Services should be entitled to pension after eighteen years' service, irrespective of age, as is already the case as regards the West African Medical Staff. Special attention is drawn to those Colonies in which the pension rate is only based on a one-sixtieth part of the average salary of the last three years of service, plus five years' tropical allowance—a most inadequate provision.

14. *Pensions of Medical Officers already retired.*—The Association would most earnestly draw attention to the extremely unsatisfactory position of medical officers already retired as regards pension. The position of some of these men is almost tragical. To leave them to genteel starvation is a course which reflects discredit on the whole Empire, as well as on the particular colony which has had their services.

15. *War Service and Colonial Pension.*—In a case lately brought to the notice of the Association, it would appear that a Colonial medical officer who was in 1916 placed by the late Secretary of State for the Colonies at the disposal of the War Office for military service during the late war, and who served accordingly on temporary commission in the R.A.M.C. in Mesopotamia for over two years, has been informed that his service with the Colours will not count as service towards Colonial pension, notwithstanding the letter dated August 31st, 1914, addressed by the late Secretary of State to the Crown Agents, to the effect that the service of such officers with the Colours "will count in full for Colonial pension and for increments (if any) of Colonial salary." If there is no adequate explanation of this case, the Association considers this refusal to reckon service with the Colours towards Colonial pension to be quite unjustifiable.

Personnel.

16. In the matter of numbers the Colonial Medical Services are admittedly deficient. This should be rectified at the earliest possible moment. The possibility of carrying it out depends of course on the measures now taken by the Colonial Office to remove present grievances and make the Services attractive.

17. *Opportunities for Private Practice.*—Where private practice is allowed, it should not be whittled down by restrictions. Official tariffs should not be framed for people able to pay for and look after themselves. No objection should be raised to medical officers increasing their fees for private practice to meet the present economic conditions.

18. *Specialization.*—As recommended by the Departmental Committee (paragraph 35 of its report), there should be adequate provision for specialization. Such posts should carry extra pay.

19. It is extremely desirable that the Sanitary Department should be given a status commensurate with its importance, and its personnel should be adequate and properly paid. As regards Eastern Africa especially, this matter should have immediate attention.

20. *Leave: Transfer: Passages.*—The Association most heartily endorses the recommendations of the Departmental Committee as to leave, transfer and passages (paragraphs 32, 34, and 38 of the report). There should be proper arrangements for local, home and study leave, on full pay. Study leave should be in addition to any leave the medical officer has earned. There should be at least three months' study leave every five years, and the fees should be paid by the Government (paragraph 34). Medical officers going home should have free return passages for self, wife, and up to two children, and similarly on transfer (paragraph 32). Medical officers on transfer should not suffer financial loss in any respect (paragraph 38).

21. The Association protests against the practice, which it understands is at present followed by the Colonial Office, of sending medical officers out to the Federated Malay States as "second class passengers."

22. *Grouping: Promotion.*—The Association trusts there will be no avoidable delay in carrying out the recommendations of the Departmental Committee as regards grouping of neighbouring Services, with a view to formation of a unified "Colonial Medical Service" (paragraphs 19–21, 36). It is hoped that all the arrangements will be completed at once for an "East African Medical Staff" and a "Malayan Medical Service," and the process of linking up followed up as and when possible. The Association believes that this is one of the most immediately practicable ways of bringing about that ideal of a real Colonial Medical Service of a similar status to the Royal Army Medical Corps and the Indian Medical Service which the report of the Departmental Committee inculcates. As regards transfer from one Colony or Protectorate to another in the area of the "East African Medical Staff" or of the "Malayan Medical Service," it appears to the Association that it will be only fair to existing medical officers who are serving in the Colony or Protectorate of their choice to provide that no medical officer shall, except by his own consent, be moved from the Colony or Protectorate he is now serving in, and that refusal on his part of such transfer shall not penalize him in any way, either by his being moved to an "out" station or by his being passed over for promotion. On the other hand, all medical officers now joining should be liable for service in any part of the consolidated group.

23. *Widows and Orphans.*—The Association is of opinion that the suggestion, in paragraph 33 of the report, that there should be general provision throughout the Colonial Medical Services for widows and orphans, on the lines of the West African scheme, will, if carried out, greatly further the growth of a Colonial Medical Service and of the *esprit de corps* which is so valuable in such a service.

24. *Inspectors of Medical Services for East and West Africa.*—The Association hopes that it will be possible to appoint inspectors of medical services for East and West Africa at once (paragraph 26 of report).

Other Matters.

25. In the opinion of the Association the above represent the matters most urgently calling for attention, with a view to removing from the Colonial Medical Services the unpopularity

from which these Services at present undoubtedly suffer in the minds of the medical profession. There are, however, a number of other matters raised in the report of the Departmental Committee, and by the Association in its evidence before that Committee, which are considered to be of great importance, and which it is hoped will receive early attention. A copy of the Memorandum of Evidence of the Association is enclosed herewith—SUPPLEMENT to the BRITISH MEDICAL JOURNAL of April 24th, 1920 (see page 141).

26. For example, the questions of hospitals and dispensaries and their equipment and facilities (including buildings) for medical research (paragraphs 11–13 of the Association's Memorandum of Evidence); confidential reports (paragraph 40 of Report of Departmental Committee); prompt filling of vacancies (paragraph 32 of the Memorandum of Evidence); status of medical officers (paragraph 45 of report); housing (paragraph 39 of report), and maintenance of, and pensions for, an adequate nursing staff, and the question of adequate native staff other than nursing, are all important.

27. The Association is gratified to find that the Departmental Committee has endorsed many of the suggestions made in the evidence given on behalf of the Association. It also notes with pleasure from the letter (appended to the report of the Departmental Committee) of August 28th from the Secretary of State to Sir Walter Egerton, K.C.M.G., the chairman of the Committee, the importance which the Secretary of State attaches to the Medical Services of the various Colonies and Protectorates. The Association is also glad to note the steps already taken, or being taken, for reforms as regards unification of services, pay, housing, and facilities for research.

28. The Association would, however, strongly press that the Secretary of State should do more than merely send the report of the Departmental Committee to each colony and dependency for the opinion of the local executive or governor. In view of the discontent of many of the present members of the Services, and the impossibility of getting a free supply of new officers unless a new departure is made, the Association would urge that the Secretary of State should press the relevant recommendations of the report on the sympathetic consideration of each colony and dependency, and do all he can to secure prompt attention to the main recommendations of the report.

29. The Association realizes that many of the Colonies and Protectorates with which the Colonial Office has to deal are practically independent bodies, but the Association is well aware of the influence of the Home Government on these bodies when it cares to exercise it.

30. For various reasons the Colonial Medical Services have not yet attained to that efficiency which the interests of the communities concerned, and of the Empire as a whole, require. The Departmental Committee has gone thoroughly into the whole matter, and urges lines of action which the Association fully endorses, and which in the opinion of the Association do not represent any financial outlay which would not be abundantly justified by the results obtained. The Association has for some time felt itself unable to recommend young practitioners to enter the Colonial Medical Services. But if satisfactory assurances are given that the recommendations of the Departmental Committee, as far as the essentials at least are concerned, will be given effect, the Association will gladly do everything in its power to bring the claims of the Services to the notice of satisfactory candidates, and to make those Services of the utmost possible use and benefit to all concerned.

I am, Sir, your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

The Under-Secretary of State,
Colonial Office, Downing Street, S.W.1.

Downing Street,
November 15th, 1920.

Sir,

I am directed by Viscount Milner to inform you that he has had under his consideration your letter of October 15th, regarding the Colonial Medical Services.

2. Since that letter was written, a useful discussion has taken place between representatives of this department and the Association, and Lord Milner is glad to take this opportunity of acknowledging the desire shown by the Association on that occasion to assist the Colonial Office to the best of its ability.

3. The Association's letter consists mainly of an endorsement of the recommendations contained in the report of the Departmental Committee appointed by Lord Milner to inquire into the Colonial Medical Services. This report was transmitted to the Governments concerned in September, and it is expected that their observations will be received in a few weeks. Until they have been received and considered it is not possible to reply fully to the Association's letter, but, as the Association is aware, effect has already been given to some of the Committee's recommendations and others are being dealt with in this department, where it is possible to do so. In the meantime there are a few points in the Association's letter with which Lord Milner considers it advisable to deal at once.

4. (Paragraph 2.) In the Colonies where private practice forms a recognized part of the officer's emoluments it is not considered practicable to guarantee the value of the private practice, which must always depend to some extent on personal considerations, but, as a general rule, it is proposed to take two-thirds of the estimated value of private practice, *plus* recognized fees, in computing the salary required for an officer engaged on general medical duties.

5. (Paragraphs 3–6.) The initial salary of medical officers in the East African Services has been increased by 50 per cent. In West Africa it does not appear reasonable to reckon the prewar duty allowance of £80, which was not pensionable and was only drawn by an officer while actually serving in West Africa, as part of the permanent salary on which a 50 per cent. increase should be based; apart from that, an increase of more than 50 per cent. has been granted.

6. (Paragraph 7.) The Treasury ruling, which has been enforced for the Home Services, is that an officer should be placed on a new scale of salary at the next point above the salary drawn by him on the pre-existing scale. This must be applied to those Protectorates in which Treasury control of expenditure exists, and has been necessarily adopted elsewhere to ensure uniformity.

7. (Paragraphs 9, 10, 11.) The questions of retirement on gratuity after a short term of service in places other than East and West Africa is a matter on which the opinions of the local Governments must necessarily be obtained. In East Africa publicity has been given to the decision to adopt this principle.

8. (Paragraph 13.) It is clear that a scheme based on the special circumstances of West Africa is not necessarily applicable to other districts, where conditions are very different. Officers in Eastern Africa are now allowed and may be required to retire on pension after twenty years' colonial service or on reaching the age of 50, whichever is the earlier.

9. (Paragraph 14.) In the case of the majority of Colonies and Protectorates temporary increases of pension have been granted generally to retired Government officers, in view of the increased cost of living in this country and elsewhere.

10. (Paragraph 15.) It is understood that this refers to an officer who, at his own request, was released temporarily from the West African Medical Staff for military service. His military service will count towards the amount of his pension and towards the eighteen years' total service necessary to qualify for pension, though not towards the twelve years' residential service in West Africa which is required to qualify for pension. In the circumstances it does not appear that the officer concerned has any justifiable grievance, especially as he has obtained a gratuity from the War Office in respect of his two years' service, in addition to the reckoning of such service towards the amount of his West African pension.

11. (Paragraph 17.) In large or isolated districts where only one medical officer is available, as is frequently the case, it can hardly be said that people are "in a position to look after themselves."

12. (Paragraphs 18 and 19.) Action has already been taken towards an increase of the facilities for specialization and for research work. The position of the Sanitary Departments in East Africa has already received consideration, and a scheme has been put into force which should prove satisfactory.

13. (Paragraph 21.) There is no general practice of sending medical officers to the Federated Malay States as second class passengers, and Lord Milner would be glad to investigate any specific instances which may have occurred; none has been reported to this office. Medical officers are subject in the matter of passages to the same rules as administrative officers of the same scale of salaries, who before the war were given second-class passages on mail steamers or first-class passages on other steamers. The distinction is now in abeyance.

14. (Paragraph 23.) A widows' and orphans' pension scheme for East Africa is at present being actively taken up, and it is hoped to bring it into force at an early date; schemes for many other Colonies and Protectorates have been in force for some years.

15. Finally, there is the point raised by the deputation at their recent interview, that in some cases medical officers have actually had their emoluments decreased by the recent revisions of salary. In all the schemes of revision which have come up for consideration it has been the desire of the Secretary of State that the new salaries should at any rate not be less than the old salaries *plus* war bonus, but that, if possible, they should be rather in excess of them. His Lordship thinks, therefore, that any cases of this kind which have occurred must be due to inadvertence, and if you will furnish him with particulars regarding them he will be glad to look into them.

I am, Sir, your obedient servant,
(Signed) H. J. READ.

Association Notices.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

FIFE BRANCH.—Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., will deliver a British Medical Association Lecture to the Fife Branch on Wednesday, December 8th, on the "Modern Treatment of Fractures." All practitioners in Fife are cordially invited to be present at the meeting.

Meetings of Branches and Divisions.

ESSEX BRANCH: SOUTH ESSEX DIVISION.

THE annual dinner of the South Essex Division of the Association was held at Southend-on-Sea on October 29th, when a large company attended.

The health of the chairman, Dr. DOUGLAS WATSON, was proposed by Dr. C. FORSYTH, who expressed the members' warm appreciation of the services rendered by the Chairman during his term of office. The toast of "The South Essex Division" was proposed by the CHIEF CONSTABLE of the borough.

Dr. J. F. WALKER, Honorary Secretary of the Division, in his reply, after extending a welcome to the newly joined members, said that public opinion, shocked by the results of systematic medical examination of the community for army purposes, demanded that preventable disease should in future be prevented; the medical profession had the great responsibility of giving the public a lead in this important matter. The conditions in which for centuries the profession had been conducted would soon be changed; the doctor, ploughing the lonely furrow in the field of disease—unassisted, unsupervised, and with the essentials necessary for the best results of his labour often not available or withheld—was to be encouraged to take part in "team" work. Those who believed in a whole-time State medical service were, as a rule, persons who had no experience of general practice; in the speaker's opinion, the relation between the doctor and patient, according to which the former was guide, philosopher, and friend, would never survive the frosty atmosphere of officialism. Unless the profession remained contented and intelligent, all new schemes must fail. Some persons considered that equitable and just conditions of service might be secured by the formation of a trade union; if one regarded recent instances of the effects of trade unionism on public welfare, this view would seem to be questionable. It was no more possible to apply commercial standards to the work of the medical profession than to measure electricity with a yard measure. The objects were rather to be achieved by showing the public that the doctors' cause was just and that their interests were identical with those of the public; a ton of coal hewn by a discontented miner might burn as brightly as any other, but the output of a discontented doctor must suffer in quality and react adversely alike on him who put forth and him who received it. By taking the trouble, as opportunity arose, to explain their difficulties and aspirations, doctors could so influence public opinion as to obtain recognition of their just claims. First of all, however, were required unity and co-operation among the doctors themselves, and it was here that the British Medical Association was of service. The Association was not merely a trade union whose success was to be judged by the amount of extra wages which it could wring out of a reluctant Government; the object of the Association was to raise the tone and ideals of the profession, to encourage interest in the scientific side of medical work, and to endeavour by patient thought and unselfish industry to solve the numerous problems which the profession was called to consider. Lack of pride in the Association was merely due to ignorance of the great work it was doing, the democratic basis on which the Association rested, and the large part in its government played by the general practitioners. If one were asked what the Association was doing in South Essex, the answer might be made, "*si monumentum requiris, circumspice.*" Dr. Walker went on to cite instances of the activity and the spirit of good-fellowship which characterized the South Essex Division. Nearly 75 per cent. of the medical men in the area were members of the Division, which in this respect stood third highest in England; it should be their object to make it the strongest and best in the country. Fortified by the great traditions of the profession in the past, encouraged by the wonderful opportunities opening up to it in the future, the members of the Association might go forward whole-heartedly, and, above all, unitedly, to face and solve the complex problems of the future.

At the opening of the winter session, which took place on November 12th, Mr. VICTOR BONNEY gave an instructive and interesting address on a survey of modern gynaecology; more than thirty members were present. On December 10th Mr. H. S. Clogg will address the Division on some points in the diagnosis of surgical diseases of the abdomen.

BIRMINGHAM BRANCH: WEST BROMWICH DIVISION.

At a meeting of the West Bromwich Division held on November 10th the Report of the Consultative Council and the questions in D. 5 were considered.

After some discussion it was decided not to answer the questions in D. 5, and the following resolution was carried:

> That this meeting decides to subscribe to the Memorandum of the Exeter Division, and is of the opinion that the scheme of the Consultative Council imposes an unjustifiable burden on the tax-payer and interferes with the independence of the medical profession.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.

A MEETING of the Division was held on November 10th, when Dr. A. J. ROSE was in the chair. The report of the Consultative Council of the Ministry of Health was considered. Dr. G. C. ANDERSON, the Deputy Medical Secretary, addressed the meeting on the report. The questions drawn up by the Council were discussed and voted upon separately, any points of difficulty being referred to Dr. Anderson. The meeting closed with a vote of thanks to Dr. Anderson for his attendance.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.

A MEETING of the Willesden Division was held on November 16th, when Dr. CRONE presided. After considerable discussion the resolution as to contract practice was deferred for consideration at the next meeting. Consideration of the Council's questions on the "Dawson Report" was concluded, special emphasis being given to the following: (*a*) There should be no general out-patient departments; (*b*) the official element should be kept to the lowest possible minimum, every case and as much as possible of the work should be done by general practitioners; (*c*) the public should be encouraged to insure against the expenses of illness, especially serious illness. It was unanimously agreed to form a local medical advisory council as soon as possible, that meetings be held regularly on the third Tuesday of each month, and that the annual report of the medical officer of health be discussed at the December meeting.

SOUTH-WESTERN BRANCH: PLYMOUTH DIVISION.

A MEETING of the Plymouth Division was held on November 4th, when the Chairman, Colonel A. B. SOLTAU, presided. The HONORARY SECRETARY reported on various matters discussed at the Annual Representative Meeting. Dr. S. Noy Scott was appointed representative.

The interim report on medical and allied services was introduced by the CHAIRMAN, who pointed out that a large amount of private practice had gradually been absorbed by State officials, and that the trend of public opinion seemed to be towards a large extension of such work. He said that such extension would press hardly on middle-aged practitioners during the transition stage, but that ultimately a race of practitioners would arise who might readily acquiesce in such extension. He asked for a discussion on the general principles underlying the report.

A discussion followed, and the general opinion was that although some such scheme appeared inevitable, yet when the details of it came to be considered and anything definite about the necessary finances become known it would be proved so impracticable and expensive as to be unacceptable to both doctor and patients. The word "available" in the first question gave rise to much discussion. Several members thought the State had already assumed the responsibility referred to, and that medical services were available to all who cared to seek them. It was, however, pointed out that some simplification in the method of obtaining such services was desirable. The opinion was expressed that this question could have been more easily answered had the word "further" been inserted between "assume" and "responsibility."

Some members who had had experience of what State service meant, as shown in the Army and Navy, were of opinion that any State scheme for full medical service would prove bad both for patient and doctor, and one member said he looked on the whole scheme as an attempt to directly coerce the non-panel medical man. Some considered the scheme undoubtedly due to the known and admitted failure of the Insurance Act to produce the anticipated or promised improvement in the general health of the community, or to the suggestion that certain insurance practitioners were not conscientiously performing their duties. It was generally felt that if the scheme was to be pushed through by the Ministry it would be wiser to attempt to modify it, so far as possible, so as to make it acceptable to the profession, rather than to threaten opposition and face another probable "insurance fiasco." The opinion was freely expressed that politicians cared little for the interests of medical men as such. On the other hand, it was fully realized that the general interests of the community should always be the guiding principle in legislation, and that, as class legislation was undesirable, it was also felt that, whether the scheme was based on free, voluntary, contributory or compulsory insurance lines, it should be applicable to one and all, so that no individual should be able to secure, by additional voluntary payments, a better service or greater comforts, and that therefore, whether in the primary or secondary centres, all should be treated alike.

The decision ultimately come to was:

> That this Division, whilst recognizing that a State service on the lines of this scheme, with the loss of individuality it entails, is not necessarily a good one, would accept the principle that any move towards improving the health of the nation is a right one, and is prepared to support it.

The meeting then considered the questions seriatim, and answered such as could be answered. Some were left unanswered, as it was felt that effective consideration could not, after a very long meeting, be given to them, and because sufficient facts were not available on which to give an opinion.

YORKSHIRE BRANCH: SHEFFIELD DIVISION.

A MEETING of the Sheffield Division was held on October 29th, when Lieut.-Colonel J. MACKINNON, D.S.O., was in the chair. Mr. SAMPSON HANDLEY delivered a lecture on the lines of advance in the surgery of breast cancer, illustrated by lantern slides; microscopic slides also were exhibited. The lecture will be published in a subsequent issue of the BRITISH MEDICAL JOURNAL. A hearty vote of thanks was recorded to Mr. Sampson Handley at the conclusion of his address.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1920.

Tuesday, November 23rd, 1920.
Sir Donald MacAlister, K.C.B., President, in the Chair.

The one hundred and twelfth session of the General Council of Medical Education and Registration was opened at the offices of the Council in Hallam Street, London, W., on November 23rd, at 2 p.m.

President's Address.

Sir Donald MacAlister said: The only change in our membership which I have to record is the accession of Dr. Denis J. Coffey, President of University College, Dublin, whom the National University of Ireland sends us in the place of Sir Bertram Windle. His reputation as a physiologist and an administrator has preceded him, and assures him of a welcome in this Council. Our former colleague for twenty years, Dr. William Bruce of Dingwall, the first direct representative for Scotland, has passed away at an advanced age. His professional life was coextensive with that of the Council itself, for he graduated in 1858. He leaves an honoured memory as a leader of professional thought and action among Scottish practitioners.

Let me also mention that the senior member of the Registrar's Office Staff, Mr. G. G. Storr, M.A., has retired, after thirty-five years of conscientious service.

This session we shall miss the always helpful guidance of our Judicial Assessor, Sir Archibald Bodkin, owing to his promotion to the important legal office of Director of Public Prosecutions. Since he took up duty in 1909, on the death of the late Mr. Sydney Lushington, he has won the trust and esteem of the Council by his wise advice in matters of law and procedure, and by his unfailing courtesy. We offer him our grateful good wishes for his prosperity and advancement in the service of the State.

In order that you may not be without skilled counsel during the present meeting, I have, with the approval of the Penal Cases Committee and the Executive Committee, arranged for the attendance in the meantime of Mr. E. W. Hansell, Counsel to the Board of Trade and Recorder of Maidstone, who was formerly associated professionally with Mr. Muir Mackenzie. In the course of the week I shall seek your instructions regarding a definite arrangement.

The members of the Council will have learned, with a satisfaction shared in by the whole profession, that His Majesty has been pleased to appoint our colleague emeritus, Sir Clifford Allbutt of Cambridge, to be a member of His Privy Council. The honour is a fit recognition of Sir Clifford's personal eminence; but we esteem it also as reflecting distinction on the profession to which his life and talents have been devoted.

Parliamentary Bills.

Through the Privy Council and otherwise we have been in communication with various Government departments on matters concerning the work of the Council. We have learned that the bill, introduced by the Right Hon. Sir Henry Craik with the Lord President's approval, for cheapening and simplifying the procedure at our elections of Direct Representatives, has, owing to the press of political business, made but little progress in the House of Commons.

The draft of the bill for the amendment of the Dentists Act is in a forward state of preparation, and it is intended to bring the measure before Parliament during the present session. Means have, I understand, been found for uniting the two bills I spoke of in June into one bill, which is to be introduced by the Minister of Health. The Minister has been good enough to furnish the Council's representatives with opportunities of stating the Council's views on the subject matter of the bill at various stages of its preparation. We have reason to expect that, in the draft, effect will be given to most of the suggestions made.

The Dangerous Drugs Bill, mentioned to the Council in my last address, has passed into law. Under its provisions regulations governing in detail the manufacture sale, prescribing, and dispensing of opium, cocaine, and other potent drugs, have to be framed by the Government. It is probable that the Pharmacopoeia Committee will be consulted on the form of such of these regulations as come within its province. We have not yet received the report of the Departmental Committee on the official control of standards, in respect of serums, vaccines, and certain galenicals included or capable of inclusion in the *Pharmacopoeia*. I learn, however, that the report is nearly ready. Its recommendations will be considered by the Pharmacopoeia Committee, and communicated to you at the proper time.

The Consultative Council's Report.

The Interim Report of the Medical Consultative Council of the English Ministry of Health has been in the hands of members for some months, and has been widely discussed throughout the country. The Interim Report of the corresponding body in Scotland, of which I am chairman for the time being, has just been presented and will soon be published. Both of these reports make proposals for the better organization of medical practice in Great Britain, and for its more complete correlation with publicly provided services, preventive and curative. These proposals deserve the fullest discussion on the part of the profession, as well as of the public at large. Their aim is to render more effective the manifold services which the profession of medicine in all its branches is capable of rendering to the well-being of the nation. If that aim is to be attained, whether in the manner proposed or otherwise, certain changes, of emphasis rather than of substance, will be called for in the professional training of future medical practitioners. It is chiefly from this standpoint that the Interim Reports concern you as a Council of Medical Education; and accordingly your enlarged Education Committee has during the recess been busy in preparing for your discussion the whole subject of curriculum revision. I can foresee that several sessions will be occupied in exploring and deciding the various questions that the national situation raises with reference to the improvement of the course of medical study and examinations. Some steps, however, already considered by the Council in last session's debate, can be taken at once if the Council is so minded. On these Dr. Mackay's Committee is ready to bring up definite recommendations.

Medical Examinations.

The question of medical study is in a sense distinct from the question of medical examinations; yet the two are naturally so related that each has an important bearing on the other.

A large number of the final examinations in medicine, surgery, and midwifery have now been visited and inspected. The confidential reports thereon are, or soon will be, at your disposal. It will be for the Examination Committee to say whether it will offer you any interim conclusions on the reports so far referred to it, or await the opportunity for a comprehensive report when the cycle of visitations and inspections is nearer completion. In the meantime, of course, all the information in possession of the Examination Committee will also be accessible to the Education Committee.

The inspection of the examinations in sanitary science for degrees and diplomas in public health is proceeding, and should be finished next year. I gather that the Public Health Committee propose to defer their general review of the reports of the inspector until all of these have been received.

At the risk of anticipating the committees, I may be permitted here to say, after a critical study of the reports, whether of final medical or of public health examinations, that they give abundant evidence of the care bestowed by the licensing bodies generally on the fulfilment of the important public function of testing and certification which has been entrusted to them by the State.

Medical Reciprocity.

I have little fresh information to give you regarding medical reciprocity within the Empire; but legislation for the better regulation of medical and dental practice in the British Dominions is making active progress. In the Province of Quebec a new University at Montreal has been set up by the expansion and establishment on a separate footing of the Montreal Branch (École de Médecine) of the Laval University. The Executive Committee has now recognized for registration purposes the medical degrees of the autonomous University of Montreal, as equivalent to those formerly conferred at the same school in the name of Laval. A Proclamation, having the effect of an Ordinance, has been issued for the mandatory Protectorate of South-West Africa (lately German), whereby the unlicensed practice of medicine or dentistry is prohibited under heavy penalties. The mandatory territory of Tanganyika (also lately German) is now provided with a similar Ordinance, on the lines of that adopted in 1910 for the East Africa Protectorate. South Australia has amended its Medical Act in important particulars. It makes express provision, under due safeguards, for reciprocity with non-British countries, and ordains sharp penalties upon unregistered persons who advertise or hold themselves out in any way as medical practitioners.

The Tasmanian Medical Act.

In Tasmania an Act has been passed which imposes novel restrictions and prohibitions on practitioners of medicine. His Majesty has not yet applied Part II of the Medical Act, 1886, to Tasmania, and the Council has therefore at present no relation of reciprocity with that State. But the Executive Committee has under the Standing Orders to deal in the first instance with any proposal tending to the recognition of Tasmanian medical qualifications, when such recognition is sought. The Committee therefore deemed it expedient to inquire through the Colonial Office for the reasons which moved the State Legislature in framing the unusual enactments in question. A reply has just been received from the Governor of Tasmania, transmitting a dispatch from the Premier of the State. The text is set forth in the Executive Committee's minutes. It states that:

> The Government is satisfied that this legislation has accomplished what it was intended to do, and medical practitioners if they so desire can now, under the protection of the law, consult with any other medical practitioner, and, in fact, are doing so. Without this protection any member of the British Medical Association here dare not consult with practitioners outside that organization."

The Council has no power to intervene in what appears to be a local difference between the State Government and the Association, but some good may be done by making public the reasons offered by the Government for making the enactments.

Medical Examinations in America.

It will be of interest to members of the Council to know that the visit of inspection made last May to the United States by Dr. Norman Walker, Mr. Waring, and Sir Humphry Rolleston, on behalf of the Royal Colleges in London and Edinburgh, has led them to present favourable reports on the methods and standards of the American National Board of Medical Examiners. As a result the Conjoint Board of Examiners in Scotland has agreed to recognize certain professional courses of study and examinations, officially attested by the National Board, as entitling American medical graduates to be admitted to the conjoint qualifying examinations of Scotland. This time last year I spoke of the "influential movement towards the establishment of a high and uniform standard of professional qualification throughout the American Commonwealth, of which the National Board is the expression." It is gratifying to find that personal experience has justified our British representatives in recommending to their respective bodies that the fullest recognition permissible should be accorded to those who have duly satisfied the Board's conditions and tests.

You will remember that reciprocity with Belgium was instituted as a war measure, temporary in its duration as regards that country. I have caused inquiries to be made as to the facilities afforded there to British practitioners under peace conditions. We had some reason to think that changes in the Belgian law were contemplated that might call for reconsideration of our agreement. We are awaiting official information on the point, before communicating with the Lord President.

Dental Legislation.

In the matter of dental legislation the Overseas Dominions are still in advance of the Mother Country. New laws have been enacted in Ontario, Prince Edward Island, and in the Yukon Territory, which contain drastic provisions against the practice of dentistry or dental surgery by any but qualified and registered persons. Prince Edward Island further institutes a statutory *Dental Students' Register* for the enrolment of those who have passed the prescribed preliminary or matriculation examination, and have entered on professional study at a university, dental college, or other authorized institution. It has been said that the Legislatures of the Dominions are "the experiment stations of the Empire." Our older and slower moving Parliament would do well to observe and to profit by the "traffics and discoveries" in dental law-making that are wrought out in the laboratories overseas.

The Dental Education and Examination Committee will report to you on these and on other matters referred to it. Among them is a proposal of the Royal Faculty of Glasgow to institute a higher diploma in dentistry on the model of that lately established by the Royal College of Surgeons of Edinburgh. Under Section 11 (6) of the Dentists Act the Council has to make orders respecting the registration of such diplomas as additional qualifications. Queen's University of Belfast asks recognition for its new Licence in Dental Surgery as a primary qualification for the *Register*.

On the motion of Sir NORMAN MOORE, seconded by Dr. NORMAN WALKER, a vote of thanks was accorded to the President for his address.

The Executive Committee reported that an Act had been passed incorporating the Montreal University, being that part of the University of Laval situated in Montreal, and that an application had been received from Montreal University that the Council would grant to its degrees the same recognition as it had done to those of the undivided Laval University. The Committee had resolved that any person holding the degree of Doctor of Medicine of the Montreal University should be registered in the Colonial List, provided that the Registrar was satisfied with regard to certain other legal particulars. The report was received and entered on the minutes of the Council.

The English Branch Council recommended the Council to place upon the *Register* the name of George Ansel Sterling Ryerson, who was registered under the Medical Act, 1858, but, owing to being in the Dominions, neglected to effect registration before the appointed day under the Act of 1886. Having practised in Canada he now desired to be able to practise in England. The documents were reported all in order, and the recommendation was agreed to.

Dr. NORMAN WALKER presented a report from the Examination Committee with regard to the progress of the inspection of final examinations, but comments were reserved until a later stage, when all the reports would be in the Committee's possession.

After the Council had sat in private, the PRESIDENT announced that the names of Alexander Christie McArthur and John Papa Nicolas would be restored to the *Medical Register*.

INSURANCE.

INSURANCE COMMITTEES AND THE MINISTRY OF HEALTH.

MUCH concern is at present being expressed by approved societies and Insurance Committees as to the possible fate of the committees when the time comes—and it may not be far distant—for the setting up of local health authorities under the Ministry of Heath of England and Wales and the Scottish Board of Health. This feeling was strongly expressed at the recent annual meeting of the Scottish Association of Insurance Committees. Some of the speakers entirely ruled out the committees from acting as the local health authority on the ground that they are not directly elected by the ratepayers. On the other hand, the Ayr County Committee brought forward a motion to the effect that as the Insurance Committees are the only existing statutory bodies whose sole duty is the administration of medical treatment, their duties and powers should be enlarged so that there may be local co-ordination in the administration of medical services. In this connexion some valuable testimony is given in the final annual report of the Scottish Insurance Commissioners, a brief notice of which appeared in the JOURNAL of September 11th, p. 409. In speaking of maternity benefit, the Commissioners report that it has been "highly popular: positive evidence is abundant that it has greatly helped mother and child," and, though complaints have been made that too much has gone to the doctor or midwife, the mother and child have benefited by the skill and care thus obtained. The report further states that medical benefit has been found to work well, and there has been little real ground for loose and general charges of inefficiency. The demand for more extended medical and institutional services does not imply condemnation of the working of the present insurance scheme, but is rather an indication that it has caused an increased appreciation of the importance of a future development of medical services. The report goes on to say:

> An American critic has alleged that insurance doctors are mainly occupied in dealing with trivial complaints; in so far as that is the case it is testimony to the worth of the present scheme; the facilities for treatment which the Act presents to the insured have resulted in the insurance practitioner seeing disease in its earliest and most curable stage, when there is frequent opportunity to inhibit the onset of disabling or fatal illness.

As to sanatorium benefit it is claimed that the Insurance Acts have stimulated public interest in tuberculosis and have spurred on public health authorities to tackle it. besides providing greater financial help towards dealing with the national scourge. There can be no doubt that the credit for the successful administration of these benefits belongs mainly to the Insurance Committees. No one will deny that the co-ordination of all the bodies that now deal with health matters is urgent, but whatever the constitution of the future local health authority may be, the committees, not only in Scotland, but in England and Wales, may justly claim that it would be a calamity if the vast experience they have gained in the administration of domiciliary treatment were not recognized and utilized.

SCOTTISH ASSOCIATION OF INSURANCE COMMITTEES.

At the eighth annual conference of the Scottish Association of Insurance Committees, held at Inverness this autumn, the report of the Executive Committee dealt at some length with the demand of the panel chemists for an increase in the dispensing fee. After futile negotiations, which almost led to a general withdrawal of the chemists from the panel at the end of last year, a settlement was arrived at. The Treasury refused any guarantee against a possible discounting of accounts, but as some protection against the risk it was agreed (1) to abolish the floating 6d. and provide 2s. per insured person for drugs and appliances; (2) a penny of the 2s. was to be set aside to form a National Central Reserve Fund; (3) any surplus in any area was to be transferred to this fund if and so far as required to prevent discounting in any other area in Scotland, and (4) more efficient machinery was to be provided against extravagant prescribing. As regards the new conditions of the medical service, the Executive Committee continues to put pressure on the Government to provide the service of consultants, specialists, etc., promised in 1914, but postponed owing to the war.

The greatest interest was taken in the subject of the local control of a future health service, and two papers were presented to the conference, which have been printed separately.

In one of these Mr. W. T. Duncan, clerk to the Fife County Insurance Committee, urges, (1) the creation of larger local administrative areas than those that now exist with a few exceptions, (2) the formation in each area of a single administrative body specially and directly elected by the ratepayers for the sole purpose of administering the health services, and (3) the provision of unlimited medical and surgical treatment for all persons. For this purpose some form of State service is held to be necessary; Mr. Duncan refuses to accept as the mind of the medical profession the "literary fumings which occasionally disfigure the public press," and thinks that the attitude of the profession towards a State service will only be determined when concrete proposals are formulated in a bill.

The other paper, by Mr. T. Hunter, clerk to the Paisley Burgh Insurance Committee, discusses the qualifications of the various authorities that have been suggested as the future local health authority. He thinks that in time the difference between insured and non-insured will be removed, and that all persons under a certain income limit, or perhaps all who desire it, will be entitled to free medical treatment either with a State service or with some modification of the panel system. The Insurance Acts would then only deal with monetary benefits, and the Insurance Committees as such would pass out of existence, being ruled out as a local health authority because they are not representative of the ratepayers. The present health authorities are also regarded as unsuitable, as so many of them are too small and parochial in outlook, while the county councils have already too much to do. The body that appeared to be most favoured by Mr. Hunter is a hybrid committee of one-half members of the county council and the other half co-opted members representative of other public health interests, such as the education authorities, the medical profession, voluntary hospitals, war pensions committees, etc. The chief objection to this was on financial grounds. The Health Committee would necessarily be a spending body, while the control over expenditure is at present in the hands of the county councils. Various proposals are suggested to meet this difficulty, and to prevent the county councils from interfering unduly with the activities of the Health Committee.

There was evidently a wide difference of opinion as to the best constitution of the new local health authority, though there appeared to be a large body of opinion in favour of a medical service available for the whole population. The financial objections against such a vast scheme may not have been sufficiently appreciated.

THE LONDON PANEL COMMITTEE.

Dr. H. S. Beadles, Secretary of the West Ham Panel Committee, informs us that his Committee, at its last meeting, considered a letter, dated October 25th, 1920, containing resolutions passed by the London Panel Committee, and passed the following resolutions:

1. That the West Ham Panel Committee is of opinion that the Insurance Acts Committee, as at present constituted, more effectually represents the medical profession in insurance matters than could any committee entirely elected by Panel Committees, and fully endorses the overwhelming opinion as expressed by the representatives at the Conference held on October 21st, 1920.
2. That the calling of a Conference as suggested by the London Panel Committee is not necessary nor desirable.
3. That the Committee regrets that the London Panel Committee should withdraw its representation from the Insurance Acts Committee and from Group K, thereby depriving the rest of the Panel Committees of the country of its co-operation, and hopes that the London Panel Committee will reconsider its decision.

CORRESPONDENCE.

Consultation with the Regional Medical Officer and Travelling Expenses.

Sir,—In the document, Memo. R.M./1, recently issued by the Ministry of Health, dealing with the relationship of panel practitioners and the regional medical staff, there appear to be two conditions which will arise, namely: (1) Where the panel practitioner will *desire* to be present at the examination of the patient by the medical officer; (2) where the panel practitioner *must* be present at the examination if the medical officer thinks it desirable.

In some cases these conditions will necessitate loss of time as well as expense in travelling to the place of examination. The reasonable travelling expenses incurred by the insured person are to be paid. How about those of the panel practitioner? No mention of these is made in R.M./1, and surely in framing the Terms of Service of Practitioners, paragraph 8 (13), it was never intended that the clauses should be so interpreted that the practitioner should be mulcted in his own travelling expenses. Such an interpretation will undoubtedly not lead to smooth working.—I am, etc.,

Worcester, Nov. 17th. ARTHUR FOSTER.

Insurance Practice.

Sir,—At this period when the whole country is crying out against the proposed legislation by the Ministry of Health which threatens us with rates at 40s. or more in the £, the letter published in the Supplement of November 6th, by Dr. E. H. Worth, is particularly interesting. I submit that before entering into further grandiose schemes the Ministry of Health should put National Health Insurance on a sound footing.

Dr Worth is quite right as regards towns when he indicates that panel doctors receive capitation fees in respect of insurance persons who have never consulted and never mean to consult them. The reason for this is only too obvious. The stock mixtures formulated for the use of insured persons are in many cases futile from a therapeutic point of view. The public knows this well, and a large number of insured patients prefer to go to a non-panel practitioner to obtain adequate treatment. It can be hardly dignified for a panel practitioner to know that an insured person has consulted him merely for the sake of the certificate and that the prescription given will never reach the chemist.

To me the whole system of treatment under the Insurance Act seems highly unsatisfactory. The capitation grant for drugs is inadequate for the proper treatment of patients under existing circumstances. If a panel doctor wishes a patient to have any special treatment apart from preparations mentioned on Form M.C./3 he must pay for these, however expensive the treatment may be, out of his own pocket, as he must not give the patient a prescription or accept money for special drugs.

The present system is degrading to the practitioner and most unsatisfactory to the patient. The latter is well recognized, and consequently, as already stated, patients prefer to go to a non-panel doctor, who has freedom of action as regards treatment. Instead of dealing with this matter the Ministry of Health is now wasting the practitioners' time and taxpayers' money in bringing out new record cards, which will certainly not tend to any better or more efficacious treatment of insured persons.

It is high time that the profession united to insist on their being allowed to treat insured persons adequately, and also it should protest against extra work being put on panel doctors which can have no practical value.—I am, etc.,

Otley, Ipswich, Nov. 22nd. G. W. C. HOLLIST.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following notifications are announced by the Admiralty: Surgeon Commanders W. N. L. Cherry to the *Emperor of India* on recommissioning, K. H. Hole to the *Pandora* on recommissioning. Surgeon Lieutenant Commander R. N. W. W. Biddulph to the *Conqueror*. Surgeon Lieutenants A. G. Taylor to the *Thunderer*, J. R. Brennan to the *Conqueror*.

Surgeon Lieutenant Commanders J. S. Orwin and H. W. Nicholls have been promoted to the rank of Surgeon Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major E. Gibbon, O.B.E., relinquishes the temporary rank of Lieutenant-Colonel and is restored to the establishment.

Major L. Cotterill is restored to the establishment.

Major H. W. Long retires on retired pay and is granted the rank of Lieutenant-Colonel.

Captain J. H. Spencer to be Major.

The following Captains retire, receiving a gratuity: I. R. Hudleston, D.S.O., is granted the rank of Lieutenant-Colonel; S. J. Higgins and S. H. Smith, M.C., and are granted the rank of Major.

The following officers resign their commissions: Captain E. Parker; Lieutenant (temporary Captain) W. S. Gross, and is granted the rank of Captain.

To be temporary Captains: F. E. Johnson, late temporary Captain, with seniority from November 21st, 1914; R. S. Aspinall, late Captain, S.R., with seniority from November 13th, 1916.

The following officers relinquish their commissions: Temporary Captains, and retain the rank of Captain, H. D. Gasteen and G. T. Wrench.

INDIAN MEDICAL SERVICE.

Major R. H. Lee has been appointed to officiate as Agency Surgeon Kotah and Jhalawar (September 13th).

Major F. Stevenson has been appointed to officiate as Civil Surgeon, Dera Ismail Khan (September 30th).

Major R. B. B. Foster has been appointed to officiate as Joint Civil Surgeon, Peshawar (September 18th), and in addition to officiate as Chief Medical Officer, North-West Frontier Province (September 26th).

Major F. W. Cragg, M.D., Assistant Director, Central Research Institute, Kasauli, has been granted privilege leave for one month (October 18th).

Lieut.-Colonel W. Lethbridge, D.S.O., M.B., has been transferred to the temporary non-effective list (September 16th).

The following officers have been permitted to retire from the service: Colonel P. C. H. Strickland (August 19th), Colonel C. N. C. Wimberley, C.M.G. (September 10th), Lieut.-Colonel J. Mulvany (July 29th).

Lieut.-Colonel G. Tate, M.B., has been appointed to officiate as Professor of Midwifery, King Edward Medical College, Lahore.

Lieut.-Colonel H. Auston Smith, C.I.E., M.B., has been confirmed in the appointment of Inspector-General of Civil Hospitals, Bihar and Orissa (June 21st, 1920).

Major to be Lieut.-Colonel: N. P. Sinha (retired) (Feb. 5th, 1917).

Captain to be Major: W. D. Keyworth, M.B. (July 30th, 1920).

Lieut.-Colonel De Vere Condon, M.D., has been transferred to the temporary non-effective list from September 29th.

DIARY OF SOCIETIES AND LECTURES.

CHILD STUDY SOCIETY, 90, Buckingham Palace Road, S.W.1.—Thurs., 6 p.m., Dr. Wm. Brown: Value of Suggestion in Education.

ROYAL SOCIETY OF MEDICINE. *Section of Tropical Medicine*: Tues., 5 p.m., to appoint Organizing Committee to prepare nominations for officers and to draw up regulations for the conduct of the Section. Dr. F. G. Rose: Incidence of Filariasis in British Guiana; demonstrations by Dr. J. Gordon Thomson and Major J. A. Sinton, V.C., I.M.S., Major A. C. Parry, R.A.M.C., Dr. G. M. Vevers, Professor R. T. Leiper, Dr. M. Khalil, and Dr. J. B. Christopherson. *Section of Surgery*: Wed., 5.30 p.m., Sir Lenthal Cheatle: Cysts and Duct in Relation to Cancer and Papillomata of the Breast; 4.30 p.m., Exhibition of Tumours of the Breast, mounted from Hospital Museums. *Section of Obstetrics and Gynaecology*: Thurs., 8 p.m., Dr. Clifford White: Sodium Bicarbonate Tolerance in the Toxaemias of Pregnancy; Major C. F. Hawkins: Reduction of Blood Pressure in Eclampsia; Dr. James Young and Dr. Douglas Miller: Etiology of Eclampsia and the Pre-eclamptic State. *Section of Laryngology*: Fri., 5 p.m., Cases. *Section of Anaesthetics*: Fri., 8.30 p.m., Informal meeting for free discussion (tea, coffee, smoking).

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Infirmary.—Wed., 4.15 p.m., Mr. Rutherford: Demonstration of Surgical Cases.

LONDON HOSPITAL.—*Medical Unit*: Dr. A. W. M. Ellis: Mon., 4 p.m., Renal Disease; Thurs., 4 p.m., Kidney Efficiency. *Surgical Unit*: Mr. Walton: Mon., 12 noon, Anatomy of Liver and Gall Bladder; Tues., 4 p.m., Pancreatitis; Wed., 4 p.m., Mr. Sherren: Pyloric Stenosis.

MANCHESTER: ANCOATS HOSPITAL.—Thurs., 4.30 p.m., Dr. H. Holmes: Congenital and Rhythmic Disorders of the Heart.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Dr. A. Ramsbottom: Modern Treatment of Diabetes.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Mon., 5.30 p.m., Dr. Parsons-Smith: Subacute Infective Endocarditis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.1.—Daily, excepting Wed. and Sat., 2–3.30 p.m., Out-patient Clinics. Mon., 3.30 p.m., Dr. Turner: Ward Cases. Tues., 3.30 p.m., Dr. Russell: Ward Cases. Wed., 2 p.m. and 3.15 p.m., Lectures. Thurs., 3.30 p.m., Lecture by Dr. Greenfield: Cerebro-spinal Fluid. Fri., 3.30 p.m., Dr. Collier: Ward Cases. Sat., 9 a.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., Operations, In- and Out-patient Clinics, etc. Mon., 2.30 p.m., Mr. Banister: Gynaecological; 3 p.m., Dr. Whiting: Heart Disease. Tues., 9.45 a.m., Lieut.-Colonel Elliot: Eye Cases and Operations; 2.30 p.m., Mr. Hayton: Throat, Nose and Ear; 3 p.m., Mr. Howell Evans: Surgical Cases. Wed., 2 p.m., Mr. Hayton: Throat Operations; 3 p.m., Dr. Oliver: Skin; 4.30 p.m., Mr. N. Fleming: Eyes. Thurs., 2 p.m., Mr. N. Fleming: Eyes; 3 p.m.: Mr. Metcalfe: Examination of Diseases of Digestive Tract by *X* Rays. Fri., 2.30 p.m., Dr. Sundell: Children; 4.30 p.m., Dr. Alexander: Medical Cases; 5 p.m., Dr. Provis: Venereal Department. Sat., 3 p.m., Mr. Carson: Surgical Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Dr. Simson: Diseases of Women; 5 p.m., Dr. Grainger Stewart: Nervous Affections of Rheumatism. Tues., 2.30 p.m., Mr. Addison: Wards; 5 p.m., Mr. Davis: Tuberculous Disease of Larynx, Middle-ear, etc. Wed., 10 a.m., Mr. MacDonald: Genito-urinary; 5 p.m., Mr. Donald Armour: Arthritis. Thurs., 2 p.m., Mr. Bishop Harman: Eyes; 5 p.m., Sir J. Dundas Grant: Functional Aphonia, etc. Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; 5 p.m., Mr. Steadman: Dental Sepsis and Rheumatism (Lecture). Sat., 10 a.m., Dr. Saunders: Children; 2 p.m., Dr. Owen: Out-patients.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

NOVEMBER.

30 Tues. London: Maternity and Child Welfare Subcommittee, 2.30 p.m.

DECEMBER.

1 Wed. London: Finance Committee, 2.30 p.m.

8 Wed. Fife Branch: British Medical Association Lecture by Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., on Modern Treatment of Fractures.

14 Tues. London: Scrutiny Subcommittee, 2 p.m.

APPOINTMENTS.

ANNAND, W. Fraser, M.D.Lond., Physician to the Coventry and Warwickshire Hospital.

McDONALD, Niel, O.B.E., M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Honorary Anaesthetist to the Royal Free Hospital, London, and to Queen Mary's Hospital for the East End, Stratford.

HEFFERMAN, L. W., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer to the Burma Corporation Limited, at Namtu, N.S.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTH.

DAVIS.—On November 19th, at 46, Harley Street, W.1, the wife of Edward D. D. Davis, F.R.C.S., of a daughter.

MARRIAGE.

FERGUSON—SANFORD.—On November 16th, at the Parish Church, Lytham, by the Rev. A. J. Coombes, Vicar of St. John's Church, Newcastle-on-Tyne, Ronald Leslie Ferguson, M.D., of Moss Side, Manchester, to Ethel Grace, second daughter of the late Rev. E. J. Sanford and Mrs. Sanford, of South Shore, Blackpool.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 4TH, 1920.

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British Medical Association.

CURRENT NOTES.

Fees for Treatment of School Children in Scotland.

THE attention of practitioners in Scotland is directed to Minute 100 of the Annual Representative Meeting, in which approval is given to a minimum fee of two guineas for a session of not more than two and a half hours (see SUPPLEMENT of September 25th). Difficulties are likely to arise where a session is normally of not more than one hour's duration, and a lower fee is offered for it. Before accepting such an offer, practitioners are urged to communicate with the Scottish Medical Secretary, and find if the fee is approved. These appointments are frequently not advertised, and information does not reach the office in time for action to be taken. One case has come to notice—namely, Renfrewshire—where the Education Authority has offered 15s. an hour for attendance at clinics in various centres. It is understood that some appointments have been made, but in Port Glasgow the practitioners have resolved unanimously to refuse to accept the terms offered. The Scottish Medical Secretary has had a meeting with the doctors concerned, and has promised them the support of the British Medical Association.

Health Certificates for Emigrants.

The attention of the Association has been called to the serious inconvenience, or even hardship, which may be inflicted on emigrants who have been given certificates of good health by private practitioners which are not accepted by the medical officer at the port of embarkation or, as is more likely, at the port of disembarkation. To give an instance: a man, having received a clean bill of health from his private doctor, may arrive with his family at a port in Canada; he is found by the port medical officer, who makes a very minute examination, to be suffering from very early phthisis; he is not allowed to land, but is turned back with his whole family, and thereby suffers very serious pecuniary loss and inconvenience. It should be pointed out that the Board of Trade examination which is made on embarkation is the one required under Section 306 of the Merchant Shipping Act, 1894. It is made in the interest of the health of the passengers and crew during the voyage, and it is not intended to ensure that the approved settlers or other persons examined will be able to pass the searching examination on disembarkation. That cases of this kind not infrequently occur is evidenced by the fact that the Overseas Settlement Office, 59, Victoria Street, London, S.W.1, has asked the British Medical Association to call the attention of its members to what may happen as the result of overlooking any point in the details of the examination required by the authority at the port of disembarkation. Differences of opinion there must always be, but a practitioner who, with the very best of intentions, has given his client the benefit of a doubt may find that, quite unwittingly, he has done him a very great disservice.

For the benefit of medical practitioners the following particulars required in Canada are given, and it is understood that the requirements of other Dominions are substantially the same:

Prohibited Immigrants.

The Immigration Acts and Regulations prohibit the entry into Canada of any person who is: (*a*) An idiot, feeble-minded, or epileptic; (*b*) deaf and dumb, or blind and infirm; (*c*) insane or mentally deficient; (*d*) so physically defective as to render him or her liable to become a charge upon the public or any charitable institution; (*e*) a criminal, or of immoral character; (*f*) afflicted with any dangerous, infectious, contagious, loathsome, or other disease; (*g*) a beggar, vagrant, or is likely to become a public charge.

Meetings of Branches and Divisions.

SOUTH-WESTERN BRANCH: EXETER DIVISION.

A MEETING of the Exeter Division was held on November 2nd, when Dr. CUTCLIFFE was in the chair.

Arising out of the minutes, Mr. RUSSELL COOMBE explained that the Minister of Health had refused to allow an appeal to common law against his decision to remove a panel practitioner from the panel.

The Consultative Council's Report.

The report of the Medical Consultative Council was considered. In view of the difficulty medical practitioners in the country districts had in expressing their views, it was decided to take a postal vote on any points on which the meeting could not come to a conclusion. The meeting considered D. 4 and approved answers to questions. A memorandum prepared by Dr. GORDON was then considered, and it was decided to issue it to all Divisions after revision by a small committee. The revised version is in the following terms:

Memorandum by the Exeter Division.

That in the opinion of this meeting the scheme of the Consultative Council is undesirable at the present time, since it imposes a burden at present unjustifiable on the taxpayer; that it is not immediately necessary; and that, unless drastically altered, it will have the gravest effects on medical practice from its interference with professional independence. If, however, legislation is forced upon us now, the scheme of the Consultative Council cannot be accepted as it stands—first, because it is far too costly; secondly, because it is too meddlesome.

A scheme so fatal to the independence of general practitioners and consultants and their sense of responsibility would be disastrous to the continued efficiency of British Medicine. Moreover, what British Medicine urgently needs after the strain of the war is breathing time. There is no urgency about this matter, and it should have been allowed to wait, and time given for the important medical problems confronting the community to be considered.

Whatever scheme is ultimately adopted, the following must be cardinal points to insist on:

1. There must be no extravagance. Provision should be strictly related to the requirements of individual districts
2. All practitioners in a district must have the right to join the primary centre if they wish, and should be removed from it by the General Medical Council alone.
3. Periodic visits by consultants, and unsolicited removal of cases by them should not be allowed, because subversive of the sense of responsibility and of the initiative of the local men.
4. Consultants for the poor must be called in, as consultants for the rich are, when asked for by the medical attendant or by the patient.
5. There must be free choice of consultants. that is there must be no panel of consultants

6. There must be a wage limit. Part-time service available for all members of the community without wage limit becomes whole time service, which is admitted to be destructive of efficiency.

7. There must be no tertiary centres—"teaching" or otherwise. They would destroy the prestige, initiative, and efficiency of the secondary centres, and give rise to intolerable friction. They would also lead soon to a regular hierarchy of centres, with London as head.

8. Paragraphs 56 and 57 of the Report run as follows:

> "A secondary health centre should be completely equipped, since on the excellence of its service and organization the efficiency of the primary health centres and domiciliary services based upon it would to a large extent depend.
>
> "Such equipment would include:—*General Services:* Medical, surgical. *Special Services:* Obstetric, gynaecological, ophthalmological, throat and ear, dermatological, orthopaedic, genito-urinary, dental, and industrial hygiene. *Laboratories:* Pathology in all its branches. *Other Services:* Pharmacy, radiology, electrotherapy, hydrotherapy, radiant heat, physical culture, massage, nursing."

A centre constituted on such a scheme can only be of the consultant type, and it would be entirely destructive of its prestige and efficiency to make it in any way subordinate to any other centre.

9. The medical work of both primary and secondary centres should be controlled by a committee of the staff, and not by any administrative officer—a method which has been found so disastrous in some public services.

10. We must have an adequate voice in the election of the Consultative Council to the Minister.

11. A Local Medical Advisory Committee is useless unless it is sufficiently strongly represented on the Local Health Authority to ensure its being consulted when necessary.

12. No proposals should be finally agreed to which do not include the financial proposals to the profession.

13. Consultants must be paid, as now, for "piece-work," not by time.

14. Privacy in illness must be preserved for the public.

Much has been said about "organization." There is wise organization and unwise organization. An organization which impairs initiative and sense of responsibility is fatal to progress. The Army Medical Service, in which organization is (perhaps unavoidably) a fetish, is professionally far below the civilian standard.

November 2nd, 1920.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A MEETING of the Portsmouth Division was held on November 25th, to which all members of the local medical profession were invited.

The agenda carried through was: (1) To receive the report of the subcommittee appointed to answer questions *re* Consultative Council's Report set forth in D. 4. This was unanimously confirmed. (2) The memorandum received from the Exeter Division *re* the Consultative Council's Report was adopted with one dissentient. (3) Mr. C. P. CHILDE, F.R.C.S., then proposed a resolution regarding the Consultative Council's Report which, after considerable discussion and slight verbal amendments, was finally carried as follows, with one dissentient, by the Division members present:

> In the opinion of the Portsmouth Division, British Medical Association, the revolution in the practice of medicine outlined in the report of the Consultative Council, whatever its advantages, is viewed with apprehension in view of the obvious financial burden it will place on the shoulders of the taxpayer. The consideration, therefore, of any scheme of this sweeping character should be deferred until such time as the country has recovered from the crushing financial burdens to which it has been reduced owing to the late war.

A rider proposed by Dr. EMMETT was added:

> That the British Medical Association be instructed to at once organize the profession for the purpose of controlling votes at the next general election.

The Secretary was instructed to send copies of the resolution to the press, to the local members of Parliament, and to all Divisions of the British Medical Association.

There was a large attendance at the meeting, and the liveliest interest was shown.

Association Notices.

MEETING OF COUNCIL.

THE next meeting of Council will be held on Wednesday, December 15th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

FIFE BRANCH.—Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., will deliver a British Medical Association Lecture to the Fife Branch on Wednesday, December 8th, on the "Modern Treatment of Fractures." All practitioners in Fife are cordially invited to be present at the meeting.

KENT BRANCH.—A meeting of the Kent Branch will be held [illegible] Thursday, December 9th, at the Board Room, [illegible] Hospital, [illegible]. Lord Dawson of Penn will give an address [illegible] the Consultative Council's [illegible] with Primary Health Centres, with special reference to the [illegible] [illegible] of the [illegible] [illegible] [illegible]. [illegible] members of the profession [illegible] [illegible] [illegible] [illegible].

SOUTH MIDLAND BRANCH: EAST HERTFORDSHIRE DIVISION.—A meeting of the East Hertfordshire Division will be held at the Hertford County Hospital on Wednesday, December [illegible], at [illegible] p.m., when a British Medical Association Lecture will be delivered by Dr. S. Maynard Smith, D.S.O., M.C., of [illegible], on "The Treatment of Fractures."

YORKSHIRE BRANCH: ROTHERHAM DIVISION.—The joint annual dinner of the Rotherham Division and the Rotherham Medical Guild will be held at the Crown Hotel on Friday, December 3rd. Dr. H. E. Knight will preside.

YORKSHIRE BRANCH: WAKEFIELD DIVISION.—A meeting of the Wakefield Division will be held at the Institute, Wood Street, Wakefield, at 3 p.m. on Tuesday, December 7th. Dr. Cox, the Medical Secretary, will deliver an address on "Some Signs of the Times for Doctors." All members of the profession in the county of Yorkshire will be welcome, members and non-members of the British Medical Association alike. Dr. May will be in the chair.

GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1920.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

REVISION OF THE CURRICULUM.

ON November 25th and 26th the Council discussed at length the revision of the whole curriculum in medicine. The subject was brought forward on a report from the Education Committee.

Dr. J. Y. MACKAY (Chairman of the Committee), in moving the reception of the report, said that the subject was given a "second reading debate" at the previous session of the Council, and a full report of the discussion appeared in the BRITISH MEDICAL JOURNAL of June 12th, 1920. He would like to express the Committee's appreciation of the excellent report which appeared in the JOURNAL; it formed a splendid summary in which the views of all the speakers were most carefully set out. In that discussion it was generally conceded that the curriculum was very greatly overloaded, and that something must be done to simplify and co-ordinate medical education, chiefly the education of the general practitioner. The chief difficulty, now and for many years past, had been felt by the clinical teachers, for every discovery made in the earlier sciences reacted upon clinical teaching and work. Every new light within the area covered by any of those sciences found a focus somewhere or other on the clinical plane, and added to the complexity of the clinical teacher's task. On all sides the work of the clinician was being extended year by year. The congestion of the clinical department was generally admitted. In every one of the earlier sciences there had been great expansion. At one time it was considered possible for the facts of the earlier sciences to be explained to the student at the beginning and for him to carry them in his memory until presently when he came to clinical study he gradually appreciated their relevance. But no scientific teacher in medicine now could fail to appreciate that the earlier sciences must be taught, not as a set of details, but as a living thing, to be thoroughly integrated with the other subjects, such as anatomy and physiology, pathology, and medicine, presently to be learned. The most obvious suggestion for improvement was to lengthen the curriculum, and that might have to be the ultimate step, but it was well to be careful before taking any course which would have the effect of indiscriminately lengthening the curriculum, and the Education Committee had been slow to arrive at a decision on this point. The problem was rather to lighten the curriculum by the removal of non-essential matters, or at least so to arrange the curriculum as to prevent anything which was absolutely essential from being left out. Much could be done by co-ordinating the different departments of study. The Committee therefore suggested that curriculum subcommittees be appointed, to consist partly of specialists and partly of clinical teachers, to consider and report on the various subjects of study. A separate subcommittee would be appointed for each subject or group of subjects, but all would be considered in their relation to clinical study. A separate set of subcommittees might be appointed for England, for Scotland, and for Ireland, but before reporting to the Council all the subcommittees should meet together and endeavour to co-ordinate their findings. Before these subcommittees could get to work, however, certain matters called for immediate action. One was the desirability that the young student who came up for his medical training, often at the age of 16 should, in all cases as a preliminary to beginning medical study, be required to furnish a certain standard of proficiency in physics and chemistry. This did not mean necessarily that he should have been taught these subjects in the secondary schools. In some parts of the country the schools were well organized and the licensing bodies could accept a certificate from the education authority that a student had passed a satisfactory examination: in other parts the conditions were different, and here arrangements must be made for the students to take their course in the general science classes of the medical school or university they proposed to enter. This of necessity meant lengthening the curriculum, but only for those students who came forward without having had instruction to the extent desired in these preliminary sciences. The speaker applied to medicine the remark of a great statesman in regard to life in general: "Youth a mistake; manhood a struggle; old age a regret." It was a mistake if the medical student began without having studied science in the way in which it should be studied. The Committee had been interested to receive from Sir George Newman a statement of the views of the Section of Medical Education at the annual meeting of the British Medical Association, held at Cambridge, as embodied in three resolutions, whose terms, he said, accorded in general with the views of the Committee. There remained the question of biology. The secondary schools were not equipped for the teaching of biology as they were for the teaching of physics and chemistry, and here the Committee proposed that those who entered on medical study and who had diligently attended an approved course of instruction in elementary biology in a secondary school might be admitted to a professional examination in that subject immediately after their registration as students. The Committee believed and recommended that physics, chemistry, and biology in their medical aspect should form part of the curriculum in medicine. The teaching bodies themselves would arrange at what point the medical aspect of these subjects should be specially put to the students. A further proposal to be laid before the Council was in harmony with the suggestion made by many speakers in the previous discussion—namely, that the pressure of examinations might be relieved to the extent of empowering the examiners in assessing marks to take into account the duly attested records of the work done by the candidates throughout the course of study in the subject of the examination. This would diminish the unfortunate habit of cramming. Personally, he believed that written examinations led more particularly to cramming, but the method of the examination was one which must be left to the discretion of the licensing bodies. The Committee made no recommendation on the subject of lectures, which was also touched upon in the previous discussion, though the feeling of the Committee was that the lecture could not be dispensed with.

The Preliminary Sciences.

It was agreed that the report be received and entered on the minutes, and then

Dr. MACKAY moved the first recommendation:

> That the resolutions of the General Medical Council in regard to professional education as revised in December, 1912, be so modified as to provide:
>
> (*a*) That before registration in the students' register, every applicant shall be required to have passed, in addition to the examination in general education, an examination in elementary physics and elementary chemistry conducted or recognized by one of the licensing bodies;
>
> (*b*) that a student who has diligently attended an approved course of instruction in elementary biology in a secondary school or other teaching institution, recognized by a licensing body, may be admitted to a professional examination in elementary biology immediately after his registration as a student of medicine;
>
> (*c*) that before registration as a student, every candidate shall produce evidence that he has attained the age of seventeen years:
>
> (*d*) that specialized instruction in physics, chemistry, and biology in their application to medicine shall be included in the professional curriculum, the teaching arrangements in each case to be determined by the licensing body.

Dr. J. C. MCVAIL, in seconding, said that the recommendation was opportune on two grounds. In the first place, the secondary schools were now in a better position than before to teach physics and chemistry, and some of them—biology; and in the second place, the large numbers entering the medical profession at the present time made it easier to raise the standard of medical education. Had the Council been faced with the likelihood of a shortage of practitioners in the near future, a proposal to increase the strictness of the standard of entrance would have been difficult. But the schools were overcrowded, and some of them were attempting to restrict admission by the imposition of narrower age-limits.

The Place of Biology.

Mr. H. J. WARING moved an amendment substituting for (*a*) and (*b*) of the recommendation the words:

> That before registration in the students' register every applicant shall be required to have passed an examination in general education, and in addition to have attended approved courses in elementary physics, elementary chemistry (organic and inorganic), and general biology, and to have passed an examination in these subjects conducted or recognized by one of the licensing bodies.

He said that the object of the amendment was to bring into the preliminary year the study of general biology. Hitherto the unfortunate position of biology had interfered with the satisfactory teaching of anatomy and physiology, and also of biochemistry. If the amendment were adopted, the student, as soon as he had registered, would be able to commence his anatomy, physiology, biochemistry, and biophysics, and there would be less of that cramming and coaching which was the curse of medical education at the present time.

Sir NORMAN MOORE seconded the amendment, which, if adopted, he said, would result in full use being made of a school year, and would sweep away the risk, which he saw in the main resolution, of having two examinations in the preliminary sciences instead of only one. They could not afford to lengthen the curriculum, particularly to lengthen it in its first stage, and any encroachment upon the time available in the early part of the students' curriculum should be carefully guarded against.

Dr. RUSSELL WELLS said that in actual practice the effect of the amendment would be to add a year to the curriculum, and he described how this would work out in the University of London. On the general matter of the report, he expressed regret that there was no concrete suggestion for raising the standard of general education, as to which a widespread feeling was manifest in the previous discussion. The authors of the report were intending to put into the school year certain work which had hitherto been done after school. Would it not be better for the initiation into the sciences to be given by master minds in those subjects rather than taken in the ordinary school course?

Dr. H. R. DEAN also urged that a great opportunity would be missed if the Council did not require at this stage a raising of the standard of general education. A higher standard in literature—at least up to the standard of matriculation examinations—was essential, and before any special instruction was given to schoolboys in physics and chemistry a higher standard of mathematics should also be sought. The effect of the proposals in the report was, if anything, against the raising of the general education of the student. It was the experience of most teachers that the very best students who came to them were often none the worse for the fact that they had done no science at school. But if this proposal was to go forth with the sanction of the Council it would come to the knowledge of schoolmasters and also of parents, and there would be pressure to bring professional or specialized teaching to bear at an earlier age. With the proposal to make the minimum age entitling to admission to the students' register 17 years he supposed there would be general agreement, but he felt that if a boy was able to pass the matriculation standard of the university at 16, and to pass it well, or even to pass a higher standard in general education, it would be better to allow him to go right on to the university at 16. An approved standard of general education would be better than an arbitrary standard of age.

Sir GILBERT BARLING felt that the acceptance of either the resolution or the amendment would tie the hands of the subcommittees to whom, according to a later recommendation, it was proposed to remit the matter. It would be better to set up the subcommittees and elicit their advice before taking any definite step. Otherwise it would only be minor points which were remitted to the subcommittees.

Dr. RICHARD CATON said that one objection to schoolmaster instruction in these subjects was that in the secondary schools physics and chemistry were necessarily so taught as to be applicable to students of all types, not alone those who intended to enter medicine; whereas the medical student required very specialized teaching in these subjects. He trusted that the work of the subcommittees would not be hampered by resolutions of the Council.

Dr. W. RUSSELL said that the proposals put forward by the

Committee were not really proposals to extend the period of medical education, but merely to modify the last year at school, which was usually a specialized year. He found it hard to believe, even after much discussion in the Council, that it was of no advantage to a boy going to the university to have had reasonably good grounding in physics and chemistry, though he could not speak so definitely of biology.

Sir JAMES HODSDON regarded this preliminary examination in physics and chemistry as intended to improve the general education of the student and equip him with a certain amount of scientific training. Physics and chemistry in their more direct relation to medicine must be taken up subsequently and co-ordinated with the other subjects of the curriculum.

The PRESIDENT reminded the Council that, by its resolution of 1911, secondary schools, if approved by licensing bodies, were recognized in connexion with the teaching of physics, chemistry, and biology, just as if they were medical schools, so that any suggestion that medical students be transferred from the schools to the universities for the purpose of this instruction would mean the reversal of the Council's present practice and policy. Under the existing arrangements, if a student had taken physics, chemistry, and biology at a secondary school recognized by one of the licensing bodies, he might count that as six months of his five years.

Mr. E. B. TURNER had hoped to see in the report a more definite recommendation for raising the standard of general education. He held that at the age of 16 or 17 a youth would hardly be sufficiently educated to take up the whole study of medicine, and he was afraid that if an examination in physics and chemistry were required to be passed before students' registration the result would be to transfer the cramming classes from the universities to the schools. It was essential that the future medical man should have the best education possible, even if it came to a six years' curriculum. A good general education was the foundation on which the whole intensive and scientific study of medicine had to be built. He hoped that nothing would be done by the Council to discourage general education or make the student a mere examination-passing machine.

Sir JOHN MOORE added his voice to the plea that before any decision was taken the subcommittees should be allowed to report. The Council's regulations of 1911 could not be considered in any way to apply to Ireland, where there was no sufficient teaching in physics and chemistry in the schools, and from his experience he did not think that 1 per cent. of the students in Dublin came up to the university with an approved standard of instruction in these subjects.

Dr. NORMAN WALKER held it a mistake to suppose that boys who were taking physics and chemistry at good secondary schools were in the least neglected as to their general education. Their education in physics and chemistry went on for a number of years, and was not specially applicable to medicine, but was the sort of instruction that it was desirable that men in various professions should have. It was the duty of the licensing bodies to see that the secondary schools maintained the necessary level.

Professor A. F. DIXON believed that physics and chemistry were best taught at the universities; Dr. D. J. COFFEY pointed out that in any case the universities must maintain for some time their first-year physics and first-year chemistry until it became clear that the instruction could be given properly in the schools; and Professor ARTHUR THOMSON appealed to Mr. Waring to withdraw his amendment in order that the issue might be made clear as between the recommendation put forward by the Committee and the desire of many members of the Council that the matter should be left for the consideration of the subcommittees.

Dr. MACKAY was willing to accept Mr. Waring's amendment subject to a little modification in its terms, but he thought it had better be voted on. The reason why in the recommendations of the Committee biology had not been bracketed with physics and chemistry was because biology was not taught in the schools nearly to the same extent as the other subjects.

Mr. WARING said that his amendment brought in the words "approved courses"; he was not particular whether these should be taken in the secondary school, polytechnic, or university. He thought it generally recognized that the elements of biology as well as those of physics and chemistry were good for every student, and he would like the secondary schools to pay much more attention to this subject.

The PRESIDENT, in putting Mr. Waring's amendment, said that if it was passed it would mean that the preliminary scientific examination would be followed by five years of medical study, instead of four and a half years as at present. The Committee's resolution proposed that the preliminary scientific examination before registration should consist of physics and chemistry, and the amendment added biology.

On a show of hands, five voted for the amendment, which was lost by a large majority.

Co-ordination of Earlier and Later Studies.

Sir GILBERT BARLING then moved that a decision on the matter of the preliminary sciences in the curriculum be deferred until after the appropriate subcommittee which it was proposed to set up had reported.

Professor ARTHUR THOMSON, in seconding, said that it was not very clear what the Committee was proposing. The suggestion was that the examinations in physics and chemistry should be of a preliminary scientific character, and not be professional examinations, whereas the examination in biology was quite expressly stated to be a professional examination. It would be expedient to lay it down that there should be a preliminary examination in science, the subjects being physics, chemistry, and biology, of which two must be passed before registration as a student.

Dr. MACKAY opposed the amendment, and again said that the Committee proposed no change of attitude with regard to the secondary schools. He hoped that in time—though he feared it might be a rather distant future—these subjects would be passed over to the schools, in which case something very valuable would have been achieved from the general point of view of education in the country. It would be a long time before the subcommittees could make their reports, and to defer the revision of the curriculum until then, so far as these pressing matters were concerned, was, as every teacher in the earlier sciences would recognize, attended by considerable disadvantage.

Mr. BENNETT felt that before a decision was made more information, such as these subcommittees would collect, was desirable. While some in the schools adhered firmly to the extreme classical tradition, others pushed science forward to such an extent that the rest of the education suffered. The effect of these proposals would clearly be to bring physics and chemistry into the schoolboy's curriculum at an earlier age. That might or might not be desirable, but in any case more information should be forthcoming.

The PRESIDENT, speaking as a member of the Education Committee, said that the result of the debate in the previous session was to impress the Committee with the desirability that all the subjects of the medical curriculum should be correlated, so that their direct bearing might be made clear from the beginning. Among the subjects which must be so correlated were physics, chemistry, and biology. The question of that correlation was to be referred to a subcommittee. That had nothing to do with the preliminary or general instruction in physics, chemistry, and biology. Such preliminary instruction was given in order to ensure that when a boy came to study in the medical curriculum the specialized and co-ordinated physics, chemistry, and biology he should know the alphabet of the subject; otherwise, he would have to learn the alphabet within the curriculum. The question of learning the alphabet of these subjects was not contemplated at all in the reference to the subcommittee.

On a show of hands there were 17 in favour of Sir Gilbert Barling's amendment (postponing the matter until the subcommittees had reported) and 15 against. A count by roll-call was demanded, when the result was:

For the amendment	17
Against	17
Absent	4

The PRESIDENT said that he could only declare that the amendment had not been carried.

The Standard of General Education.

Dr. H. R. DEAN then moved a rider to the Committee's recommendation:

> And that the minimum standard of general education required by the Council for registration as a student should be raised to a standard equivalent to that demanded in other learned professions previously to or concurrently with the coming into operation of the requirement of a preliminary examination in science before registration.

He said that now the Council was setting about what might prove to be a very big change in the curriculum, and a very large number of young men were entering upon medicine, the time was ripe for raising the standard generally. If the Council did not at this stage take some cognizance of the preliminary standard of general education it would in a sense allow the matter to go by default.

Dr. **RUSSELL WELLS**, who seconded, said he was not antagonistic to the Education Committee's recommendations, but he would be inclined to oppose them if the Council did not carefully guard itself against the lowering of the standard of general education. His fear was that if a preliminary scientific examination were instituted which could be taken from the schools at the age of 17, the schoolmaster would be under the temptation to get the students through the lowest minimum of general education as early as possible in order that there might be a longer time to devote to scientific education, and that would be disastrous to medical education in general. He knew that that was not the intention of the Council, but a legislative body had to look beyond its intentions and calculate upon the possible effects of its action. A premium would be placed upon the lowest examination. He was not opposed in all cases and under all conditions to these science examinations being taken in the schools.

Dr. **MACKAY** said that, as it stood at present, the preliminary examination in all the universities was of the highest standard. The only bodies which accepted a lower or minimum standard were the conjoint boards in the three countries, but out of 3,300 students who entered into the medical curriculum last year, he did not suppose that more than 150—probably considerably less—had passed in by way of what might be called these lower grade examinations. He agreed to bring this matter of the minimum standard of general education before his committee at the earliest opportunity. There must be a two years' notice before the recommendation could come into force, and the same would apply necessarily to the rider if carried, and in the meantime he promised that the Education Committee would consider and report on the matter.

On this understanding the rider was agreed to without dissent.

The Efficiency of the Medical Student.

Dr. **MAGENNIS** moved to add to the clause dealing with the age of the student on registration:

> and that he (the prospective student) shall be interviewed by the university or licensing body concerned as to his physical and mental suitability to join the medical profession.

He wished to take the opportunity of sliding this in as quietly as possible. (Laughter.) At present people who were suffering even from mental disability had been allowed to enter for medicine. They had evidence of it in that Council. (Laughter.) He meant in the cases that came before it.

The **PRESIDENT** remarked that every candidate for registration had to present certain documents, including one from the dean of his school, stating that he had duly commenced medical study at that school. If the dean filled up that document it might be taken that he had satisfied himself as to the other particulars. The matter rested with the dean as the responsible person.

Dr. **ADAMS** said that the dean had no power to exclude any student who was suffering from the most obvious infirmity.

The **PRESIDENT**: Neither has the Council.

The amendment, which was seconded by Dr. Adams, was negatived, five voting in its favour.

Methods of Examination.

Dr. **MACKAY** then moved a modification of the Council's previous recommendations so as to provide:

> That in the regulations for the several examinations it shall be provided that the examiners be empowered in assessing marks to take into account the duly attested records of the work done by the candidates throughout the course of study in the subject of the examination.

Professor **HARVEY LITTLEJOHN** seconded.

Sir **GILBERT BARLING**, while supporting the proposal, said that in Birmingham something of this kind had been tried, and the examiners had protested against the withdrawal from them of some of their power in examinations. The plan, therefore, was not pursued, but a resolution of the Council would strengthen the hands of those who believed that the students' records should be taken into account.

Dr. **MCVAIL** said that some students knew how to "play up" to a professor's idiosyncrasies, and it seemed as though a professor, unlike an external examiner, might be subjected, unconsciously on his own part, to undue influence. The external examiner, at all events, should have it definitely impressed upon him that he was to maintain absolute independence.

Professor **LITTLEJOHN** said that surely when a student had spent nine months in practical physiology his credit was not to be decided in a ten minutes' test by an external examiner. His day-by-day work during this period should be taken into consideration.

The recommendation was adopted.

Appointment of Special Subcommittees.

Dr. **MACKAY** then proposed and Sir **JAMES HODSDON** seconded:

> That the Council approve the appointment of a number of special subcommittees as detailed below, mixed in constitution and each containing representatives of correlated studies, to be charged with the duty of reporting to the Council on the scope of the several curricula, defining essential contents from the standpoint of the adequate training of the general practitioner; of advising as to the proper co-ordination of the work of instruction; and of making recommendations concerning the better teaching of the preventive aspects of medicine. (1) The preliminary sciences as related to medicine; (2) anatomy and physiology; (3) pathology and pharmacology; (4) medicine, surgery, and midwifery.

Some discussion took place on the method of appointing the subcommittees, and it was agreed that the Education Committee should have power to take the initiative, and that the procedure would be for the co-operation to be secured of as many members of each of the Branch Councils as possible, and that each subcommittee which was formed out of the Branch Council would co-opt certain specialists from without, the Education Committee being ultimately responsible for seeing that the subcommittees were of reasonable dimensions and at the same time fully representative.

The recommendation was agreed to, and it was also agreed that the first of the recommendations regarding the examination in preliminary sciences should come into effect two years hence—on January 1st, 1923.

PUBLIC HEALTH COMMITTEE.

Sir **JOHN MOORE** moved certain recommendations of the Public Health Committee. The Council gave its approval to a proposed alteration of the regulations of the University of Durham for its degree of Bachelor of Hygiene. It also agreed, on the recommendation of the Committee, to express to the Lords of the Admiralty its satisfaction that the importance of naval officers obtaining a diploma in public health was so fully recognized by them, and that study leave for that purpose—which Sir John Moore said was on a generous scale—had been granted.

The Council approved, temporarily, and subject to a general reconsideration of the regulations for diplomas in public health, of the two months' course of instruction on entry and the two months' course for promotion at the Royal Naval Hospital, Greenwich, allowing them together to count for four months' study, provided that the subjects did not overlap; and it approved the special course of three months at Haslar in advanced public health as being sufficient to reduce to three months the instruction under a medical officer of health required under the Council's regulations and rules for the diploma.

Sir John Moore said that his Committee was very pleased with the attitude both of the Admiralty and the Medical Department of the Navy in respect to these matters.

The Diploma in Public Health.

Sir **JOHN MOORE** then went on to move:

> That the General Council should authorize the Public Health Committee to consider and revise the existing regulations and rules for diplomas in public health which were originally adopted by the Council on June 1st, 1889, and amended and amplified from time to time, particularly on December 1st, 1911, with a view to bringing the special course of instruction required of candidates for the diploma into harmony with the duties of a modern medical officer of health, which have changed considerably since the resolutions and rules were originally adopted, and afterwards amended and amplified.

The mover added that no one at present supposed that the medical officer of health should be an expert bacteriologist or chemist. He was surrounded by experts in these different technical subjects.

Dr. **COEY BIGGER**, at whose instance the proposal was brought before the Committee, said that the majority of medical men who took the diploma in public health did so for the purpose of qualifying themselves for some branch of the public health service, and it was therefore essential that the course of study should be adapted to equip them for entering upon their future work with the greatest possible knowledge. The present curriculum required candidates to devote a good deal of time to chemistry and bacteriology. They had to go through a long and arduous course of analytical chemistry, and as soon as they had passed their examination in this subject they tried to forget the knowledge which they had taken so much trouble in acquiring, the reason being that they were never now required to carry out this kind of work, they were not supplied with any of the necessary equipment, and even if they were their certificates would not be accepted in any court. It was quite necessary, at the same time, that every one engaged in the public health service, particularly medical officers of health, should have a sufficient training in analytical chemistry to appraise the value of an analyst's certificate and to be thoroughly conversant with the technique so that he could advise on questions which might arise. The same applied to bacteriology. The Public Health Committee therefore asked to be empowered to go into the question of a revision of the curriculum. A great deal more administrative knowledge was now required of those engaged in the public health service, but so far as he could learn from attending two public health examinations there was no regular instruction given in any of the technical and administrative difficulties which arose in formulating or carrying out schemes such as those in connexion with maternity and child welfare, tuberculosis, or venereal diseases.

Sir GEORGE NEWMAN supported the recommendation, and said that not only had there been this development in public health in the directions mentioned by the last speaker, but also in directions affecting the relationship of the medical officer of health to clinical matters, particularly infectious and contagious diseases, and also to general practice. These seemed to be very profound changes, and he thought he was not going too far in saying that they called for a new type of medical officer of health. He hoped that if the Council approved this proposal there would be an opportunity later of discussing details. Along with the growth he had indicated, there had been a remarkable development in the way of specialization concerning branches of work which hitherto had come within the area, so to speak, covered by the diploma.

The recommendation was adopted.

OTHER COMMITTEES.

Sir NORMAN MOORE moved the report of the Students' Registration Committee, which gave details of applications for antedating registration, for registration in exceptional circumstances, and for the approval of certain recognized teaching institutions; and also the report of the Pharmacopoeia Committee, giving particulars of the copies of the *British Pharmacopoeia* sold and in stock. The latter report added that the Committee had been offered an opportunity of making representations to the Home Office on the proposed regulations regarding the prescribing and dispensing of certain potent remedies under the Dangerous Drugs Act, and had communicated its observations thereon to the Secretary of State.

No recommendations were attached to these reports, which were received and entered on the minutes.

Sir JOHN MOORE moved the adoption of a report of the Irish Branch Council which stated that the Council had resolved to send a communication to the Irish Public Health Council begging that steps might be taken for the utilization of Poor Law lying-in institutions in Ireland for the instruction of medical students in practical midwifery under expert supervision.

The PRESIDENT said that a similar request had been addressed to the English and Scottish authorities. An answer had been received from the Scottish authority, but not yet from the English. The whole matter would come before the Council, he hoped, at the next session.

The report was adopted.

DENTAL MATTERS.

The Executive Committee recommended that the Council should recognize the higher dental diploma of the Royal Faculty of Physicians and Surgeons of Glasgow for registration in the *Dentists Register* as an additional qualification.

The PRESIDENT, in moving approval of the recommendation, said that the proposal was on the lines of that which was approved last session in the case of the Royal College of Surgeons of Edinburgh. The only point of difficulty which had arisen was in connexion with the description of the diploma. It was at first proposed to call these diplomas "Diplomas in Dental Science," but "D.D.S." were already the recognized initials for a doctor of dental science, and there were some people who would perhaps be inclined to make profit out of the confusion.

Dr. ADAMS said that he had had a communication from Glasgow, and the term 'Higher Dental Diploma' would be accepted, as in Edinburgh.

The recommendation was agreed to.

[illegible] moved certain recommendations of the Dental Education and Examination Committee, all of which were agreed to.

DISCIPLINARY CASES.

Improper Certification.

On November 24th the Council considered the case of Nariman Hormasji Clubwala, registered as of Masina Hospital, Mazagon, Bombay, L.M.S., M.D., who was charged with giving a certificate on or about May 30th, 1920, at the foot of which was typed "(Signed) J. Kanga, M.B., B.S., Surgeon," for whom he was acting as locum tenent, stating that a certain soldier in the Australian Imperial Force had been under the treatment of the said J. Kanga for the previous five months, suffering from epilepsy (minor) and war neurosis, and was not in a fit condition to attend to his duties, whereas in fact the occasion on which he (Clubwala) gave the certificate was the first time he had seen or attended the man in question, and he had no previous knowledge or information of the case.

Dr. Clubwala attended in person, and was also represented by his counsel, Mr. J. E. Holloway-Pike. The complainants were the Australian Imperial Force, represented by Major E. W. Morris, senior medical officer, and Captain P. Fennelly, legal officer.

Captain Fennelly, in opening the case, said that an Australian soldier named Dent absented himself in December, 1919, and his whereabouts were not known until May, 1920, when he reported to head quarters at Australia House, London, bringing with him a certificate purporting to be signed by Dr. Kanga, of Fulham Palace Road. The certificate went further than an ordinary medical certificate, and appeared to justify the man's five months' absence. The Senior Medical Officer, Major Morris, questioned the certificate, and went to see (as he thought) Dr. Kanga personally. On calling at the address given, however, he discovered that it was Dr. Clubwala who had signed the certificate, and that Dr. Kanga had gone away to South America on holiday. Dr. Clubwala admitted in conversation that he had never seen the man in question before May 30th, and he failed to produce any records of the case left by Dr. Kanga. When Dr. Clubwala was asked by Major Morris upon what he based the statement in his certificate, he said that he based it upon the statements made to him by Dent and on his examination of him at the time. He added that he had authority to sign Dr. Kanga's name. As Major Morris was leaving, Dr. Clubwala said to him, "I hope I am not going to get into trouble about this." The Australian Government, Captain Fennelly continued, had transported from 350,000 to 400,000 men from Australia, and it was under an obligation to return them. The experience of those responsible for the Australian troops in London, among officials, medical practitioners, and others, had been most pleasurable. Generous help had been given, and this was the only instance in which anything of this kind had been brought to their attention. It was, however, of so glaring a character that it was thought well to lay it before the Council for such action as might be deemed appropriate.

Major Morris gave evidence bearing out Captain Fennelly's statement. He said that on discovering Dr. Clubwala's identity he asked him for any case-book or record of any sort which might have been left by Dr. Kanga, but none was forthcoming. Cross-examined, he said that Dent's service record showed that he had actively fought in France, but not that he had been wounded. Asked why he called on Dr. Kanga or Dr. Clubwala, he said that it was because he questioned the genuineness of the certificate from the medical point of view. In answer to other questions, he said that he had himself examined Dent, and found very slight evidence of disability. Dent had now gone back to Australia.

Dr. Clubwala, giving evidence on his own behalf, said he came to England early in May last. Towards the end of May Dr. Kanga informed him that he was going away and asked him to act as locumtenent. He gave him particulars of his most important cases, including that of Dent. When Dent called at the surgery, witness examined him in the presence of the man's wife, and he produced to the Council a record of that examination written on a card which had been filed and dated May 30th. He was fully satisfied that the man was suffering from the condition stated in the certificate. When Major Morris called on him he told him that he had full authority from Dr. Kanga to give a certificate, though he had no authority in writing. He denied having said to Major Morris that he hoped it would not get him into trouble. In reply to the President, he said that his record giving the history of Dent's case was in existence when Major Morris called, but he did not produce it because it was not asked for. Asked why he did not sign his own name, he said he was unaware of the legal technicalities involved, and he supposed he ought to have appended his initials. He understood that Dent wanted the certificate in order to get some money from the army. He (Dr. Clubwala) received one shilling for giving the certificate. Asked what symptoms he would expect to find in a man suffering from epilepsy who did not have a fit in his presence, witness replied that he would expect nervous irritability, shakings, and marks of injury from falls. He added that he might have given other certificates, though not many, in the name of Dr. Kanga. In reply to the Legal Assessor (Mr. Hansell), he said that the record was made in the presence of Dent and his wife, and that he had never shown it to his solicitor.

Dr. J. J. Kanga also gave evidence, and described how Dent had been carefully examined by him and found to be suffering from minor epilepsy and war neurosis. He had been wounded, and one finger had been amputated. He was in a fit and was quite unconscious on one occasion when the witness attended him. If the symptoms were not found when the case was examined by Major Morris, he could only say that Major Morris could not have gone into the case thoroughly. He gave particulars of a few cases to Dr. Clubwala before leaving, and Dent's was one of them. The certificate given by Dr. Clubwala was absolutely true, and he would have given the same himself. He did not see why he himself should have left a certificate, as he had authorized his locumtenent to use his judgement and also to sign his name. He had not given Dr. Clubwala authority to sign death certificates in his name, but he was to sign insurance certificates and generally to use his discretion. He agreed that in this case the certificate should have borne Dr. Clubwala's initials. He added that it was quite usual for a wounded soldier to want a certificate to show that he was ill and had to stay at home.

Mr. Holloway-Pike said he was prepared to call Dent's wife and her mother who would speak as to Dent's condition and the visit to Dr. Clubwala, but the Council decided to take counsel's word for it that such evidence would have been given. Mr. Holloway-Pike then addressed the Council on behalf of Dr. Clubwala, who, he claimed, had only been guilty of some slight neglect in failing to append his initials, and not of misconduct. Dr. Clubwala was a young man unacquainted with the legal technicalities to which the Council rightly attached so much importance.

Captain Fennelly, in a closing speech, said that Dr. Clubwala's certificate was framed exactly to serve the purpose of the absentee, even to the period which it was supposed to cover. Such action, by covering up breaches of discipline, paralysed the arm of the military authorities.

The Council then deliberated in private, and on the resumption of the public sitting the President said:

> Dr. Clubwala, I have to announce that the Council has given careful consideration to the charge which has been brought against you, and has found it to have been proved. In view of the grave nature of the offence and its serious consequences to the public, the Council has judged you to have been guilty of infamous conduct in a professional respect, and has directed the Registrar to erase your name from the *Medical Register*.

The President added that the Council desired to thank the authorities of the Australian Imperial Force for bringing the information before it.

Procedure after Conviction for Misdemeanour.

On November 24th and 25th the Council considered the case of CHARLES EDWARD DOLLING, M.B., Ch.B., registered as c/o an Australian bank, who was summoned on the charge that, being a registered medical practitioner, he had been convicted at the Westminster Police Court on January 21st, 1920, of a misdemeanour and fined £10 (or in default six weeks' imprisonment), which decision was upheld on appeal to the General Quarter Sessions.

Dr. Dolling was present, and was defended by Mr. A. Neilson, K.C., who at the outset, after the Solicitor to the Council had stated the facts of the case and had put in a certificate of the conviction, argued that, while the Council must accept the conviction as a fact, it was competent to consider the circumstances connected with the conviction. The certificate proved nothing more than the fact of conviction; it was not admissible as evidence of guilt before that tribunal, and the Council would be fully justified in considering such circumstances as might go to prove that the conviction was wrong.

The President said that the Council was acting under Section 29 of the Medical Act, 1858, which stated that if any registered medical practitioner was convicted of any felony or misdemeanour the Council might, if it saw fit, direct the Registrar to erase his name. The Council must accept the conviction as a fact, and the Council was not to act as a court of appeal in the sense of retrying the case. But any evidence as to the character or gravity of the offence, and any matters in excuse or extenuation, might be admitted.

The Council, by the desire both of the Council's solicitor and the defendant's counsel, decided to hear the case in private. The hearing had not concluded when the Council adjourned for the day, and on the resumption of the case on the morrow, the hearing was again continued in private.

When strangers were readmitted, the President announced that the Council had not seen fit to direct the Registrar to erase Dr. Dolling's name.

Misdemeanours.

The Council considered, on November 26th, the case of John Louis Palmer, M.B., Ch.B., registered as of The Grange, Lucan, co. Dublin, who was summoned to appear on the charge that, being a registered medical practitioner, he had been convicted of certain misdemeanours. The convictions, at various London police courts, were six in number, the offence in each case being drunkenness. The latest was on June 2nd last.

Dr. Palmer was not present, and was not represented. The Solicitor to the Council said that in this case he had reason to think that the doctor concerned did not know it was pending, for the notice of inquiry which had been sent to the address at which he was registered had been returned through the Dead Letter Office. He did not remember that there had been a case before the Council previously in which it was uncertain whether the defendant had received the notice; on the other hand, this was a case of conviction, so that technically no notice need be given at all.

After the Council had deliberated in private, the President announced that the convictions had been proved to the Council's satisfaction, and that the Registrar had been directed to erase Dr. Palmer's name.

Certain formal resolutions were then passed and a vote of thanks to the President concluded the proceedings.

THE MEDICAL REGISTER: CHANGE OF ADDRESS.

IN our issue of July 31st, 1920, we published at the request of the General Medical Council a list of medical practitioners who had not responded to the inquiries of the Registrar of the General Medical Council made under Section 14 of the Medical Act. 1858. The result was very satisfactory, as the Registrar has been able to get into communication with more than half of the practitioners whose names appeared in the list. We are now requested to publish the following further list of medical officers of the Royal Navy or Army Medical Service who are no longer on the active list. Any officer whose name is included in the list or anyone who is able to give information about them is requested to communicate without delay with the Registrar of the General Medical Council, 44, Hallam Street, London, W.1.

ROYAL NAVY.

Alderdice, Geo. Fredk., L.R.C.P.Irel. 1901
Anderson, Isaac Hy., M.D.Q.U.Irel. 1869
Andrews, John, M.D.R.U.Irel. 1883
Arkwright, Eustace, M.B.U.Edin. 1896
Barrington, John Leslie, L.R.C.S.Irel. 1880
Barry, Jerome, M.D.R.U.Irel. 1885
Bennett, Wm. Ed., M.R.C.S.Eng. 1873
Bray, Ernest Ed., M.R.C.S.Eng. 1881
Browne, Horace Ximenes, M.R.C.S.Eng. 1878
Browne, Thos., M.D.Q.U.Irel. 1862
Burke, Hubert Wm., L.R.C.P.Edin. 1883
Burnett, Thos. Smith, F.R.C.S.Irel. 1890
Chancellor, Alfred Austin, M.B.R.U.Irel. 1903
Christie, Alex. Livingston, M.B.U.Aberd. 1876
Coad, John Edwin, M.R.C.S.Eng. 1885
Colthurst, Ludlow Tonson, M.D.Q.U.Irel. 1874
Connolly, Nicholas Thos., L.R.C.S.Irel. 1860
Ferguson, John Christopher, M.B.U.Dubl. 1886
Fletcher, Wm. Bainbrigge, M.R.C.S.Eng. 1862
Godding, Chas. Cane, C.B., M.R.C.S.Eng. 1872
Haldane, John Reid, M.B.U.Glasg. 1910
Hamilton, Stewart, L.R.C.S.Irel. 1871
Harries, Henry, M.R.C.S.Eng. 1882
Harvey, Christopher, L.R.C.P.Edin. 1870
Hawton, Jas. Wm. Hambly, M.R.C.S.Eng. 1873
Horner, Thos. Lyle, L.R.C.P.Edin. 1868
Jenkins, John, M.R.C.S.Eng. 1884
Kellett, Solomon, L.R.C.S.Irel. 1866
Kelsall, Chas. Jas. Seddon, M.R.C.S.Eng. 1886
Levis, John Sampson, M.D.Q.U.Irel. 1860
Longfield, Wm. Digby, L.R.C.S.Irel. 1859
Lory, Wm. Manley, M.R.C.S.Eng. 1878
McKinlay, Archibald, L.R.C.S.Irel. 1872
McLeod, Alex. Wm., L.R.C.S.Edin. 1877
Macmahon, Geo. Robt., M.B.U.Dubl. 1890
Macmillan, Chas. Clarke, D.S.O., M.B.U.Edin. 1897
Macnamara, Hugh Winckworth, M.R.C.S.Eng. 1880
Martin, Jas. McCardie, D.S.O., L.R.C.P.Edin. 1880
Miller, Richd., M.B.U.Dubl. 1883
Morley, Ed. John, M.R.C.S.Eng. 1879
Norbury, Sir Hy. Fredk., K.C.B., M.D.U.Malta 1870
O'Brien, Michael, M.D.R.U.Irel. 1884
O'Leary, Elystan Glodrydd Evelyn, M.R.C.S.Eng. 1894
Patterson, Alfred, L.R.C.S.Irel. 1873
Reid, Ernest Stewart, M.B.U.Edin. 1895
Reid, Walter, M.D.U.Edin. 1863
Richardson, Hy. Anthony Wills, L.R.C.S.Irel. 1873
Scott, Alex., M.B.U.Aberd. 1860
Stott, Wm. Gordon, M.B.U.Aberd. 1885
Swan, Ed. Goffe, L.R.C.P.Edin. 1880
Sweetnam, Jas. Long, M.D.Q.U.Irel. 1869
Thomas, Elijah Richd. Lockwood, M.R.C.S.Eng. 1902
Twigg, Geo. Despard, F.R.C.S.Irel. 1884
Wales, Geo. Fredk., L.R.C.P.Edin. 1880
Whicher, Jas. Chas. Francis, L.R.C.S.Edin. 1884
Williams, Robt. Wm., L.F.P.S.Glasg. 1870
Young, Wm. Robt. Minchin, L.R.C.S.Irel. 1879

ARMY MEDICAL SERVICE.

Allen, Sydney Glen, M.R.C.S.Eng. 1884
Barnett, Kennet Bruce, F.R.C.S.Irel. 1904
Barry, John, M.D.Q.U.Irel. 1867
Bennett, Richd. Dawson, L.R.C.S.Irel. 1868
Boulger, Isaac, M.R.C.S.Eng. 1873
Boyd, Thos., L.R.C.S.Irel. 1874
Brogden, Jas. England, L.R.C.P.Edin. 1889
Butterworth, Samuel, M.R.C.S.Eng. 1882
Carey, John Thos., M.B.U.Aberd. 1875
Clark, Stephen Frazer, M.B.U.Edin. 1885
Colahan, John J. Aloysius, M.D.Q.U.Irel. 1857
Corry, Geo., L.R.C.P.Edin. 1868
Croly, Arthur England Johnson, L.R.C.S.Irel. 1879
Dugdale, Wm., L.R.C.P.Irel. 1879
Emerson, Isaac Bomford, L.R.C.S.Irel. 1873
Falkner, Percy Hope, L.R.C.P.Irel. 1898
Faunce, Chas. Edmund, M.R.C.S.Eng. 1882
Fayrer, Sir Jos., Bt., M.D.U.St. And. 1889
Freyer, S. Forster, C.M.G., M.D.R.U.Irel. 1883
Garland, Fredk., D.S.O., M.B.R.U.Irel. 1901
Gormley, Jos. Andrew, M.D.Q.U.Irel. 1873
Hinde, Alfred Buckley, O.B.E., M.R.C.S.Eng. 1886
Hughes, Geo. Edgar, L.R.C.S.Irel. 1885
Hunter, Geo. Douglas, C.B., C.M.G., etc., M.R.C.S.Eng. 1883
Hutchinson, Victor Patrick, M.R.C.S.Eng. 1909
Jagoe, Hy., M.B.U.Dubl. 1867
Jennings, Chas. Boromeo, L.R.C.S.Irel. 1867
Lane, Cecil Alex., M.B.U.Edin. 1884
Lane, Geo., L.R.C.P.Edin. 1894
Latchford, John, M.B.U.Dubl. 1865
L'Estrange, Edgar Francis, L.R.C.P.Irel. 1895
Lilly, Alf. Thos. Irvine, L.R.C.P.Lond. 1884
Lucas, Thos. John Rashleigh, C.B., M.B.U.Dubl. 1880
McCormack, Robt. Jas., M.D.Q.U.Irel. 1881
McCreery, Benj. Thos., F.R.C.S.Irel. 1887
Macdonald, Chas. Jos., C.M.G., M.D.R.U.Irel. 1885
McGann, Jas., L.R.C.S.Irel. 1872
Maclean, Fitzroy Beresford, M.R.C.S.Eng. 1877
Macleod, Robt. Lockhart Ross, C.B., etc., M.B.U.Glasg. 1884
McNaught, Jas. Gibson, M.D.U.Glasg. 1894
Marder, Ed. Swan, M.R.C.S.Eng. 1884
Maunsell, Chas. Albert, M.D.Q.U.Irel. 1862
Melville, Chas. Henderson, C.M.G., M.B.U.Edin. 1885
Nash, Llewellyn Thos. Manley, C.M.G., L.R.C.S.Irel. 1884
Nicholls, Hy. Michael, M.B.U.Aberd. 1898
Pennefather, Ed. Mansergh, L.R.C.P.Irel. 1901
Popham, Lionel Robt., L.R.C.P.Edin. 1889
Porter, Robt., C.B., C.M.G., M.B.U.Glasg. 1879
Powell, John Lowry, D.S.O., M.B.U.Dubl. 1899
Power, Wm. Moroney, L.R.C.P.Irel. 1897
Reynolds, Jas. Hy., V.C., M.B.U.Dubl. 1857
Riordan, Wm. Ed., L.R.C.S.Irel. 1883
Roe, Ed. Alex. Hy., L.R.C.P.Irel. 1868
Roe, Wm. Carden, L.R.C.S.Irel. 1874
Rowe, John Mary, M.C., M.B.N.U.Irel. 1912
Saw, Francis Albert, M.B.U.Durh. 1885
Sexton, Timothy Wm., M.R.C.S.Eng. 1905
Smith, Wm. Patrick, L.R.C.S.Irel. [illegible]
Spencer, Francis Hy., M.D.U.Aberd. 1876
Stables, Alex., M.R.C.S.Eng. 1884
Swan, Wm. Travers, C.B., M.B.U.Dubl. 1884
Trotter, Wm. John, L.R.C.S.Irel. 18[illegible]
Waring, Anthony Hy., D.S.O., M.R.C.S.Eng. 1895
Wellings, Bernard Wm., L.R.C.P.Edin. 1863
Weston, Alfred Fullam, L.S.A.Lond. 1899
White, Michael, M.D.Q.U.Irel. 1873
Wills, Samuel Richd., L.R.C.S.Irel. 1882
Wilson, Barnett, C.B., M.D.R.U.Irel. 1833
Woods, Chas. Greaves, M.D.R.U.Irel. 1883

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commander G. L. Buckeridge to the *Impregnable* as Senior Medical Officer. Surgeon Lieutenant Commander E. L. Markham, O.B.E., to the *Impregnable*. Surgeon Lieutenants H. E. Stephen to the *Columbine*, for Port Edgar; H. Hurst to the *Vivid*, additional (temporary).

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Majors to be acting Lieutenant-Colonels: G. B. T. Churchill (from March 12th to May 13th, 1920); W. E. C. Lunn (May 13th, 1920).

Captain A. Shepherd relinquishes the acting rank of Major (April 1st, 1919).

C. A. Davies, late Major C.A.M.C., to be temporary Major.

F. H. Scrimgeour relinquishes the rank of local Major.

Captain W. L. A. Harrison resigns his commission.

The following late temporary Captains to be temporary Captains with seniority from dates indicated: H. H. Parry (May 1st, 1920), R. A. Shekleton (February 27th, 1918), S. H. Scott (January 22nd, 1917), F. J. Power (October 27th, 1919).

H. C. Perkins to be temporary Lieutenant.

The following officers relinquish their commissions: Temporary Major D. M. Hughes on ceasing to be employed at the Edmonton War Hospital, and retains the rank of Major. Temporary Captains and are granted the rank of Major: C. Y. Ford, M.C.; (acting Major) A. E. Atkinson. Temporary Captains and retain the rank of Captain: A. S. Allan, H. W. Fox, R. B. F. McKail, J. L. Davies, G. D. MacKintosh (on account of ill health), A. A. Skeels. Temporary honorary Captain J. R. Taylor and retains the honorary rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major H. Drummond (late R.A.M.C., T.F.) to be Captain, and to relinquish the rank of Major.

Captain (acting Major) J. A. Henderson relinquishes the acting rank of Major on vacating appointment of D.A.D.M.S., August 26th, 1920 (substituted for notification in the *London Gazette*, October 13th, 1920).

Captain E. A. C. Fazan, M.C., 5th Battalion, Royal Sussex Regiment, relinquishes his commission in the R.A.M.C.(T.F.).

Captain C. Webb is restored to the establishment.

Captain G. F. Haycraft to be Major.

Captain C. B. Jones (late R.A.M.C.) to be Captain, with precedence as from June 4th, 1919.

Lieutenant D. F. Dobson to be Captain.

To be Captains: Captain F. W. Goodbody, from T.F. Reserve (precedence as from September 14th, 1914); H. P. Gabb, M.C., late R.A.M.C., S.R. (precedence as from June 1st, 1918).

P. Lloyd-Williams (late Surgeon Lieutenant R.N.) to be Lieutenant (precedence from January 31st, 1919).

DIARY OF SOCIETIES AND LECTURES.

HUNTERIAN SOCIETY, Sion College, Embankment, E.C.—Wed., 9 p.m., Mr. A. W. Sheen, C.B.E.: Oriental Sore; Mr. H. E. Griffiths: Diagnosis of Gall Stones.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Mon., 8.30 p.m. Discussion on the Surgical Treatment of Malignant Disease of the Colon introduced by Sir Berkeley Moynihan, to be followed by Sir W. Arbuthnot Lane, Mr. G. W. Mummery, Mr. G. Grey Turner, and Mr. H. W. Carson.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Mon., 5 p.m., Bradshaw Lecture by Sir Berkeley Moynihan: Surgery of the Diseases of the Spleen.

ROYAL SOCIETY OF MEDICINE.—*Section of Surgery, Subsection of Orthopaedics*: Tues., 5 p.m., Cases. *Section of Pathology*: Tues., 8.30 p.m. (at the Laboratories of the Medical Research Council, Mount Vernon, Hampstead, N.W.3). Professor L. Hill: Measurement of Capillary Blood Pressure; Captain S. R. Douglas: Serological Races of Cholera Vibrio; Dr. W. Mair: Dohler's Bodies in Scarlet Fever and Pneumonia; Mr. J. E. Barnard: Ultra-violet Light in the Differentiation of Animal Tissues; Dr. L. Colebrook: Actinomyces; Major H. W. Acton: The Gametocyte of Benign Tertian Malaria; Dr. Lovatt Evans: Determination of Blood Reaction. *Section of Balneology and Climatology*: Thurs., 5.15 p.m., Dr. Max Forges: Mud Baths and Nephritis; Dr. F. [illegible]: Combined Methods in Diagnosis and Treatment; Dr. [illegible]: [illegible] Effects of Barium Water. Members of the Section will dine together at the Welbeck Palace Hotel, Welbeck Street, W.1, at 7 p.m. Those intending to be present are requested to notify Dr. C. F. Sonntag, 80a, Belsize Park Gardens, N.W.3, by December 8th. *Section of Neurology*: Thurs., 8.30 p.m., Dr. Farquhar Buzzard: Tabes. *Clinical Section*: Fri., 5 p.m., Cases. *Section of Ophthalmology*: Fri., 8 p.m., Cases.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Victoria Infirmary: Wed., [illegible] p.m., Dr. [illegible] Mackenzie: Medical Cases.

LONDON HOSPITAL.—*Medical Unit*: Mon., 4 p.m., Dr. A. W. M. Ellis: Treatment. *Surgical Unit*: Mr. Walton, Mon., 12 noon: [illegible] of Large Intestine and Rectum. Tues., 4 p.m., Acute and Chronic Pancreatitis. Mr. Sherren: Wed., 4 p.m., [illegible] of the Stomach.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Dr. A. [illegible]: [illegible] and Differentiation of Cardiac Irregularities [illegible] Clinical Examination.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Mon., 5.30 p.m., Dr. Russell Wells: Prognosis in Heart Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.1.—Daily, except Wed. and Sat., 2–3.30 p.m., Out-patient Clinics. Mon., 3.30 p.m., Dr. [illegible]: Ward Cases. Tues., 3.30 p.m., Dr. [illegible]: Intracranial Abscess. Wed., 2 p.m. and [illegible] p.m., Lectures. Thurs., 3.30 p.m., Dr. Saunders: Tumours of Spinal Cord. Fri., 3.30 p.m., Dr. Howell: Encephalitis. Sat., 9 a.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—*Special Course*, December 6th to 18th: Syllabus for first week as printed in the *Bulletin* of the Fellowship of Medicine and Post-Graduate Medical Association. *Daily*: 10.30 a.m.–12.45 p.m., Clinical and Laboratory Methods; 2–3 p.m., Groups of Clinical Cases; 3–4 p.m., General Hospital Work; 4.30 p.m., Clinical Lecture.

SALFORD ROYAL HOSPITAL.—Thurs., 4.30 p.m., Dr. Sturrock: Referred Pain.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Dr. Morton: *X* Rays; 5 p.m., Mr. Harman: Tuberculosis of the Eye. Tues., 10 a.m., Dr. McDougal: Electrical; 5 p.m., Mr. Addison: Tuberculous Adenitis, Lymphadenoma, etc. Wed., 11 a.m., Mr. MacDonald: Cystoscopy; 5 p.m., Mr. Armour: Arthritis. Thurs., 2 p.m., Mr. Baldwin: Orthopaedics; 5 p.m., Dr. F. J. Poynton: Heart Disease. Fri., 2 p.m., Dr. Pernet: Skins; 5 p.m., Mr. Gibb: Rheumatic Eye Affections. Sat., 10 a.m., Dr. Saunders: Children; 12 noon, Mr. Sinclair: Abdominal Disease.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

7 Tues. London: Ministry of Pensions Subcommittee, 2.30 p.m.
Exeter Division, Royal Devon and Exeter Hospital, 2.30 p.m.
Wakefield Division: The Institute, Wood Street, Wakefield, 3 p.m. Dr. A. Cox, O.B.E., the Medical Secretary, will deliver an address on Some Signs of the Times for Doctors.
8 Wed. Fife Branch: British Medical Association Lecture by Mr. H. Wade, C.M.G., D.S.O., F.R.C.S., on Modern Treatment of Fractures.
London: Ministry of Health Subcommittee, 2.30 p.m.
9 Thur. London: Central Ethical Standing Subcommittee, 2 p.m.
Kent Branch: Board Room, 37, West Hill, Dartford, 3 p.m. Lord Dawson of Penn will give an address on the Report of the Consultative Council.
14 Tues. London: Medical Students Subcommittee, 12 noon.
London: Scrutiny Subcommittee, 2 p.m.
15 Wed. London: **Council**, 10 a.m.
East Hertfordshire Division, Herts County Hospital, 3 p.m.: British Medical Association Lecture by Dr. S. Alwyn Smith, O.B.E., D.S.O., of Cardiff, on the Treatment of Fractures.
17 Fri. North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15–5 p.m., Scientific Demonstrations.

JANUARY.

14 Fri. Border Counties Branch: Lowther Hall, Lowther Street, Carlisle, 3.30 p.m. Demonstration by Major Sinclair on the Treatment of Fractures.

APPOINTMENTS.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—*Senior Resident Medical Officer*: George J. Sophianopoulos, M.R.C.S., L.R.C.P. *Assistant Resident Medical Officer*: J. J. Savage, M.B.Oxf., M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

CONNELL.—At the English Hospital, Jerusalem, on November 11th, 1920, to the wife of Captain W. C. Connell, R.A.M.C., a son.

PATON.—At 10, Coates Crescent, Edinburgh, on November 22nd, the wife of Brevet Major W. C. Paton, M.C., F.R.C.S.E., I.M.S., of a daughter.

ROSE.—On November 20th, at the Nursing Home, 9, Brunswick Walk, Cambridge, to Dr. and Mrs. F. G. Rose, a daughter.

MARRIAGE.

COOPER—DOWNHAM.—On the 24th November, 1920, at West End Wesleyan Church, Morecambe, Lancs, Mervyn Clement Cooper, M.C., M.R.C.S., L.R.C.P., only son of the late Frederick Clement Cooper and Mrs. F. L. Hawkes Pott, of Shanghai, China, to Alice May, eldest daughter of Mr. and Mrs. Downham, of Morecambe.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 11TH, 1920.

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British Medical Association.

CURRENT NOTES.

Conference of Voluntary Hospital Staffs.

THE Minister of Health, at the request of a body of members of Parliament, has agreed to appoint a small committee, whose reference is:

> "To inquire into and report upon the financial position of the voluntary hospitals throughout the country, and to make recommendations."

The situation thus produced is a matter of great importance to the medical profession, and particularly to members of the staffs of voluntary hospitals, as was pointed out by Dr. William Collier of Oxford in a letter in the BRITISH MEDICAL JOURNAL of December 4th, 1920, p. 871. Following the suggestion made in that letter, the British Medical Association has resolved to call a conference of representatives of the staffs of voluntary hospitals at 11 a.m. on Tuesday, December 21st, in London, and not on the 16th, as suggested last week. The Medical Secretary has written to the honorary secretaries of the staffs of the larger voluntary hospitals in England and Wales inviting each to nominate a physician and a surgeon on the staff to represent it at the conference. The questions to be discussed will include: (*a*) "What is the general opinion of members of hospital staffs as to how the present financial difficulties of voluntary hospitals should be met?" It may also be desirable to make arrangements for witnesses to give evidence before the Government Committee. (*b*) "What should be the attitude of members of hospital staffs in the event of decisions being taken which would lead to patients paying, in part or in whole, the hospital maintenance fees, either individually, or by means of some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods?" In particular it should be considered in what circumstances it would be necessary to insist upon a payment being made to the members of the staffs for professional services.

Motions for the agenda should be received by the Medical Secretary not later than the first post on Tuesday, December 14th. Further particulars will be given in our next issue.

The Ministry of Health Bill: A Central Professional Committee.

It will be remembered that one of the principal points arising out of the discussion at the deputation from the British Medical Association to the Minister of Health on November 1st was the desire expressed by Dr. Addison to see a body set up, representative of the whole medical profession, with which he could confer on all Ministry of Health matters. (A full report of the proceedings appeared in the SUPPLEMENT of November 6th, 1920.) The Ministry of Health Committee of the Association gave long consideration to this question on November 16th, and the matter was further considered by a subcommittee which met on December 1st. It is hoped to issue in the near future a report giving the Association's views as to what should be the composition of the body suggested by Dr. Addison.

Status of the Insurance Acts Committee.

The recent annual Conference of Representatives of Local Medical and Panel Committees rejected the customary annual motion proposing that the Insurance Acts Committee should be abolished and its place taken by a committee composed entirely of nominees of Panel Committees. Only fourteen votes were recorded in favour of the motion, four of which were given by the London representatives. Following that, the Conference rejected with the same emphasis (sixteen voting in favour of it—four of these being London votes) a motion that an independent and directly elected negotiating body be constituted in place of the Insurance Acts Committee. Notwithstanding that the committees represented at the Panel Conference thus decisively rejected the idea of substituting another body for the Insurance Acts Committee, the London Panel Committee has since pressed the same proposal upon Panel Committees throughout the country. Resolutions of the following kind (though varying, of course, in phraseology) have been passed in support of the Insurance Acts Committee by a number of Panel Committees, including those of Birmingham, Newcastle-on-Tyne, Essex, West Riding of Yorkshire, West Ham, Somerset, Herefordshire, and Surrey:

> (*a*) That they are satisfied that the Insurance Acts Committee, as at present constituted, does satisfactorily represent insurance practitioners, and does this the more effectively because it contains practitioners other than insurance practitioners. Also, that the establishment of such a body as is suggested by the London Panel Committee would not be essential and would be injurious to their interests.
>
> (*b*) That the calling of such a conference as is suggested could only have the effect of weakening the position of insurance practitioners in future negotiations with the Ministry of Health.
>
> (c) That the interests of insurance practitioners are not separate from those of the profession generally, and that therefore the Insurance Acts Committee ought not to be composed only of insurance practitioners.
>
> (*d*) That the policy of the London Panel Committee in standing outside the Insurance Acts Committee is short-sighted, and in practice will only result in damaging the interests of practitioners in the metropolitan area.

Prompt Information to the Association.

Members are reminded of the importance of giving the Honorary Secretary of the Division within which they reside early notice of disputes or incidents in their neighbourhood which affect their professional interests or those of the profession in the area. Such disputes or incidents may, as recent experience has shown, lead to the tender of advertisements for publication in the JOURNAL, and it is only by giving timely notice to the Association in such matters that members can make certain that the machinery of the Association shall be effectively used to safeguard their interests. In any case of urgency it will be well for the member to communicate not only with the Honorary Secretary of the Division, but also with the Medical Secretary of the Association, 429, Strand, W.C.2.

Payment of Part-time Prison Medical Officers.

Some twelve months ago the part-time prison medical officers sought the assistance of the British Medical Association with a view to securing an increase of pay. In November, 1919, a letter was addressed to the Home Secretary asking if he would receive a deputation in order that the Association might discuss the question with him. The Home Secretary replied that he would be glad if the Association would set forth its case in a short memorandum. A memorandum was accordingly drawn up giving reasons why there should be an increase in pay, or at least a war bonus. It was also pointed out that a fee of two guineas should be paid to the medical officer for confinements taking place in prison, and that there should be a guinea fee for reports on the physical and mental condition of prisoners. On June 25th, 1920, the Home Office informed the Association that an increase of 30 per cent., dating from April 1st, 1920, had been made in the pay of those part-time prison medical officers whose salaries had not been raised during the war; the letter also stated that the other points in the memorandum were receiving consideration. The following letter has been received this week from the Permanent Under-Secretary, Sir William Troup:

> "Having laid before the Secretary of State your letter of the 16th ultimo regarding the remuneration of the medical practitioners employed at H.M. Prisons who are not full-time officers, I am directed by him to acquaint you that he has obtained Treasury sanction for the payment to these gentlemen (in addition to their salaries of a fee of 2 guineas for each confinement they attend, and a fee of 10s. 6d. for each report they are required to make by a court of law, if they are not called as witnesses nor receive fees as such from the court. The scale of salaries was also improved after the receipt of the memorandum you forwarded to this office on 24th December last, and before the grant of the 30 per cent. bonus."

District Medical Officers' War Bonus.

In October last the Islington district medical officers sought the aid of the British Medical Association in persuading the guardians to grant them a war bonus. The only increase given these officers since 1914 was a bonus of 10 per cent. On receiving an assurance from the medical officers that it could be shown that their work had not decreased, a letter was written to the Board of Guardians by the Medical Secretary, expressing surprise that the board had not given its medical officers the bonus given to all its other officers, and asking that the matter should be brought before the guardians. The letter remarked that most of the metropolitan boards were believed to have given the bonus recommended by the Ministry of Health without any discrimination between medical officers and other officers. It pointed out that by instruction of the Association medical practitioners had raised their private fees by not less than 50 per cent., and that a public body could scarcely consider a bonus of 10 per cent. sufficient to cover the increased cost of everything so far as its medical officers alone were concerned; moreover, the likelihood of considerable unemployment during the coming winter would add much to the work of the medical officers. The Islington Board of Guardians was accordingly urged to give medical officers the same bonus as that granted to its other officers. To this letter there was no reply, but on November 26th one of the medical officers concerned wrote to say that a bonus of 33⅓ per cent. had been granted, and that it was to date from October 1st. He expressed his gratitude to the Association for its assistance, and stated that the Medical Secretary's letter had carried great weight with the guardians.

Bradford Advisory Medical Committee.

Dr. W. N. West Watson, Honorary Secretary of the Bradford Division, informs us that an Advisory Medical Committee for Bradford was constituted on November 29th. Written nominations were called for from the whole profession of the city; a postal vote was then taken on these nominations, and it is satisfactory to learn that 85 per cent. of the practitioners voted. The election resulted in the appointment of the following representatives:

Consultants.—Mr. B. Hughes, Dr. G. H. Oliver, and Mr. J. Phillips.

General Practitioners.—Drs. J. F. Allan, F. Beetham, J. B. Dunlop, R. A. Lankester, A. Manknell, H. Shackleton, J. V. S. Taylor, W. N. West Watson, J. Wherry Willson.

Whole-time Officers.—Dr. W. Campbell and Dr. H. Vallow.

So far as we are aware, this is the first local medical advisory committee to be set up, and it is worthy of note that all but two of those elected are members of the British Medical Association.

Work of a Military Nature and Rebate of Income Tax.

A retired I.M.S. officer, who was employed as a civilian at a military hospital during the war, had applied in vain to the Commissioners of Inland Revenue to be taxed on his pay for this work at the army rate instead of the ordinary rate. Feeling that, as an individual, he had exhausted all the methods open to him, he turned to the British Medical Association for help. A letter was written on his behalf pointing out that, on a ruling given by the Inland Revenue Commissioners to the Association, he appeared to be entitled to the lower rate of tax. Although he subsequently received a letter purporting to give a final decision that the rebate could not be granted, the Association has now been informed by the Commissioners that the claim is admitted and that the amount of tax overpaid will be refunded.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH.

A MEETING of the chairmen and honorary secretaries of the Divisions of the Metropolitan Counties Branch was held at the offices of the Association on November 25th, to consider suggestions for making the work of the Branch and the meetings of the Divisions more attractive.

Mr. BISHOP HARMAN, who was in the chair, said that in no other profession were the individual members keener on their work, but doctors could scarcely claim the palm for enthusiasm with regard to its social side. In this respect the provinces stood higher than London. London was a difficult place, perhaps the most unsociable and unneighbourly city in the world. It was to meet that difficulty, to break down isolation and cultivate the social and communal aspect of the profession, that the meeting had been called; with every measure of success attained, by so much would be enhanced the value of doctors to the country. It was the object of the British Medical Association to gather up the scattered profession into a compact whole, to make weak units strong by mutual alliance, to collect the aspirations of the many into a well-balanced symphony. These aims could only be secured by local effort through the Divisions, and it followed that the organization of the Divisions was of first importance. There must be an energetic working executive, a chairman of sound judgement, and above all a secretary who delighted in the work of his office. In every Division there were enough of the type of men needed if one looked for them. The work of a Division was threefold: (1) Clinical meetings—these were the best means of establishing good relations between members and of adding to their numbers; if these were a success, the other parts of the work would follow easily. (2) Domestic economy—this included social intercourse; but in addition provincial Divisions had done much to establish co-operation between members, and in this respect secretaries might well study the Sheffield scheme for co-operative work during holidays or sickness of members. (3) Political economy—here the Association was daily doing battle for the rights of its members and for the profession at large. Far reaching questions were involved, affecting the present-day doctor to some extent and his successors much more.

Dr. J. A. PERCIVAL BARNES contended that the practitioners in London were, for many reasons, in a peculiar position, and moved the following resolution, which was seconded by Dr. F. C. MARTLEY:

> That, in the opinion of this conference, the organization of the Metropolitan Counties Branch should be reviewed, with the intent of making its action on behalf of the Divisions more rapid and efficient.

Dr. G. E. HASLIP welcomed the motion. He contended that the position of practitioners in London was not appreciated by the Central Council and could not be thoroughly understood by anyone without actual experience of medical practice in the Metropolis and of its isolation. It was desirable, he believed, to have a real live governing body in London, such as a London Committee, constituted on the lines of the Scottish Committee of the Association. Such a Committee, being a Standing Committee of the Central Council, would report direct to that Council at regular intervals, and so the Council would be kept in constant touch with the practitioners in London.

Mr. E. B. TURNER thought that London should take its proper place in affairs generally, and particularly in the Association. The Metropolitan Counties Branch comprised nearly one-seventh of the membership of the entire Association. He would like to see the mode of election to the Branch Council changed, so that it would be more difficult—and consequently a greater honour—to become a member of the Council for the metropolitan area, and that all classes of practitioners should be represented on the Council.

Mr. W. MCADAM ECCLES stated that at present the Branch Council was representative of the Divisions of the Branch, but he would like it to be representative of the various types of medical men in London.

Dr. H. B. BRACKENBURY thought that there was something to be said for making a London branch of the Association and not a branch which included various portions of the surrounding counties; but the definition of London for this purpose would need to be very carefully made. The whole Association must be organized on common lines; but whether this should be on a democratic or an autocratic basis ought not to be decided hastily. He did not want a London Committee set up comparable to the Scottish or Irish Committees. Personally, he was in favour of the democratic basis being continued; if the Metropolitan Counties Branch was too large it could easily be divided.

Dr. F. W. GOODBODY thought that a great drawback was the size of some of the London Divisions, and that they should consider the desirability of having a larger number of smaller Divisions.

Dr. C. O. HAWTHORNE thought the conference could spend its time more profitably by dealing with matters other than the constitution of the Association—for example, the stirring up of members of Divisions to take active interest in the work of the Association. He recognized the sincerity of those who suggested the formation of a London Committee, but he asked what practical difference would there be between such a committee and the Branch Council. If the Association was to have democratic interest and control, matters must proceed on the lines of law and order, which were necessarily slow. Members who read the JOURNAL would find many examples of what the Association did to help the profession. The setting up of a London Committee would not cause members to read the JOURNAL; the only way to increase the membership of the Association was by the individual efforts of its members.

In reply to Dr. CHRISTINE MURRELL, the CHAIRMAN and Dr. HASLIP explained what would be the effect under the constitution of the Association if a London Committee were set up.

The motion of Dr. Barnes was then put to the meeting and carried, and a rider, proposed by Dr. HASLIP and seconded by Mr. TURNER, was carried as follows:

> "That this meeting requests the Council of the Metropolitan Counties Branch to consider whether the time has not arrived for the formation of a London Committee which should be a Standing Committee of the Central Council of the Association."

A rider, proposed by Dr. BRACKENBURY and seconded by Dr. HAWTHORNE—"that the organization of the Metropolitan Counties area by means of Branch and Divisions be not interfered with"—was lost.

Camberwell Division.

A SPECIAL general meeting of the Camberwell Division was held on November 26th at the Camberwell Infirmary, when Dr. A. F. HEALD was in the chair. Dr. W. W. King Brown was elected Honorary Secretary of the Division. The memorandum D.5 of the Association was discussed, and answers to the questions contained therein were formulated, agreeing mainly with the suggested replies of the Council and Representative Body. It was decided to hold scientific meetings on the first Wednesday in January, March, and May next, and it was announced that Dr. Herbert French had kindly consented to read a paper on January 5th on "Some medical points of practical utility." These meetings will be held at Camberwell Infirmary at 9 p.m.

North Middlesex Division.

AT a special meeting of the Executive Committee of the North Middlesex Division, held on November 19th, the following resolution was passed:

> "That in the event of the post of medical officer of health of the Municipal Borough of Hornsey being offered at a salary of less than £1,000 per annum, the BRITISH MEDICAL JOURNAL be requested to decline the advertisement and to take all necessary steps to prevent the post being accepted."

⁂ We understand that the Hornsey Town Council was induced to offer a salary of £1,000 per annum, rising to £1,250, for this post. It may be assumed that this was largely because of the action taken by the North Middlesex Division.

NORTH OF ENGLAND BRANCH.

Gateshead Division.

THE annual dinner of the Gateshead Division—the first since 1913—was held on November 27th in the Turk's Head Hotel, Newcastle, when Dr. F. S. LEECH presided. The guests of the evening were Dr. R. A. Bolam and Dr. Alfred Cox. Twenty four sat down to dinner.

Dr. COX apologized for having to temper business with pleasure. He impressed on the members the necessity of individual attention to the Association's work and to their own interests, which he pointed out were identical. If the members of the profession were to retain their independence they must not divide their ranks by having a multitude of small societies, each with its own self-elected officials, but must amalgamate into one great whole. They must have one society, representing the entire profession, with whom the Government could negotiate. He outlined the Bradford Hospital scheme, and drew attention to the fact that all such rate-aided schemes, child welfare centres, school clinics, etc., could and should be under the aegis of the local profession. The Division must, however, hold regular meetings, and practitioners must attend them and transmit their decisions to headquarters. Dr. Cox made a most forceful and persuasive speech, and was heartily cheered.

Dr. BOLAM, in a genial speech, agreed with what Dr. Cox had said. He warned the members that the country was in a bad way financially, and that in the near future the Government would look round for some "economy stunt," and most probably would drop on the doctors as being the least likely to make any organized opposition.

Other members spoke, and various schemes were proposed for obtaining new members. The CHAIRMAN pointed out that Dr. Cox's appeal unfortunately did not reach the men who most required the stimulus, but that, if each one present did his duty, they might individually stir up the laggards' interest in the affairs of the Association.

Stockton Division.

DR. ALFRED COX, Medical Secretary of the Association, visited Stockton on November 25th, and addressed a meeting of medical practitioners from the Divisions of Cleveland, Stockton, and Hartlepool. His subject was "Some signs of the times for doctors." Dr. LYLE, C.B.E., presided.

Dr. COX, reviewing the growth of various societies and unions in recent years, said that their progress, success, and the results achieved were in direct proportion to their degree of organization. The more efficiently organized a body was, the stronger and more able it was to secure a hearing and press and enforce its demands. The British Medical Association was the most democratic organization in the kingdom, and was proud of its record in looking after the interests of the profession. He outlined some of the activities of the Association towards legislation past and present, and showed what a potent factor the Association was in championing the case of the individual practitioner no less than in representing the profession as a whole. The ideal thing was that the medical profession should be represented in all negotiations with the Government and other authorities by one body only, and there was no other body that was able to represent a majority of the profession except the British Medical Association. In conclusion, the speaker advocated a keener interest in the work of the Association by Divisions, which could always rely on headquarters for guidance and help should occasion arise.

Among other matters, Dr. Cox was questioned as to the attitude of the British Medical Association towards the Medico-Political Union, and he made an exhaustive reply.

Dr. DICKIE (Middlesbrough), who moved a vote of thanks—cordially given—suggested that the Association might perhaps with benefit cultivate a more conciliatory attitude towards the Medico-Political Union, and meantime try and form a working basis for future co-operation.

Tyneside and South Shields Divisions.

A JOINT meeting of the Tyneside and South Shields Divisions was held in the Town Hall, North Shields, on November 30th, with Dr. FRASER in the chair. The meeting was called in order that Dr. Cox might meet both members and non-members in the two Divisions.

Dr. COX gave an address in which he outlined some of the questions which concerned the medical profession and schemes upon which the Divisions would be called upon to give their opinion, and he tried to impress upon those present the necessity for organizing themselves, in order that the Central Body might be enabled to take such action as would be in the best interests of the profession as a whole. He pointed out that there were only about 52 per cent. of the practising profession who were members at present of the British Medical Association and he suggested that propaganda work might be undertaken in order to enlist the sympathies of non-members, so that they might become associated with the work of the local Division.

At the close of his address Dr. Cox invited questions. A considerable amount of discussion centred round about the Report of the Consultative Council on medical and allied services, and Dr. MARTIN pointed out that in connexion with Dr. Bolam's paper, which appeared in the BRITISH MEDICAL JOURNAL of November 27th, it was suggested there that junior surgeons of the teaching schools might be installed as operators in the municipal hospitals that might be established in the neighbourhood. Dr. Martin thought that such hospitals should be staffed by the local men of the district who were willing to undertake and were capable of doing such surgical work. Dr. Cox said that the paper which had appeared was, he thought, put forward with a view to inviting criticism and opening discussion in the JOURNAL upon the opinions expressed in the

Consultative Council's report, and he urged the speaker to put forward his own views and criticisms in order to elicit the opinions of different sides regarding the question. Dr. Cox also stated that he hoped shortly there might be a conference of representatives of surgeons and physicians from practically every hospital in the United Kingdom in order that the British Medical Association might get a consensus of opinion and thus be able to formulate a policy upon the question which would be helpful to the Ministry of Health.

With reference to the organization and propaganda work which might be done, various members spoke and put forward views which might be helpful for the purpose of recruiting. Dr. HARRISON suggested that if regional medical officers could be located at different parts of the country who could fulfil the functions of an intermediary between the Central Body and the local Divisions, this would tend to increase the membership and make the British Medical Association a more powerful body. Dr. COX stated that this form of assistance had had consideration, but the difficulty was that many of the questions that would arise for consideration by local Divisions and the regional medical officers would be of such a character that they could only be answered easily by a man direct from the Central Body. For this reason the central staff had been strengthened of late in order that advice and help might be given at any time to a Branch or Division if required direct from the headquarters staff.

On the invitation of the Chairman, Dr. SHEPHERD of South Shields proposed a vote of thanks to Dr. Cox, and Dr. MARTIN of North Shields seconded the proposition, which was duly put and carried.

UGANDA BRANCH.

A MEETING of the Uganda Branch was held at Kampala on July 22nd. Dr. J. C. Baker was elected a member of the Council in succession to Dr. J. H. Cook retired. The proposals of the British Medical Association regarding federation were discussed, and the meeting voted in favour of federation, but decided that the question should be further considered at the next general meeting in January, 1921, in the light of the decision of the Annual Representative Meeting in Cambridge, whose report had not then been received. Dr. Reford was appointed to represent the Uganda Branch at the annual meeting at Newcastle in 1921. It was decided to hold meetings of the Branch at least once in two months. Dr. W. L. Peacock was appointed honorary secretary and treasurer in succession to Dr. J. Hope Reford, who was asked to continue the duties till Dr. Peacock's arrival at Entebbe in October.

WILTSHIRE BRANCH: TROWBRIDGE DIVISION.

THE annual meeting of the Trowbridge Division was held on October 27th, when the following officers were elected:

Chairman: Dr. T. W. Locket. *Vice-Chairman:* Dr. F. F. Bond. *Honorary Secretary:* Dr. R. Wright

YORKSHIRE BRANCH: HARROGATE DIVISION.

A MEETING of the Harrogate Division was held on November 11th, when Dr. NIMMO WATSON was in the chair.

The following officers were elected for the year:

Chairman: Dr. C. H. Greenwood, Ripon. *Vice-Chairman:* Mr. Herbert Frankling *Honorary Secretary:* Dr. Gibson. *Representative in Representative Body:* Dr. Greenwood.

The Report of the Consultative Council was carefully considered, and the questions in D.5 were answered.

Association Notices.

MEETING OF COUNCIL.

THE next meeting of Council will be held on Wednesday December 15th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—A meeting of the Border Counties Branch will be held at Carlisle on Friday, January 14th, 1921, when Major Sinclair will give his Demonstration on the Treatment of Fractures, in the Lowther Hall, Lowther Street, at 3.30 p.m. The various methods of treatment will be shown, and a lantern demonstration given. There will be a dinner of the members in the evening.

KENT BRANCH: ROCHESTER, CHATHAM AND GILLINGHAM DIVISION.—A meeting of this Division will be held at St. Bartholomew's Hospital, Rochester, on December 14th, at 4 p.m., when cases will be shown and demonstrated.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.—A meeting of the East Hertfordshire Division will be held at the Hertford County Hospital on Wednesday, December 15th, at 2.30 p.m. A British Medical Association Lecture will be delivered by Dr. S. Alwyn Smith, D.S.O., M.C., of Cardiff, on "The Treatment of Fractures," at 3 p.m.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—A meeting of the Division will be held at 8.30 p.m., on Tuesday, December 14th, in the Library at 11, Chandos Street. Agenda: Election of six representatives on Branch Council; nominations should reach the Honorary Secretaries by December 13th. Discussion on "multiple door plates," to be opened by Dr. [illegible] Cole.

INSURANCE.

CORRESPONDENCE.

The London Panel Committee.

SIR,—The criticisms that have appeared in the medical press of the action of the London Panel Committee in refusing to take part in the election of the Insurance Acts Committee of the British Medical Association indicate that the Committee's motive for this course has been misunderstood.

In view of the approaching elections of Panel Committees in most districts (although not in London, since an election took place there last summer), it appears desirable that the position of the London Panel Committee should be made clear, so that individual practitioners who share the views of the majority of London men may support candidates of like opinions to represent them on their Panel Committees.

The London policy is quite simple. It being agreed that the conditions of service and terms of remuneration under the Insurance Acts can only be satisfactorily arranged by the method of collective bargaining, it is contended that it is right that the body to whom is entrusted the duty of conducting such bargaining should consist entirely of persons directly elected by, and solely responsible to, those on whose behalf they are negotiating.

The action taken by the London Panel Committee in determining not to be represented on the Insurance Acts Committee was not decided upon without due consideration. The justification for the action is not that any exception is taken to the personnel of the Insurance Acts Committee, but to its constitution. The London Panel Committee are of opinion that the body negotiating with the Government on behalf of the panel practitioners should be elected by the panel profession, and exception is taken to the fact that six members of the Insurance Acts Committee are elected by the Representative Meeting, and these six, together with the four *ex-officio* members of the British Medical Association Committees, in reality constitute the Insurance Acts Committee. These ten may co-opt the representatives of Local Medical and Panel Committees, and whilst in actual practice they have always done so, yet the fact remains that the co-option is permissive. But, even if we admit that a compulsory co-option might be better, there still remains the fact that ten members do not directly represent, nor are they directly elected by, panel practitioners through their Panel Committees. The view of the London Panel Committee is that the negotiating body should be the executive of, and elected by, the Conference of Local Medical and Panel Committees; that each member of the negotiating body should derive his authority from that Conference. The inclusion on a negotiating body of persons, however competent in themselves, who are not directly elected, is liable to lessen the confidence of those who are to be bound by the conclusions arrived at, and thereby to lead to the risk of a repudiation of the terms agreed upon. The London Panel Committee are also of opinion that the cost of such conference and of its executive should be borne by practitioners through their Panel Committees. It is felt that the expense should in no part be borne by any outside Association or Union, and that under no circumstances should money, so allocated, be used for any other purpose than that of safeguarding the interests of the panel profession.

It has been represented that this policy might be construed as ungrateful or hostile to the British Medical Association. The London Panel Committee believe that a majority of their members are loyal members of the Association, who regard it as in the best interests of the Association that it should be free to voice the views of all classes of the profession, and should not be open to the criticism that it is unevenly dominated by the interests of insurance practitioners or of any other section of its members.

The London Panel Committee hope that this view, which it regards as of great importance to the future of insurance practice, will be given the prominence it deserves at the forthcoming election of Panel Committees, and that candidates will be selected and supported who are in agreement with this policy.—We are, etc.,

H. J. CARDALE,
Chairman.
W. COODE ADAMS,
Vice Chairman.
LAURISTON E. SHAW,
Treasurer.

R. DUNSTAN,
E. A. GREGG,
Members of Committee.
R. J. FARMAN,
Secretary.

Staple House, Chancery Lane, W.C.2.
Dec. 6th

BRITISH MEDICAL ASSOCIATION.

FOUNDED 1832.

Patron: HIS MAJESTY THE KING.

THE British Medical Association is established for the promotion of the Medical and allied Sciences and the maintenance of the honour and interests of the Medical Profession. It has Divisions and Branches throughout the British Empire. There are 43 Branches, with 215 Divisions, in the United Kingdom, and 44 Branches, with 58 Divisions, in the British Empire Overseas.

Any Medical Practitioner registered in the United Kingdom under the Medical Acts, any Medical Practitioner who does not reside within the area of any Branch of the Association and who though not so registered is possessed of any of the qualifications described in Schedule (A) of the Medical Act, 1858, and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom who is so registered or possesses such medical qualification as shall (subject to the By-laws) be prescribed by the Rules of the said Branch, is eligible to become a Member of the Association. Members of the Association are, *ipso facto*, Members of the Division and Branch in the areas of which they reside.

The liability of Members is limited.

The annual subscription, which is due in advance on January 1st in each year, and entitles the Member to all the ordinary privileges of Membership of the Association, including Membership of the Division and Branch in which he or she resides, and the weekly supply of the *British Medical Journal* post free, is as follows:—

Member resident in United Kingdom	**3 Guineas.**
(In the case of newly qualified practitioners elected within two years of registration, 1½ guineas yearly, up to end of 4th year after registration.)	
Member resident in a Branch outside United Kingdom	**2 Guineas or more.**
according to the Rules of the various Branches.	
Member resident outside United Kingdom where no Branch is organised	**2 Guineas.**

If you desire to become a Member of the Association, please fill in and post this form to the Association, 429, Strand, London, W.C. 2, and forward a cheque or postal order for your first subscription.* Cheques or postal orders should be crossed, and made payable to "The British Medical Association." Election is ordinarily by the Council of the Branch in the area of which the Candidate resides, but in the case of Candidates resident outside the United Kingdom (if no local Branch is organised) is by the Council of the Association. In the case of most Branches, no signature, other than that of the Candidate, is required. For election by the Council (as above), 3 approving signatures are ordinarily required. Under no circumstances are approving signatures necessary in the case of Officers of the Royal Navy, Royal Air Force, Army, Indian Medical Service or Colonial Medical Service, on the Active List.

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APPLICATION FOR ELECTION.

To the British Medical Association,
429, Strand, London, W.C. 2.

I, ____

(Full Christian and Surnames. Please write very distinctly.)

a Registered Medical Practitioner, am desirous of being, and hereby apply to be elected a Member of the British Medical Association, and I agree, if elected, to pay the subscription and to abide by the Articles and By-laws of the Association for the time being in force, and the Rules of the Division and Branch to which I may at any time belong.

Signature ____

Titles ____

Home Address ____

____

Date ______________________, 192 .

Additional Forms of Application for Membership may be had on application to the BRITISH MEDICAL ASSOCIATION, 429, Strand, London, W.C. 2.

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* Applicants for Membership resident in the areas of Oversea Branches should send their applications and remittances to the Honorary Secretary of the Branch if his or her address is known to them, failing which the application and remittance should be sent to the Head Office, 429, Strand, London, W.C. 2.

Fold Here.

Stamp.

Fold Here.

THE MEDICAL SECRETARY,
BRITISH MEDICAL ASSOCIATION,
429, STRAND,
LONDON, W.C.2.

Fold Here.

Please Detach Here.

Vaccination Fees.

SIR,—At a recent inspection I brought up the question of increase in fees for vaccination, and was informed by the inspector that the Minister of Health was open for any consideration of the matter.

I would point out that in the case of the 2s. 6d. fee this has been raised to 5s. In other words, the urban public vaccinators are getting a double rise for their 2s. 6d. work. But the country practitioner has been entirely forgotten and has no increase whatsoever. I may add that I have gone recently six and seven miles for a 7s. 6d. fee, which includes a subsequent journey a week later.

It is the question of locomotion which hits the country practitioner hardest in these days, and if the Ministry of Health considers it is worth double to vaccinate in one's surgery, it is surely worth double for vaccination when mileage is taken into account.—I am, etc.,

Heathfield, Nov. 27th. THOMAS BURFIELD.

Panel Record Cards.

SIR,—On January 1st next, I believe, the doctors with panels are to start keeping record cards. Being anxious to know what was coming, I went down to Kingston and interviewed the clerk to the Insurance Committee of Surrey, and he was most courteous and painstaking, and showed and explained to me all he could.

First, the record cards are shaped like a stiff paper bag, "but not half stiff enough." There are particulars back and front, some details on each side. The doctor is supposed to write in, or see that they have already been written in; these are mostly vexatious details that anyone could have furnished. Next, 1,000 cards take up a space 5 ft. long 7 in. high and 5 in. wide. As I have 1,230 panel patients, this will mean 6 ft. × 7 in. × 5 in. I cannot have a drawer 6 ft. long, so it looks like having a cabinet with six drawers each 1 ft. deep, 7 in. high, and 5 in. wide. Such a cabinet made of deal would cost at least £7 or £8; surely the Ministry is not going to put us to such an expense. Next, every patient's card will have to be found in one of the drawers marked and replaced, in its proper alphabetical order, each time the patient calls. This is some order with 1,230 cards, and taking a two hours' session night and morning, the records will take up more time than the patients, and all this for records of cases which are most of them trivial cases, when once diagnosed.

My own opinion is that those responsible for the framing of the record cards are not going to use them themselves. I consider them cumbersome, flimsy, and useless. The old card was a king to it, and, though useless as a record, much more manageable. The present one is quite unmanageable, both in its size and its contents. Fancy having to handle 1,230 cards daily, when you are not likely to see even half that number of panel patients individually. I sincerely hope that the Ministry of Health will not inflict the medical profession with such a monstrosity. It would be laughable if it were not so serious a matter.—I am, etc.,

Wallington, Surrey, Nov. 26th. A. Z. C. CRESSY.

LOCAL MEDICAL AND PANEL COMMITTEES.

COUNTY OF LONDON.

THE London Local Medical Committee, at its November meeting, adopted recommendations from a subcommittee to the effect that a radical cure for two large inguinal herniae, an operation for acute appendicitis, and an operation for cyst of the knee, were not services which could, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary competence and skill.

It was agreed that the Secretary to the Committee should be paid a minimum salary of £1,000 per annum, rising by £100 a year to £1,400.

The Chairman, Dr. Cardale, proposed a resolution maintaining that the allocation scheme should be amended by omitting Clause 4, subsection 4 (which states that every insured person shall have at least one month's notice of a proposed assignment, the notice to include a statement as to his right during that month to select a practitioner or institution or apply for permission to make his own arrangements). He believed the subsection would lead to many administrative difficulties; within three months an insured person should be definitely allocated to a doctor, and there was no reason why he should be given another month. The resolution was carried.

The Chairman stated that a deputation from the Committee had been received by the Medical Benefit Subcommittee, when the "datum line" was discussed. It was agreed that it was not desirable to fix any datum line for individual prescriptions, and that for investigations extending over a quarter of the year the datum line be fixed at 40 per cent. above the areal average, such datum line to be reviewed at the end of three months. The Ministry of Health had fixed the line above which all prescriptions should be investigated at 25 per cent. above the average for the area. The deputation pointed out that this would be an impossible task for London. With regard to individual prescriptions, it was obvious that certain very expensive prescriptions were perfectly justified, and should be left as a matter for discretion.

WARWICKSHIRE.

A MEETING of the Warwickshire Panel and Local Medical Committee was held on November 18th at Leamington, when Dr. H. Tibbits (Warwick) was unanimously appointed Chairman, in succession to Dr. J. Orton. The recent circular (R.M.1) on the powers and duties of the regional medical officers gave rise to considerable discussion in regard to the dangers of disclosing confidential information to third parties. The position of a doctor who was required to disclose to the regional medical officer information regarding his patient's health where the approved society had referred the case for investigation was thought to be a doubtful one; and this also applied where, consequent upon the issue of a "vague" certificate, the practitioner was required to impart further information without the patient's authority. It was decided to ask the Ministry to provide for the indemnification of practitioners in these circumstances. The local profession were recommended loyally to observe the recommendations of the Interdepartmental Committee on record-keeping, but passed a resolution that only a first and last occasion of consultation where a "trivial" case was involved should be recorded; and also that no cost in respect of transmission ought to fall on the doctor. The recent proposals of the Ministry that a local "datum line" should be arranged, above which analytical details of all prescribing should be furnished by the pricing bureaux to the Panel Committees for investigation, were strongly opposed. Alternative procedure was agreed, whereby all prescriptions considered by the technical superintendents of bureaux to be apparently excessive—judged by ordinary standards and without reference to cost—should be referred to the Panel Committee. It was considered that there could be no possible objection to the exercise of this primary discrimination by the technical officer of the bureau, inasmuch as any person qualified to dispense is at once aware of a prima facie abnormality in a prescription which should call for professional notice. The objection to the "datum line" proposals was based upon the misconceptions likely to be spread as to the standard of prescribing open to practitioners. The London proposals for secession from representation on the present Insurance Acts Committee were unanimously allowed to lie on the table. Great objection was taken to the prospect of a Christmas election of the Panel Committees, and doubts were expressed as to whether, where the schemes required meetings to be convened for the purpose of voting, the necessary quorums would be obtained.

COVENTRY.

THE Coventry Panel and Local Medical Committee met at Coventry on November 25th under the chairmanship of Dr. W. H. Lowman. The meeting was addressed by Dr. T. M. Carter, the regional medical officer of the area, on the subject of Memorandum R.M.1, recently issued. Grave doubts were urged by members as to whether the defence of privilege at law would protect practitioners who were required to impart confidential information to the Ministry by the referee when examining cases referred to him by an approved society, but the general provisions of the scheme were regarded as acceptable. The recent procedure laid down by the Ministry in connexion with the scrutiny of prescribing received strong opposition. It was generally regarded by members that the adoption of a "datum line" over which all scripts should be scheduled as prima facie in need of review would operate to the detriment of patients by reason (*inter alia*) of the expectation that many doctors would tend to prescribe only the cheapest drugs, and would hesitate to incur expenditure in excess of the datum line. Alternative proposals had been circulated by the West Midland Pricing Committee by which all prescriptions considered by the technical officer of the bureau to be abnormal—judged without reference to cost but by ordinary standards—were to be referred to the Panel Committee for scrutiny. This alternative was approved by the meeting, the proposals of the Ministry being strongly condemned. A recent general meeting of the medical profession of the area had recommended that a voluntary levy should be adopted as the basis of the Panel Committee's administrative income instead of, as hitherto, the allocation of a sum approved by the Ministry forming a first charge on the local practitioners' fund. This request was unanimously endorsed, the Committee adopting the attitude that no account should be required to be given as to their expenditure except to their constituents. The request from the London Panel Committee to consider secession from representation on the Insurance Acts Committee was unanimously negatived.

BUTE.

THE Bute County Panel Committee has drawn up the following memorandum arising out of the report of the Consultative Council on Medical and Allied Services:

Memorandum on Health Centres.

The Bute County Panel Committee, having had a lengthy experience of the working of a cottage hospital, desires to express its opinion as decidedly in favour of the establishment of Primary Health Centres. They would, the Committee thinks, help to improve the standard of practice as well as enable general practitioners to undertake communal services. The health centre or hospital should be available for all classes of the community, and all classes should pay more or less for their maintenance. The practice of the hospital should be open to all the practitioners in the neighbourhood and they should charge fees for attendance. The administration and general superintendence of the hospital should be left as much as possible in the hands of the practitioners themselves. Advantage might be taken of existing cottage hospitals which could be subsidized on condition that they undertook certain work.

In Scotland, where no place is very far from a university town, it would seem unnecessary to establish Secondary Centres, at least in the meantime. When consultation is desired considerable latitude should be given, both to the patient and to the doctor, in the choice of a consultant. If consultants were only to be obtained from Secondary Centres in a county town, this would limit the choice.

J. STEWART HALL,
Honorary Secretary.

November 27th, 1920.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Surgeon Commander A. B. Marsh to the *Victory III* additional for three months' special post-graduate course. Surgeon Lieutenant S. R. Johnston to the *Cormorant*. Surgeon Lieutenant (temporary) J. B. Crawford has been transferred to the permanent list with original seniority of April 1st, 1915.

ARMY MEDICAL SERVICE.

Colonel F. Kiddle, C.M.G., retires on retired pay, August 23rd, 1920 (substituted for notification in the *London Gazette*, September 29th, 1920).

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel P. J. Probyn, D.S.O., retires on retired pay.

Major A. C. Duffey is placed on the half-pay list on account of ill health.

The following Captains to be acting Majors: C. R. Dudgeon, M.C., H. G. Winter, M.C.

The name of temporary Captain James T. Rearden is as now described, and not as in the *London Gazette* of November 3rd, 1920.

Captain J. D. Duncan, 5th Royal Highlanders (T.F.), to be temporary Captain, April 7th, 1915 (substituted for notification in the *London Gazette*, May 10th, 1915).

The following Lieutenants (temporary Captains) to be Captains: J. M. Morrison, J. S. B. Forbes.

R. E. Murphy to be temporary Lieutenant.

The following officers relinquish their commissions: Temporary Captain R. B. Wallace, D.S.O., M.C., and is granted the rank of Major. Temporary Captains and retain the rank of Captain: S. F. Boyle, J. G. Garson.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain R. G. J. McCullagh is transferred to the unemployed list.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Major Wilson Ranson, D.S.O. (Colonel A.M.S., T.F.), resigns his commission.

Captain H. D. Gardner relinquishes the acting rank of Major.

The following Captains relinquish their commissions, and retain the rank of Captain: A. B McA. Lang, C. K. Mowll, D. G. Duff, D. Finlayson, T. Fleming, F. W. A. Watt, J. H. Brown, C. S. Baxter, D. C. Lamont, D. Fergusson, W. Scotland, A. M. Davidson, A. S. Goudie, A. G. F. McArthur, W. Napier, A. K. I. Jones, J. W. H. Grice, F. L. Whincup, R. Andrew, G. Winter.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain J. Rigby (late R.A.M.C.) to be Captain, with precedence as from April 27th, 1919.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

The announcement regarding Captain W. T. Briscoe which appeared in the *London Gazette* of January 10th, 1919, is cancelled.

DIARY OF SOCIETIES AND LECTURES.

HARVEIAN SOCIETY OF LONDON, 11, Chandos Street, W. 1. Thurs., 8.30 p.m.—Discussion: The Future of the Poor Law Infirmary, to be introduced by Dr. C. M. Wilson and Dr. Buttar, followed by Mr. Morris (London Hospital), and others.

ROYAL SOCIETY OF MEDICINE.—General Meeting of Fellows, Tues., 5 p.m. *War Section*: Mon., 5.30 p.m., Surgeon Commander E. L. Atkinson, R.N.: Snow Blindness. *Section of Therapeutics and Pharmacology*: Tues., 4.30 p.m., Dr. W. E. Dixon: Quinine Derivatives as Local Anaesthetics; Dr. O. Inchley: Drug Absorption by Electric Current; Dr. W. E. Dixon and Dr. Douglas Cow: Methyl Chlorides of Tellurium. *Section of Medicine*: Tues., 5 p.m. (London Hospital), Demonstrations, etc., by the Physicians. Paper: Mr. D. Hunter: Results of Fractional Test Meals. *Section of Psychiatry*: Tues., 8.30 p.m., Dr. A. F. Tredgold: Moral Imbecility. *Section of History of Medicine*: Wed., 5 p.m., Mr. Charles Sayle: The Library of Thomas Lorkin; Professor J. A. Gunn: Sir John Floyer. *Section of Dermatology*: Thurs., 4.30 p.m., Cases. *Section of Electro-Therapeutics*: Fri., 8.30 p.m., Adjourned discussion on Radiotherapy. Papers: Dr. R. Morton: Developments in Deep Therapy; Dr. L. Martindale: X-Ray Therapy of Fibroids.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, London School of Tropical Medicine, 23, Endsleigh Gardens, N.W.1. Friday, 8.30 p.m., Laboratory Meeting and Demonstration.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Samaritan Hospital for Women, Wed., 4.15 p.m., Dr. N. Stark: Demonstration of Gynaecological Cases.

LONDON HOSPITAL MEDICAL COLLEGE (*Surgical Unit*).—Tues., 4 p.m., Mr. Walton: Visceroptosis. Wed., 4 p.m., Mr. Sherren: Carcinoma of the Stomach.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Mon., 5.30 p.m., Dr. Moon: Angina Pectoris.

MANCHESTER ANCOATS HOSPITAL.—Thurs., 4.30 p.m., Mr. Platt: Internal Derangements of Knee-joint.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Mr. E. D. Telford: The Management of the Enlarged Prostate.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—*Special Course*, December 6th to 18th: Syllabus for second week as printed in the *Bulletin* of the Fellowship of Medicine and Post-Graduate Medical Association. *Daily*: 10.30 a.m.–12.45 p.m., Clinical and Laboratory Methods; 2–3 p.m., Groups of Clinical Cases; 3–4 p.m., General Hospital Work; 4.30 p.m., Clinical Lecture.

NORTH OF ENGLAND BRANCH, BRITISH MEDICAL ASSOCIATION, Royal Victoria Infirmary, Newcastle-on-Tyne.—Demonstrations: Fri., 2.15 p.m., Mr. A. M. Martin: Flat Foot and Bunion; 2.45 p.m., Mr. H. Drummond: Malignant Disease of the Rectum; 3.15 p.m., Professor T. Beattie: Pleurisy with Effusion, having a special regard to Aspiration; 3.45 p.m., Tea; 4.0 p.m., Dr. H. E. Gamlen: Improved Methods in the Use of *X* Rays; 4.30 p.m., Dr. F. J. Nattrass: Peripheral Nerve Lesions.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 12.15 p.m., Dr. Burnford: Pathological; 5 p.m., Mr. Gibb: Rheumatic Affections of the Eye. Tues., 10 a.m., Mr. Steadman: Dental; 2 p.m., Mr. Davis: Throat. Wed., 10 a.m., Dr. Saunders: Children; 5 p.m., Mr. Armour: Arthritis. Thurs., 10.30 a.m., Dr. Simson: Gynaecological; 5 p.m., Lady Barrett: Puerperal Sepsis. Fri., 2.30 p.m., Mr. Addison: Wards; 5 p.m., Mr. Harman: Tuberculous Affections of the Eye. Sat., 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen; 2 p.m., Dr. Owen: Out-patients.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

14 Tues. London: Medical Students Subcommittee, 12 noon.
London: Scrutiny Subcommittee, 2 p.m.
Marylebone Division, 11, Chandos Street, 8.30 p.m.
Rochester, Chatham and Gillingham Division, St. Bartholomew's Hospital, Rochester, 4 p.m.
15 Wed. London: **Council**, 10 a.m.
East Hertfordshire Division, Herts County Hospital, 3 p.m.: British Medical Association Lecture by Dr. S. Alwyn Smith, O.B.E., D.S.O., of Cardiff, on the Treatment of Fractures.
17 Fri. North of England Branch: Royal Victoria Infirmary, Newcastle-on-Tyne, 2.15–5 p.m., Scientific Demonstrations.

JANUARY.

14 Fri. Border Counties Branch: Lowther Hall, Lowther Street, Carlisle, 3.30 p.m. Demonstration by Major Sinclair on the Treatment of Fractures.

APPOINTMENTS.

FELDMAN, William D., M.B., B.S.Lond., Medical Registrar, Prince of Wales's General Hospital, Tottenham.

FOURACRE, S. F., M.B., B.S.Lond., Anaesthetist to the Hospital for Consumption and Diseases of the Chest, Brompton.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

CRAWFORD.—On November 29th, at 7, Hawarden Way, Mancot Royal, near Chester, to Barbara G. Crawford (*née* Rutherfurd), M.B., Ch.B., and George R. Crawford, a daughter.

MACAULAY.—At Seremban, Federated Malay States, on November 3rd, 1920, the wife of T. S. Macaulay, M.D., D.T.M., a daughter.

DEATHS.

ASHDOWN.—George William Welton Ashdown, M.D., F.R.C.S., at 1, Grosvenor Road, Ripley, Derbyshire, on November 25th, aged 63.

POPE.—Lieut.-Colonel Thomas Henry Pope (late of Indian Medical Service), M.D., B.Sc., F.R.C.S.E., aged 67, dearly beloved husband of Agnes Ann Pope (*née* Crichton), at Margate, on November 29th, after a short illness. (Indian papers please copy.)

SINCLAIR.—On November 16th, at her residence, Boduant, Oakleigh Park, N.20, Matilda Ann Sinclair, M.D., B.S., of 14, Endsleigh Street, W.C.1.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 18TH, 1920.

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British Medical Association.

CURRENT NOTES.

Conference of Representatives of Medical Staffs of Hospitals.

THIS Conference, to which the medical staffs of the larger hospitals have been invited to send two representatives, will take place, by kind permission of the Royal Society of Medicine, in the Barnes Hall of that institution, 1, Wimpole Street, London, W., at 11 a.m. on Tuesday, December 21st. The chair will be taken by Sir James Galloway, K.B.E., C.B., and an agenda containing the motions already sent in is being forwarded to the hospitals which are sending representatives. It is hoped that all the larger voluntary hospitals will be represented, in order that a situation in which the medical profession is deeply concerned can be properly discussed.

Dr Macdonald's Visit to South Africa.

Dr. J. A. Macdonald sailed for South Africa on September 10th. He arrived at Durban in time to attend the South African Medical Congress, and, as stated in our report (November 20th, 1920, p. 790), he received a very cordial welcome. During his tour of the South African Branches Dr. Macdonald attended meetings at Pietermaritzburg, where he was entertained to dinner by the Administrator of Natal; at Pretoria, where he had an interview with General Smuts; at Johannesburg, and at Bloemfontein. By the beginning of November he had reached Cape Town, and he left there on November 8th for Rhodesia, his intention being to return to Cape Town and to travel home by a steamship due to reach England on December 27th. Greatly to his regret, transport difficulties compelled him to forego the East African part of his tour, the disorganization of the steamship service being made worse by the coal strike here. Our contemporary, the *South African Medical Record*, in its issue of November 13th, gives a full account of a meeting of the Cape of Good Hope (Western Province) Branch of the British Medical Association, held on November 5th, for the purpose of hearing an address by Dr. Macdonald in his capacity as representative of the Council of the Association.

Fee for Notification of Infectious Diseases.

In a Current Note on October 30th we recorded that the British Medical Association had again addressed the Minister of Health in regard to the fee for notification of infectious diseases, reminding him of the indignation aroused in the medical profession by the reduction of this fee under the Local Government (Emergency Provisions) Act, 1916. Almost exactly a year ago the Ministry issued a circular to local authorities stating that the fee would revert to 2s. 6d. at the date of the termination of the war as fixed by Order in Council; yet there is still no indication of when that Order is likely to be issued. The Association therefore asked Dr. Addison to include provision for the restoration of the notification fee in the Ministry of Health Bill then before Parliament. The Ministry's answer enclosed copies of Dr. Addison's reply to a question by Sir William Whitla in the House of Commons on November 1st, and of Mr. Bonar Law's reply to another question regarding the date of the termination of the war. The first reply added nothing to what is already known to our readers; the second gave an assurance that there would be no unnecessary delay in the ratification of the Turkish and Hungarian treaties, these being the last two treaties that stand in the way of the issue of the Order in Council. The Medical Secretary, in acknowledging this communication, pointed out that the medical profession is tired of waiting for the official end of the war, and added:

> "The reply of Mr. Bonar Law is not at all satisfactory. We are quite aware that there will be no 'unnecessary delay,' but, judging from past experience, the necessary delay may mean months or even years. The British Medical Association can see no necessary connexion between the 'end of the war' and the restoration of a fee which everybody now admits ought never to have been reduced. Once again we press that the injustice should be remedied at once—if not by a clause in the Miscellaneous Provisions Bill, then in any other way that can be suggested."

Postal Medical Officers

The British Medical Association is aware that on September 1st last a new arrangement was made between the Postmaster-General and the Ministry of Health whereby insured persons who receive medical benefit under the Post Office medical system were to take their medical benefit through the National Insurance Act. This arrangement is to come into force on January 1st, 1921. By that time, doubtless, a large number of the persons concerned will have made their choice of a doctor who is acting under agreement with the Insurance Commisioners, and consequently postal medical officers will know what effect the arrangement is likely to have upon their capitation lists. The Medical Secretary would be glad if members of the British Medical Association who are postal medical officers will be good enough to inform him how many names have been removed from their post office lists as a result of this new arrangement.

Association Notices.

SUGGESTED CHANGES OF AREAS.

Proposed Division for Lewisham.

NOTICE is hereby given to all concerned of a proposal made at a meeting of the members of the Association resident in Lewisham, held on December 10th, 1920, that so much of the present Woolwich and Lewisham Division as is contained within the Borough of Lewisham be detached from that Division to form a separate Division, to be called the Lewisham Division. Written notice of the proposal has been given to the Metropolitan Counties Branch and the Woolwich and Lewisham Division, and the matter will be determined in due course by the Council. Any member affected by the proposed change and objecting thereto is requested to notify the Medical Secretary, 429, Strand, W.C.2, of the fact, and the reason therefor, not later than December 28th.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.—A meeting of members and non-members will be held on Tuesday, December 21st, at 8.30 p.m., at St. Andrew's Parish Hall, High Road, Willesden Green. The annual report of the Medical Officer of Health will be discussed, and the formation of a "practitioners' mutual help scheme" will be considered. Dr. J. S. Crone will present a report of the conference held on November 30th between representatives of the Urban District Council, the Board of Guardians, the Cottage Hospital, and the Willesden Division of the British Medical Association to consider the Interim Report of the Medical Consultative Council. The representatives of the Division intimated general acceptance of the principles contained in the report. The conference declared its opinion that Willesden should be a distinct unit for all its health services, and appointed a subcommittee of six of its delegates to draw up and submit an agenda for discussion at the next meeting.

BORDER COUNTIES BRANCH.—A meeting of the Border Counties Branch will be held at Carlisle on Friday, January 14th, 1921, when Major Sinclair will give his Demonstration on the Treatment of Fractures, in the Lowther Hall, Lowther Street, at 3.30 p.m. The various methods of treatment will be shown, and a lantern demonstration given. There will be a dinner of the members in the evening.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH.

Proposed Lewisham Division.

A WELL attended meeting of members of the Association resident in the Lewisham district, called by the Metropolitan Counties Branch Council, was held, by kind permission of the Secretary, at the South Eastern Hospital, Sydenham, on December 10th, when the chair was taken by Mr. MCADAM ECCLES, in the unavoidable absence of Dr. Goodall. The following resolution was carried unanimously:

> That so much of the present Woolwich and Lewisham Division as is contained within the boundaries of the Borough of Lewisham be detached from that Division, to form a separate Division to be called the Lewisham Division and that the Council of the Association be asked to accede to this request.

Dr. G. W. Charsley (Sydenham) and Dr. C. J. B. Buchan (Catford) were provisionally elected chairman and secretary respectively of the members in the area.

After the induction of Dr. Charsley into the chair, Dr. Thos. [illegible] (Catford) was elected vice-chairman, and the following, together with the officers, were elected members of an executive committee: Drs. Arnold, Forsyth, Gladstone, Wilson, Orr, Foster, [illegible], Roberts, [illegible], and Summerhill.

After Dr. G. C. ANDERSON, Deputy Medical Secretary, Mr. Bishop Harman, Dr. Paterson, [illegible], and the representatives of the Branch had answered questions, a vote of thanks to the officers of the Branch brought the meeting to a close.

Harrow Division.

THE Division held a meeting on November 30th, when the suggestion by the County of Middlesex Education Committee that the local cottage hospital should send part time specialists to operate on tonsils and adenoids in school children was discussed. It was decided to write to the Committee stating that the Division would do all in its power to arrange for these operations to be done, provided that local talent was employed and that fees were paid for services rendered on the British Medical Association's scale.

Dr. C. E. GODDARD read a paper on Lord Lister.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.

THE members of the North Northumberland Division held a most successful dinner on December 1st at the White Swan Hotel, Alnwick, when seventeen members were present. Dr. BADCOCK, chairman of the Division, presided.

Dr. COX was the guest, and addressed the members during the evening. A very interesting discussion on matters relating to the future of the profession followed. Dr. Cox was heartily thanked for his address.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A WELL attended meeting of the Division and local profession of Portsmouth was held on November 25th.

The Secretary was instructed to write to the Portsmouth Watch Committee, stating that the profession considers the minimum fee for police calls should be 10s. 6d. from 7 a.m. to 10 p.m., and 21s. from 10 p.m. to 7 a.m.

The meeting unanimously confirmed the findings of the subcommittee appointed to answer questions set forth in D. 4, and endorsed and adopted, with one dissentient, the Exeter Division's memorandum on the Consultative Council's Report.

With one dissentient the following resolution was adopted:

> "In the opinion of the Portsmouth Division of the British Medical Association the revolution in the practice of medicine outlined in the Report of the Consultative Council, whatever its advantages, is wholly inopportune, in view of the obvious financial burden it will place on the shoulders of the taxpayer. The consideration, therefore, of any change of this sweeping character should be deferred until such time as the country has recovered from the crushing financial straits to which it has been reduced owing to the late war."

A rider was also unanimously added:

> "That the British Medical Association be instructed to at once organize the profession for the purpose of controlling votes at the next general election."

SUSSEX BRANCH: CHICHESTER AND WORTHING DIVISION.

A WELL attended meeting of the Division was held at the Steyne Hotel, Worthing, on December 8th, when Dr. COX spoke on "The Signs of the Times for Doctors." In spite of the fog, members came from Horsham, Chichester, Brighton, Arundel, Bognor, Littlehampton, and elsewhere, and felt they were well rewarded by the interest aroused by the Medical Secretary's address. The meeting was followed by a dinner, after which Dr. Cox continued to make his points on the policy of the British Medical Association and its usefulness to the profession. Several members joined in the subsequent discussion.

MALAYA BRANCH.

A MEETING of the Malaya Branch was held at the District Hospital, Kuala Lumpur, on October 8th. The President, Dr. MCCLOSKY, gave his address of welcome with a retrospect of the history of the Branch.

It was agreed that the subscription should be raised to 18 dols., and that a request be made to headquarters to ascertain if more than 4s. a head could be retained by the Branch.

The following officers were nominated for 1921:

President: Dr. Croucher. *President-elect:* Dr. Malcolm Watson. *Vice-President for Singapore:* Dr. Galloway. *Vice-President for Penang:* Dr. Rose. *Vice-President for Federated Malay States:* Dr. Fletcher. *Honorary Secretary:* Dr. Scharff. *Honorary Treasurer:* Dr. Noel Clarke or Dr. Lim Han Hoe, Singapore.

The meeting considered that the salaries paid to medical practitioners in the Government service were inadequate, and decided again to call the attention of the parent Association to the matter.

A resolution of sympathy with the objects of the National Society for Combating Venereal Disease and the Society for the Prevention of Venereal Disease was adopted.

It was decided to appoint a council for the prevention of venereal diseases, consisting of medical practitioners and laymen of the various communities of Malaya, with power to create similar committees amongst the different communities in the various parts of Malaya.

Various papers were read and discussed, and a resolution was adopted expressing great appreciation of the invaluable work carried out by the Malarial Advisory Board in Kuala Lumpur, and calling the attention of the Government to the fact that the work should be continuous and active. A copy of the resolution was directed to be forwarded to the Under Secretary at Kuala Lumpur.

Demonstrations were given at the Malarial Bureau by Dr. LAMBORN and at the Institute of Medical Research by Dr. FLETCHER, who demonstrated laboratory tests for dysentery, paratyphoid, meningitis, etc.

At the dinner held in the evening it was announced that the membership roll had risen from 68 to 175.

MEDICAL FEES UNDER THE MIDWIVES (IRELAND) ACT.

A JOINT deputation of the British and the Irish Medical Associations, consisting of Dr. E. Magennis, President of the Irish Medical Association, Mr. C. H. Gick, Secretary of the Irish Medical Association, and Dr. T. Hennessy, Irish Medical Secretary of the British Medical Association, waited on the Irish Midwives Board and represented to that body that the fees prescribed by the Local Government Board (Ireland) for professional assistance rendered by medical practitioners to midwives in cases of emergency were altogether inadequate. The deputation pointed out that for extra medical assistance in midwifery cases, under the Medical Charities Acts, that even pre-war remuneration, in some unions in Ireland, was £2 2s. and £3 3s. for day and night respectively. The medical members of the boards, including the chairman, Dr. Bigger, explained that when they recommended the adoption of the English scale of remuneration for Ireland they did so in the belief that the Irish Local Government Board would not sanction a higher scale for this country. In the circumstances, they were, however, of opinion, and were prepared to recommend that the same scale should be paid under the Midwives Act as was in force under the Medical Charities Acts for extra professional assistance in cases of midwifery. Owing to a special section introduced into the Midwives (Ireland) Act, 1918, providing that parturient patients should, as heretofore, be treated under the Poor Relief (Ireland) Act, very few Irish medical practitioners will be affected by the new scales of fees as sanctioned by the Local Government Board in the following letter to the local supervising authorities:

Local Government Board, Dublin,
November 17th, 1920.

Sir,—Adverting to their circular letter of July 28th, 1919, I am directed by the Local Government Board for Ireland to state that they have prescribed the following scale of fees for professional assistance rendered by medical practitioners to midwives in cases of emergency (other than cases of patients entitled to gratuitous medical relief under Section 9 of the Poor Relief (Ireland) Act, 1851), under Section 22 (1) of the Midwives (Ireland) Act, 1918, namely:

1. Attendance at confinement in the daytime (8 o'clock a.m., to 8 o'clock p.m.), £2 2s.
2. Attendance at confinement in the night-time (8 o'clock p.m. to 8 o'clock a.m.), £3 3s.,

with the addition in each case of a mileage rate of 9d. for the portion of the outward and return journeys beyond three miles from the doctor's residence—no locomotion expenses to be allowed where the distance from the doctor's residence to the patient's house is under three miles.

The scale of fees fixed by the Board's circular letter of July 28th, 1919, is hereby cancelled.

I am, Sir, your obedient servant,
A. R. BARLAS, Secretary.

INSURANCE.

CORRESPONDENCE.

The London Panel Committee.

SIR,—The letter so influentially signed on behalf of the London Panel Committee, which appears in the SUPPLEMENT of December 11th, requires an answer. I have never assumed for a moment that the action of the more responsible members of that Committee has been due to any unworthy motive, but it is well to have an authoritative statement of their position. There seem to be three aspects of the matter to which the letter directs attention.

First, and admittedly of least importance, exception is taken to the way in which the Insurance Acts Committee is technically appointed. Six members are elected by the Representative Body, and these, with the four officers of the Association, constitute the nucleus of the Committee, to which they proceed to add eighteen members elected by the Panel Committees, one by the Society of Medical Officers of Health, one by the Association of Poor Law Medical Officers, one by the Medical Women's Federation, and one by the staffs of voluntary hospitals. None of these twenty-two need be members of the British Medical Association, and it is, of course, conceivable as an abstract intellectual proposition, but inconceivable as a practical act, that the original ten members might refrain from passing the formal resolution adding the others. Personally I hope that steps may be taken to abolish the necessity for this formality, and also to add to the Committee as an additional member the person who is elected each year by the Conference of Local Medical and Panel Committees to be its chairman. Even then it would not follow that the final stage in the evolution of the Committee would have been reached. It would be open to modifications by suggestions from the London Panel Committee or elsewhere.

Secondly it is urged "that the body negotiating with the Government on behalf of the panel practitioners should be elected by the panel profession." I know of nothing which can properly be called "the panel profession," and I resent the expression; but, apart from this, the above statement takes altogether too narrow a view of the functions of the Insurance Acts Committee. That Committee's chief duty is to watch over the interests of the whole profession in its relation to the National Health Insurance Acts and their developments. This is the reason why it contains a modest representation of various classes of practitioners. But even in its narrower function of negotiating with the Government on behalf of insurance practitioners it is evident that a modification of the remuneration of such practitioners or of the regulations under which they work may seriously affect other kinds of private practice and the attitude of other practitioners towards undertaking insurance work, and that therefore these other practitioners should have some proportionate influence in such negotiations. In performing its own functions of negotiating with the London Insurance Committee on behalf of insurance practitioners and of representing the profession in London in relation thereto, the London Panel Committee does not seem to object to the obligation to have various representatives of other kinds of professional work on its personnel, and if it be contended that in this case these representatives are actually chosen by the Panel Committee itself, I submit that, since there must be such representatives, it is as well that those whom they specifically represent should have a voice in choosing them.

I agree that the Insurance Acts Committee must act primarily as an Executive Committee of the Conference of Local Medical and Panel Committees, and if it seems an important point to the London Panel Committee that the direct representatives of insurance practitioners thereon are elected not by that Conference but by the members of the Panel Committees throughout the country, any alteration in the present method of election is a matter of convenience rather than of principle, and would undoubtedly be carefully considered by the Conference.

Thirdly, it is stated in the letter that "the cost of such conference and of its executive should be borne by practitioners through their Panel Committees." The National Insurance Defence Trust has been instituted with this as one of its chief objects, but the London Panel Committee which at first undertook to support this fund has now, so far from furthering this object, recently withdrawn this promised support. This appears inconsistent.

May we hope that the London Panel Committee will yet reconsider these matters? There remains on the Insurance Acts Committee a vacancy which the other Panel Committees of Group K (to which London belongs) have deliberately neglected to fill in the hope that London will nominate its representative. Whoever he might be, or whatever his views, he would be welcomed.—I am, etc.,

Hornsey, N., Dec. 11th. H. B. BRACKENBURY.

SIR,—On reading the letter over the signatures of the officials of the London Panel Committee in your last issue, I realized the truth of the old saying, that "Virtues may be carried so far that they become vices." Here we have men, whose honesty of purpose no one questions, prepared to cause disunion in our ranks, and all because, forsooth, our position in their opinion is not strictly logical.

Can anyone say that the negotiations conducted by the Insurance Acts Committee suffered in any way by the presence of Sir Clifford Allbutt? After all, "one ounce of practice is worth a pound of theory," and I remember taking part in some collective bargaining on behalf of colliery surgeons with the officials of the Northumberland Miners' Union. We succeeded fully, but our success was very largely due to the presence and active co-operation of Mr. Rutherford Morison, who logically should have been ruled out.—I am, etc.,

Auchencairn, Castle-Douglas, Dec. 13th. J. CROMIE.

SIR,—I am instructed to state that the Surrey Panel Committee totally disagrees with and regrets the action and proposals of the London Panel Committee as expressed in its letter of November, 1920, and has passed the following resolutions:

1. That in the opinion of the Surrey Local Medical and Panel Committees the Insurance Acts Committee is deserving of hearty support, and the formation of an independent negotiating body in place of it is against the best interests of the medical profession.

2. That the Surrey Local Medical and Panel Committees endorse the [illegible] of the Annual Conference of Representatives of Local Medical and Panel Committees held on October 21st, 1920, in [illegible] by overwhelming majorities (a) the motion by Dewsbury to abolish the Insurance Acts Committee, and (b) the motion by London to replace the Insurance Acts Committee by an independent negotiating body.
3. That copies of the foregoing resolutions be sent to the London Panel Committee, the Insurance Acts Committee, the Ministry of Health, and the Editor, BRITISH MEDICAL JOURNAL.

—I am, etc.,

F. B. THORNTON,
Honorary Secretary, Surrey Local Medical and Panel Committees.

December 7th.

LOCAL MEDICAL AND PANEL COMMITTEES.

HEREFORDSHIRE.

THIS Committee, at its meeting held on December 1st, had under consideration a letter from the London Panel Committee urging the formation of a new body to take charge of the **interests of panel practitioners. The following resolution was unanimously passed:**

> **That the Herefordshire Panel Committee is of opinion that those practitioners who are compelled to work the Insurance Acts are not primarily "panel practitioners," and that their interests are not, and should not be, separate from those of the profession as a whole; that the Insurance Acts Committee, having established itself with the Government as the body with which it is prepared to negotiate and, under its present constitution, being thoroughly representative of all shades of opinion among practitioners on the various panels, should be supported by all Panel Committees; and that the schismatic action of the Panel Committee for the County of London is to be severely deprecated.**

MEETINGS OF THE PROFESSION.

HAMPSTEAD.

AT a meeting of the medical profession of Hampstead, convened by the Hampstead Medical Committee, on November 26th, 1920, the following resolution was unanimously adopted:

> **That in the event of a borough or county taking over the administration of a workhouse and converting it into a hospital (as is [illegible] at Bradford), no scheme should be passed by the Ministry of Health which does not recognize the right of the general practitioner to send in their patients and attend them there, and to have access to all the equipment of the hospital.**

WILTSHIRE.

A WELL attended and representative meeting of the medical [illegible] practising in Wilts was held in Trowbridge, on November [illegible], to consider the question of the provision of maternity [illegible] in the county. A memorandum circulated in the county [illegible] was discussed.

It was resolved to suggest that the County Council should [illegible] a special committee, appointed by the meeting, before [illegible] the council's scheme for the provision of maternity [illegible] in the county, with a view to establishing the closest **co-operation between the practitioners concerned and the responsible authorities.**

A committee was appointed to draw up a scheme for the [illegible] of the medical service of the county on the lines of the Dawson Report, to be considered at a future meeting of **the profession in Wiltshire; and to confer with the county council when required.**

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Lieutenant H. [illegible] to the *Warspite*, [illegible] Ratcliffe to the *[illegible]*, [illegible] H. [illegible] to the *[illegible]* on recommissioning, A. [illegible] to the *Westminster* [illegible].

ARMY MEDICAL SERVICE.

[illegible] Major-General Sir Robert [illegible], K.B.E., C.B., T.D., [illegible] R.A.M.C. T.F. [illegible]

ROYAL ARMY MEDICAL CORPS.

Major R. N. [illegible] relinquishes the acting rank of Lieutenant-Colonel.

[illegible] of Major George B. [illegible] as notified in the *London Gazette* of November [illegible], 1920 [illegible]

[illegible] retires on [illegible] the rank of Lieutenant-Colonel.

[illegible] is restored to the establishment.

[illegible] M.C., to be acting Lieutenant-Colonel [illegible]

[illegible] to be acting Major from June [illegible] to [illegible]

[illegible] D.S.O., M.C., from [illegible], to be Captain [illegible]

[illegible] relinquishes the acting rank of Major.

[illegible] Lieutenant [illegible] to be temporary Captain.

[illegible] temporary [illegible] the London War [illegible] temporary [illegible] Captains and [illegible] J. H. R. [illegible] J. McCulloch, [illegible]

INDIAN MEDICAL SERVICE.

Lieut.-Colonel A. Miller, M.B. (Madras), has been permitted to retire from the service (October 1st).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captains to be Majors: R. Phillips, O.B.E., J. C. Grieve, M.C. (June 1st, 1920—substituted for notification in the *London Gazette* of October 21st, 1920), A. L. Heiser.

4th London General Hospital.—Captain A. H. Evans, O.B.E., **is restored to the establishment.**

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Captain F. G. Dobson, D.S.O., from 2nd West Riding Field Ambulance, to be Lieutenant-Colonel.

DIARY OF SOCIETIES AND LECTURES.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C.2.—Tues., 4.30 p.m., Specimens and Cases.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Eye Infirmary.—Wed., 4.15 p.m., Eye Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 2 p.m., Dr. Granger Stewart: Out-patients; 2 p.m., Dr. Simson: Diseases of Women. Tues., 10 a.m., Mr. Steadman: Dental; 2 p.m., Mr. Gray: Out patients. Wed., 10 a.m., Mr. MacDonald: Genito-urinary; 2 p.m., Mr. Armour: Wards. Thurs., 2 p.m., Mr. Harman: Eyes; 2 p.m., Mr. Baldwin, Orthopaedics. Fri., 10 a.m., Dr. McDougal: Electrical; 2 p.m., Mr. Banks Davis: Throat, Nose, and Ear.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

21 Tues. CONFERENCE OF REPRESENTATIVES OF MEDICAL STAFFS OF HOSPITALS, Barnes Hall, Royal Society of Medicine, 1 Wimpole Street, London, W., 11 a.m.
Willesden Division, St. Andrew's Parish Hall, High Road, Willesden Green, 8.0 p.m.

JANUARY.

14 Fri. Border Counties Branch, Lowther Hall, Lowther Street, Carlisle, 3.30 p.m. Demonstration by Major Sinclair on the Treatment of Fractures.

APPOINTMENTS.

FORREST, Colonel John V., C.B., C.M.G., M.B., C.M.Edin., Superintendent to the Royal Victoria Hospital, Belfast.
MURRAY, R. A., O.B.E., M.D., Certifying Factory Surgeon for the Stockport District, vice E. Rayner, M.D., F.R.C.S., resigned.
PARK, George W., M.B., C.M.Edin., Medical Officer to the Edinburgh Education Authority.
RYLAND, Archer, F.R.C.S.Edin., Aurist and Laryngologist to the College of Nursing, Henrietta Street, Cavendish Square, W.1.
SMITH, E. Bertram, M.B., B.S.Lond., D.P.H.Camb., Assistant Medical Officer of Health, Nottingham Corporation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 7s. 6d., *which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.*

BIRTHS.

CHODAK GREGORY.—On Monday, December 6th, to Henry Alexis Chodak Gregory, M.C., M.B., Ch.B., M.R.C.S., L.R.C.P., and Hazel Howard Chodak Gregory, M.D., M.R.C.P., of 16, Gordon Mansions, W.C.1, a son.

HALLIDAY.—On November 28th, 1920, at 24, Essex Road, London, N.1, to Dr. and Mrs. J. Rutherford Halliday, a daughter.

MARRIAGE.

FITZWILLIAMS—WAGNER.—On November 22nd, at the Roman Catholic Church in Riga, Duncan Campbell Lloyd Fitzwilliams, C.M.G., M.D., Ch.M., to Francesca Christine Wagner, M.B.E.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 25th, 1920.

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British Medical Association.

CURRENT NOTES.

Conference of Representatives of Medical Staffs of Hospitals.

We announced last week that the Conference of representatives of medical staffs of hospitals in England and Wales, called by the British Medical Association, would be held at the house of the Royal Society of Medicine on Tuesday morning, December 21st, with Sir James Galloway, Senior Physician to Charing Cross Hospital, in the chair. Owing to the approach of Christmas we go to press this week a day earlier than usual, and we are therefore unable to report the Conference in our present issue, but a full account will appear next week. The list of representatives issued by the Medical Department of the Association on December 17th shows that the medical staffs of twenty-one London hospitals and fifty-five provincial hospitals had then accepted the invitation to send representatives. The motions on the agenda paper are grouped under two main headings: (1) Present financial position of voluntary hospitals; (2) attitude of members of medical staffs of voluntary hospitals as regards paying patients. The concluding motion, to be proposed by the Chairman, is: "That the Conference proceed to consider the question of submitting evidence before the Government Committee, and the arrangement for witnesses therefor." The Government Committee referred to is that appointed by the Minister of Health "to inquire into and report upon the financial position of the voluntary hospitals throughout the country, and to make recommendations."

Local Medical Advisory Committees.

In a Current Note on December 11th, p. 158, we announced the constitution of the Bradford Advisory Medical Committee, and added that so far as we were aware this was the first local medical advisory committee to be set up. We now learn from Dr. J. Middleton Martin, County Medical Officer of Health for Gloucestershire, that the provisional Medical Advisory Committee of the Gloucestershire Scheme held its first meeting at Berkeley on July 14th, 1920, and the full Medical Advisory Committee met for the first time on December 8th.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.

A meeting of this Division, to which non-members were invited, was held at the County Hospital, Hertford, on December 15th. Dr. S. Alwyn Smith, D.S.O., M.C., of Cardiff, delivered a most instructive and interesting British Medical Association lecture on "The treatment of fractures," illustrated by lantern slides. He also demonstrated manipulations. The next lecture will be given by Dr. T. Freeman (London), on "Asthma from the immunological point of view," on **Wednesday, February 2nd, 1921.**

Association Notices.

Border Counties Branch. A meeting of the Border Counties Branch will be held at Carlisle on Friday, January 14th, 1921, when Major Sinclair will give his Demonstration on the Treatment of Fractures, in the Lowther Hall, Lowther Street, at 3.30 p.m. The various methods of treatment will be shown, and a lantern demonstration given. There will be a dinner of the members in the evening.

INSURANCE.

CORRESPONDENCE.

The London Panel Committee.

Sir,—There is one argument in the letter of the London Panel Committee in the Supplement of December 11th, to which it seems to me that Dr. Brackenbury, in his answer published on December 18th, gives an inadequate reply. After stating that "it is felt that the expense" of the Conference of Local Medical and Panel Committees "should in no part be borne by any outside association or union," the London Panel Committee goes on to say that they "believe that a majority of their members are loyal members of the Association, who regard it as in the best interests of the Association that it should be free to voice the views of all classes of the profession, and should not be open to the criticism that it is unevenly dominated by the interests of insurance practitioners or of any other section of its members." The only passage in Dr. Brackenbury's letter in which he can be said to deal with this argument is one in which he states that the "chief duty of the Insurance Acts Committee is to watch over the interests of the whole profession in its relation to the National Health Insurance Acts and their developments," and that "modification of the remuneration of insurance practitioners or of the regulations under which they work may seriously affect other kinds of practice."

It seems to me that the statement of the London Panel Committee and Dr. Brackenbury's answer should be very carefully considered by the profession in general and by the British Medical Association in particular. At present there are 12,000 practitioners on the panel, so that there must be at least 8,000 general practitioners in this country who do not undertake Insurance Act work. Are these 8,000 practitioners content that the Insurance Acts Committee should watch over their interests? and as a matter of fact does the Insurance Acts Committee do so? Let me take one question. I believe that quite a large number of the 8,000 would like to see an inquiry instituted into the working of the Insurance Acts with a view to ascertaining whether the panel system is the best that can be devised in the interests of the community. Through such an inquiry it would be possible to find out what value to attach to the numerous allegations as to the inefficiency of the panel service, and to discover in what kind of area, if any, the system is a failure, and in what areas it is a success. It is possible to suggest that an association "free to voice the views of all classes of the profession" would be better able to press for such an inquiry than a committee whose chief duty *pace* Dr. Brackenbury is surely to watch over the interests of the panel practitioner. Dr. Brackenbury describes the constitution of the Insurance Acts Committee; and it would seem difficult to imagine a committee so constituted adopting any other conception of its duty.

In replying to the opinion of the London Panel Committee, that "the cost of the Conference of Local Medical and Panel Committees and of its executive should be borne by practitioners through their Panel Committees," Dr. Brackenbury says that "the National Insurance Defence Trust has been instituted with this as one of its chief objects." Are we to infer from this that the cost of the Conference and its executive is at present borne by that Trust?

As a member of the Council of the Association I must confess that at times I am disheartened by a feeling that we are open to the criticism that the Association is "unevenly dominated in the interests of insurance practitioners." And I believe that I am not alone in this feeling. If this is so, I cannot help thinking that at the present time every effort should be made to remove any trace of such a feeling. So long as it remains it must surely be difficult for the Association to maintain that it is in a position to represent the whole profession. Might it not be better to adopt the suggestion of the London Panel Committee to make the Conference of Medical and Panel Committees autonomous and self-supporting, and then to hand over to the Ministry of Health Committee of the Association the duty of watching over the interests of the whole profession in relation to the Insurance Acts and their developments?—I am, etc.,

London, W., Dec. 18th. CHAS. BUTTAR.

LOCAL MEDICAL AND PANEL COMMITTEES.

LEICESTER.

A MEETING of the Leicester Local Medical and Panel Committee was held on December 7th, under the chairmanship of Dr. R. WALLACE HENRY.

The circular letter from the County of London Panel Committee containing proposals for the holding of a conference and the forming of an independent negotiating body, as distinct from the Insurance Acts Committee of the British Medical Association, was considered. After discussion the following resolution was unanimously passed:

> That the Leicester Panel Committee strongly deprecates any action by the Panel Committee for the County of London, or other body, which will impair the usefulness of the Insurance Acts Committee of the British Medical Association; that the Insurance Acts Committee is representative of panel practitioners throughout England and Wales, and also of the profession as a whole, and is in a much stronger position to negotiate with the Government than any [illegible] sectional body would be, and that this Committee is [illegible] of opinion that the proposal of the Panel Committee for the County of London is not in the best interests of the profession.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following notifications are announced by the Admiralty: Surgeon Commander [illegible] R. Bickford, D.S.O., to the [illegible].

Surgeon Lieutenants [illegible] Hefferman and W. J. Morris have been promoted to the rank of Surgeon Lieutenant-Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

[illegible] Colonel and Brevet Colonel J. M. Sloan, C.M.G., D.S.O., to be temporary Colonel from May 2nd, 1918, to February 4th, 1919, [illegible] London Gazette, August [illegible].

[illegible] O.B.E. [illegible] retired pay November 21st, [illegible] London Gazette [illegible] November [illegible].

[illegible] specially employed.

[illegible] Strange [illegible] the [illegible]

S. Oliver, late temporary Captain, to be temporary Captain with seniority from October 21st, 1917.

[illegible]

[illegible] OF OFFICERS.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] relinquishes his commission [illegible] and retains the rank of [illegible] Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captains to be Majors: J. B. Stanley, W. H. Rowell, O.B.E.

Captain Wm. Johnson, M.C. (late R.A.M.C. S.R.) to be Captain, with precedence as from April 1st, 1915.

Captain J. W. Wayte, M.C. (late temporary Captain, R.A.M.C.), to be Lieutenant, with precedence as from February 26th, 1915, and to relinquish the rank of Captain.

Captain (Brevet Major) W. J. Wilson is restored to the establishment on ceasing to command Field Ambulance Section, Belfast University Contingent, Officers' Training Corps.

Captain S. Hughes relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

The following officers resign their commissions: Lieut.-Colonel W. M. Gabriel, T.D., and retains the rank of Lieut.-Colonel, with permission to wear the prescribed uniform. Majors and retain the rank of Major: R. C. Rodgers (with permission to wear the prescribed uniform), R. Eager, O.B.E. Captains and retain the rank of Captain: G. F. Stones, W. R. M. Turtle.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Captain (Brevet Major) W. J. Wilson, from General List, to be Captain (Brevet Major).

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Diary of the Association.

JANUARY.

14 Fri. Border Counties Branch, Lowther Hall, Lowther Street, Carlisle, 3.30 p.m. Demonstration by Major Sinclair on the Treatment of Fractures.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Wed., 10 a.m., Dr. Saunders: Children; 2 p.m., Dr. Owen: Out-patients. Thur., 2 p.m., Dr. Stewart: Out-patients; 2 p.m., Mr. Baldwin: Orthopaedics. Fri., 10 a.m., Dr. McDougal: Electrical; 2 p.m., Mr. Davis: Throat, Nose, and Ear. Sat., 2 p.m., Dr. Owen: Out-patients; 2 p.m., Mr. Sinclair: Out-patients.

APPOINTMENTS.

CARLYON, T. B., M.R.C.S., L.S.A., Admiralty Surgeon and Agent for Balham, Tooting, Wimbledon, Mitcham, Wandsworth, and Battersea Districts.

MILLER, J. W., M.D.Vict., D.P.H.Camb., Medical Officer of Health for Radnorshire.

MOORE, Clifford A., M.S.Lond., F.R.C.S., Surgeon to the Bristol General Hospital.

SMITH, F. Bertram, M.B., D.P.H., Assistant Medical Officer of Health for the City of Nottingham.

WILSON, A. Cyriax, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer to Peckham House, and a member of the Special Neurological Clinic, Ministry of Pensions, Grosvenor Gardens.

WOOD, Duncan, F.R.C.S., Assistant Surgeon to the Bristol General Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS.

DOWSALL.—On the [illegible] inst., at [illegible] House, Hebden Bridge, Yorks., to Francis J. Dowsall, M.B., Ch.B., M.O.H., and Madeleine Dowsall, M.B., Ch.B., B.A.O. (née McNally), a daughter.

GRAY.—On December 11th, at [illegible] (née [illegible]), wife of Dr. [illegible] Gray, of a daughter, who survived only a few hours.

McROBERT.—At [illegible], India, on November 13th, the wife of Captain G. R. McRobert, Indian Medical Service, of a daughter.

MOTTAH.—On September 24th, 1920, at 84, [illegible] Street, Cairo, to Mrs. A. N. Mottah and Dr. A. N. Mottah, M.D.Liverpool, F.R.C.S.Edin., a daughter.

PHILLIPS.—On December 2nd, 1920, at 4, Marlborough Road, Bradford, the wife of [illegible] Phillips, F.R.C.S.E., of a daughter.

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EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. The Oculo-cardiac Reflex in Lethargic Encephalitis.

U. GABBI (*Giorn. di Clin. Med.*, March, 1920) examined the oculo-cardiac reflex in four cases of lethargic encephalitis, two of which occurred in adults and two in children. The ordinary technique was used, the pulse rate and sphygmographic tracing being taken before, during, and after ocular compression, and the blood pressure before and after. The compression lasted ten seconds. The results were as follows: (1) The pulse rate sank on the average from 88 or 90 to 60 or 62, and the pulse became stronger and irregular; (2) the blood pressure after the compression fell from 90 to 82; (3) the sphygmographic tracing during the compression showed a higher ascending line and more marked oscillations. One of the children showed pallor, mental confusion, nausea, and a tendency to vertigo. Injection of 1 mg. atropine in adults and ½ mg. in children had the following results: (1) Before ocular compression the pulse rate increased, and vasomotor changes appeared in the face; (2) during compression the pulse rate fell from 90 or 88 to 82 or 80; (3) the sphygmogram showed the same changes as before the injection. Exaggeration of the oculo-cardiac reflex in lethargic encephalitis is attributed by Gabbi to hyperexcitability of the vagus centre in the medulla.

2. Quinine in Influenzal Pneumonia.

EXCELLENT results are reported by CAFFREY (*Journ. Amer. Med. Assoc.*, April 24th, 1920) from the use of quinine hydrobromide in the treatment of influenzal pneumonia. Caffrey gives 25 grains for the first dose, 10 grains for the second dose, and continues throughout the course of the disease with 5 grains every four hours. He has never had a complaint of the quinine amblyopia or of the marked tinnitus aurium and head noises of which patients usually complain when the drug is used in other troubles. Among twenty-seven patients receiving this treatment with other auxiliary drugs, such as digitalis, atropine, and pituitary extract, there was only one death.

3. Acquired Immunity to Influenza.

J. BUCHHOLTZ (*Ugeskrift for Laeger*, April 8th, 1920) contributes the following observations to the numerous publications that have recently appeared in the Danish medical press on the subject of acquired immunity to influenza. During the first wave of the epidemic—which lasted from October, 1918, to February, 1919—111 (or 58 per cent.) of the nurses attached to the Bispebjaerg Hospital contracted influenza; only three developed a second attack, although they were constantly exposed to reinfection. One case was particularly instructive, as it showed that a certain temporary immunity is acquired: a nurse contracted influenza for the first time in October, 1918, made a rapid and complete recovery, and continued to nurse patients with influenza from October, 1918, till March, 1919, when she again developed typical influenza.

4. Choreiform Type of Epidemic Encephalitis.

L. DIMITZ (*Wien. klin. Woch.*, February 19th, 1920) has observed as many as thirty-five cases of epidemic encephalitis within a fortnight, and has been struck by the uniformity of the symptoms. Common to all these cases were a comparatively low temperature—a sudden rise of temperature was indicative of a complication, such as pneumonia—dryness of the lips, with crust formation and herpetic vesicles, often of a haemorrhagic character, flushing of the face, intractable insomnia, and motor excitability. This last phenomenon was characterized by recurrent but never rhythmic clonic contractions of uniform strength, or by what the author calls "choreiform restlessness." The onset of this restlessness was often gradual, the first manifestation being hiccough, or "stitch" referable to the region of the abdomen or small of the back. On scrutiny, short contractions of the abdominal muscles, including the diaphragm, were often noticed to be unilateral; they were sometimes confined to the right, sometimes to the left side. Frequently short clonic contractions of the limbs were also observed, either unilateral or bilateral. Sometimes these contractions were curiously like the semi-voluntary contractions of hysteria. Of the thirty-five patients, ten had already died, and not all the survivors were out of danger. In three cases in which a necropsy was performed the changes found in various organs were similar to those associated with fatal cases of influenza. Discussing the possibility of a connexion between epidemic encephalitis and influenza, the author admits that the correlation of the two is tempting, although in certain of his cases both the history and the clinical picture were absolutely at variance with the history and course of a typical case of influenza.

5. The Symptoms and Prognosis of Epidemic Encephalitis.

J. GERSTMANN (*Wien. klin. Woch.*, February 19th, 1920) groups his cases of epidemic encephalitis according as they presented one or other of the four following symptom-complexes: (1) Cases characterized by choreiform movements of the trunk and limbs. (2) Cases characterized by more or less pronounced lethargy or somnolence. (3) Cases characterized by definitely localized symptoms, of a tic-like form. The muscular twitchings in this group were chiefly clonic and affected the muscles of the abdomen, including the diaphragm; they were usually observed in muscles on both sides of the body, but their distribution was asymmetrical, their recurrence showed no rhythm, and they were sometimes accompanied by pain. (4) Cases characterized by unusual mental phenomena, including delirium and hallucinations. With regard to prognosis, the author emphasizes the sinister capriciousness of the disease, which sometimes terminates fatally even after convalescence seems to be assured.

6. Lumbar Puncture for the Relief of Ocular Symptoms due to Methyl Alcohol Poisoning.

M. ZETHELIUS (*Hygiea*, January 31st, 1920) notes that methyl alcohol poisoning is increasing in frequency, and that hitherto no satisfactory treatment has been devised for the ocular symptoms provoked. In three cases he has had recourse to frequently repeated lumbar puncture, with strikingly good effects in one case, good effects in another, and comparatively good effects in the third case. As methyl alcohol or its decomposition products have been found in the cerebro-spinal fluid in cases of poisoning, the author suggests that lumbar puncture may be beneficial not only by relieving pressure, but also by withdrawing poisons from direct contact with the central nervous system.

7. Loss of Both Eyes in Graves's Disease.

F. H. LAHEY (*Boston Med. and Surg. Journ.*, April 22nd, 1920) records the case of a woman in whom exophthalmos was so great as to necessitate, in October, 1917, enucleation of the right eye in consequence of oedema and ulceration of the cornea. A month later the superior cervical sympathetic ganglion was removed on the left side; at the same time the external canthus was incised. The exophthalmos, oedema, and ulceration continued to increase, and two days later the lids were sutured together; in December, 1917, this eye had to be removed. The patient is still alive, and is said to be improving in general health.

8. Deaf-Mutism.

PARREL (*Il Morgagni*, February 15th, 1920, and *Paris méd.*, December 27th, 1919) says that we ought not to take an absolutely pessimistic view about deaf-mutism, for by careful and prolonged training encouraging results can be obtained. The condition is the result of bilateral deafness, acquired or congenital, total or subtotal. Consanguinity of the parents, syphilis, tubercle, rickets, alcoholism, or plumbism may account for some cases. In a few cases evidence of meningitis in intrauterine life has been found; the condition is relatively common in certain mountainous regions. Acquired deafness may be the result of otitis (especially after scarlet fever), meningitis, injury, etc. Total deafness is rare, so that it is important to look for any residue of hearing that may be present. Having regard to later instruction in lip-reading, one should test the visual acuity. Treatment may be divided into (1) early physiological treatment given before the age of 7, and (2) pedagogic treatment given subsequently. Any existing ear or throat trouble must be cured as far as possible and the general health maintained;

respiratory and phonetic exercises should be assiduously practised, the tactile sense cultivated, and various speech movements practised by imitation. After seven years a specialized instruction should be given and continued for at least eight years.

9. Chronic Diarrhoea associated with Adenoma of the Thyroid Gland.

GORDON and BAZIN (*Canadian Med. Assoc. Journ.*, April, 1920) report the case of a woman, aged 33, who had complained during the past ten years of alternating diarrhoea and constipation, with vomiting and headache; she had lost 15 lb. in weight and felt "nervous." Physical examination was negative except for a small adenoma of the right lobe of the thyroid; this was regarded as a possible cause of symptoms of mild hyperthyroidism with intestinal manifestations. An adrenalin test gave a positive result on two occasions. The adenoma was removed, and six weeks later the patient had gained 25 lb., had had no return of the diarrhoea or constipation, was sleeping well, and was less nervous; microscopically the adenoma showed abundant mitochondria. The case illustrates the claim of Goetsch that between adenoma of the thyroid and certain types of hyperthyroidism there exists a relation, depending not on the size of the adenoma but upon its activity, which may be measured by the response to the adrenalin test and by the presence of mitochondria in the tumour cells.

10. Sodium Cacodylate for Athreptic Children.

FLOYD CLARKE and ANDREW DOW (*Amer. Journ. Dis. Children*, vol. xix, No. 4) obtained promising results by the injection of sodium cacodylate in a series of six infants, aged 6 to 15 months, all of whom were much under weight and anaemic. Eight injections were given at intervals of four days; as a result the haemoglobin index was definitely increased in each case and a pronounced increase in weight was noted in all save one. The improvement was permanent; in no case were there any toxic symptoms. Although their series is small the authors advise this treatment for children who fail to gain in weight, both in cases where the intake of food is apparently normal and in the other class of patient in whom obvious signs of digestive disturbance are manifest.

11. Pulmonary Incompetence as a Complication of Mitral Stenosis.

VAQUEZ and MAGNIEL (*Paris méd.*, April 24th, 1920) record several cases illustrating the occurrence, first described by Graham Steell in 1896, of functional pulmonary incompetence as a complication of mitral stenosis. The condition may be due to mechanical causes with increase of blood pressure in the pulmonary circulation giving rise to distension of the pulmonary artery and its orifice, or it may result from a process of pulmonary endarteritis similar to the infective endocarditis so frequently met with in subjects of valvular disease. Its localization in the pulmonary artery is explained by the fact that infective processes involve by preference those regions of the circulatory system which, owing to an excess of pressure, tend to be overworked. When the lesion is the result of a mechanical distension of the vessel the prognosis is much less grave than when it is due to infection; its appearance in the first-named manner even appears to be a favourable circumstance.

12. Treatment of Severe Gout.

GUELPA (*Bull. Soc. de Thérap.*, March 10th) reports the case of a woman, aged 34, who had suffered from very severe gout for the last ten years. When she first consulted Guelpa last November she had almost complete ankylosis of the hips and knees, less advanced ankylosis of the shoulders and elbows, and some limitation of movement of the vertebral joints. The hands showed a deviation inwards of nine phalanges and their metacarpals, and both wrists showed an ulnar [illegible] deviation. She was unable to sit down, and could only walk with difficulty. The following treatment was adopted. She was purged for four days in succession and during this time was deprived entirely of food. She was then given a diet almost exclusively of meat for four days. Muscular exercises were ordered, consisting in walking, [illegible] or in mechanical exercises. A drink was prescribed containing 5 or 6 drops of phosphoric acid in a glass of boiled water. In a month's time considerable improvement took place; the starvation period was then prolonged till the sixth day, and the purges were given every two days, with beneficial result.

SURGERY.

13. Electrolysis for Naevi in Children.

MILANI (*Riv. Osped.*, February 15th, 1920) discusses the treatment of naevi in children by means of bipolar electrolysis. The author first describes the various kinds of naevi and then proceeds to discuss the methods of treatment—namely: Excision (ideal, but of only limited application); injection of purulent vaccine (now abandoned); injection of coagulating substances (ergotin, ferri perchloridum, etc., not to be recommended); and acu- or igni-puncture (not very satisfactory). More modern methods are: Application of *x* rays or radium, electrolysis, phototherapy, electro-coagulation, galvano-cautery, high-frequency sparks, carbon dioxide snow, hot air. *X* rays are suitable for deep and extensive naevi; occasionally on the resulting scar pigmentation and telangiectasis take place. Electro-puncture is useful in superficial limited naevi and in small naevi of mucous membranes; in palpebral naevi it is often very successful, but it is contraindicated in naevi of the ear, since there is danger of necrosis of the cartilage. High-frequency sparks are painful, but sometimes useful in port-wine stains, for which, however, phototherapy is better. Of all the methods the author speaks most highly of electrolysis by the bipolar method and the use of the Lewis Jones bipolar platino-iridium needle and a current of 40–60 milliampères passed for thirty to sixty seconds. The needles should be 10–12 mm. distant from each other and should be withdrawn when discoloration appears at the site of puncture; no second application should be given before eight days have passed. Brief details with some photographs are given of thirteen cases.

14. Therapeutic Uses of Carbon Tetrachloride.

JACQUEMET and GOUBEAU (*Bull. Soc. de Thérap.*, March 10th, 1920) describe the following therapeutic uses of carbon tetrachloride: (1) In surgery, in which it is a potent antiseptic; for preparing the surgeon's hands and the field of operation it can be used in a solution of iodine 1 gram, carbon tetrachloride 100 c.cm. For protecting the surgeon's hands a solution of 1 gram of indiarubber in 40 c.cm. of the iodine solution is employed. It can also be used for preserving instruments and for the disinfection of infected wounds. (2) As a parasiticide. (3) In dermatology, either alone or with equal parts of xylol or ether, for the treatment of seborrhoea, pityriasis, acne vulgaris, and acne rosacea.

15. Unilateral Hypertrophy of the Breast in a Man.

LEFÈVRE (*Journ. de Méd. de Bordeaux*, April 25th, 1920) records the case of a soldier, aged 25, admitted to hospital for enlargement of the right breast, the size and consistence of which were similar to those of a well-developed female breast. At puberty both breasts had become slightly enlarged and tender, and for some time a few drops of fluid had escaped from the nipple. The left breast subsequently grew smaller, but the right gradually increased to its present size. The genitals showed nothing abnormal anatomically or functionally. Amputation of the breast was performed, and nothing abnormal macroscopically was found; histological examination was not performed. Lefèvre adds that he has recently operated on a patient (considered to be a woman) for a double inguinal hernia. Herein he found two testicles; the patient presented considerable enlargement of both breasts. In the subsequent discussion Borderie stated that during the war he saw a medical man who, after being severely bruised by the falling of his horse, developed enlargement of the breasts with cessation of testicular secretion and sexual frigidity.

16. Surgical Risks in Diabetics.

N. B. FOSTER (*Annals of Surgery*, March, 1920) recognizes that diabetes can only be diagnosed and its severity estimated by determining the degree of hyperglycaemia. He discusses the effects of chronic infections on diabetics; the blood sugar increases, and even though the patient takes scarcely any food sugar increases in the urine. The decrease in the metabolism of glucose is shown by some degree of acidosis even after the infection has passed. Glycosuria is occasionally manifested after anaesthesia, so that in diabetics there is definite danger of post-anaesthetic acidosis. In diabetics the low resistance of the tissues to infection must be remembered. Estimation of the CO_2 combining power of the blood (normally above 55 per cent.) gives an indication of the degree of acidosis. Any patient showing hyperglycaemia of over 0.35 per cent. (even if there is no acidosis before operation), or a CO_2 combining power of less than 40 per cent., will not survive any operation unless before performing the operation there is time to change the metabolic state. In some cases fasting causes rapid decrease of hyperglycaemia and acidosis; but if surgical infections are present Foster states that fasts are not uncommonly accompanied by a rapid increase of acidosis; these cases must be fed. Fats and carbohydrates are contraindicated. Protein alone must be given, as lean meat and eggs, with small amounts of green vegetables as a relish. Fast days may sometimes be interpolated. The food intake must not at this period exceed 300 calories daily. In acidosis Foster uses sodium bicarbonate; 10–15 grams are given subcutaneously, emulsified in 10 c.cm. of olive oil. Cases of virulent infections of the cellulitic type do not respond to any procedure, but for surgical conditions other than infections (for example, carcinoma of the breast) it may be possible even in moderately severe diabetes to give operative relief.

17. The Frequency of Injuries to the Articular Cartilages of the Knee.

P. WETTERDAL (*Hygiea*, March 15th, 1920) has analysed 36 cases operated on for injuries to the articular cartilages of the knee in a military hospital in Stockholm. In the period 1914–19, 193 cases of injuries to the knee were treated; of these, 45, or 23 per cent., were cases of injury to the articular cartilages, and in 36 of the 45 cases the diagnosis was confirmed by operation. As there were 7,500 surgical cases treated in hospital during this period, the proportion of cases of injury to the articular cartilages was 0.6 per cent. The author notes that this proportion is higher than that found by other writers, and he accounts for the difference by the fact that all his patients were young men peculiarly exposed to injuries to the knee by reason of their military duties, which included gymnastics and football. In 34 of his 36 cases the median articular cartilage was injured. Among the records of 538 published cases the author finds that the median cartilage was injured in 465 and the lateral cartilage only in 73 cases.

18. Chronic Gastric and Duodenal Ulcer.

R. COFFEY, in a paper in *Annals of Surgery* (March, 1920), reviews 233 cases treated by operation. The mortality of simple gastro-enterostomy was 2.42 per cent.; that of all other operations combined was 9 per cent. Two secondary ulcers developed in 165 simple gastro-enterostomies and seven in 67 of the more radical operations. Coffey considers that the evidence as to relief of morbidity indicates that, from the viewpoint of the recovery of the patients, simple gastro-enterostomy gives better results than any radical operations. He concludes that the proper treatment of all gastric and duodenal ulcers, from which the suspicion of malignancy can be removed with a fair degree of certainty, is to perform gastro-enterostomy and await results. If trouble develops later, a radical excision is done, either with a knife or the Balfour cautery. The cautery method is simpler and quicker. Excision, after a gastro-enterostomy has been performed, has practically no mortality at all.

19. Appendicitis and Tuberculosis.

SILVESTRI (*Rif. Med.*, January 10th, 1920) has for some years studied the relationship between appendicitis and tuberculosis. He reports 103 cases, 73 of whom were operated on and 49 observed from the beginning to the present date. Of these, 22 had a family history of tubercle, 8 had definite tuberculous lesions, and 9 signs of partially healed lesions preceding the appendicitis; 10 showed active manifestations of tuberculosis; in 7 tuberculous lesions developed subsequently (arthritis, pleurisy). Of the whole number 47 (45.6 per cent.) presented at some period tuberculous manifestations which could be recognized. Since many tuberculous affections are latent and not easily discoverable, the large proportion of recognized tubercle in this series makes the question of the relationship between tubercle and appendicitis worth further inquiry.

20. Diaphragmatic Hernia.

IN *Annals of Surgery* (March, 1920) two cases of diaphragmatic hernia are described—one by T. F. RIGGS, the other by L. FRANK. The former case was a traumatic hernia on the right of the mid-line; the symptoms consisted chiefly of recurring attacks of vomiting and eructation, the vomiting not comprising all the food taken. Operation was performed by the abdominal route; there was a definite sac to the hernia, the contents being the pyloric portion of the stomach, the greater portion of the transverse colon, and the omentum. The second case was a boy of 16, the hernia (a congenital one) having a distinct peritoneal sac, and containing the pyloric portion of the stomach, the duodenum, the omentum, and a small portion of the liver. The opening in the diaphragm was an enlargement of the oesophageal foramen, and the hernia was into the right chest cavity. In this case the symptoms dated from the age of 18 months; there were attacks of pain, distension, and vomiting, always worse in the recumbent position. After apparently emptying the stomach there was sometimes vomiting of more food. The hernia was approached through the chest wall, a portion of the seventh rib being removed; the neck of the sac was closed, and the sac was not cut away but obliterated by sutures.

OBSTETRICS AND GYNAECOLOGY.

21. Amenorrhoea and Marriage.

A. SIREDY (*Journ. de méd. et de chir. prat.*, April 25th, 1920) emphasizes the importance of a minute medical examination before marriage in every young woman aged from 18 to 20, who has not yet menstruated, whether the prodromal symptoms of the monthly period have occurred or not. He insists on the fact that individuals well formed in other respects and of a distinctly feminine appearance may present anomalies of the genitals incompatible with marriage, such as pseudo-hermaphroditism, or complete absence of the uterus, with an absent or rudimentary vagina. Absence of menstruation is not necessarily associated with such serious anomalies. In most young women who have not menstruated normal genital organs are found. Cases have even been recorded of women who have never menstruated giving birth to six or nine children. In addition to primary amenorrhoea one has to consider the amenorrhoea following surgical operations—for example, hysterectomy for fibroids or pelvic suppuration. Although maternity is out of the question in such cases, marriage is not to be forbidden provided the fiancé realizes the condition.

22. Ammoniacal Endometritis.

SCHLAGENHAUFER (*Archiv f. Gynäk.*, April, 1920) records a case of criminal abortion in which occurred septic endometritis, pyaemia, splenic abscess, and acute haemorrhagic nephritis, with oliguria and uraemia. In consequence of the latter, excretion of urea is said to have taken place in the stomach and inflamed uterine mucosa; through bacterial action ammonium carbonate was produced, and there was an ammoniacal smell from both these organs. Microscopically, small bodies of partially crystalline structure, staining with haematoxylin, were found between the muscular and mucous coats of the uterus.

23. History of a Child Born of an Eclamptic Primipara.

MCLEAN (*Journ. Amer. Med. Assoc.*, May 1st, 1920) describes the history of a child born at 6½ months of an eclamptic primipara. The infant, whose weight was 2 lb. 1 oz. at birth and 1 lb. 14 oz. on the fourteenth day, was kept in an incubator for six weeks from birth. At nine months the child was badly nourished and cyanotic over the whole body; the fingers were clubbed, but no cardiac enlargement could be made out. A loud systolic murmur was heard over the whole of the chest and was most intense over the area of cardiac dullness. Erythrocytes numbered 7,000,000, and haemoglobin 105 per cent.; craniotabes was present. The child walked at the twentieth month. At thirty-two months the child presented a robust appearance and physical examination disclosed nothing abnormal in the heart or elsewhere.

24. Complete Absorption of a Placenta.

DELASSUS (*Gaz. des Prat.*, May 10th, 1920) related at the Réunion Obstétricale et Gynécologique de Lille a case of a woman in whom after normal labour the practitioner was able to extract the cord and membranes, but could not remove the placenta, which was very much adherent. She was carefully watched in hospital for a fortnight, but no portion of the placenta was expelled. Subsequently a second pregnancy with normal course and termination is said to have occurred; its date is not mentioned.

25. Treatment of Ophthalmia Neonatorum.

CLAPP and MARTIN (*Journ. Amer. Med. Assoc.*, May 1st, 1920) report four cases of gonococcal ophthalmia neonatorum treated successfully by instillation of a 2 per cent. solution of dibromoxymercuryfluorescein.

26. Adeno-carcinoma in Scar after Removal of Pseudo-mucinous Cyst.

LANG (quoted in *Zentralbl. f. Gynäk.*, March, 1920) records the case of a woman of 30 in whom, two months after left ovariotomy for pseudo-mucinous cyst, a tumour the size of an egg developed in the abdominal scar; microscopical examination showed it to be an adeno-carcinoma. Malignant recurrences after removal of pseudo-mucinous cysts have been not infrequently described, and the author regards his case as one of metastasis by implantation.

27. An Apparatus for Measuring the New-born.

SCHULTZ (*Bull. Johns Hopkins Hosp.*, April, 1920), who has described a simple and accurate apparatus for measuring the new-born, says that, owing to their being performed in different ways and with different apparatus, these measurements, as hitherto made, have had little value for purposes of comparison. More careful measurement in a uniform manner would provide valuable statistical data.

28. Ovulation, Menstruation, and the Corpus Luteum.

WATRIN and HAMANT (*Rev. méd. de l'Est*, May, 1920) have examined macroscopically and microscopically 135 healthy ovaries removed at operation from patients in whom menstruation was known to be regular, and who were classified according to the period intervening between operation and the next expected menstruation. The authors conclude that ovulation takes place at a fixed time, twelve to fourteen days before the beginning of menstruation. At the time when the menstrual flow appears the corpus luteum has attained its maximum development; at the end of menstruation it regresses. Four days before menstruation its long diameter is 16 mm., five days after the end of menstruation less than 7 mm. Watrin and Hamant believe, with Fraenkel, Ancel and Bouin, and Villemin, that the corpus luteum by means of its internal secretion determines menstruation.

29. An Unusual Condition of the Vulva.

JOYCE (*Med. Journ. of Australia*, April 3rd, 1920) records the case of a girl of 14, who had a painful swelling of the vulva; on inspection there appeared to be a much enlarged clitoris, which was not inflamed, but was very tender. Further examination showed that the swelling was continuous with the labia on both sides; the apparent existence of a glans was due to a fissure which encircled the swelling, and at the bottom of which there was a thread. This, which proved to be a ligature of human hair, was divided, and it was found that the most prominent parts of the labia had been tied together; this had probably been done by the mother, who was insane and had formerly ill-treated the child.

PATHOLOGY.

30. Osteo-chrondritis Dissecans.

NIGST (*Muench. med. Woch.*, October 24th, 1919) gives an account of six cases of internal derangement of the knee-joint due to breaking off of a portion of articular cartilage into the joint cavity. The lesions occurred in young men, the oldest being 27, and in no case was there any osteo-arthritis; in three of the cases no history of trauma was obtainable. In five cases the lesion occurred at the most common site namely, the upper part of the internal condyle. Konig and Ludloff have shown that this type of lesion may not be of directly traumatic origin, but may find its cause in a pathological condition of a limited portion of the cartilage not at first associated with any general arthritis. Konig, in 1887, described the condition as osteo-chondritis dissecans, and asserted that it might be recognizable in an early stage before separation of the sequestrum took place. Ludloff later expressed the view that the primary lesion was damage, possibly from some slight strain, of the minute arteria genus media, with subsequent necrosis and ultimate sequestration of the portion of articular cartilage supplied by that vessel; the actual separation of the sequestrum, with its attendant risk of locking of the joint and acute synovitis, might be delayed and be ultimately determined by some insignificant trauma or unusual movement. This view has been contested by others, especially on the ground that not infrequently loose bodies of this type occur bilaterally. While conceding that the pathology of the condition is not finally settled, Nigst agrees with the above observers that a localized pathological state of the cartilage precedes the separation of the loose body. He emphasizes the importance of having both knees skiagraphed when a case comes under observation.

31. The Duodenal Fluid in Jaundice.

MAUBAN (*C. R. Soc. Biologie*, May 1st, 1920) has examined the duodenal contents removed directly by the Einhorn tube in 5 cases of catarrhal jaundice, 4 cases of specific icterus, 2 cases of jaundice from arsenical injections, 2 due to lithiasis, 2 due to carcinoma of the biliary passages or head of the pancreas, and 2 cases of undetermined origin. The volume of juice obtained was less than the normal quantity. It was limpid save in the two cases of neoplasm, where it was slightly turbid; in 9 cases the colour was normal, in 6 it was golden or pale yellow, and in the 2 malignant cases it was practically colourless. In reaction it was almost always alkaline. With the exception of the cancer cases bile acids were always found. The surface tension was normal in all except in the 2 cancer cases, where it was very sensibly increased. The pancreatic ferments were more active than in the normal state. The steapsin was hypoactive in 4 (2 of which were the cancers), normal in 2, and hyperactive in 10; the trypsin gave a parallel result—hypoactive in 3, normal in 4, and hyperactive in 10; the amylase was hypoactive in 3, normal in 1, and hyperactive in 11. In the two cases of cancer the amylolytic power was fairly considerable, though the other ferments were missing. Except in the cases where the icterus was the result of a neoplasm, the findings in jaundice do not differ much from the normal. The juice may be a little less abundant, a little less rich in biliary pigments; but on the other hand the ferments are more active than the normal, probably owing to a reaction phenomenon, an effort to restore the equilibrium upset by the diminution of the biliary secretion.

32. Detection of Traces of Haemoglobin in Urine.

PITICARIU (*C. R. Soc. Biologie*, May 1st, 1920), in view of the fact that spectroscopy cannot detect haemoglobin in greater dilutions than 1 in 1,000, suggests treating the urine with Ehrlich's aldehyde reagent for the demonstration of urobilin. If a trace of this reagent be added to a urine containing urobilin or urobilinogen a wine-red colour is produced showing with the spectroscope a single band in the blue. The author found that the urine from two cases of malaria gave the two characteristic bands of oxyhaemoglobin which still persisted after the addition of Ehrlich's reagent, but when the urine was diluted a hundred times the bands could no longer be seen; on the addition to this diluted urine of the aldehyde reagent the two characteristic bands reappeared. The method was then tested on 12 cases of malaria, the urine of which, directly examined by the spectroscope, gave no indication of haemoglobin; after the addition of the reagent the typical bands appeared. It is necessary to employ fresh urine.

33. The Sachs Georgi Reaction.

K. DEKENGA and H. J. M. PLATENGA (*Nederland. Tijdschr. v. Geneesk.*, May 8th, 1920) during the last few months have made comparative observations on the Wassermann reaction and Sachs-Georgi reaction, and as the result of the examination of several hundred serums have come to the following conclusions: In serums with a decidedly positive Wassermann reaction the Sachs-Georgi reaction was also positive as a rule, but occasionally exceptions occurred. In serums with a weakly positive Wassermann reaction the Sachs-Georgi reaction was repeatedly negative, while the opposite condition a negative Wassermann and a positive Sachs-Georgi was also sometimes met with. It seems that as a result of treatment the Sachs-Georgi reaction becomes negative more rapidly than the Wassermann reaction. It is therefore not yet justifiable to trust to the Sachs-Georgi reaction alone, though it is of value if carried out in association with the Wassermann reaction.

34. The Fixing of Sections to Slides.

C. CLAOUÉ (*Gaz. hebd. des Sci. Méd. de Bordeaux*, May 2nd, 1920) recommends the following method: A few drops of a solution of 1 part of collodion in 10 parts of ether is poured on the section as soon as it has been drained of an excess of xylol, alcohol or water. The ether rapidly evaporates and a transparent film appears. When an opaque border forms at the periphery of the film, a few drops of absolute alcohol must be poured on it. The section is then placed in a watch glass, and will be found to adhere perfectly to the slide during subsequent staining, dehydration, and mounting in balsam.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

35. Unusual Forms of Meningococcal Infection.

A. BOLAFFI (*Il Policlinico*, Sez. Med., February, 1920) records the following unusual cases. The first was a girl, aged 5, admitted to hospital with symptoms of meningitis. The cerebro-spinal fluid on lumbar puncture was opalescent and showed almost pure lymphocytosis and a large quantity of meningococci. Under treatment by antimeningococcal serum the organisms diminished but the disease took on a chronic course and death took place on the sixty-seventh day, when the child had the appearance of a "little mummy." No evidence of tuberculosis was found at the autopsy or on inoculation of guinea-pigs with the cerebro-spinal fluid. The second case, which occurred in a young soldier, was an example of meningococcal septicaemia with localization of the infection in the skin and lungs, but without meningitis. Bolaffi also records several cases of meningococcal meningitis, in which the onset was insidious or accompanied by neuralgic symptoms or gastro-intestinal disturbance.

36. The Effect of Influenza on the Amsterdam Birth Rate.

ACCORDING to J. VAN GELDEREM (*Nederland. Tijdschr. v. Geneesk.*, March 6th, 1920) the first wave of influenza reached Amsterdam in August, 1918, and three months later the birth rate fell suddenly to 932—that is, 190 lower than in 1917. The second wave, which was of much greater extent and longer duration, occurred in October, 1918, became considerably smaller towards the middle of December, but did not entirely subside till July, 1919. Three months after the appearance of the second wave—that is, in January, 1919—the birth rate again showed an abnormal fall. After a short rise in March it reached its lowest point in May and June, and then slowly rose up to the middle of August, when the level for 1918 was first reached. The births for January to August, 1917, numbered 9,547, while the corresponding figures for 1918 and 1919 were 9,342 and 7,426 respectively. Van Gelderem attributes the fall in the birth rate to the serious disturbance of the normal sexual life resulting from the increase in illness.

37. Colic Associated with Porphyrinuria.

SNAPPER (*Nederland. Tijdschr. v. Geneesk.*, April 10th, 1920) records three cases of acute porphyrinuria occurring in patients aged 17, 24, and 33 respectively, and associated with attacks of acute abdominal pain, and in one case with occult haemorrhage. When the pain subsided, the porphyrinuria diminished. In two cases which were fatal, death was preceded by polyneuritis. In none of the cases did clinical or anatomical investigation account for the abdominal pain and porphyrinuria. Snapper suggests that there was a degeneration of the retroperitoneal nerve plexuses which gave rise to (1) an abnormal action of the liver cells, as the result of which part of the blood pigment was converted into porphyrin instead of into bilirubin; (2) violent colic, which had something of the character of the so-called suprarenal colic; (3) haemorrhagic erosions of the gastric mucosa which were the cause of occult haemorrhage. It is possible that a chronic intoxication, perhaps an autointoxication, affected first the retroperitoneal nerve plexus, and then the whole peripheral and central nervous systems, and so was the cause of the porphyrinuria.

38. Treatment of Whooping-cough.

J. L. PARERA (*Revista del Instituto Bacteriologico*, October, 1919) treated 41 cases of whooping-cough in children by subcutaneous injections, according to Kraus's method, of sputum (heated to 95° C.) from whooping-cough cases. He obtained the following results: 24, or 50 per cent., were cured, 4 in less than a fortnight, 12 in more than a fortnight, and 8 within a month. Of the remaining 17, 10 showed some improvement, 6 were not affected by the treatment, and one (a child of 2½ years, admitted with severe bronchopneumonia) died. J. BACIGALUPO (*ibid.*) treated 435 cases by the same method with the following results: 250, or 57.47 per cent., were cured, 129, or 25.95 per cent., were improved, and 56, or 12.87 per cent., showed no change.

39. Sudden Death in Whooping-cough.

I. NASSO (*La Pediatria*, April 15th, 1920) records a case in an infant, aged 14 months, in whom attacks of paroxysmal cough were accompanied and sometimes replaced by attacks of sneezing. Death took place one morning during an unusually violent attack, being probably due to spasm of the glottis and arrest of the heart associated with spasmophilia. Nasso thinks it would be advisable to subject all infants suffering from whooping-cough to antispasmodic treatment, even if they have no signs of spasmophilia. In severe cases, he says, subcutaneous injections of magnesium sulphate should be given.

40. Tapeworm Indigestion.

G. BECKER (*Finska Läkaresällskapets Handlingar*, March and April, 1920) has examined for tapeworm every patient complaining of symptoms referable to the digestive tract. During the years 1917–1919 he examined 1,030 patients belonging to this category, and in the faeces of 631, or 61.2 per cent., he found evidence of worms. In 87 cases, or 8.4 per cent., the digestive disturbances could be more or less definitely traced to causes other than worms. But in the remaining 544 cases, or 52.8 per cent., no other cause of the digestive disturbances than the presence of bothriocephalus could be found. No doubt in some of these cases there were other causes which were overlooked. Only in 6 cases were the eggs of taenia found, and ascaris eggs were found only in 5 cases. Most of the author's patients came from a bothriocephalus-infested district where it is common for the inhabitants to treat themselves for worms without medical advice, but only in a few of the 631 cases had worms been found in the faeces by the patients themselves. The author concludes that in Finland, at any rate, it is a grave mistake in treating gastro-intestinal symptoms to overlook intestinal parasites. In this connexion he considers a burning sensation in the tongue very suggestive of the presence of worms; in certain districts this symptom is a commonly accepted indication. It recurs periodically, and is often so slight as to be overlooked by the patient unless his attention is drawn to it. The burning sensation is usually referred to the tip and margins of the tongue, but in some cases the whole of the mouth may be sore.

41. Vleminckx's Solution for Warts.

PUSEY (*Journ. Amer. Med. Assoc.*, 1920, 74) recommends the use of Vleminckx's solution for the treatment of warts, and publishes photographs of a case of generalized warts of the face on which the mixture had a beneficial effect. Pusey soaks a small dressing, slightly larger than the wart, in the solution and fixes it overnight; this is repeated until irritation is produced, when it is used less frequently until the wart disappears or until the desiccated mass can be dug out. The formula of Vleminckx's solution is: Calcium oxide 165 grams, sulphur sublimat. 250 grams, water to 1,000 c.cm.

42. Lemon-grass Oil.

TAKASUGI (*Bull. Nav. Med. Assoc. Japan*, February, 1920) alludes to the well known destructive power of lemon-grass oil on insects. He applied about forty kinds of volatile vegetable oils, including lemon-grass oil, to cases of skin disease caused by animal parasites, and made experiments concerning the toxic effect of these oils on certain insects. He concludes that (1) lemon-grass oil has an especially beneficial effect on skin diseases caused by animal parasites; (2) among volatile vegetable oils lemon-grass oil has the most toxic effect upon insects, the most effective ingredient being citroneral.

43. The Syndrome of the Solar Plexus in Pulmonary Tuberculosis.

A. GALLOTTI (*Il Morgagni*, Archivio, March 31st, 1920) states that it is not uncommon to find that disturbances of the gastro-intestinal function in tuberculosis are accompanied by spontaneous abdominal pain, more or less definite in character, sometimes in the form of crises resembling those of tabes or lead colic. The pain radiates in various directions, and may be accompanied by frequent vomiting, diarrhoea, and a feeling of distress. The symptoms which have not received the attention they deserve and are often confused with the ordinary gastro-intestinal disturbances of tuberculosis are to be attributed to irritation of the solar plexus by various causes, such as mesenteritis, isolated fibro-caseous glands, or sclerosis of the suprarenals. Treatment consists in recalcification (for decalcification plays an important part in the evolution of tuberculosis); for the pain, diarrhoea, and vomiting, antispasmodics, such as belladonna, valerian and its derivatives, should be given. In painful epigastric crises accompanied by pulsation of the aorta epigastric massage should be employed.

44. Two Syndromes in Lethargic Encephalitis.

G. ZAGARI (*Rif. Med.*, March 6th, 1920) describes two different syndromes in lethargic encephalitis which are sometimes associated—namely, an upper mesencephalic syndrome and a lower mesencephalic syndrome. The former is characterized by somnolence, paralysis, or paresis of the third and fourth cranial nerves, and a more or less normal cerebro-spinal fluid, preceded or followed by general symptoms (headache, shivering, vertigo, nausea, and restlessness) and a febrile condition. The lower mesencephalic syndrome is characterized by paresis of other cranial nerves—namely, fifth, sixth, seventh, ninth, tenth, and twelfth. There is usually bilateral paresis of the lower facial branches and of the motor branch of the fifth, ninth, and twelfth, giving rise to deviation of the corner of the mouth, difficulty in swallowing, and dysarthria, together with tenderness over the point of emergence of the branches of the trigeminal and anaesthesia in the area of its distribution. In addition to these two syndromes other symptoms have been described—for example, choreiform symptoms, paralysis of the upper and lower limbs, hemiplegia, tremors, incoordination, convulsions, Jacksonian epilepsy, and spinal manifestations.

45. Medical Treatment of Aortic Aneurysm.

MACLACHLAN (*Amer. Journ. of Med. Sciences*, April, 1920) emphasizes the value of medical treatment in aortic aneurysm, syphilitic in origin, and records notes of 3 cases in which general improvement took place. Absolute rest in bed for the first three months is essential, followed by a limitation in physical work for nine months, with avoidance for the remainder of life of undue exertion, worry, and mental effort. Too strict a diet is not indicated unless the blood pressure is high, and it is important to keep the general nourishment as nearly normal as possible. Potassium iodide in moderate doses is undoubtedly of value in relieving pain and hastening absorption of inflammatory tissue, but the *Spirochaeta pallida* is not affected thereby. As in tertiary syphilis elsewhere, mercury and arsphenamin must be used, the former by inunction while in hospital, and as grey powder given by the mouth when the patient returns home. At least twelve injections of arsphenamin should be given during the period of rest in bed, the first six being 0.2 gram and the remainder 0.3 gram, larger doses being avoided in order not to run the risk of straining from vomiting. The general condition of the patient and the results of the Wassermann reactions will decide the length of the treatment. If feasible, active treatment should be continued for at least two or three years. From results so far obtained more active antisyphilitic treatment of aortic aneurysm seems justified; it is unwise to stop treatment too early on account of a negative complement fixation.

46. Treatment of Epidemic Encephalitis.

S. MAGGIORE (*La Pediatria*, April 1st, 1920) has treated 9 cases (7 in children and 2 in adults) by intravenous or subcutaneous injections of sensitized vaccines prepared from young cultures of Pfeiffer's bacillus. According to the character of the reaction there was one or two days interval between the injections. The treatment was found to have a favourable effect on the somnolence, fever, and ocular, cardio-vascular, respiratory, and nervous symptoms. The injections only caused violent reactions in cases with hyperpyrexia, in all the others the reaction was slight. The good results might be attributed to immunity if the disease were regarded as influenzal in origin, or to protein therapy if it were regarded as not due to influenza.

47. Endemic Goitre in the Argentine

P. WERNICKE (*Rev. del Instituto Bacteriologico*, October, 1919) states that the drinking water in those regions of the Argentine where goitre is endemic does not present the low surface tension observed by Bircher in regions of endemic goitre in Switzerland. The geological character of the goitre regions in the Argentine does not therefore confirm Bircher's "hydrotelluric theory."

SURGERY.

48. Tumours of the Antrum.

NEW (*Journ. Amer. Med. Assoc.*, May 8th, 1920) believes that two advances have been accomplished by the use of the cautery and radium in the treatment of malignant tumours of the antrum: first, the elimination of an operative mortality, and secondly, a marked decrease in the percentage of cases showing recurrences. At the Mayo clinic for the last three years malignant tumours of the antrum have been treated by the use of heat in the form of a soldering iron followed by radium treatment, and he believes that the immediate results are much better than when resection of the jaw was performed. The earliest symptom of malignancy of the antrum usually is pain. At first it may be only a burning or an itching sensation over the cheek due to irritation of the fifth nerve. Later the pain is dull and is frequently referred to the teeth; it is usually relieved when the tumour perforates the wall of the antrum into the mouth or cheek. In some cases the first complaint is nasal obstruction, and in others the increased nasal discharge brings the patient for an examination. A rapidly growing lymphosarcoma or round-cell sarcoma may be very extensive and still be treated by the cautery and radium, but it would be hopeless to attempt treatment for a squamous-cell epithelioma of similar size. The age of the patient and the length of the history of the condition are important factors. Involvement of the nose and sinuses or floor of the orbit makes the prognosis grave, although it does not exclude the possibility of help from treatment. Glandular involvement occurs late in malignancy of the antrum, and may be in the parotid, submaxillary, or cervical regions; when it is present the possibility of helping the patient is very slight. No patients with glandular involvement were selected for treatment. The technique of the treatment is described in detail.

49. Free Skin Grafts in Mouth and Nose.

G. M. DORRANCE (*Annals of Surgery*, March, 1920) describes modifications of the method used at the Queen's Hospital, Sidcup. This method is the Ollier-Thiersch graft resting on an accurate impression of the surface to be grafted, made in dentists' modelling compound, the whole being held firmly pressed in place—in the case of the mouth by attaching the compound to a splint fastened to the teeth. Dorrance, in dissecting out the scar tissue, enlarges the cavity considerably beyond final requirements, and, in order to keep the mouth in an over-corrected position, puts the jaws in an open-bite splint. He retains the dental compound in place for fourteen to twenty-one days, and after its removal inserts a vulcanite model for several weeks. The original compound must be held in place under pressure. No harm results from the patient vomiting over the graft immediately after the operation. Skin flaps may be lined with a Thiersch graft in the same manner, but where possible a full thickness skin flap is preferable. In lining a nose with epithelium, if no skin for a flap is available, an attachment is made connected to an appliance (attached to the teeth) bearing a mould of modelling compound. A Thiersch graft is applied to the inner surface of the skin flap and the flap is then accurately fitted over the modelling compound.

50. Radical Cure of Femoral Hernia.

CATES (*Amer. Journ. of Surg.*, March, 1920) gives a further note on an operation for the radical cure of femoral hernia previously described by him, in which Poupart's ligament was cut through in order to liberate the gangrenous bowel. In two recent cases a long skin incision was made from the spine of the pubis outwards, below and parallel to Poupart's ligament. Two pairs of Mayo's forceps were thrust into the femoral ring above the neck of the sac, and the falciform and Poupart's ligaments divided for half an inch. Other forceps were then pushed in above the first pair, and the tissues divided with scissors. By sponging back the tissues and dividing between forceps wounding of important structures is avoided, and if anomalous obturator or deep epigastric arteries are divided they are held between the forceps and can be tied at leisure. After dividing the ligaments the sacs were opened and the bowels replaced. The peritoneum was then pushed back with gauze for an inch or more above Poupart's ligament, and the narrowest part of the sac tied with a double strand of No. 2 catgut on a Mayo needle. After cutting away the redundant part of the sac the remainder was gathered on the suture and sewed to the anterior surface of the abdomen by thrusting the needle through the abdominal wall.

The inner end of Poupart's ligament was then sewn to the pubic portion of the fascia lata with catgut, and the skin incision closed without drainage.

51. Crucial Ligaments of the Knee-joint.

HEY GROVES (*Brit. Journ. of Surg.*, April, 1920) describes his operations for the repair of ruptured crucial ligaments of the knee-joint designed to restore their most important functions—namely, the checking of forward displacement of the tibia by the anterior, and of backward displacement by the posterior, ligament—functions dependent upon their oblique direction which the operation aims at maintaining. The leg is encased in sterile stockingette through which a large U-shaped incision is made in front of the knee, its lowest part being just below the tubercle of the tibia, the inner limb running along the line of the inner hamstrings, and the outer one fingerbreadth on the outer side of the patella, the incision in the stockingette being fastened with clips to the skin edges. The tubercle of the tibia is chiselled off, the patella turned upwards, and the interior of the joint exposed. For repair of the anterior ligament a strip of the ilio-tibial band, 8 in. long by 1½ in. wide, is separated, retaining its original attachment to the head of the tibia. The external condyle is drilled, so that the inner end of the whole is far back in order that the new ligament may be as oblique as possible. The front of the tibia is then drilled, so that the inner end of the hole lies just in front of the tibial spine, its external orifice being over the most prominent part of the inner tuberosity of the tibia, the proximal ends of each canal being bevelled to make smooth funnel-shaped openings. With a strip of gauze as pilot the strip of ilio-tibial band is pulled taut through the femur and through the head of the tibia, and, with the knee flexed, it is fixed by sutures and one ivory nail on the inner aspect of the internal condyle. After suturing the joint capsule the tubercle of the tibia is replaced and fixed by two bone or ivory nails. A similar procedure is adopted for repair of the posterior ligament with proximal strips from the semitendinosus and gracilis tendons. These are thrust through the inner part of the posterior ligament of the knee and pulled forward until their free ends hang out from the front of the joint, and they are then passed through a hole bored through the internal condyle opening as far forward as possible on the inner aspect of the intercondylar notch. After being pulled tight, with the knee fully extended, the free ends are turned downwards and attached to the inner tuberosity of the tibia, and the joint closed. In both cases the knee is put up on a back splint, with daily massage and faradism to the quadriceps after three weeks. Six weeks after the operation a light plaster case is applied and the patient allowed to walk, and a moulded case with lateral hinges is used later for three to six months. Of fourteen cases operated upon no ill effects have followed, and all but four have benefited, four to such an extent as to be able to return to active work without wearing a splint.

52. Statistics of 154 Tonsillectomies.

H. BURGER (*Nederland. Tijdschr. v. Geneesk.*, April 17th, 1920) performed tonsillectomies on 94 patients, aged from 4 to 56 years, 37 of whom were males and 57 females. In 34 one tonsil and in 60 both tonsils were removed. The most frequent indication for operation (73 of 94 patients) was repeated attacks of sore throat. The indications for operation in the remaining cases were enlarged glands of the neck, syphilis, and lymphosarcoma of the tonsil. Local anaesthesia was always used for patients above the age of 15, painting with 10 or 20 per cent. cocaine being employed, for which injection of about 8 c.cm. of a 1 per cent. solution of cocaine and adrenalin was afterwards substituted. Haemorrhage following the operation was slight in 25, moderate in 18, and profuse in 12, but was never of a dangerous amount. Seventy per cent. of those operated on for repeated attacks of sore throat did not have another attack and improvement took place in the other cases. Burger emphasizes the fact that tonsillectomy is by no means a simple operation. It requires a definite indication and careful execution. He agrees with Malan in urging practitioners to consider the possibility of tonsillar infection in cases of rheumatism, pyaemia, and protracted organic disease.

53. Chronic Dislocation of Peroneal Tendons.

KELLY (*Brit. Journ. of Surg.*, April, 1920) describes an operation to prevent chronic forward dislocation of the peroneal tendons; its essential feature is the formation, by means of a wedge-shaped graft from the lower end of the fibula, of a new lip to the peroneal groove.

OBSTETRICS AND GYNAECOLOGY.

54. Bilateral Hermaphroditism with Bisexual Glands.

BRIAU, LACASSAGNE, and LAGOUTTE (*Gyn. et Obstét. Rev. Mens.*, vol. i, No. 2, 1920) record the case of a person who at birth was believed to be a girl; from the age of three months it was regarded as a boy with perineal hypospadias, and two efforts were made to construct a penile urethra. When 16 an operation for radical cure of a right inguinal hydrocele was performed, and the absence was noticed of the left testis from the scrotum. Soon afterwards there began to occur regularly every three weeks an admixture of blood with the urine; at these times no mammary changes occurred, although the breasts had distinctly feminine configuration. During the next two years pain and tenderness in association with the periodic haemorrhages continued to increase, and the patient sought further treatment. At laparotomy were found a rather small uterus; on the right, a round ligament, a rudimentary tube, and no ovary; on the left, a round ligament, a Fallopian tube and an inflamed enlarged "ovary" containing a blood cyst. Subtotal hysterectomy was performed, and the "testis" was removed from the right groin. The excised sexual glands were very carefully examined; that of each side was proved to be a mixed gland, containing both ovarian and testicular elements. The left gland, according to its pelvic situation, and its relations with the uterus and tube, was an ovary; microscopically it was shown to comprise two parts—a fully-functioning ovarian part and a testicular portion with rudimentary spermatocytes. The right gland, by reason of its inguinal situation, its anterior covering of tunica vaginalis, and its connexion with an epididymis and vas deferens, appeared to be an ectopic testis; microscopically it contained an ovarian portion with ripe follicles and a testicular part with fully formed spermatocytes. The patient has been free from nervous or circulatory troubles in the five years that have elapsed since the last operation.

55. Obstetric Palsy.

BOORSTEIN (*Med. Record*, November, 1919) describes seventeen cases of this condition, and says that it should be recognized that obstetric palsy belongs to the domain of orthopaedic surgery. Great care should be taken to prevent over-stretching and over-use of the denervated muscles or contractures of their antagonists; the shoulder should at once be put in a splint or brace to prevent stretching of the deltoid. In most cases the injuries to the nerves are not severe, and if treated early will recover. Conservative treatment should be tried for three months; it consists of support, massage, and exercises. If this fails, Taylor's operation on the plexus is useful, and the contracted pectoralis major, subscapularis, and teres major should be cut by Sever's method. Observation should be continued until the age of 10 at least, as slight deformity may persist.

56. An Unusual Case of Tuberculous Salpingitis.

GREENBERG (*Bull. Johns Hopkins Hospital*, April, 1920) records the case of a married woman of 19 who, since an attack of pneumonia five years previously, had had abdominal pain. Examination revealed a tense, smooth cystic mass, adherent and tender, bulging on the right into the pouch of Douglas and the rectum. Under ether, pelvic examination showed the swelling to consist of two unequal parts; the diagnosis was made of right tubo-ovarian abscess. At laparotomy two masses were seen in the right adnexa; the upper and smaller was bluish, cystic, and lobulated, and resembled an extrauterine pregnancy in the outer third of the Fallopian tube. This was removed intact, together with a wedge of uterine cornu; the lower and larger mass was a corpus luteum cyst, of which a portion, together with the right ovary, was excised. Subsequent examination of the smaller cystic mass showed it to contain a greenish gelatinous fluid in the most dilated portion, and a firm greyish-white material in the uterine end. Microscopically typical tubercles were abundant. The left tube, which was enlarged, showed similar microscopic appearances.

57. Three Cases of Cancer of the Body of the Uterus following X-ray Treatment for Fibroids.

MORNARD (*Gyn. et Obstét. Rev. Mens.*, vol. i, No. 2, 1920) reports three cases of malignant disease rapidly developing in the uterine body within a short time of *x*-ray treatment for fibroids. The patients were from 45 to 51 years old, and had been known from one to four years to have fibroma, for which they had received from three to twelve monthly applications of radium; in each case haemorrhage ceased, but the tumour did not diminish in size. In two of the cases, within five months metrorrhagia and fetid discharge suddenly appeared; with extraordinary rapidity, the uterus became immobile and the broad ligaments infiltrated. Proliferative malignant masses were found in the body of the uterus, and both these patients were dead within six weeks. In the third case the haemorrhage and discharge returned two years after cessation of the radio-therapy; the malignant disease of the body was treated by extended hysterectomy, and the patient was still living twenty-seven months after the operation. In the three cases the rate of extension of the growth of the uterine body was greater than that of even the most rapid cases of cancer of the cervix. Unfortunately no histological examination was made.

58. Inversion of the Uterus.

ENGELMANN (*Zentralbl. f. Gynäk.*, April 3rd, 1920) describes two cases of complete uterine inversion following labour. He believes that the condition is more common than has hitherto been believed, and is due to the general employment in cases of post-partum bleeding of the Credé method of expulsion of the placenta. The author suggests that students and midwives should be taught in practising Credé's grip to use both hands with outstretched fingers. He advocates treatment of this condition—except, perhaps, in cases showing no great degree of shock—by immediate reposition under general anaesthesia.

PATHOLOGY.

59. The Significance of Yellow Spinal Fluid.

NAMMACK (*Amer. Journ. of Med. Sci.*, April, 1990) records the finding of yellow spinal fluid in a series of 96 cases. In 5 the true syndrome of Froin occurred—namely, immediate coagulation of the fluid on standing, yellow coloration (xanthochromia), and a marked increase in cells and albumin: 2 were cases of meningeal haemorrhage, 2 of tuberculous meningitis, and 2 of poliomyelitis. It seems that Froin's true syndrome represents the extreme development of a process of which the appearance of yellow coloration represents the earliest stage. Of 60 of the remaining cases which were tabulated, 40 were cases of tuberculous meningitis, 13 poliomyelitis, 3 cerebral haemorrhage, 1 meningeal haemorrhage, 1 cord tumour, 1 pachymeningitis, 1 cerebro-spinal meningitis. These figures confirm the clinical observation that the presence of yellow fluid in a case with meningeal symptoms strongly suggests the probable diagnosis of tuberculous meningitis or poliomyelitis.

60. Catalase Content of Cerebro-spinal Fluid.

Whilst the presence of catalase indicates the presence of many cells or of a coagulum in the fluid, LEVINSON and B[illegible] (*Journ. Amer. Med. Assoc.*, May 8th, 1920) see no advantage in the catalase examination for practical purposes. The cell count done immediately after withdrawal of the fluid from the body gives more accurate information without necessitating the use of complicated apparatus. Fluid that gives a fairly high catalase reading directly after the fluid was removed from the body gives a lower reading if examined after the fluid has been standing. This shows that the catalase depends on the presence of leucocytes, and varies directly with the number of leucocytes present in the fluid. Since leucocytes degenerate on standing, the catalase reading becomes lower. The authors conclude that the catalase test as applied to cerebro-spinal fluid is of no practical value.

61. Borna's Disease

According to R. KRAUS, L. KANTOR, and R. QUIROGA (*Rev. del Instituto Bacteriologico*, October, 1919), Borna's disease, or encephalitis enzootica, is a condition which has been observed in summer for several years among the horses in the Argentine Republic, and is characterized histologically by an infiltration of the cerebral vessels. Cerebral injection of rabbits with brain emulsion from horses produced death within twenty-four hours, a characteristic diplococcus being cultivated from their brains. Cerebral injection of horses with the pure culture reproduced all the symptoms of the natural disease. The writers therefore conclude that Borna's disease is caused by a specific diplococcus.

62. Pathology of Haemorrhagic Diathesis.

ARNOLD KIRCH (*Wien. klin. Woch.*, December 18th, 1919) gives details of four cases in which haemorrhages were a feature. Two were cases of scurvy due to imperfect diet. In one of these, but not the other, there was haemorrhage from the gums; in both there were subcutaneous haemorrhages in the lower limbs. Apart from anaemia the blood showed no important alterations. In the third case there were numerous skin haemorrhages and bleeding occurred from the mucous membranes. In this case examination of the blood showed most of the features which have been described by Frank in purpura: the blood platelets were diminished to 14,000 per cubic millimetre and giant platelets were seen. The bleeding time was much prolonged and coagulation time was definitely prolonged. A sample of blood which coagulated *in vitro* showed no retraction of the clot on standing; the osmotic resistance of the red corpuscles was diminished. The fourth case was one of pernicious anaemia with petechiae in the skin. In commenting on the case of purpura Frank discusses the importance of the blood platelets in promoting coagulation and checking haemorrhage; in that case normal agglutination of platelets was not observed.

63. Azotaemia in Haemolytic Icterus.

GILBERT, CHABROL, and BENARD (*Paris méd.*, May 8th, 1920,) have carried out series of estimations of the non-protein nitrogen in the blood in different types of disease characterized by jaundice of haemolytic origin. In one case of chronic splenomegalic icterus with corpuscular fragility a well-marked azotaemia, of 2.4 grams per litre, was noted coincident with an attack of increased jaundice, and again immediately after splenectomy had been performed. In the interval frequent estimations gave normal readings of 0.45 to 0.6 gram per litre. In three other cases of the same kind, where only a few estimations could be made, no rise of non-protein nitrogen in the blood was observed. Seven cases of pernicious anaemia were examined; all of these showed a "sub-icteric" condition, the cholaemia varying from 1 in 6,000 to 1 in 12,000, and in six the non-protein nitrogen was definitely increased to above 0.7 gram per litre. In other cachectic diseases at late stages the estimations did not exceed 0.45 gram per litre. One case of haemoglobinuria with jaundice due to malaria was examined and showed a definite azotaemia, which rose to the high figure of 6.45 grams per litre towards death. In none of the haemolytic cases was this rise in non-protein nitrogen accompanied by any evidence of uraemia, and only in the malarial case did the kidneys show any evidence of lesions which might contribute to a retention of metabolic products. The authors incline to believe that the excess of urea in the blood in the cases of haemolysis is derived from the globin fraction of the "lysed" blood, which is changed into urea in the liver just as the haematin fraction is there converted into bile pigment. Attempts were made to obtain experimental proof of this by perfusing the livers of dogs with "lysed" blood; it was found that the amount of urea obtained from this perfusion fluid was double that from perfusion with an isotonic solution free from haemoglobin. It remains doubtful, however, if the amount of blood destruction which occurs in haemolytic jaundice is sufficient to account for any high degree of azotaemia, as the nitrogen from the corpuscles of 100 grams of blood is sufficient to give only 4 grams of urea.

64. The Diagnostic Value of Casoni's Reaction in Hydatid Disease.

P. LAURIDIANA (*Il Policlinico*, Sez. Prat., May 3rd, 1920) gives the following description of this reaction, which is said to be positive in 87.5 per cent. of all cases of hydatid disease. Casoni uses as antigen (1) the clearest possible hydatid fluid taken from the cysts of oxen or sheep; it is strained several times through thick filters and kept in an ice chest, a drop of pure carbolic acid being added to 20 c.cm. of the fluid; (2) a watery extract of the hydatid membrane and of the cystic fluid. The first is thought to be more active than the second. After disinfection of the skin of the arm ¼ c.cm. of the fluid is injected into the dermis, and as a control an equal amount of sterile normal saline solution into the other arm. In the course of a few days, if the reaction is positive, the patient feels a slight irritation at the site of inoculation, and in twelve hours an oval patch of erythema appears, which, in well marked cases, may reach the size of the palm of the hand. Subsequently oedematous infiltration develops, which is painful and tender, and accompanied by a local rise of temperature. The erythema lasts two days and the infiltration four days. Six illustrative cases are recorded.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

65. A Series of Cases of Gout.

OF 116 patients admitted to hospital who were later found to have gout only 29 were admitted as having gout or even suspected gout, despite the fact that 65 of them "had the diagnosis written on their ears in unmistakable characters." WILLIAMSON (*Journ. Amer. Med. Assoc.*, June 12th, 1920) reports that only 5 of the 116 entered the hospital in their first attack, the great majority of patients having been admitted many years afterwards. The ratio of admissions of cases of gout to the total medical admissions was 0.399. Tophi were present in the ears 65 times, and in only one case were tophi found elsewhere without the ears being simultaneously affected. In 14 instances there were tophi in the ears and in other portions of the body as well. Such other locations were the fingers, toes, knuckles, thumb, elbows, and the thyroid cartilage. Bursae were found four separate times, three times over the olecranon and once over the acromion. The blood findings were quite uniform. A moderate leucocytosis occurred in most of the cases. In 42 cases careful Roentgen-ray studies were made of the joints involved; 14 of these cases were reported as showing either definite gouty changes, or changes that were consistent with gout. All of the other 28 cases were returned with the statement that the joint changes indicated hypertrophic osteo-arthritis, or else showed arthritic changes of an indefinite character. Of the 14 cases recognized by the Roentgen ray as gout, 13 showed tophi in the ears, and the fourteenth patient had a gout of fifteen years' standing. Of the 28 cases in which the Roentgen findings were not characteristic of gout, 21 showed tophi in the ears. The conclusion, therefore, seems inevitable that even in the most skilled hands the x rays are of very little service from a diagnostic standpoint.

66. Treatment of Catarrhal Jaundice.

LYON (*Amer. Journ. of Med. Sci.*, April, 1920) describes a direct method of treatment for catarrhal jaundice, the presence of catarrhal or infective processes in the stomach and duodenum being first ascertained by examining their fasting and digesting secretions chemically, microscopically, and bacteriologically. In the seven cases so examined not only was there a gastro-duodenal catarrhal inflammation, but also a local implantation of pathogenic micro-organisms—streptococci, staphylococci, *Micrococci catarrhales*, or pneumococci—either in the stomach or duodenum or in both. A sterile duodenal tube was passed to the stomach in its fasting morning state and the contents were withdrawn for analysis. The stomach was washed with water, followed by liquor antisepticus alkalinus in hyperacid cases, or hydrochloric acid solution in subacid cases, and then with water again until the washings were clear. 250 c.cm. of potassium permanganate solution (1 in 15,000 to 1 in 8,000) and of a solution of silver nitrate (1 in 20,000 to 1 in 10,000) were introduced into the stomach on alternate days and allowed to remain for from three to five minutes. After drinking a glass of water the patient was turned on the right side, and by slow swallowing the tube was allowed to enter the duodenum; its contents, which at first were bile-free, were aspirated for examination. The duodenal mucosa was douched by introducing through the tube 50 to 100 c.cm. of 25 per cent. saturated solution of magnesium sulphate. A low pressure vacuum bottle was connected to the tube and the clear solution remaining in the duodenum was first aspirated; it was shortly followed by bile-stained fluid, and later by pure bile alone. Treatment was given daily until the bile duct was freed, and then every second or fourth day. In only two of the seven cases was it possible to unplug the ampulla of Vater at the first treatment, but in all this was accomplished at the second or third. Following the biliary drainage the duodenum was disinfected with potassium permanganate or silver nitrate solution of the same strength as used in the stomach; this was continued as long as microscopic evidence of duodenitis was found. The treatment took from one to one and a half hours. In the cases treated the average duration of the jaundice was seventeen days, as compared with the average of thirty-five where the usual expectant treatment had been adopted.

67. Millard-Gubler's Syndrome in Lethargic Encephalitis.

E. BANDIERA (*Il Policlinico*, Sez. Prat., April 19th, 1920) records a case in a man, aged 70, who, after initial symptoms consisting of irritation of the larynx and oesophagus causing difficulty in speaking and swallowing, developed myosis and rigidity of the right pupil, right external strabismus and diplopia, supranuclear paresis of the left facial, motor paresis of all the muscles of the right upper limb without obvious electrical changes, marked ataxia of the right lower limb, and spinal ataxia of the left lower limb. The tendon reflexes were normal. The symptoms indicated a lesion of the left half of the pons. In the course of a few weeks improvement set in, and finally complete recovery took place.

68. On the Sign of the Aortic Arch.

A. BABES and D. DUMITRESCO (*Paris méd.*, April 17th, 1920) have examined more than 500 patients with various medical and surgical affections for this sign: it consists in vigorous pulsation of the aortic arch, which can be felt synchronously with the heart beat at the upper border of the manubrium sterni. The sign necessitates the presence of the three following conditions, either separately or in combination: (1) Dilatation of the aortic arch; (2) hypertrophy, however slight, of the left ventricle; (3) raising of the heart, either by fluid in the pericardium, or by intra-abdominal pressure due to ascites, an intra-abdominal tumour, or enlargement of the liver, especially of its left lobe. The mechanism of the sign consists in the elevation of the heart, and consequently of the aorta, towards the sternal notch. The writers regard the sign as of less value as an indication of aortic dilatation than of hypertrophy of the left ventricle and of pericarditis with effusion.

69. Amblyopia Due to Carbon Disulphide.

TERRIEN (*Paris méd.*, April 17th, 1920) records two cases in men, aged 45 and 48 respectively, who were employed for eight hours daily in a badly ventilated mustard plaster factory; they had to spread a solution of indiarubber in carbon disulphide on paper which was then covered with mustard powder. Both presented a very large central scotoma associated with well marked narrowing of the visual field. The prognosis of amblyopia due to carbon disulphide is usually favourable and the occurrence of atrophy is rare. In a large number of cases collected by Terrien recovery took place in 33 per cent., improvement in 25 per cent., and in 20 per cent. treatment failed. As intoxication by carbon disulphide takes place through the respiratory tract it is most important that factories in which carbon disulphide is used should be well ventilated. As soon as intoxication occurs the patient should be removed from further exposure to the vapour. Strychnine, small doses of iodides, and diaphoretic measures should be employed; vapour baths and infusions of jaborandi leaves are useful.

70. Permanent Results of Sanatorium Treatment.

J. OSTENFELD (*Ugeskrift for Laeger*, April 29th and May 6th, 1920) has investigated the after-histories of male patients treated at the Faksinge working-class sanatorium in the period 1908–1914. The total number of discharges, including deaths at the sanatorium, during this period was 1,496. After deducting the patients who stayed less than a month, and those who died in the sanatorium, as well as other patients disqualified for various reasons, the author is left with a figure of 1,278. Of these, 82 per cent. were discharged as improved or cured. In 44 per cent. of the 1,278 discharges complete or partial capacity for work was maintained five years or more later. Of the patients admitted to the sanatorium in the first stage of the disease 76 per cent. were perfectly fit for work, and another 6 per cent. were fit for part-time work. Thus, a permanent good result could be claimed for 82 per cent. of the first stage cases. Of the patients in the second stage 51 per cent. were still fit for work. Of the third stage cases 18.5 per cent. were still perfectly fit for work, and 57.2 per cent. had died within five years of discharge. On the basis of these figures the author urges the necessity for early sanatorium treatment, and he regards the present wave of pessimism over the results of sanatorium treatment as unjustified.

71. The Third Sound of the Heart.

C. LIAN (*La Médecine*, March, 1920) states that this is neither rare, as Gallavardin maintains, nor frequent, as Thayer believes. Lian has found it in about 10 per cent. of the soldiers in his section who reported sick. It is, he says, fairly often muffled, and appears as a distant echo of the normal second sound, but not infrequently it appears very distant. It is heard either at the apex alone or in the intercostal space above. It is not heard at the base, and is thus distinguished from the reduplication of the second sound, which is best heard in that region. As a rule it is a transitory phenomenon, and is not heard in every cardiac cycle nor at every examination. As a general rule slowness of the cardiac contractions enables the third sound to be heard more distinctly. It is rarely heard when the patient is in the upright position. It is most frequent in young subjects, as Thayer has shown. As regards its mechanism two theories have been suggested: (1) It is due to the sudden distension of the ventricles at the onset of diastole, and may be explained either as a muscular sound or as due to tension of the auriculo-ventricular valves. Lian agrees with British and American writers that the third sound is a physiological phenomenon. (2) It is a similar phenomenon to the protodiastolic sound in gallop rhythm.

72. Influenza Mortality among Hospital Cases.

IN an analysis of the 1,311 cases of influenza admitted to the medical side of the Sahlgren Hospital in Gothenburg between July 12th and December 31st, 1918, C. A. WALLGREN (*Hygiea*, April 30th, 1920) finds that there were 94 deaths within twenty-four hours of admission to hospital. The total mortality in hospital was 30.4 per cent. Among males this mortality was 34 per cent., among females it was 26.3 per cent. The age of 20 to 30 showed the highest morbidity as well as the highest mortality. In 77 per cent. pneumonia was diagnosed, and the mortality among the cases of pneumonia was 38 per cent. Of the 86 cases of empyema 56 per cent. died. Heart disease and pregnancy had a sinister effect on the prognosis. No specific remedy gave general satisfaction, and the most valuable treatment was early confinement to bed and a sojourn there till the acute stage of the disease had passed.

SURGERY.

73. Post herpetic Neuralgia and its Surgical Treatment.

According to J. A. SICARD (*La Médecine*, February, 1920) the inflammation of herpes zoster affects four segments of sensibility to pain—namely, the spinal roots, the cells of the posterior horn, the sympathetic ganglia, and the intraspinal and paraspinal sympathetic. The inflammatory reaction and the subsequent scar may involve one or more of these segments. If the cells of the posterior horn or the branches of the sympathetic are principally involved it is [illegible] that an operation on the spinal ganglion or the [illegible] will be useless. Four operations may be considered: [illegible] operation consists in pulling out the intercostal nerve at its point of emergence from the [illegible] foramen and tearing off the [illegible] the nerve round a pair of forceps. The other three operations, which are intraspinal, are [illegible] operation, Sicard and Desmarest's operation, and [illegible] of the posterior root. [illegible] operation consists in [illegible] the posterior root independently of the anterior [illegible] the dura mater. It is a [illegible] operation, and when performed at the level of the [illegible] is almost inevitably followed by [illegible] paralysis. It could therefore only be performed in the intercostal region. Sicard and Desmarest's operation [illegible] applicable to the inter[illegible] in section of the spinal [illegible] and of the adjacent anterior and posterior roots. The [illegible] to be carried out on four adjacent radicular [illegible] section of the posterior roots involves the opening of the arachnoid sac and escape of a large quantity of cerebro-spinal fluid.

74. Speech without a Larynx

[illegible] that the first cases of voice [illegible] were reported by [illegible] in 1882. Since then very [illegible] cases have been recorded, the most important [illegible] being those of Gottstein and [illegible]. In 190[illegible] showed a patient at the Société de Chirurgie who could carry on a conversation at a distance of 10 to 15 metres, and by means of Delair's apparatus telephone from Bayonne to Paris. Examination of this patient by the present writers showed that the pulmonary bellows were replaced by the oesophagus and pharynx, the lower vocal cords by the posterior pillars, the thoraco-laryngo-bucco-nasal resonators by the pharyngeal cavity and its adnexa, and the glottis by the palato-glossal diaphragm.

75. Formation of a Tracheal Fistula in Tuberculosis of the Larynx.

G. ROSENTHAL (*Paris méd.*, April 17th, 1920) in the severest cases where a complete rest is necessary for the larynx performs tracheotomy and injects twice daily through the tube large doses of some antiseptic oil, after having prevented, or at least diminished, cough by a previous injection of two or three syringefuls of 1 in 200 novocain solution. After the larynx has had a rest the ordinary tracheotomy tube is replaced by one which has the curve and chief dimensions of an adult's tube but the diameter of a child's. The injections are continued and the tube is again replaced by another whose external diameter is only 3 mm., and finally by one of an external diameter of 2 mm. The advantage of this method is that speech and nasal breathing are permitted. In the milder cases one may start by injections of disinfectant oils through the crico-thyroid space, and, if necessary, then employ tubes of 2 or 3 mm. in diameter, only using tracheotomy as a last resort.

76. Rupture of the Patellar Tendon.

R. VILLAR and J. P. LABAT (*Gaz. hebd. des Sci. méd. de Bordeaux*, May 30th, 1920) record three cases of this condition in adults. In one the tendon only was ruptured, while in the other two there was a fracture present as well. In the first case the rupture was situated midway between the apex of the patella and the anterior tuberosity of the tibia, affecting the whole width of the tendon, the fragments of which were separated by an interval of 2 cm. According to Ombrédanne, who found it in only 4 per cent. of the cases on record, this situation for rupture of the patellar tendon is very rare. In the second case the rupture was also in the middle of the tendon, but was incomplete and superficial, probably involving only the fibres attached to the anterior tuberosity of the tibia. The rupture of the tendon was accompanied by fracture of the external condyle of the femur. In the third case the rupture occurred at the upper part of the tendon and was associated with fracture of the upper part of the patella.

77. Surgical and X-Ray Treatment of Trigeminal Neuralgia.

R. LENK (*Wien. klin. Woch.*, May 20th, 1920) has observed several cases of neuralgia affecting different branches of the trigeminus, in each of which one branch had been surgically treated by resection or injections of alcohol before being submitted to *x*-ray treatment. Remarkable improvement as the result of *x*-ray treatment, amounting in some cases to complete recovery, took place in the region of the nerve branches which had not been previously treated, whereas those which had been treated showed no reaction. Lenk concludes that surgical treatment deprives any subsequent *x*-ray applications of any prospect of success. Whether scar formation is responsible for this, as Wilms supposes, can only be settled by histological examination of the nerves treated by alcohol injections. Without disputing the success obtained by surgical treatment in many cases of trigeminal neuralgia, Lenk maintains that it should only be employed when *x*-ray treatment has proved unsuccessful.

78. Surgical Treatment of Cicatricial Stenosis of the Larynx and Trachea.

G. CANUYT (*Gaz. hebd. des Sci. méd. de Bordeaux*, May 2nd, 1920) describes the method of treatment adopted in Moure's clinic at Bordeaux for cicatricial stenosis of the larynx and trachea resulting from gunshot wounds. The treatment was carried out in three stages: (1) The larynx or trachea (usually both organs) were opened, the cicatricial tissue obstructing them completely removed, and the artificial opening maintained. (2) The passage was kept open by dilatation with a rubber tube for a period ranging from several months to several years. (3) The laryngo-tracheal fistula was closed by a suitable plastic operation as soon as the permeability of the larynx and trachea was re-established. Of 26 cases so treated, 17 made a complete recovery, 1 died as the result of tuberculosis, and 8 were still under treatment but would probably be cured in a few months.

79. Recurrent Facial Erysipelas of Pharyngeal Origin.

H. LAVRAND (*Rev. de laryng., d'otol., et de rhinol.*, May 15th, 1920) reports the case of a nursing sister, aged 34, who had always enjoyed good health up to 1887, when she began to suffer from attacks of migraine and intermittent swelling of the mucous membrane of the turbinate bones. She also began to have attacks of facial erysipelas about every three weeks. As a rule the attacks were mild, but at irregular intervals their severity was more marked. On examination of the patient in 1889 Lavrand found enlargement of the inferior turbinates, chronic pharyngitis and adenoids. No benefit being derived from local applications to the nose and pharnyx or from galvano-cauterization of the inferior turbinates, the adenoids were removed in 1889, and apart from a single attack in 1892 the patient did not suffer any more from erysipelas until her death from cardiac failure in 1918.

80. Intracranial Otogenous Diseases.

H. MYGIND (*Ugeskrift for Laeger*, May 27th and June 3rd, 1920) has analysed all the cases of intracranial otogenous disease observed at his hospital since October, 1905. He claims that his figures are larger than any hitherto published from a single source, and therefore give a more correct estimate than the combined analyses of different observers. The four chief intracranial sequels to ear disease were meningitis (141 cases), sinus phlebitis (106), brain abscess (42), and subdural abscess (19 cases). In 65 per cent. of the total only one intracranial complication occurred, and in the remaining 35 per cent. two or more intracranial diseases were found. Recovery took place in 36 per cent. of all the intracranial cases, and in 45 per cent. of those with only one intracranial disease. In this category the recoveries from meningitis were 18 per cent., and from sinus phlebitis 79 per cent. With regard to age, about one-third of all the cases were children between 5 and 14 years; the proportion of recoveries at this age was 44 per cent. of all the cases of multiple intracranial disease, whereas for all ages the recoveries were only 19 per cent. of all the multiple cases. Sex played no part, with the exception that between the age of 5 and 14 there were many more girls than boys. Although many writers have maintained that middle-ear suppuration on the right side gives rise to intracranial sequels more frequently than when the left ear is affected, the author could not confirm this. There were, however, 27 abscesses in the right side of the brain, as compared with only 14 in the left.

81. Continuous Aspiration in Oto-rhino-laryngology.

E. J. MOURE (*Rev. de laryng., d'otol., et de rhinol.*, April 15th, 1920) advocates the use of continuous aspiration as introduced by Rocher of Bordeaux in operations on the ear, nose, and throat. It should be employed whenever the surgeon wishes to have a clear view of the field of operation, to operate rapidly, and to prevent the escape of blood and pus into the respiratory tract. The results of its use are simplification and rapidity of the operation and diminution of operative shock. The apparatus consists of a pump driven by an electric motor to which is attached a rheostat to regulate the rapidity of the rotation.

82. Ununited Fractures of the Mandible.

R. H. IVY (*Annals of Surgery*, March, 1920) gives details of 22 such cases. He employed three methods of restoring the lost substance: (*a*) Pedicled graft from the mandible, by Cole's method. This is used in the body or symphysis for a loss of substance up to 3 cm., but is not applicable to the ramus; the graft unites more readily than a free one, and is not so vulnerable to infection. (*b*) Osteo-periosteal graft from the tibia, by Delangenière's method. This is most universally applicable, can be made of any shape, and is suitable for all degrees of loss of substance. Complete union is more slowly attained, and the jaw must be kept fixed by a proper splint. (*c*) Graft of the crest of the ilium. This can be adapted to small or great loss of substance; immediate fixity can be obtained in cases in which the splints cannot be thoroughly relied upon, and immediate cosmetic result is good. Regeneration did not occur as readily in the ramus as in the body of the mandible. Normal occlusion of the teeth was maintained by splints, which were kept in place for at least three months after the graft operation. The teeth were unlocked at intervals for gentle exercise and to stimulate bone growth. Ivy recommends that at least six weeks should intervene between the healing of sinuses or septic wounds and a bone operation.

OBSTETRICS AND GYNAECOLOGY.

83. Nephrotomy and Decapsulation in Eclamptic Anuria.

GÉRARD (*Journ. d'Urologie Méd. et Chir.*, ix, No. 2) reviews from the literature 62 cases of eclamptic anuria with 40 per cent. mortality (Albrecht), 78 cases with 28 per cent. mortality (Lance), and 98 cases with 39 per cent. mortality (Poten). He alludes also to 4 cases (with 2 deaths) in which other authors practised nephrotomy. His personal record is that of a primipara of 30, six and a half months pregnant, who on July 10th had backache, oedema of the legs, and oliguria, but no albuminuria. On July 31st the urine contained 2.5 grams of albumin per litre. Two days afterwards two eclamptic fits occurred. When admitted to hospital she was conscious, and was treated by bleeding and purgation; next day she gave birth to a dead child. She had not passed urine since the first fit. The oedema spread into the upper extremities, and an intense compensatory diarrhoea was observed. The patient now became somnolent, and an almost total anuria persisted. At operation a sero-sanguineous fluid exuded from the subcutaneous tissue, and the kidney was enlarged and congested. It was incised, and a drainage tube was placed in the pelvis of the kidney; urine began to drain from the tube next day, and to be passed per urethram three days afterwards. The patient eventually made a complete recovery.

84. Accidental Injury to the Ureter.

POTEN (*Zentralbl. f. Gynäk.*, April 17th, 1920) discusses the course to be adopted after accidental injury, section, or ligature of the ureter. This usually occurs during a wide hysterectomy or the removal of intraligamentary ovarian tumours. Stoeckel suggested that in such cases occlusion of the ureter should be performed. Kawasoye showed that as leaking subsequently occurred simple ligation could not be relied on; he suggested that the lumen should be closed by the tying of a knot in the upper fragment (a procedure which was successful in animal experiments). Poten, having cut through the ureter in an operation for subperitoneal ovarian tumour, tried, but without success, to make a knot in the upper section of the divided ureter, which was only 5 cm. long. Accordingly he twisted the end of the fragment through three complete revolutions on its long axis, and anchored it in the pelvic connective tissue. The patient made an uninterrupted recovery.

85. Incision of the Vaginal Portion of the Cervix during Labour.

CATHALA (*Gyn. et Obstét. Rev. Mens.*, vol. i, No. 2, 1920) reports 14 cases (12 in primiparae) in which this procedure was employed in protracted labour. The author believes that this method is frequently of use and may be adopted in preference to instrumental or manual dilatation, or to vaginal Caesarean section. There is said to be little possibility of accident when the method is only practised after the accoucheur has assured himself that the fetal head has passed, or can pass, the vaginal insertion of the cervix; the precise degree of dilatation which has occurred is of minor importance. The author recommends two incisions only, one anterior and one posterior; anterior and posterior incisions affect a region which is only slightly vascular, are not likely to cause ectropion, and are frequently followed by a spontaneous union. Suture immediately after labour is not advisable; secondary suture at the end of lying-in may be advocated on theoretical grounds, but is rarely employed.

86. Growths of the Bladder.

JEANBRAU, GRYNFELLT, and AIMES (*Journ. d'Urologie Méd. et Chir.*, ix, 2) believe that the varying estimates of the relative frequency of carcinoma and sarcoma of the bladder (said to be from three to forty cases of the former to one of the latter) may be explained by the occurrence of alterations in type of the vesical epithelioma as a consequence of cystitis, secondary infections, or the action of the urine on ulcerated tumours. They record the case of a single woman who from 30 to 42 had slight painless haematuria about once a year, from 42 to 57 every few months, and thenceforward more frequently still, until at the age of 62 the bleeding was continuous. About this time cystitis, increased frequency, dysuria, anaemia, and cachexia supervened. The patient died a few months after a palliative operation in which a voluminous infiltrating tumour was, as far as possible, removed. Microscopically the growth was a carcinoma with plasmodial proliferations which were attributed to the secondary infection and the action of the urine; it was only by very careful examination that it could be established that the tumour was not a sarcoma, the appearances of which were in certain regions closely simulated. The authors conclude from the history that the tumour had remained in a benignant condition for twenty-seven years, during which period operative excision would have been relatively simple and would have led to a cure.

87. Causation of Premature Rupture of the Membranes.

SCHMIDT (*Monatsschrift f. Geburtshilfe u. Gyn.*, lii, 1) records the case of a primipara of 25, who had severe uterine haemorrhage in the sixth month. Examination showed that the bleeding proceeded from the portico cervicalis, which was of a spongy texture and ectopic. The possibility of new growth or of tuberculosis was considered; a piece was excised and showed the mucosa of the cervix to be much inflamed, with numerous ovula Nabothi and occasional ectopic decidual cells. About three weeks later the membranes ruptured prematurely; six days afterwards a living child was born. The author considers that the bleeding was the result of congestion of the mucous membrane, due partly to the inflammatory process and partly to the decidual metaplasia. The fetal membranes were examined microscopically and showed leucocytic infiltration, which increased in amount from the placental site to the region of the rupture, where in places the epithelium was lacking, and where the inflammatory signs were very well marked. Schmidt suggests that premature rupture of the membranes may frequently be due to inflammation.

88. Treatment of Birth Fractures.

BORNSTEIN (*Amer. Journ. of Dis. of Children*, May, 1920) reviews the methods that have been advocated for the treatment of these fractures. He reports six cases of fracture either of femur or humerus treated by application of the Thomas-Jones splint, which allows easier transportation, permits cleansing of the children, and saves a great deal of watching. The deformity is easily controlled, and it is easy to carry out early massage. Moleskin plaster instead of adhesive strapping is employed.

PATHOLOGY.

89. Prognostic Value of Cholesterinaemia in Chronic Nephritis.

HENES (*Arch. of Int. Med.*, April 15th, 1920) has previously reported that in cases of chronic nephritis which are progressing favourably the blood contains an excess of cholesterin above the normal range of 1.5 to 1.8 grams per litre. In a series of twelve cases at present reported he shows that hypocholesterinaemia is of serious prognostic importance in chronic nephritis, and that it may give warning of impending uraemia, before blood analysis reveals retention of non-protein nitrogen. In estimating the importance of the cholesterin titres attention must be given to the presence or absence of adventitious factors which by themselves produce variation in the cholesterin content of the blood; for example, it is diminished by fever and is increased in arterio-sclerosis and in jaundice. Henes attributes to cholesterin a protective rôle in nephritis against [illegible], and claims for it similar protective powers against toxic agents in acute infections and toxic conditions. It is to be remarked from Henes's figures [illegible] that in that condition a hypercholesterinaemia possesses prognostic value only for the [illegible], thus in one case of nephritis in which the cholesterin amounted to [illegible] grams per litre before [illegible], it still remained as high as [illegible] grams after [illegible] had developed, and only fell to [illegible] the normal [illegible] grams, immediately before death.

90. Ice-box Fixation in Wassermann Test for Routine Practice.

[illegible] the method of [illegible] fixation in the Wassermann test, [illegible] of syphilitic [illegible]. [illegible] by electricity at little expense.

91. Creatin Metabolism in Arthritis.

PEMBERTON and BUCKMAN (*Arch. of Int. Med.*, April, 1920) give a short review of work done in recent years on creatin, and find that this substance is not derived primarily from muscle, but is constantly formed in the body and retained or used up in metabolic processes. When as a result of pathological processes of various kinds it is produced in excess, or its utilization is prevented, it may appear as an abnormal constituent of the urine. There is no evidence to show that any important proportion of the body creatin is eliminated as creatinin. Attention was directed in the present investigation to the creatin values because it has been shown that in arthritis there is a constant glucose intolerance, a condition which, when due to other pathological lesions, has been found associated with creatinuria. On examination of the blood creatin in forty cases of arthritis, suitably dieted, the authors found abnormally high values in one-half of the cases. A certain number of patients showed a diminution of the blood creatin coincident with clinical improvement. Only in three cases was there any creatinuria. The results were controlled by similar observations on nine normal individuals.

92. Pathology of Encephalitis Lethargica.

TAROZZI (*Il Morgagni*, April 5th, 1920) says that among seven cases followed by autopsy, in every case there was clear evidence of pulmonary lesions of an influenzal type. In the majority of cases the ventricular fluid was increased in amount; the cerebro-spinal fluid was clear and sterile; in two cases there was some leucocytosis. In no case was there any evidence of punctiform haemorrhage in the brain. The changes were those of irritative encephalitis, and were most noticeable in the pons and peduncles and bulb, and consisted chiefly in an infiltration of small round cells grouped about the small vessels, the veins more conspicuously than the arteries. Bacteriological examination of the pulmonary lesions demonstrated the presence of organisms of a diplo-streptococcal type. The author is disposed to look upon encephalitis lethargica as a manifestation of influenza.

93. The Behaviour of B. coli in Milk.

C. GORINI (*Il Policlinico*, Sez. Prat., April 12th, 1920) has found that *B. coli* behaves differently in milk cultures according to its power to produce acid; two types of the organism may therefore be distinguished. The first is a vigorous acid producer, and brings about coagulation even when the milk, as the result of sterilization, has acquired a brownish tint; the second is a weak acid producer, which may cause coagulation if the milk has not been too much sterilized. As regards the distribution of these two types of *B. coli*, the vigorous acid producer is found in foodstuffs and the other in human and bovine faeces. In milk the proportion varies owing to the liability of milk to be contaminated both by food and faeces.

94. Fibrinuria in Carcinoma of the Kidney.

O'CONOR (*Amer. Journ. of the Med. Sci.*, May, 1920) describes a case of this condition, which, except in association with tropical chyluria, is very rare. Abstracts are given of twenty-five cases from the literature. O'Conor's case was a man of 57, who complained of backache and pain under the right costal margin, loss of weight, and "clotting" of the urine, together with intermittent haematuria. The urine was acid, specific gravity 1024, and contained a slight trace of albumin, occasional red and white blood cells, but no casts nor fat. The liver was enlarged; no varicocele was present. The coagulum from the urine had all the physical characteristics of fibrin. At operation an adeno-carcinoma of the right kidney was removed.

95. Hydatid Cysts in Children and Adults.

ACCORDING to V. ZERBINO (*Anal. de la Fac. de Med.*, January and February, 1920) hydatid disease usually occurs in childhood, adolescence, and adult life up to the age of 35. After 40 it is infrequent, and after 60 quite exceptional. A third of all cases occur in the period of childhood up to puberty. The disease is most frequent between 16 and 25. Development of the cyst takes place very rapidly in childhood, and cysts appear in unusual situations between the ages of 1 and 6 years. Vesiculation and suppuration of the cyst are less frequent in the child than in the adult. Zerbino thinks that owing to the early appearance and rapid development of the disease in children very few cysts in the adult date back to childhood or youth.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

96. Intramuscular Injections of Milk in Infectious Diseases.

I. BRATT (*Hygiea*, March 31st, 1920) has given intramuscular injections of sterilized cow's milk in 30 cases of influenza and in 8 cases of other infectious diseases, such as scarlet fever, acute articular rheumatism, erysipelas, *post-partum* parametritis, prostatitis, mumps with orchitis, and severe pyelitis. One case of scarlet fever proved refractory; the remaining 7 cases reacted favourably to the injections. With regard to the cases of influenza, the injections seemed to give a satisfactory turn to the disease in slight and moderately severe cases, bringing down the fever within three days, and tipping the scales in the patient's favour when protraction of the disease or convalescence hung in the balance. But in 7 cases, 2 of which terminated fatally, the injections failed to influence the temperature. It would therefore seem as if the success of this treatment depended on a certain reserve capacity for reaction on the part of the patient; without it, and when the disease was severe, he derived no benefit from the treatment. The author used ordinary commercial milk, boiled for four minutes, as well as milk especially obtained for the purpose under aseptic conditions and boiled before use. The effect of this milk was as good as that of ordinary milk, and it provoked a less severe general reaction.

97. Ambulatory Encephalitis Lethargica.

ALBRUZZETTE (*Rif. Med.*, January 31st, 1920) reports the case of a man aged 44 who walked into hospital, and whilst complaining to the doctor about his various symptoms, among which a feeling of sleepiness was the chief, suddenly failed in his speech and fell into a profound sleep. With some difficulty he was roused by shaking and proceeded with his conversation; very shortly he again fell asleep. A fortnight before he had a severe headache, and for three days had seen double. There was slight laryngitis, profound weakness, and intense sleepiness. After the diplopia had disappeared the sight did not return to the normal but remained misty. There was no evidence of uraemia or diabetes. There was ptosis of the right eyelid; Babinski's and Kernig's signs were absent. The symptoms lasted about twenty days and then all cleared up; the patient never laid up during the whole period.

98. Aneurysm of the Left Ventricle.

ACCORDING to R. LUTEMBACHER (*Arch. des mal. du coeur*, February, 1920), who records three cases, aneurysms of the left ventricle are not usually discovered until after death. They are regarded as having no clinical interest, not so much because they remain latent, but because the symptoms which they produce tend to be confounded with the concomitant cardio-vascular lesions. In spite of their size they are not revealed by radioscopy, and they do not show any tendency to form pulsating tumours in the front of the chest wall or below the costal margin, probably owing to their being drawn down by their own weight. They become embedded in the diaphragm or liver, where they are invested with pericardial adhesions and so escape all methods of clinical examination. The only sign of any value which Lutembacher has found is localized pain at the apex, apparently due to deep-seated lesions occurring in the wall of the heart. It is often very violent, and may compel the patient to stoop forward. As a rule, however, it is dull in character, and may even consist only in a feeling of weight and discomfort in the chest. The development of pericardial symphysis localized to the apex, and of signs of cardiac insufficiency sometimes gives rise to a syndrome, which is of some diagnostic value when present apart from any other cardio-vascular lesions. In contrast with rheumatic pericardial adhesions, in which the myocardium contracts vigorously and draws with it the chest wall, depression of several ribs and systolic retraction of the apex are not observed; the apex beat may even be indistinct. This suggests that the localized pericardial lesion is accompanied by a severe destructive lesion of the myocardium. The symptoms of cardiac insufficiency consist in dilatation of the left heart, a functional mitral murmur, and severe dyspnoea.

99. Bilateral Sympathetic Ophthalmoplegia.

CADWALADER (*Journ. Amer. Med. Assoc.*, May 8th, 1920), in commenting on the diagnostic importance of the occurrence of bilateral sympathetic ophthalmoplegia in cases of lethargic encephalitis, says that bilateral involvement of the sympathetic fibres of the eyes can be caused only by a diffuse or inflammatory lesion of the brain stem, so that when it is associated with the characteristic mental confusion of lethargic encephalitis it should be regarded as a diagnostic sign of that disease. Because of the bilaterality of the narrowing of the palpebral fissures and contraction of the pupils, it is not likely to attract attention and is overlooked; but when it occurs only on one side at a time, the contrast quickly directs attention to it. Bilateral sympathetic ophthalmoplegia is not known to occur in other diseases.

100. Disordered Action of the Heart during the War.

IN a study of 136 patients with disordered action of the heart, P. MERKLEN (*Arch. des mal. du coeur*, January, 1920) found 24 (17 per cent.) whose symptoms had developed before enlistment. In a little less than half this number the condition had succeeded acute infections—almost always rheumatism or scarlet fever. Aggravation of a previous condition as the result of the war undoubtedly occurred. *X*-ray examination of 26 cases showed that only in 3 did the longitudinal diameter of the heart exceed the normal figures given by Vaquez and Bordet. In only 2 cases was widening of the aorta seen. As regards the etiology, in 52 cases (38 per cent.) there was a history of a previous infection, which in 30 was rheumatic fever and in 14 scarlet fever. The 8 remaining cases had had pneumonia, diphtheria, measles, malaria, gas poisoning, or undetermined infections. In 62 per cent. of the cases there was no history of a previous infection. In some cases the disordered action of the heart was connected with incomplete Graves's disease.

101. Meningeal Syndrome at the Onset of Small-pox.

M. PUIG (*Rev. Españ. de med. y cir.* February, 1920 records two cases of small-pox in children, aged 2 and 5 years respectively, which began with symptoms resembling meningitis (convulsive attacks, nuchal rigidity, Kernig's sign, mydriasis, and photophobia). On lumbar puncture in one case 85 c.cm. of clear, non-albuminous fluid were withdrawn under pressure. Puig regards the condition as one of serous meningitis (possibly due to the virus of small-pox) in predisposed subjects, one of the patients having had brothers and sisters who had died with meningeal symptoms.

102. Pseudo-ascites in Children.

S. SEGAGNI (*Il Policlinico*, Sez. Prat., April 12th, 1920) records four cases (in children aged from 5 to 10 years) illustrating the condition described by Tobler of Breslau under the name "pseudo-ascites secondary to chronic enteritis." The cases show that in children who have suffered from obstinate and protracted diarrhoea and have consequently become cachectic and emaciated, the abdomen is generally enlarged and the intestinal coils dilated. The intestine, being filled with liquid contents, tends to sink into the lower part of the abdomen, dragging with it the mesentery. Two signs of ascites—movable dullness and a sense of fluctuation—may be simulated by the free fluid and thus suggest tuberculous peritonitis or effusion due to heart disease, nephritis, or cirrhosis of the liver. Sometimes, as in a case reported by Reano, pseudo-ascites may be associated with tuberculous peritonitis.

103. The Clinical Value of Viscometry of the Blood.

O. JOSUÉ (*La médecine*, March, 1920) states that however rapid the manipulations may have been, examination of the viscosity of the blood as it leaves the organism is fallacious if the blood has not been first made incoagulable by the addition of 1 c.cm. of a 10 per cent. solution of sodium citrate to 9 c.cm. of blood. The viscosity of the blood enables one to judge in a roundabout way of the amount of dilution of the blood. Thus drugs which withdraw water from the organism, such as purgatives or diuretics, increase the viscosity. On the other hand, when there is hydraemia the viscosity is diminished.

In cardiac failure the viscosity is diminished, while there is a retention of water in the blood; but when under the influence of digitalin polyuria takes place, the blood becomes concentrated and the viscosity increases. When the patient is very oedematous, the fluid in the tissues passes into the blood under the action of digitalin, and the viscosity diminishes; it increases later as the oedematous fluid becomes eliminated.

104. Paroxysmal Haemoglobinuria.

MOURIART (*Rev. Méd.*, February 21st, 1920) recommends treatment of the attack by rest, warmth, milk diet with plenty of bland fluid. If the anaemia is very severe hypodermic injections—for example, ergotin, strychnine, etc.—and oxygen inhalations may be useful, and vapour baths, cupping, gallic acid, and quinine have been used with benefit; but as a matter of experience, however, none of these drugs seems to have much beneficial effect. Nitrite of amyl, given with the idea of diminishing vasoconstriction which might accelerate the haemoglobin destruction, has not proved useful. More important and more fruitful in results is prophylactic treatment—avoiding cold or chill, wearing flannel, avoiding hard physical work, gradual hardening of the skin by graduated baths at increasingly low temperature. Antisyphilitic treatment with salvarsan and allied drugs has given good results, and many cases of haemoglobinuria are said to be of syphilitic origin. Where antisyphilitic treatment fails antianaphylactic injections of serum may do good, and some cases treated with success on these lines are mentioned. Propeptone has also been given with advantage in a few cases. Calcium chloride and cholesterin also find support in the favourable experience of those who have used them.

105. Epilepsy and Diabetes.

M. LABBÉ (*Paris méd.*, May 1st, 1920) dismisses glycosuria following epileptic fits, and confines his attention to epilepsy occurring in the course of diabetes. The former has nothing to do with diabetes, is of short duration, and merely represents an irritation of the bulbar centres in the course of an epileptic attack. Epilepsy occurring in diabetic patients may be of various kinds: for example, there may be a coincidence of the two diseases, or a diabetic may have a fit, due to extrinsic causes, such as alcoholism, or uraemia, or cerebral syphilis, tumour, abscess, softening, or meningitis. Four examples of epilepsy occurring in diabetes are given, to show that in cases of acidosis in which uraemia and all other causes could be excluded it appeared justifiable to attribute the epilepsy to acidosis. The attacks were observed during the stage of complete coma or in the premonitory stage; they were localized or generalized, and followed by prolonged loss of consciousness.

106. Photodynamic Treatment of Malaria.

According to G. VIALE (*Il Policlinico, sez. Prat.*, April 5th, 1920) quinine is much more active in the light than in the dark. Very dilute solutions of quinine salts, which have no action on ferments or protozoa in the dark, exercise a destructive action upon them when exposed to the light. Viale, therefore, in the treatment of malaria associated heliotherapy with quinine treatment, by making his patients expose their naked bodies to the sun's rays for some hours after taking quinine. In seven cases in which this treatment was tried excellent results were obtained. After one or two weeks' treatment the enlargement of the spleen and fever subsided, and the patients gained flesh and resumed work.

107. Benzol in the Treatment of Leukaemia.

[illegible] (*[illegible] Med.*, January [illegible]th, 1920) reports [illegible] cases of leukaemia treated with benzol. From personal experience and a study of the literature of the subject, it appears that benzol is uncertain in its effects [illegible] it does good and sometimes, even in [illegible] the [illegible], it gives rise to symptoms of poisoning. It is best given by the mouth and in small doses [illegible] grams to 4 grams per diem; it is well to [illegible] with other treatment at the same time, [illegible] therapy. [illegible] temporary increase in the number of leucocytes, [illegible] reduction especially as regards immature and [illegible] cells. It increases the number of red [illegible] and the haemoglobin index, reduces the size of the spleen and liver and lowers the temperature. Probably [illegible] by a process of [illegible]. As soon as marked improvement [illegible] it is advisable to diminish the dose as [illegible] as possible.

SURGERY.

108. Chronic Nephritis and Enlargement of the Prostate.

LAVENANT (*Journ. de méd. et de chir. prat.*, March 10th, 1920) states that chronic nephritis may be associated with enlargement of the prostate, the latter being only an epiphenomenon in the course of the former disease. On the other hand, all the symptoms of chronic nephritis with rise of blood pressure may merely be the result of the vesical retention resulting from prostatic hypertrophy. The two forms of nephritis may be differentiated by minute examination of the symptoms and by the improvement which follows a strict regimen, rest, and especially the tying in of a catheter. The coexistence of an independent chronic nephritis with raised blood pressure is not always a contraindication to operation if it is not accompanied by severe valvular lesions.

109. Magnesium and Cancer.

DUBARD (*Rif. Med.*, February 28th, 1920, and *La Bourgogne Méd.*, July 15th, 1919) has pointed out that the divalent salts of calcium and magnesium have a regulative and restraining action in disordered cell proliferation, and cites the beneficial action of magnesium salts in cases of warts. He says, moreover, that he has known families which had a marked hereditary tendency to cancer and escaped when they removed to dolomitic regions. The poorer a soil in dolomitic elements the greater the prevalence of cancer. People with slight magnesium reserves (for example, neurasthenics, old people) are more prone to cancer. Dubard has noticed in the early stages of cancer an exaggerated loss of magnesium salts. Acting on these views he has given calcined magnesia in cancer, and feels encouraged by the results.

110. Treatment of Vesical Paresis by Injection of Glycerinum Boracis.

CORBINEAU (*Journ. d'Urologie*, Tome ix, No. 1, 1920) records two cases of vesical paresis cured by injection of 30 c.cm. of glycerinum boracis into the bladder, normal and painless micturition taking place from a quarter to half an hour after the injection, provided it was made when the bladder was full. The fluid may be injected directly into the bladder by a sound or through the meatus with a syringe of 50 c.cm. capacity. The advantage of the latter method is that a smaller quantity of glycerin (15 to 20 c.cm.) is required.

111. Intermittent Parotid Swelling caused by Tooth Plate.

JARDET (*Journ. de méd. et de chir. prat.*, April 25th, 1920) recalls four cases of parotid swelling occurring in adults and characterized by sudden enlargement of the gland. This almost always occurs after the first meal of the day, and rapidly increases during mastication; its subsequent development varies with the character of the food and according as it is a primary attack or a relapse. The swelling is accompanied by interference with movements of the jaw and sometimes by pain which is acute for the first half-hour and afterwards dull, like that of mumps. Contrary to what is found in mumps, however, on pressure on the gland a distinct lobulation can be felt, and occasionally a hard cord of the size of a pencil; this is Steno's duct. Pressure on the gland causes expulsion of a plug of mucus followed by a flow of saliva. The affection usually starts during the first week that a tooth plate is worn, but it may occur later. It may last for several days, but usually disappears more or less completely on the first day and reappears the next day and for five or six days in succession. After an interval of a month or six weeks it recurs as a result of a chill, the irritation of food, or the onset of menstruation. The condition is due to the tooth plate causing inflammation of the gum, which spreads to the orifice of Steno's duct and so causes retention of saliva. Cure is effected by removal of the tooth plate and subsequently by its careful adjustment, together with the use of a potassium chlorate mouth wash.

112. The Indications and Contraindications for Prostatectomy.

ACCORDING to A. BLUM (*Wien. klin. Woch.*, May 13th, 1920), prostatectomy is justified by the fact that all other methods of treatment are more dangerous and have less power to check the natural progress of the disease or the danger of cancerous degeneration of the hypertrophied gland. Thus the mortality from simple catheter treatment is 8 to 10 per cent., from operations on the sexual organs, such as castration or vasectomy, 27 per cent., and from cystostomy 33 per cent., whereas the mortality from prostatectomy is only 5 to 8 per cent. Prostatectomy is indicated in all cases in which there is complete or partial retention or when the patient's general condition is affected by distressing subjective symptoms. Contraindications to the operation are severe cachexia, serious impairment of the cardiac functions, uraemic or diabetic coma, cerebral or spinal palsies, severe diseases of the internal organs, such as tuberculosis or cancer, stone, bilateral renal disease with much azotaemia, and lastly, perivesical and periprostatic suppuration. The operation is also indicated when enlargement of the prostate is complicated by large stones, tumours and diverticula, severe cystitis, and mild chronic pyelonephritis. When severe infection of the bladder, accompanied by fever, is present, the operation should be carried out in two stages. Prostatectomy, when there are severe haemorrhages and acute retention of urine, should be avoided as far as possible, for the results are worse than when the operation is carried out after preparation by tying in a catheter. Blum does not regard the operation as justifiable in the first stage of prostatic enlargement, before any retention is present. Owing to the danger to the sexual functions caused by fistulae and strictures, he prefers the suprapubic transvesical operation to the perineal route, and regards local anaesthesia by infiltration with 1 per cent. novocain as indispensable.

113. Ether Narcosis per Rectum.

BACIALIS (*Il Morgagni*, March 5th, 1920) points out that different observers have formed very different opinions as to the value of giving ether per rectum for anaesthetic purposes; some of the defects may be due to inefficient administration. The author has found it sufficiently satisfactory in gynaecological work. The day before operation he keeps the patient on a fluid diet; five hours before operation he washes out the rectum. An hour before the operation he gives a morphine injection and an enema of 100 to 120 grams of ether in 50 grams of olive oil, the duration of the injection being not less than five minutes. The eyes of the patient must then be bandaged, the ears plugged with cotton-wool, and all exciting sensations averted. Anaesthesia usually follows in about an hour; if not, a few inhalations of ether given in the ordinary way suffice to induce it. After the operation it is advisable to wash out the rectum; the patient generally remains more or less stuporose for four or five hours. The inconveniences of this method are slight, but a little cough, pain in the left iliac fossa, or slight headache, may follow. One patient had hysteropexy, amputation of the cervix per vaginam and inguinal herniotomy all performed at the same sitting. The method is unsuitable for operations of urgency, and the narcosis is not deep.

114. X-Ray Treatment of Verruca Plantaris.

HAZEN and EICHENLAUB (*Journ. Amer. Med. Assoc.*, May 8th, 1920) record sixteen cases of plantar warts treated by the Roentgen ray. Some of those of longest duration respond most quickly to treatment; almost invariably the pain disappears in from two to four days; $1\frac{1}{3}$ Holzknecht skin units are given every three to four weeks, the dosage being estimated according to the method long advocated by MacKee. The authors use no filter in this work, as they feel that on superficial lesions results are much better with the unfiltered ray.

115. Venereal Prophylaxis.

IN order to determine, if possible, whether the use of prophylaxis prevents one type of venereal disease more than it does another, a comparison was made by P. M. ASHBURN (*Journ. Amer. Med. Assoc.*, May 8th, 1920) of the relative proportions of the three diseases in the first 2,000 cases in which infection followed the use, and in the first 2,000 in which it followed neglect of prophylaxis. These figures show: Without prophylaxis, gonorrhoea, 67.2 per cent.; chancroid, 15.6 per cent.; syphilis, 17.2 per cent. With prophylaxis, gonorrhoea, 64.5 per cent.; chancroid, 18.9 per cent.; syphilis, 16.6 per cent.

116. Post-influenzal Ulceration of the Vocal Cords.

ACCORDING to G. CANUYT (*Rev. de lar., d'otol., et de rhin.*, April 15th, 1920), who records an illustrative case in post-influenzal ulceration of the larynx, the vocal cords only are affected. The ulcer is situated on the free border of the vocal cord, most frequently on its posterior third (rarely on the anterior third), and almost at the base of the arytenoid process. The ulceration is often symmetrical, but is more marked on one side than the other. There is never any peripheral infiltration as in epithelioma or gumma of the vocal cords.

117. Hypernephroma of the Kidney.

L. J. VAN DER MANDELE (*Nederl. Tijdschr. v. Geneesk.*, May 8th, 1920) records the case of a man, aged 50, whose symptoms were vomiting, accompanied by right-sided colicky pain, which radiated to the back, pubic symphysis, and leg, and was aggravated by the passage of a small amount of dark-red urine. In the right lumbar region there was a large tender swelling. Examination of the urine showed numerous red corpuscles, but no leucocytes or casts. No tubercle bacilli were present. The diagnosis of hypernephroma of the right kidney was made and confirmed at operation, when an encapsuled tumour was found in the renal pelvis and removed. The issue of the case is not recorded.

OBSTETRICS AND GYNAECOLOGY.

118. Active Treatment of Uterine Infection after Abortion.

KOLDE (*Monats. f. Geburtshilfe u. Gynäk.*, li, 1) gives statistics of 1,318 cases of pyrexia following abortion treated by systematic emptying of the uterus. The embryo was freed digitally, the uterus was emptied and carefully curetted, and pituitrin or ergotin were subsequently administered. The mortality was 3.8 per cent., as contrasted with 13 per cent., 10 per cent., and 8 per cent. respectively in the figures of Winter, Schottmüller, and Warnekros. This method also shortens considerably the time necessary for treatment; it has the advantage of allowing bacteriological examination of the uterine contents to be made.

119. Physiological Loss of Weight and Transitory Fever in the Newborn.

HEIMANN (*Monats. f. Geburtshilfe u. Gynäk.*, li, 1) has recorded the changes of weight occurring among 6,384 children, of whom 1,581 were breast-fed, who were born and remained longer than ten days in his clinic. The minimum weights were reached between the third and fifth days; the absolute loss of weight was roughly proportional to the weight at birth, so that the heavier children sustained the greatest losses; the relative loss of weight was inversely related to the weight at birth. Only in 5.5 of the children was the birth-weight regained so early as the tenth day; in the great majority this occurred between the fifteenth and the twenty-first days. The heavier the child at birth the more slowly was the weight regained after the initial loss. The figures were not modified by the existence of icterus neonatorum. The transitory pyrexia, which might be as great as 40° C., occurred in the same period as the loss of weight—namely, the first five days after birth.

120. Fibromyoma of the Urethra.

GOLDBERG (*Zentralbl. f. Gynäk.*, May 22nd, 1920) has collected from the literature 23 records of fibromata, 8 of fibromyomata, and 3 of myomata of the urethra, as well as 6 cases of myoma of the urethro-vaginal septum. In most cases the tumour was between the size of a hazel nut and that of an egg. Goldberg's case occurred in a unipara of 17, and led to incontinence and dysuria. At operation he removed a rounded bluish-red sessile tumour, rather larger than a cherry. The tumour was covered by stretched and inflamed mucous membrane; its core was fibromyomatous.

121. Promiscuous Uterine Curettage.

BOVÉE (*Surg., Gyn. and Obstet.*, June, 1920) points out the many dangers incidental to uterine curettage, and says that in many cases reported by the pathologists as chronic endometritis no genuine characteristics of existing inflammation are present. The author quotes the figures of Curtis, who found that in 26 nulliparae without history or gross evidence of infection, 23 gave no bacterial growths from the endometrium, and in 2 of the 3 who furnished growths the mixed infection followed a curetting performed a few days before. In 13 nulliparae with history or gross evidence of infection, 1 only showed a growth of the gonococcus. In 47 parous women, without history or gross evidence of infection, 4 only showed growths. In 32 cases of parous women with history or gross evidence of infection, 9 showed growths, of which 5 were gonococcal.

122. Surgical Treatment of Pelvic Inflammation.

RAFFERTY (*Illinois Med. Journ.*, January, 1920) says that surgery has little place in the treatment of acute pelvic inflammatory conditions, with three possible exceptions—namely: (1) The opening of abscesses, (2) removal of the appendix in cases resulting from infection of that organ, (3) ligation of infected thrombotic pelvic veins in cases of puerperal pyaemia. Acute salpingitis, peritonitis, and cellulitis, whether puerperal or gonorrhoeal, are best treated by absolute rest in bed, abstinence from food, avoidance of excessive purgation, and by vaginal douching. If this conservative treatment is not successful drainage should be instituted, preferably per vaginam. If pelvic symptoms persist after pyrexia disappears, an abdominal operation is both necessary and safe.

123. Unusual Findings in a Case of Cancer of the Cervix.

GOLDBERG (*Zentralbl. f. Gynäk.*, May 22nd, 1920) records the case of a nullipara of 51 in whom menstruation, formerly regular, had for a few years occurred at irregular intervals of a few months, and, during the last half-year, at intervals of from two to four weeks; during the latter period there was intermenstrual discharge of a watery, blood-stained fluid. The uterus and adnexa formed a tumour extending to three fingerbreadths below the umbilicus. The portico cervicalis was hard and irregular, and the surface of the cervix near the os externum was friable and exuded blood. At operation the tumour, which had formed scanty adhesions to the abdominal wall, omentum, and pelvic colon, was found to include a haematometra and a double haematosalpinx. The cervix was microscopically proved to be carcinomatous, and the growth had penetrated a short way into the musculature. The distended uterus on section showed a remarkable fascicular hypertrophy of its muscular wall, not unlike that seen in the bladder in cases of prostatic hypertrophy. The mucosa of the corpus uteri and tubes was atrophic; there was chronic thickening of the latter as well as cyst formation in the ovaries.

124. Mercuric Chloride Poisoning after Vaginal Injections.

BLAND (*Journ. Amer. Med. Assoc.*, May 1st, 1920) reports three cases of poisoning following the use of mercuric chloride douches to prevent conception; two of the patients died. Dr. PORTE (ibid.) also reports a case in which the patient died from acute nephritis after inserting two 7.5 gr. mercuric chloride tablets into the vagina.

PATHOLOGY.

125. The Clinical Significance of Cylindroids.

ACCORDING to [illegible] EIGENBERGER (*Zentralbl. f. inn. Med.*, May 15th, 1920) R. von Jaksch was the first to show that cylindroids in the urinary sediment were a sign of disturbance in the renal circulation. At von Jaksch's suggestion Eigenberger investigated the urine of 81 cases of non-compensated heart disease, and found cylindroids in 36 cases, or about 44 per cent. Most of these 36 cases also showed clinical evidence of disturbance of the renal circulation. Of special interest was a patient with lordotic albuminuria, the subject of polycythaemia rubra, who normally had no albuminuria, casts, or cylindroids, but after pronounced lordosis showed much albumin, some blood, and numerous cylindroids in the urine. As circulatory changes in the kidney are regarded as responsible for lordotic albuminuria, the appearance of blood and cylindroids must be attributed to the same cause.

126. Pancreatic Lithiasis and Diabetes Mellitus.

[illegible] (*Il Policlinico, Sez. Prat.*, April 5th, 1920) records the case of a woman aged 30, who for about a year had suffered from diabetes, and about two or three months before death showed signs of tuberculosis in both lungs. At the autopsy, in addition to extensive tuberculosis of both lungs, the pancreas was found to be converted into a series of cysts containing a turbid serous fluid, with calcareous sand and numerous small friable calculi. A large whitish stone was found in the head of the organ blocking the pancreatic duct. Histological examination showed the presence of sclerotic [illegible] tissue with a few islands of Langerhans in a good state of preservation. The liver showed intense pigmentation from a deposit of iron in the endothelium and Kupffer cells, some of which were necrotic.

127. The Complement Fixation Test in Tuberculosis.

J. HEKMAN (*Nederl. Tijdschr. v. Geneesk.*, May 8th, 1920) found that the complement fixation test was not positive in all tuberculous manifestations, especially at the onset of acute processes such as pleurisy, acute pulmonary tuberculosis, commencing tuberculous peritonitis, or in advanced disease with a bad general condition. Otherwise it was positive in all forms of tuberculosis apart from affections of the central nervous system and its membranes. In children the reaction possesses diagnostic value. In adults it has a prognostic value, a decidedly positive reaction being, *caeteris paribus*, a favourable sign. The reaction in adults has a special diagnostic value, as the antibody content of the serum may change during the disease. The change often consists in an increase of the antibodies, but Hekman has seen patients who on the first examination gave a decidedly positive reaction, and subsequently showed much lower values; all these cases were fatal.

128. Serological Examination of Rabbits after Treatment with Typhus Virus.

E. WEIL and A. FELIX (*Wien. klin. Woch.*, May 13th, 1920), as the result of their experiments, come to the following conclusions: (1) The brain of guinea-pigs infected with typhus virus does not produce any agglutinins for X_{19} in the guinea-pig, but constantly produces them after intraperitoneal inoculation in the rabbit; (2) on the other hand, intraperitoneal injection of the brain of normal guinea-pigs into rabbits does not produce antibodies to X_{19}; (3) the serums of rabbits agglutinating X_{19} behave to X_2, typhoid bacilli, Shiga-Kruse and Flexner dysentery bacilli, *Proteus vulgaris*, *B. coli*, and *Micrococcus melitensis* in the same way as before treatment (unchanged normal agglutination); (4) the normal brain only fixes the heterogenetic sheep's blood haemolysis, but leaves the X_{19} agglutinins intact; (5) these results indicate that the agglutinogen of the typhus virus is identical with the chief receptor of X_{19}, and that typhus agglutination in man must be regarded as a specific reaction.

129 A Remarkable Case of Cerebro-spinal Meningitis.

M. VAN RIEMSDIJK (*Nederl. Tijdschr. v. Geneesk.*, April 24th, 1920) records a fatal case of cerebro-spinal meningitis in a boy, aged 5 years. The spinal fluid was turbid and showed exclusively polymorphonuclear leucocytes and intra- and extra-cellular Gram-positive diplococci. In addition to purulent meningitis the autopsy showed pneumonic foci in the lungs, dilatation of the heart, and parenchymatous degeneration of the liver. Bacteriological examination showed that the organism was the *Micrococcus tetragenus albus*, which is non virulent to white mice.

130. Oxygen Avidity of Normal and Malignant Cells.

DREW (*Brit. Journ. Exper. Med.*, April, 1920) was able to demonstrate differences between normal and tumour tissues by measuring their oxygen avidity. A measured quantity of the minced living tissue was placed at the bottom of a long thin test tube, and to this was added a certain quantity of Locke's solution, without the glucose, containing methylene blue in concentration of 1 in 100,000. Paraffin was poured over the surface to prevent reoxidation, and the tubes were incubated at 37° C. The effect noted was a progressive decolorization of the blue fluid, commencing at the bottom of the tube next the tissue and gradually extending upwards. The height of the colourless fluid was measured by a millimetre rule every half-hour, and curves were constructed with the heights as ordinates and the time as abscissae. All normal tissues gave curves of the same general character; they rose steeply from the beginning, gradually slowed down in the second, third, and fourth hours, after which they remained practically stationary. In the case, however, of malignant tumours of rats and mice no reduction of methylene blue took place for the first hour or two; a small rise in the curve then occurred, and ceased usually about the fourth or fifth hour (at a time when transplantation experiments showed that the tissue was dead). Similar curves could be obtained by using dilute haemoglobin solutions instead of methylene blue and measuring the reduction by means of the spectroscope. The slowness of reduction in the case of the tumour cells may be explained by their low oxygen avidity, the fluid in which they lie having sufficient oxygen in solution; but if the fluid be exhausted and washed with an indifferent gas, such as hydrogen, there being no free oxygen to hand, the cells have to obtain it from the solution and consequently reduce the methylene blue.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

131. Diagnosis of Sciatica.

G. ROUSSY and L. CORNIL (*La Médecine*, February, 1920) describe three new tests for sciatica: (1) Lateral flexion of the trunk. If the patient standing in the upright position with his hands on his hips is told to flex his trunk laterally, first to the right and then to the left, without bending the lower limbs, a limitation in lateral flexion will be observed, as a rule on the side of the pain, more rarely on the opposite side. (2) Dorsal flexion of the foot. This test should be carried out with the patient in the dorsal decubitus, the affected limb being in the position of maximum extension. The foot is suddenly flexed on the leg, thus causing an elongation of the nerve, especially of the posterior tibial. In genuine cases an immediate antalgic reaction occurs, shown by flexion of the leg on the thigh and of the thigh on the pelvis so as to relax the elongated nerve. The pain is localized by the patient in the calf, and sometimes all along the trunk of the nerve on the back of the thigh. (3) Internal torsion of the foot. This movement causes a pain on the outer surface of the leg, especially below the head of the fibula, and the patient flexes the lower limb to relieve the pain. Elongation of the external popliteal nerve is probably the cause; the fact that this nerve is much less sensitive than the internal popliteal explains why this sign is less frequent than that of dorsal flexion of the foot.

132. Influenza and Tuberculosis.

AMBERSON and PETERS (*Amer. Rev. of Tuberculosis*, 1920, iv, 71) analyse the histories of patients who had epidemic influenza previous to entering Loomis Sanatorium, and note the incidence and fatality of this disease among former patients. The following conclusions are drawn: (1) There is no certain evidence that tuberculous individuals possess an immunity to epidemic influenza not possessed by the non-tuberculous; (2) there is no support to the belief that the severity of an influenza attack is less among the tuberculous than among the non-tuberculous; (3) in many cases influenza gives rise to definite evidence of pulmonary tuberculosis, of which there was no sign before the attack of influenza; (4) in those already affected with tuberculosis, influenza may set alight again a quiescent condition.

133. Rheumatic Type of Typhoid Fever.

GUILLAIN, LAROCHE, and LIBERT (*Bull. et Mém. Soc. Méd. des Hôpitaux*, May 6th, 1920) report a case which had the symptoms of an acute polyarticular rheumatism, and none of the signs of typhoid fever. The patient, a woman of 19, a month after accouchement developed joint pains, with a swelling of the right knee and both ankles. The temperature was 104.3° and the pulse 88. The fauces were red, the spleen slightly enlarged, the liver normal, and there were no gastro-intestinal symptoms nor cardio-vascular lesions. The urine was abundant and contained traces of albumin. Two days after admission to hospital the facies was altered, the tongue dry and reddened at its margins, and diarrhoea set in. No rash was found. Next day the temperature fell to 102°, and the joint swellings almost disappeared, without much change in the general condition. The fall in temperature continued, and perspiration was profuse. After six days in hospital the patient was considerably better; the temperature was normal, and the articular symptoms had disappeared. A fortnight later, however, the temperature rose again, and the patient had middle-ear suppuration and right maxillary sinusitis, for which she was transferred to the aural department of the hospital. The progress of the case and the response to salicylates would not have led one to suspect the real cause of the condition had not a blood culture, taken soon after her admission to hospital, revealed septicaemia due to *B. typhosus*.

134. Electro-puncture of the Spine in Tabes Dorsalis.

PICCININO (*Rif. Med.*, January 24th, 1920) speaks very favourably of electro-puncture in the treatment of tabes. He uses two needles, so as to avoid unnecessary shock after removal of a needle. The positive plate is placed on the neck or sacrum, and the needle attached to the negative pole and inserted from 1 to 2 centimetres into the skin and subcutaneous tissues. A current of 10 to 15 milliampères is used. As soon as bubbles of gas appear around the needle it is slowly withdrawn, and the second needle inserted before complete withdrawal. From 50 to 100 punctures can be made. As the proceeding is very painful local anaesthesia is advisable. In the particular patient treated, his troublesome incontinence of urine was almost completely cured by the treatment. The site of injections should be near the lumbar swelling—that is, just below the twelfth dorsal vertebra.

135. The Liver and the Gastro-intestinal Tract.

H. SÉRÉGE (*Gaz. hebd. des Sci. Méd. de Bordeaux*, April 11th, 18th, 25th, 1920) urges that the gastro-intestinal canal should be studied as a series of units functionally united, and not, as has hitherto been done by most writers, in each of its segments. He regards it as illogical to describe a morbid process localized in one part of the gastro-intestinal tract without taking into account reactions which may occur simultaneously at another part. Lasègue had already shown that it was a mistake to separate gastric from intestinal pathology. Although serious affections of the stomach—for example, cancer—might exist without involvement of the intestine, he had pointed out that in a large number of cases, perhaps the majority, so-called dyspepsias were really intestinal affections. Sérégé explains the influence of one segment of the gastro-intestinal canal upon another by changes in the normal equilibrium of the circulation. By reason of its situation in the portal area, the liver acts as a connecting link between the various parts of the gastro-intestinal canal.

136. Premonitory Pains in Malignant Metastases.

PAIN preceding the appearance of subcutaneous metastases, and enabling the patient to predict the exact site where a secondary growth will subsequently appear, seems to be a new observation. A. CRAMER (*Annales de Médecine*, 1920, vii) records this sequence in a woman, aged 45 years, who shortly after Halstead's operation for a small carcinoma of the mamma developed miliary carcinomatosis. Usually the subcutaneous carcinomatous metastases are painless; Bourquelat regarded this freedom from pain as one of their most constant features. But in Cramer's case not only were the subcutaneous tumours painful, but the pain appeared before any tumour could be felt; this was noted in about 100 tumours, the small metastases appearing about twenty-four hours after pain had marked out their site. Examination after death showed that there was carcinomatous infiltration of the lymphatic sheaths of the nerve trunks and of the Pacinian corpuscles, and that the widespread carcinomatosis was not induced through the blood stream, but, as Sampson Handley has insisted, by the lymphatics.

137. Transient Pericardial Friction in Coronary Thrombosis.

L. WHITTINGTON GORHAM (*Albany Medical Annals*, April, 1920) has within five years seen six cases of acute cardiac disturbance in elderly persons presenting such characteristic and uniform features that the diagnosis of coronary thrombosis was made in every case; in three cases the diagnosis was confirmed by necropsy. The author notes the following features which were common to all cases: (1) A sudden agonizing attack of pain, which was usually substernal and frequently radiated to the left arm; in contrast with that of ordinary angina, it often lasted several hours. Pain or soreness over the heart sometimes followed this attack and persisted for some days. In some cases the pain was referred to the epigastrium, and it was usually followed within twenty-four hours by fever lasting four or five days; the patients were often very restless but not delirious. (2) The pericardial rub, which developed within the first few days, was often transitory and recurrent; it was localized to a small area and was not loud. Only in one out of the six cases could it not be found; here the infarcted area was on the posterior surface of the left ventricle, and there was haemorrhagic effusion into the pericardium. (3) Other conditions noted were: tachycardia, arrhythmia, feeble heart sounds, a falling blood pressure, increase of cardiac dullness to the right, the disappearance of a systolic murmur present before the attack (or the development of a mitral murmur), oedema of the lungs, albuminuria, and, in the late stages, general oedema. The failure of nitroglycerine, morphine, and digitalis in many of these cases was probably due to the cardiac muscle being too extensively damaged to react. The author concludes that the symptom-complex of stenocardia, fever, pericarditis, and varying degrees of myocardial insufficiency—for which Sternberg has proposed the name pericarditis epistenocardica—is a clearly defined syndrome, a knowledge of which makes possible during life the diagnosis of coronary thrombosis.

138. Rare Symptoms in Thyroiditis.

M. FASANO (*Il Policlinico*, Sez. Prat., April 26th, 1920) records the case of a married woman, some 30 years of age, who during an attack of suppurative thyroiditis developed tachycardia, tremors of the upper limbs, slight exophthalmos, and Moebius's sign, but neither Stellwag's or von Graefe's sign. Rapid disappearance of the symptoms followed evacuation of the abscess.

139. Etiology of Mongolian Idiocy.

STOELZNER (*Muench. med. Woch.*, December 26th, 1919) examined the history of ten pregnancies which had been followed by the birth of Mongolian idiots; in three cases the mother was found to have presented symptoms of hyperthyroidism—falling out of the hair, diminished sweating, chilliness, languor, apathy, and obesity.

140. Comparative Mortality in Germany, Denmark, and Switzerland during the War.

G. ROSENFELD (*Zentralb. f. inn. Med.*, April 24th, 1920) states that the first blockade year produced the same results in Denmark as were seen in Germany during the first years of the war—namely, a diminution in the total mortality and in the deaths from alcoholism, diabetes, and nephritis, and an increase in deaths from pulmonary tuberculosis and senile debility. During the years 1914–16 there was a decline in mortality from all causes in Switzerland, and especially as regards congenital debility and gastro-intestinal catarrh in young children. In 1917, on the other hand, there was a slight rise in the general mortality in Switzerland, deaths from senile debility being 156 more than in 1914–16 and 112 more than in peace time; 451 more deaths occurred from pulmonary tuberculosis than in 1914–16, and 117 more than in peace time. Deaths from other forms of tuberculosis were 144 more than in 1914–16. On the other hand, the mortality from congenital debility and infantile gastro-enteritis was even less marked than in 1914–16.

SURGERY.

141. Pathogenesis and Treatment of Empyema.

MOSCHCOWITZ (*Amer. Journ. of Med. Sciences*, May, 1920) regards empyemata as resulting almost invariably from the rupture of a small subpleural pulmonary abscess, their rapid development being favoured by the presence of the small amount of serous fluid which, in every case of diffuse pneumonia, is present in the pleural cavity. When a serous pleurisy thus becomes purulent encapsulation occurs by deposit of fibrin on the periphery (it is very rare for an empyema to occupy the entire pleural space. Before pleural adhesions have formed and before the exudate has been wholly converted into pus, treatment should begin by aspirations every twelve to twenty-four hours; in a few cases such treatment, combined with an adequate diet, is curative. Operation in the formative stage is contraindicated because the accompanying pneumonia is at its height, and, there being as yet no adhesions, a pneumothorax would occur and cause embarrassment of the heart. When the seropurulent fluid has changed into pus and adhesions between the surfaces of the pleura have formed, treatment consists in a simple intercostal thoracotomy performed under local anaesthesia when the patient's condition is otherwise satisfactory. It is rarely necessary to resect a rib or ribs. Open thoracotomy is indicated for acute pyopneumothorax only. Drainage is secured by a rubber tube, through which irrigations with Dakin's solution are carried out.

142. Diaphragmatic Hernia of Traumatic Origin.

[illegible] M. C[illegible] Smith and J. B[illegible] ([illegible] May 10th, 1920) [illegible] that diaphragmatic hernia may occur either immediately after the injury or as the result of an effort or a slight injury after the wound in the diaphragm has cicatrized. As a rule the hernia is situated on the left side, for on the right side the liver protects the diaphragm. Of twenty-six cases collected by Frey twenty-five were on the left and only one on the right. The organs which constitute the hernia are, in order of frequency, the stomach, splenic flexure of the colon, omentum, small intestine, spleen, and caecum with the appendix. It is rare for the whole of the stomach to be contained in the thorax; as a rule, only the greater curvature constitutes the hernia, and much more rarely the pylorus and first part of the duodenum penetrate the thorax. The symptoms are not pathognomonic. The patients complain of dyspnoea, palpitation, and digestive disturbances such as dyspepsia or vomiting, which may simulate gastric ulcer. In more serious cases complications may occur, such as perforation of a gastric ulcer, haemorrhagic pleurisy, or strangulation of the hernia. A certain diagnosis can only be made by radioscopy. The prognosis is always serious, as every diaphragmatic hernia is liable sooner or later to become strangulated.

143. Chronic Urethritis and Prostatitis due to Bacillus coli Infection.

C. E. VERDIER (*Military Surgeon*, July, 1920) found that approximately 30 per cent. of all the patients with urethritis and prostatitis attending a urological clinic at Camp Travis showed an absence of gonococci from the discharge, which, however, was loaded with the colon bacillus. Practically all these patients gave a history of what had been diagnosed in civil life as gonorrhoea, and many had had the disease for several years. All the patients were potent, none had arthritis, and few, if any, complained of pain or distress. The prostate was usually normal, sometimes showed a small boggy spot, and in a few instances was large and boggy. Inflammation of the seminal vesicles and the epididymis was notably absent. Urethral stricture was common, limited for the most part to the anterior urethra. The men were given full military duty, and seemed in no way to suffer therefrom. Treatment consisted in prostatic massage twice weekly, followed by thorough irrigation of the bladder and urethra with a hot but mild solution of potassium permanganate and subsequently by instillation of argyrol or silver nucleinate in 10 per cent. solution. In making posterior instillations the passage of a hard instrument does more harm than the instillation can effect, and accordingly air pressure is employed by the author, who uses an all-glass syringe cock, an air chamber, and rubber bulb.

144. Milk Injections in the Treatment of Gonorrhoea.

IT is now some years since the suggestion was made that some of the effects of vaccines and serums were due to their albuminous content as distinguished from specific factors. On these lines deutero-albuminoses, nucleinate of soda, peptone, and normal horse serum have been given in different diseases to replace specific antidotes; of late years milk has been used with fairly satisfactory results. TROSSARELLO (*Rif. Méd.*, April 3rd, 1920) has treated 45 cases of gonorrhoea and 15 of venereal adenitis with milk injections. From 5 to 10 c.cm. of sterilized milk was injected intramuscularly in the gluteal region; an average of five injections at intervals of three or four days was given. The febrile reaction in some cases was severe, especially where pyrexia was already present. Anaphylactic phenomena were only seen in one patient. In urethritis and cystitis the results were on the whole negative; in three cases of prostatitis some slight benefit seemed to occur. In five cases of epididymitis the effect seemed particularly good; in two cases of arthritis the results were good in one and uncertain in the other. In two cases of salpingitis the results were uniformly excellent, and in adenitis, especially if treated early, very good effects were noted.

145. Delayed Arsenical Poisoning due to Salvarsan.

STRATHY, SMITH, and HANNAH (*Canadian Med. Assoc. Journ.*, April, 1920) report 58 cases (of which eight were fatal) of delayed arsenical poisoning following the administration of "606" preparations by the intensive method. In the eight fatal cases the symptoms were sudden and severe; death took place within a few days, jaundice being rapidly followed by nausea, epigastric pain, stupor, haematemesis, and delirium. The autopsy showed marked liver atrophy. Of the non-fatal cases, 39 were admitted for jaundice, 8 for dermatitis (in 5 severe, with marked exfoliation), 2 for nephritis, and one for general debility. The dermatitis was followed by jaundice in one case, and in two others by peripheral neuritis; in over 50 per cent. of the cases albuminuria was present. Symptoms seldom developed within five weeks of the administration of "606," the earliest signs being bile in the urine, albuminuria, loss of appetite, and jaundice; these symptoms should be looked for in all patients receiving this treatment. By x-ray screening of the standing patient liver atrophy could be detected at an early stage, changes in shape and position being noticed in addition to the decrease in depth of the liver shadow. Although instructions were issued that a physical and urinary examination should be made before and after each treatment, it was found that this had been neglected in these cases. No fatalities occurred in cases where these observations had been made and the skin watched for signs of dermatitis; it was found that if the diet was free severe symptoms rapidly developed, and death ensued from poisoning by products of digestion with which the liver was unable to deal. A case is reported of dermatitis and hepatic atrophy occurring in a patient who received Fowler's solution ♏v thrice daily for five months.

146. Mucocele of the Sphenoidal Sinus.

ACCORDING to J. VAN DER HOEVE (*Nederl. Tijdschr. v. Geneesk.*, April 24th, 1920), who reports a personal case in a woman aged 53 and has collected eight others from the literature, mucocele of the sphenoidal sinus is a rare disease which has a protracted course. It usually first appears between the tenth and twentieth years, and in the great majority of cases occurs in the female sex. The symptoms are headache, optic atrophy, ocular palsies, nasal obstruction, and exophthalmos. Diagnosis is extremely difficult, but is aided by radiography. Prognosis is bad. Treatment consists in opening the sinus from the nose, or, if this is impossible or unsuccessful, from the orbit.

147. Sarcoma of the Duodenum.

ELLIS and PLANKUL (*Med. Journ. Siamese Red Cross*, vol. ii, part 3) report a case of sarcoma of the duodenum. The patient was a female, aged 36, a chewer of betel nuts. She complained of griping pains in the abdomen and discomfort after food. There was a palpable lump below the left costal margin and the stools were black. The patient died six months after the onset of the trouble; at autopsy a local plastic peritonitis was found about the duodenum and regarded as evidence of an incomplete perforation. A diffuse growth was found in the second, third, and fourth parts of the duodenum involving the head of the pancreas. The authors believe that the neoplasm was of intestinal origin and had not arisen from the pancreas. Histologically, the tumour proved to be a lympho-sarcoma.

148. Extirpation of the Gasserian Ganglion.

E. RANZI (*Wien. klin. Woch.*, May 20th, 1920) states that since 1901 extirpation of the Gasserian ganglion for trigeminal neuralgia has been performed in sixteen cases at the First Surgical Clinique of Vienna University. Three patients died from the operation, one as the result of air embolism during the operation, and two from meningitis some days later. Thirteen cases recovered, and reports were available in ten, in which the operation had been performed at periods varying from 9 years to 7 months previously. None of the patients had had a true relapse, and only three stated that they had had slight transient pain from time to time. No ocular damage from section of the first branch was observed. The figures showed that while extirpation of the Gasserian ganglion is a more dangerous operation than injection of alcohol into the ganglion, the end results were more satisfactory. Krause's method for exposing the ganglion was at first adopted, but subsequently Cushing's was substituted. The difficulty in the operation depended chiefly on whether the haemorrhage was severe; if so, it usually came from the middle meningeal artery.

OBSTETRICS AND GYNAECOLOGY.

149. Treatment of Fibroids.

GAGEY (*Journ. de méd. et de chir. prat.*, May 25th, 1920) discusses the indications for treatment of fibroids by operation, exposure to *x* rays, and radio-therapy respectively. Large tumours reaching to the umbilicus or above should be treated, he says, surgically or by the use of radium. Small tumours which do not occasion pain or haemorrhages, and are often discovered accidentally, require symptomatic medical treatment only. With regard to other varieties of cases Gagey agrees with Faure, that surgical intervention is indubitably indicated in: (1) Cases in which there is uncertainty of diagnosis—for example, between a small fibroma and salpingitis, or between a larger fibroma and ovarian cyst. This group includes all cases in which there are no intermissions of the haemorrhages and there is suspicion of cancer. (2) Cases complicated by necrosis, peritonitis, fever, etc. (3) Cases complicating pregnancy, if the size or situation of the tumour may lead to dystocia. (4) Pediculated fibroids (in which treatment by radium or *x* rays is found not to be efficacious) and fibroids becoming polypoid within the uterine cavity. (5) Small localized fibroids which may be treated by myomectomy without removal of the uterus. Such treatment has been followed in certain cases by pregnancy, whereas the use of radiation may destroy the ovarian function. The writer mentions as an additional contraindication to *x*-ray or radium treatment the presence of fibroids in the true pelvis, when compression symptoms are to be feared. In all other cases radio-therapy is said to be the best method of treatment. *X* rays usually give satisfactory results, and their use is not dangerous; the treatment, however, lasts for at least three months, and is difficult to apply in patients who, as the result of severe or prolonged haemorrhages, require rest in bed. Operative treatment has a mortality of 3 to 5 per cent. Treatment by radium is simple and rapid. Five cases are reported in which after one application of radium the tumour diminished greatly in size and the symptoms disappeared; in one case the application of *x* rays had been pursued during twelve months without success. After dilatation by Hegar's sounds (No. 10 or No. 12) the author places for twenty-four hours 120 mg. of radium bromide within the uterus; one application only is made. As a rule the haemorrhages do not cease abruptly; they may persist in diminished amount for four to six weeks. In the majority of cases only one menstruation occurs after radio-therapy; regression of the tumour is complete, as a rule, at the end of the third month.

150. Indications for Caesarean Section.

COURINAUD (*Thèse de Paris*, 1919, quoted in *Journ. de méd. et de chir. prat.*, May 25th, 1920) discusses the use of Caesarean section for conditions other than mechanical obstruction (by narrowing or tumours of the pelvis) to delivery. He says that Caesarean section is often justified (1) where an antecedent operation has been performed on the uterus—for example, hysteropexy or amputation of the cervix; (2) in cases of vaginal stricture; (3) by uterine malformation; (4) as prophylactic treatment for imminent rupture of the uterus; (5) by rigidity of the cervix, primary, cicatricial, or syphilitic; (6) by certain grave maternal conditions. Among the latter eclampsia is stated not to be an indication; Caesarean section, often practised by the German school for this complication, is said to be accompanied by a greater maternal and fetal mortality than is treatment by dilatation (by means of a bag) and subsequent forceps delivery. The remaining maternal conditions justifying Caesarean section are: grave diseases of the heart, severe crises of asphyxia, or imminent death. As fetal indications are given the following: (1) excessive size of the fetus; (2) the rise of the fetal heart rate above 180 or its fall below 100, provided in either case that the os is incompletely dilated; (3) certain cases of malpresentation, especially by face, brow, or shoulder. Other possible indications are: low placental insertion, retro-placental haemorrhage, and irreducible prolapse of the cord

151. Torsion of an Ovarian Cyst during Pregnancy.

LITTLE and ELDER (*Canadian Med. Assoc. Journ.*, May, 1920) record the case of a primipara of 28, three months advanced in pregnancy, in whom severe cramp-like pains occurred in the lower abdominal region. Examination was negative, but the pains continued, and twenty-one hours afterwards, as the result of obstructive congestion, a tumour of the right ovary became palpable in the right lateral fornix. At operation a chronically inflamed appendix was removed, together with a twisted ovarian cyst (the size of a small lemon) and the outer portion of the oedematous Fallopian tube. The pregnancy continued its natural course.

152. The Milk Test for Placental Integrity.

KIRSTEIN (*Deut. med. Woch.*, 1919, No. 20) discusses the value of this test, which was first introduced by Küster in 1914, and consists of injections of milk into the placenta (laid on its fetal surface) by means of a syringe introduced into the umbilical vein. The test was supposed to be positive when the milk issued in a jet from one of the cotyledons; exploration of the interior of the uterus was then said to be justified. Kirstein tried the test 151 times during 1912–19 (using during the war water instead of milk); 102 negative and 49 positive results were obtained. In the negative cases the test was repeated, and on one occasion in such a case a piece of the placenta was found to have been retained. A positive result was found to be unreliable; in only 11 per cent. of cases giving such a result was the placenta found actually to be incomplete. Experiments in which the placenta was artificially modified confirmed the author's opinion of the unreliability of the test, which he has now completely discarded.

153. Eclampsia without Convulsions or Coma.

CHATILLON (*Korrespondenzbl. f. Schw. Aerzte*) has recorded the case of a primipara, aged 40, who, after normal pregnancy brought forth at full time and by normal labour, a dead child. An hour and a half afterwards the patient suddenly expired without having exhibited any pathological symptoms. At the autopsy the diagnosis of eclampsia was established by the characteristic histological changes in the liver, brain, and meninges. The author has collected 42 cases of eclampsia without convulsions or loss of consciousness.

154. Prolapse of the Cord.

ACCORDING to ZWEIFEL (*Muench. med. Woch.*, 1920, No. 3), out of 25,333 births occurring from 1909-1918 at the Münchener Frauenklinik, prolapse of the cord (after rupture of the membranes) was present in 165 cases, or 0.65 per cent. Of these, the presentation was transverse in 10 per cent., pelvic in 5 per cent., and vertical in 0.4 per cent.; the condition was more frequent among the elder patients. It appeared from the analysis of the pelvic presentations, of which 26 were foot presentations, and 10 incomplete foot presentations, and in only 5 of which the buttock presented, that incomplete filling of the lower uterine segment is an important etiological factor. Other frequently associated conditions were pelvic contraction, high insertion of the placenta, and prolapse of the arm. In 119 cases where the child was living at the time of prolapse of the cord, 54, or 45 per cent., were born dead. If from these 119 cases 15 are deducted in which the child was moribund when treatment was begun, the fetal mortality was 39, or 37.5 per cent.

155. Secondary Ovarian Cancer.

DENGG (*Zentralbl. f. Gynäk.*, March, 1920) records five cases of secondary ovarian cancer occurring within a period of from one to five years after partial resection of the stomach for cancer.

PATHOLOGY.

156. Diphtheria Bacilli in the Urine.

M. CARLESECCA and A. CASASSA (*Giorn. di R. Acad. di Med. di Torino*, September December, 1919) examined catheter specimens of the urine in 100 cases of diphtheria and found diphtheria bacilli present in 85 per cent. They are convinced that by slight improvement of the technique, examination of a larger quantity of urine, and more frequent examinations, positive results would be obtained in all cases. The diphtheria bacillus was never found in pure culture, but always in association with other organisms—for example, streptococci, *B. coli*, pneumococcus, Brison's coccus, and Friedländer's bacillus. The presence of the diphtheria bacillus in the urine was independent of the gravity of the case. It was impossible, for obvious reasons, to continue investigations on the same individual until the cultures were negative, but it was an almost invariable rule for the urine to be still positive one and a half months after the onset of the attack, at a time when faucial cultures were negative.

157. Mechanism of the Colloidal Gold Reaction.

CRUICKSHANK (*Brit. Journ. Exp. Path.*, April, 1920), the only author in this country who has published his results with Lange's colloidal gold test, confirms the results of foreign workers regarding its value in the diagnosis of general paralysis. It does not run in parallel with any other test of spinal fluid. The substance present in the spinal fluid of general paralytics which brings about the precipitation of the colloidal gold is not dialysable, and resides in the globulin fraction of the protein. It is not altered by prolonged heating at temperatures short of those causing coagulation of the protein. No evidence has been obtained to support the view that the reaction depends on the presence of peptone. The various types of reaction that are recognized can be simulated by mixtures of globulin and albumin, the globulin acting as a precipitating agent and the albumin as a protective one. The so-called "luetic" reactions are due to the excess of albumin partially masking the precipitating effect of the globulin. Since the globulins obtained from negative spinal fluids, even when used in concentrated form, are almost inactive, the author does not consider that the precipitating action of paretic fluids can be ascribed solely to the increase in globulin, but regards it as dependent on a specific alteration of the physical state of the globulin which is associated with a positive electric charge. It is of interest in this connexion to note that the alteration in the globulin is not specific for syphilis, but also occurs in multiple sclerosis, which is now suspected by some to be due to a spirochaetal infection. The test might prove of use in separating cases of true multiple sclerosis from those diseases which closely simulate it clinically. The paretic and luetic reactions cannot be attributed merely to the passage of serum globulin into the spinal fluid, though the meningitic reactions may be caused thereby. The author considers that only the paretic and luetic types should be regarded as of real diagnostic value, the meningitic reactions being still of doubtful worth.

158. Transmission of Coccidiosis to Man by the Rabbit.

J. CHAINE (*Gaz. hebd. d. sci. méd. de Bordeaux*, May 30th, 1920) states that coccidiosis, which is almost always a fatal disease in the rabbit, can be transmitted to man, in whom it does not cause any definite symptoms, its presence only being discovered *post mortem* in the form of cysts in the liver and intestine. Man becomes contaminated from sick rabbits, or even healthy carriers of coccidia, or by eating raw salad or radishes which have been grown on manure containing coccidia. After removal of the liver, intestines, etc., the rabbit's flesh (which is never invaded by coccidia) can be safely eaten, but should be carefully cooked lest any coccidia have dropped apart from the liver and intestines.

159. Insoluble Serums.

BESREDKA (*C. R. Soc. Biologie*, April 17th, 1920) has observed an interesting fact which may be of considerable use in the administration of preventive serums. If 5 grams of desiccated serum be added to 10 c.cm. of saline solution (giving five times greater concentration than in the normal blood) and the mixture be heated for an hour at 57° C., there results a semisolid, transparent, golden mass of coagulated serum. If this be cut into small pieces and desiccated *in vacuo* it will be found to have lost its solubility. Pulverized and added to saline solution and diluted to 0.5 per cent. it forms an emulsion capable of passing through a fine needle. The practical advantage of such an emulsion is that owing to the extreme slowness with which it becomes soluble in the body there is no danger of anaphylaxis being produced in a sensitized animal. Owing, however, to the danger of embolism after intravenous administration, Besredka had recourse to laryngeal injection of the suspension, by which route very large doses of serum can safely be administered. Antidiphtheritic and antitetanic serums treated in this way do not lose their antitoxic properties.

160. On the Efficacy of Antityphoid Inoculation.

A. GALAMBOS (*Wien. klin. Woch.*, May 13th, 1920) brings forward the following arguments against the efficacy of antityphoid inoculation: (1) In the course of the summer of 1917 he had occasion to observe an outbreak of 33 cases of enteric fever in Austrian soldiers. Typhoid was diagnosed in 23 cases (in 9 bacteriologically) and paratyphoid in 10 (in 5 bacteriologically). All the patients without exception had been inoculated. The great majority had enlisted since the beginning of 1917, and had been inoculated twice in April and once in June. A few of the older patients had been inoculated in the previous year. In some cases the last inoculation in June coincided with the beginning of the incubation period. All the cases presented the typical picture of enteric fever, the attacks, as a rule, being severe. Seven of the cases died, and the clinical symptoms and lesions found *post mortem* were typical. (2) Galambos suggests that many of the cases included in the statistics of antityphoid inoculation were not really cases of typhoid fever at all, especially in regard to one isolation hospital in which it was stated that among several hundred cases of typhoid there was not a single death. Even if it were granted that the inoculation was followed by a decline in the incidence of typhoid fever, this would not be a proof of the efficacy of inoculation, as in 1870-71, during the Franco-Prussian war, a similar decline in the incidence of typhoid fever occurred. (3) The difference in the mortality in inoculated soldiers and the uninoculated civilian population cannot be brought forward as a proof of the efficacy of inoculation, as the mortality from dysentery in soldiers who had not been inoculated against it was much lower than in the civilian population. Galambos concludes that, though antityphoid inoculation may play an important part in association with other factors in reducing the incidence of typhoid fever, its action on typhoid mortality cannot yet be regarded as proved.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

161. Climate and Consumption.

IN his report for 1918 on the effects of treatment at Reknes Sanatorium on the west coast of Norway, J. SÖMME (*Tidsskrift for Den Norske Laegeforening*, March 1st, 1920) draws attention to the evil effects of wind and rain on consumptives. In November and December, 1917, the weather was persistently bad, and the patients had daily to struggle against driving rain during their walks. In 1918 only 64.4 per cent. of the patients were discharged as improved, although the average for the ten previous years in this category was 82.2 per cent. The results for the first and second stage cases were about 10 per cent. worse for 1918 than for the average of the ten previous years. Discussing the choice of sites for sanatoriums, N. HEITMANN (Ibid., May 1st, 1920) defends the action of the Norwegian officials who, in selecting sites for Government working-class sanatoriums, have been guided largely by considerations of working expenses, the cost of travelling to and from sanatoriums, and other economic factors. With regard to the choice of site for the last two Government sanatoriums, he notes that many years were spent in their selection, and that, though both happen to be in the lowlands, their position is sheltered and the surroundings are healthy. He quotes numerous authorities in support of his contention that the results of sanatorium treatment are as good in the lowlands as in an Alpine or sub-Alpine climate, and he suggests that Sömme's unsatisfactory results for 1918 at Reknes can be traced to food rationing and other complicating factors. Neither he nor Sömme alludes to Dr. W. Gordon's investigations into the effects of rain-bearing winds on pulmonary tuberculosis.

162. Arsenic in General Paralysis.

ACCORDING to LAIGNEL-LAVASTINE (*La Médecine*, February, 1920) the value of arsenic in the treatment of general paralysis depends mainly on the period of the disease at which it is given. At an advanced stage, it is not only useless but aggravates the condition. On the other hand, at the onset, and even at the height of the disease, long remissions may be obtained by its use. As a general rule, it is true, the remissions are only clinical and are not accompanied by any change in the biological reactions, especially of the Wassermann reaction in the cerebro-spinal fluid. Preventive treatment is still more important. The writer recommends that every syphilitic patient should have lumbar puncture performed systematically in the course of the fourth year. If the cerebrospinal fluid shows a meningeal reaction, treatment should be continued till the reaction disappears. If no reaction is present, another examination should be made at the tenth year. Administration of arsenic in the form of novarsenobenzol may be intravenous, intrathecal (Ravaut), intra-arterial (Pitulesco), intraventricular or intraorbital (Bériel). The intravenous route, which is usually employed, may be combined with lumbar puncture, which may or may not be followed by intrathecal injection of the drug.

163. Encephalitis Lethargica and Influenzal Polioencephalitis.

ZAGARI (*Rif. Med.*, March 20th, 1920) discusses the relationship of these conditions—Are they two separate distinct diseases, or different forms of the same thing? The multiplicity of forms and variability of symptoms tend to throw doubt on the existence of encephalitis lethargica as a separate disease; on the other hand, a case of severe typhoid and a mild ambulatory form of the same disease are clinically as far apart as the most divergent cases of encephalitis lethargica. Histological examination of the parts of the brain usually affected does not throw convincing light as to the specific character of encephalitis lethargica. Bacteriology, he says, does not enable us to decide definitely. In the first place authorities differ as to the true organism causing influenza, and this is equally true as to encephalitis lethargica. In addition, we are coming to believe less in a single causal agent and more in mixed infection, so that more than one organism may be the cause. This theory of mixed infection would at any rate help to explain the protean form of the disease. On the whole, in spite of certain facts which seem to link encephalitis lethargica with influenza, the author thinks that, before a definite opinion can be given, we must await further knowledge.

164. The Palmo mental Reflex.

G. MARINESCO and A. RADOVICI (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, February 4th and 18th, 1920) describe the following reflex which they found to be well marked in patients with a bilateral lesion of the pyramidal tracts. When the skin of the palm is stimulated there is a distinct contraction of the three muscles of the chin on the same side—namely, the levator menti, depressor labii inferioris, and depressor anguli oris—causing elevation of the chin and half the lower lip. At the same time the skin of the chin is depressed and forms a series of folds at the level of the cutaneous insertion of the three muscles named. When the reflex is exaggerated the platysma may also react, causing wrinkling of the skin down to the supraclavicular fossa. From examination of 300 individuals, healthy or suffering from various diseases, the writers concluded that the phenomenon is merely an exaggeration of a normal reflex, which is most pronounced in children, especially after the period of infancy. Unlike other cutaneous reflexes, it is exaggerated in affections of the pyramidal tract, especially when they are bilateral. A very slight stimulation of the palm is sufficient to produce it.

165. Sudden Death from Cardiac Gumma.

NAKAJIMA and ISHIGURO (*Bull. of the Naval Med. Assoc. of Japan*, April, 1920) record the case of a seaman of 24 who expired in an anginal attack occurring during severe muscular exertion. At the autopsy were found two gummata in the heart—one in the auricular septum, and the other between the aortic orifice and the ventricular septum. The latter gumma, by pressure on the left coronary artery, appeared to have caused the formation of cicatricial tissue in the posterior wall of the left ventricle near the apex and among the posterior papillary muscles.

166. Direct Transfusion for Purpura Haemorrhagica.

MOFFATT (*Canadian Med. Assoc. Journ.*, May, 1920) records a case of severe purpura haemorrhagica in a woman, aged 23, who had had moderate enlargement of the thyroid since 16. A slight trauma eighteen months previously produced bluish marks on the skin, followed later by occasional severe epistaxis. After an attack of influenza petechial spots appeared on the extremities and further epistaxis occurred, and the following menstrual periods were so excessive that on two occasions blood transfusion was performed, and eventually partial hysterectomy as a last resort. Convalescence was slow, and the purpuric spots were persistent and diffuse, and increased greatly when the patient was long on her feet. Haemorrhages into the conjunctivae, tongue, and oral mucous membranes also occurred, and finally an attack of nausea and vomiting was followed by an abundant haematuria. Horse serum was given subcutaneously in large doses without effect, but a blood transfusion of 840 c.cm. immediately produced a striking effect upon the general condition, and upon the haematuria in particular, the urine becoming clear within twelve hours and quite normal in five days. The purpura and subjective symptoms also disappeared, and she rapidly gained in strength and colour up to the date of record—five weeks after transfusion.

167. Diabetes and Exophthalmic Goitre.

ACCORDING to M. LABBÉ (*Ann. de Méd.*, No. 2, 1920) the association of diabetes with exophthalmic goitre was described by Dumontpallier in 1867, and has since been noted by numerous writers. Gastand in 1913 collected 50 cases of the kind, and Labbé himself has seen five cases, whereas during the same period he never met with a case of diabetes associated with myxoedema. The association is not a mere coincidence, but the diabetes appears to be the result of a functional disturbance of the thyroid gland. Several writers have recorded examples of the two diseases occurring at the same time in various members of the same family, thus indicating the existence of a morbid relationship between diabetes and exophthalmic goitre. All forms of diabetes may occur. Sometimes the disease is severe and accompanied, as in two of Labbé's cases, by loss of flesh and acidosis, and in several instances death has been due to diabetic coma. Sometimes, however, the acidosis is only intermittent, and in mild forms there is no acidosis at all. The special features of diabetes in subjects of exophthalmic goitre are that the glycosuria is less affected by diet than in uncomplicated diabetes, and may often appear or disappear without known cause. Sometimes the exacerbation of diabetes is definitely related to that of exophthalmic goitre, the glycosuria disappearing at the same time as the goitre, or the diabetes becoming worse if the goitre assumes the character of Graves's disease. Labbé has found that the most successful results have been obtained by preparations of iodine, which not only diminish the palpitation and tachycardia, but also considerably reduce the glycosuria.

168. Intermittent Claudication.

ACCORDING to HEITZ (*La médecine*, March, 1920) this affection, which is characterized by arterial obliteration in one or both lower limbs, is most common in males. Some races, such as the Japanese and Jewish, appear specially predisposed. It is frequently associated with diabetes or intermittent glycosuria. Syphilis is found in only one quarter of the cases. About half Heitz's patients were heavy smokers. There is fairly often a history of frost-bite of the foot. Lastly, claudication may appear after ligature of the femoral or popliteal artery. It is generally observed between the ages of 40 and 60, frequently in association with a high blood pressure, but Heitz has seen it in patients between the ages of 30 and 35 and with a normal blood pressure, or in old age. The patient complains of a painful cramp in his leg, which compels him to stop after walking a few hundred yards or less. A feeling of coldness in the extremities is also frequent. The symptoms disappear in a few minutes but rapidly return after the patient starts walking again, especially if he hurries or walks uphill, or if the external temperature is low. The cramp is usually felt only on one side, even when the lesions are bilateral, as is the rule. The temperature of the lower limb at rest is usually, but not invariably, subnormal. The appearance of the skin is normal as a rule in the recumbent position, but the feet generally assume a bright pink or red coloration if they are allowed to hang down for a few minutes. The sensibility of the skin remains normal; so also with the tendon reflexes, except in diabetes, where they are often weak or abolished. In severe cases there may be amyotrophy, with weakening of the faradic and galvanic reactions without reaction of degeneration. Pulsation of the dorsalis pedis and posterior tibial arteries is always abolished on the painful side and often on the other; pulsation is usually perceptible in the femoral artery. Examination with Pachon's instrument shows that the oscillations are considerably reduced in amplitude. If there is vaso-constriction on placing the feet in a hot bath, the amplitude of the oscillations increases considerably and the arterial pulsation reappears, but if the artery is obliterated the oscillations do not reappear. This test enables one to exclude endarteritis in a malingerer, and to affirm its presence in a patient who cannot give a clear account of his symptoms. It also enables the affection to be distinguished from the intermittent claudication of the spinal cord, described by Dejerine, in which the arteries of the lower limbs are healthy, but the contractions of the arterioles in the lumbar enlargement are manifested by cramps in the legs after walking. Improvement in intermittent claudication often occurs after arterial ligature or gets worse as the result of endarteritis. As the result of abstention from tobacco, galvanic baths, and a cure at Royat, the condition may remain stationary for years. The Japanese have obtained good results by the injection of Ringer's solution. Relapses are not uncommon, and in such cases a new symptom appears [illegible] pain when in the recumbent position. In a few weeks or months gangrene of one or more toes develops. Complete recovery is impossible, but life may be made tolerable by partial amputation of one or more toes.

169. Artificial Pneumothorax in Pulmonary Abscess

[illegible] (*Glasgow Med. Journ.*, May, 1920) records a case of localized abscess in the upper lobe of the right lung following the extraction of teeth in a woman aged 27. [illegible] showed the presence of a well circumscribed cavity half filled with fluid, and for a week she exhibited irregular temperature with copious brownish foul-smelling expectoration containing elastic tissue but no tubercle bacilli. Complete recovery followed induction of artificial pneumothorax repeated on several occasions.

[illegible]

SURGERY.

170. Sixth Nerve Paralysis associated with Acute Otitis on the Opposite Side.

DUTHEILHET DE LAMOTHE (*Rev. de lar., d'otol., et de rhin.*, April 15th, 1920) records a case in a girl aged 9 years, who five days after an operation for right mastoiditis developed signs of meningitis, followed by paralysis of the left external rectus. The cerebro-spinal fluid, which was turbid and under hypertension, contained a very large quantity of fibrin but very few cells, and thus presented the appearances characteristic of serous meningitis. Lumbar puncture was performed daily, followed by intrathecal injection of electrargol. Complete recovery took place in about six weeks' time. The present case resembles those previously reported, in its sudden onset during the course of acute otitis, its association with serous meningitis, and its favourable issue. The writer attributes the paralysis to the serous meningitis, and considers that the paralysis of the contralateral nerve was probably due to some special anatomical predisposition which rendered it more susceptible than its fellow.

171. Injection of Alcohol into the Gasserian Ganglion.

H. PICHLER (*Wien. klin. Woch.*, May 20th and 27th, 1920), who has treated fifty-one cases of trigeminal neuralgia by injection of alcohol into the Gasserian ganglion, is convinced that cure of the disease is almost certain by this method. He points out, however, that the operation is by no means simple or easily carried out, but requires much practice. As it is not altogether devoid of danger, it should not be performed on out-patients. It should be reserved for those cases in which all other methods have been tried in vain, and should be regarded as a rival operation to extirpation of the Gasserian ganglion, for which it can almost always be substituted. Local causes must first be recognized and removed. A careful examination, therefore—including the use of *x* rays—must first be made of the teeth, nose, and eyes. The most important and sometimes inevitable complication is keratitis neuroparalytica. For this reason the injection must be preceded by a careful examination of both eyes. It is not advisable to anaesthetize the ganglion with cocaine before the injection of alcohol. Owing to the danger of keratitis the first branch should be spared if possible when it is not affected by the disease. The dose of alcohol required varies considerably, but is not unfrequently ten or even fifteen times as much as Härtel's maximum dose of 1 c.cm. The injections may be repeated as often as is desired.

172. Trephining for Fractured Cranial Base.

ROUX-BERGER (*Bull. et Mém. Soc. de Chir. de Paris*, 1920, 46) describes four cases of fractured cranial base trephined by him after use of Cushing's early bilateral subtemporal decompression. The majority of those taking part in the discussion condemned any intervention unless specially indicated. The method of treatment generally used in France appears to be repeated lumbar puncture, operation being reserved for those cases which fail to respond. Most cases presenting limb paralyses, and all in which an extrameningeal haemorrhage is suspected, are submitted to operation. The value of the bilateral exploration is well shown by one of Roux-Berger's cases, for although on the side first decompressed nothing was found, on the other there was a voluminous clot.

173. Embolic Aneurysms of Peripheral Arteries.

ADAMS (*Glasgow Med. Journ.*, June, 1920) records two cases of this very rare condition; both patients were males aged about 30 suffering from aortic disease, and in both cases blood culture was negative. In one patient a fluctuant pulsatile swelling appeared between the great trochanter and the posterior iliac spine; the aneurysm of the gluteal artery disappeared after ligature of the internal iliac artery, but the patient died within a few days. In the other case a fusiform swelling appeared in the region of the ulnar artery; proximal ligature was performed, but the patient died a few days later.

174 Aberrant Mastoid Cells.

MOURET and SEIGNEURIN (*Rev. de lar., d'otol., et de rhin.*, May 31st, 1920) state that the term "aberrant mastoid cells," first employed by Moure in 1901, should not signify all cells isolated from the other mastoid cells or from the antrum, but should only apply to cells whose connexion with the other air cavities in the temporal bone is not obvious and requires careful search. They point out that there is no such thing as an isolated air cell separated from any cavity communicating with the outer air. When an infective focus is found in the mastoid at some distance from any air cavity, there is a tendency to regard it as an aberrant cellulitis. Osteitis, however, secondary to inflammation of the tympanum and antrum, is not uncommon and may give rise to belief in the existence of aberrant cells. The practical conclusion to be drawn from the presence of cells situated at a distance from the antrum is that a deep and free mastoidectomy should take the place of a simple antrotomy, which in the majority of cases should never be performed.

175. Cosmetic Surgery of the Nose.

TIECK (*Amer. Journ. of Surg.*, May, 1920) records his experience of a thousand cases of nasal deformity treated during the last twelve years. The operations were performed under local anaesthesia, and four intra-nasal incisions were usually required in each fossa. For correction of a "sagged-in bridge" or "saddle nose," the nasal bone was elevated and the defect filled in by a transplant of the middle or inferior turbinate bone. In nearly all cases there was a certain amount of post-operative oedema. The conformity of the nose underwent continuous improvement for six months; out of 100 transplants only five broke down. The article is illustrated by photographs.

176. Osteo-articular Dystrophies and Industrial Accidents.

A. MOUCHET and R. PILATTE (*Journ. de méd. et de chir. prat.*, May 10th, 1920) record two cases to show that the medical expert should always bear in mind the possibility of bony or osteo-articular dystrophies, which may occur at two different ages: (1) At adolescence, in the form of trophic disorders of growth, producing spontaneous fracture of the neck of the femur, in which traumatism may play little or no part; (2) during adult life, usually after 40 years of age, in the form of a trophic arthropathy, frequently but not invariably due to syphilis. In such cases radiography is a valuable guide, but requires careful interpretation; it is most important that the healthy side should be radiographed at the same time as the affected side.

177. Cardiolysis.

DELORME (*Gaz. des Hôp.*, April, 1919) describes the technique of cardiolysis. He wishes to reserve this term for the separation of adhesions between the visceral and parietal layers of the pericardium. The cardiac decompression by mobilization of the overlying chest wall, to which operation the name cardiolysis is often given, is called by Delorme "pericardiolysis." The author believes cardiolysis to be of value in rheumatic and tuberculous pericarditis. The heart is exposed by reflection of the fourth, fifth, and sixth costal cartilages from the sternum; it is important to avoid opening the left pleural cavity. The fibrous pericardium is incised, and all adhesions are separated by the fingers, aided by blunt-nosed scissors curved on the flat. Should the adhesions be too close and tough, Delorme contents himself with incising the anterior attachments of the pericardium to the diaphragm. The left phrenic nerve must be avoided. The results are said to be good.

178. Injections of Vaseline into Abscesses and Phlegmons.

FOR the past twenty years E. LINDSTRÖM (*Svenska Läkaretidningen*, January 30th, 1920) has been experimenting on lymphadenitis, abscesses and phlegmons, making small incisions, through which he injected vaseline alone, or various drugs with vaseline as a vehicle. Pure vaseline proved as effective as any combination of vaseline with other drugs. He regards this treatment as particularly suitable for out-patients and general practice; the technique is easy, and the discomfort to the patient minimal. After disinfection of the skin by ordinary methods, one or two incisions, according to the size of the inflamed area, of about 1 cm. are made, and, if pus has already formed, it is squeezed or washed out. The abscess cavity is filled with vaseline, melted in a water bath and introduced through a syringe. The cavity is first irrigated with the vaseline, with which its remote corners and crevices are then distended. The syringe having been withdrawn, the incision is blocked by a cold compress till the vaseline has stiffened. An ordinary dressing is left in place for four or five days. In some cases these injections have to be repeated. The author claims for this treatment the advantages of painlessness (provided an ethyl chloride or ether spray is used), insignificant haemorrhage, rapid healing, and, because of the smallness of the incision, no disfiguring scar formation. Owing to the gradual escape of the vaseline the incision does not become blocked nor is pus retained; plugging the abscess cavity with dressings is definitely contraindicated.

OBSTETRICS AND GYNAECOLOGY.

179. Hysterectomy in Cases of Adnexal Suppuration.

FAURE (*La Gynécol.*, February, 1920) and BÉGOUIN discussed at the Brussels Congress of September, 1919, the indications for and technique of hysterectomy in the treatment of adnexal suppuration. They remarked that many non-encysted inflammatory conditions undergo spontaneous cure, but that operation must be undertaken in cases in which the symptoms continue to advance in severity, as well as in cases which present signs and symptoms of a chronic non-retrogressive inflammatory condition. In cases of hyperacute inflammation with pain and signs of peritonitis it often suffices to evacuate the pus (when this is collected in a single pouch) by means of colpotomy. When, however, there are multiple pouches abundant drainage is required and vaginal hysterectomy is recommended. If hysterectomy is required in conditions of puerperal infection the vaginal route is to be preferred; this is also the method of choice in post-puerperal peri-uterine affections. Abdominal hysterectomy is indicated for bilateral adnexal inflammations which have become chronic. Pyosalpinx, whether tuberculous or not, should always be operated on provided it is in the "cold" condition; abdominal operation should not be undertaken within four to six weeks after an acute pelvic manifestation in connexion with pyosalpinx. In exceptional cases in which the pelvic peritonitis does not subside and the fever persists, the surgeon may be forced to operate and should choose the vaginal route. In cases of chronic pyosalpinx approached by the abdomen hysterectomy should be practised if the adnexal lesions are bilateral. The authors prefer the subtotal operation, which they say is simpler, easier, and quicker, and in which there is no risk of imperfect haemostasis in the neighbourhood of the vagina. The authors found hemisection of the uterus from the fundus downwards a useful expedient in difficult cases of abdominal hysterectomy for adnexal inflammation. Many of those who took part in the subsequent discussion preferred the complete to the subtotal operation.

180. Pendulous Abdomen: Rachitic Pelvis: Caesarean Section.

MICHOLITSCH (*Zentralbl. f. Gynäk.*, May 15th, 1920) records the case of a primipara aged 42, in whom he found, forty-eight hours after rupture of the membranes at term, a pendulous abdomen and a uterus acutely bent, with its fundus hanging over the thigh. The patient had lumbar lordosis, sabre-blade curvature of both tibiae, and rachitic signs in other bones. The child was living. The lower uterine segment was chronically contracted over the fetal head; the os admitted two fingers. An endeavour, made under anaesthesia, to raise the uterus was unsuccessful, and the patient refused to co-operate in the postural correction of the uterine malposition. A large healthy child was removed by Caesarean section; it became possible as soon as the patient was under deep anaesthesia to raise the uterus, the chronic contraction of which then disappeared.

181. Syphilitic Metrorrhagia.

ROULLAND (*La Gynécol.*, February, 1920) recounts the case of a woman aged 42 who presented a condition of profound cachexia, and in spite of all varieties of treatment had had grave metrorrhagia for over ten years. The history showed that the onset of the bleedings had been preceded by two miscarriages at the second month; the Wassermann reaction was strongly positive. The patient was given four injections of neo-salvarsan (to which she exhibited signs of intolerance) and intravenous injections of mercuric chloride, succeeded during twelve months by an intensive mercurial course of an unspecified nature; cure followed. It is noteworthy that the metrorrhagia had been accompanied by vomiting and by exceptionally severe headaches.

182. Organotherapy in Disorders of Menstruation.

ESCH (*Zentralbl. f. Gynäk.*, May 29th, 1920) reviews reports that have been given of treatment of disorders of menstruation by means of the corpus luteum and other gland extracts. The same extracts have been reported to have therapeutic success in opposed groups of conditions, such as amenorrhoea and menorrhagia; on this and other grounds the author expresses the opinion that the effects of injection of organ extracts may be due partly to their containing specific internal secretions and partly to their unspecific protein content. An exception is found in the use of pituitary extract for menorrhagia; here there is specific action on the uterine muscle.

183. X-ray Treatment of Fibroids in Germany.

Solomon (*Journ. de Radiol. et d'Electrologie*, iv, 3) has reviewed the literature published in Germany during the war concerning the *x*-ray treatment of gynaecological conditions, especially fibroids of the uterus. He finds that in the majority of gynaecological clinics in Germany *x*-ray therapy has come to be the sole means of treatment for uterine fibromyomata; application of radium or hysterectomy is rarely employed. Numerous contraindications to *x*-ray treatment were formerly given, and included (1) suspicion of malignant degeneration, (2) concomitant fever or signs of serious compression, (3) submucous or polypoid situation of the myoma, (4) coexistence of adnexal tumours, (5) ascertained or suspected gangrenous condition of a myoma. With progress of technique many of these contraindications have been abandoned. Very large doses are preferred. Up to 1918 the majority of authors advised the use of numerous points of application; lately these have been reduced to from one to four. The majority of writers recommend treatment at several sittings during the course of a few weeks or months. A few surgeons recommend intensive treatment at one sitting. Reeder (*Strahlentherapie*, 1919, ix) had 96.6 per cent. of cures, 2.6 per cent. of improvements, and 0.8 per cent. of failures among 117 cases. Heimann (*Strahlentherapie*, loc. cit.) obtained 100 per cent. of cures in 96 cases of myoma and 67 of metropathy.

PATHOLOGY.

184. Hydrocephalus and Atrophy of the Suprarenals.

G. F. Cosmettanos (*Grèce médicale*, February, 1920) records the case of a newborn child who died twenty-four hours after birth. At the autopsy all the thoracic and abdominal organs, with the exception of the suprarenals, were normal on naked eye and microscopical examination. The lateral ventricles were much dilated and filled with transparent fluid. Both suprarenals were atrophied and showed complete absence of the medullary substance on the right side and an almost complete absence on the left, where it was merely represented by a few chromaffin cells. Cases of coexistence of malformation of the brain and suprarenal glands may be divided into two groups: (1) those in which the congenital anomalies occur at the beginning of the development of the nervous system, and (2) those in which the anomalies occur later—that is, after the appearance of the sympathetic ganglia and the chromaffin substance. In the first case the arrest of development of the nervous system results in an arrest of development of the sympathetic ganglia and consequently of the chromaffin substance. In the second case some morbid condition of the parents, such as syphilis, alcoholism, or tuberculosis, is responsible for the congenital anomalies in organs embryologically related, such as the brain and the medullary substance of the suprarenals. In the present case the parents' history was not available.

185 The Colour of the Iris and Heredity.

H. Bryn (*Tidsskrift for Den Norske Lægeforening*, May 15th, 1920) has examined 834 persons in two mountainous districts in Norway with respect to the colour of their eyes. He found that if both parents and all the grandparents had blue eyes without any brown pigmentation, all the children were blue eyed. When both parents were blue eyed, while some of the grandparents had eyes with brown pigmentation, 10 per cent. of the children had eyes with brown pigmentation, while the rest were blue eyed. When both parents had eyes with brown pigmentation, 25 per cent of the children were blue eyed and the remainder had eyes with brown pigmentation. When one parent was brown eyed and the other blue eyed, the number of blue and brown eyes was equally divided among their children. When both parents had "mixed" eyes, 25 per cent. had blue eyes, 25 per cent. brown eyes, and 50 per cent. "mixed" eyes. But this rule did not apply to all types of "mixed" eyes. If both parents had blue eyes with a well defined brown ring round the pupil, all their children exhibited the same type of "mixed" eyes.

186. Absorption of Oil by the Lung.

Guieysse-Pellissier (*C. R. Soc. Biologie*, May 23rd, 1920), who had previously shown that oil injected into the trachea of rabbits was borne into the most remote pulmonary alveoli and absorbed by the epithelial cells, now adds information obtained by further investigations on the same subject. Histological studies showed that round the oil masses a new cell system was formed, composed of large cells (apparently epithelial) with large nuclei, polymorphonuclear leucocytes, and eosinophile leucocytes. The stages of lipolysis could be fairly well followed. The large cells were clearly the epithelium of the alveoli, some of which had become detached and formed free cells, whilst others remained adherent and multiplied actively by karyokinesis. Infiltrated with leucocytes the whole constituted a new system of defence. Some of the cells contained oil droplets, whilst others showed none; it is imagined that in the latter case intracellular digestion had progressed further. By mixing with the oil carmine granules it was thought that the process of absorption could be better followed. The voracity of the alveolar epithelium was such that most of the cells were packed with carmine, whilst the oil had disappeared. The polymorphonuclear leucocytes showed nothing out of the common, but the presence of eosinophiles in large quantity was a striking feature. There was no increase of eosinophiles in the circulating blood: the local arterioles, however, were filled with them; they lay in a continuous layer against the vessel wall and could be found even in the substance of the wall between its muscular fibres; they collected also in the peribronchial connective tissue. In the alveolar wall these eosinophiles underwent change; their granulations increased in size and showed a tendency to produce rupture of the cell. Uniform in size for each particular cell, they varied in size from cell to cell. Generally they assumed cubical forms, but sometimes were more linear and took up a parallel arrangement within the cell. There was evidently some relationship between the absorption of oil and the presence of these eosinophiles with large granules, for they were often attached to epithelial cells which were gorged with oil droplets.

187. The Duodenal Fluid in Jaundice.

Mauban (*Paris Méd.*, June 12th, 1920) finds that, as a rule, in cases of jaundice (icterus consequent on malignant disease of the head of the pancreas excepted) the juice removed by tubage from the duodenum seems to be little modified. It is slightly less abundant and less rich in bile pigment and bile salts than the normal fluid, but its complete absence is exceptional. Pancreatic ferments are distinctly more active than in normal fluid; possibly this results from the slighter degree of dilution of the pancreatic juice by bile, but more probably this is a compensatory reaction.

188. Treponema pallidum in the Seminal Fluid.

According to Pinard and Hoch (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, June 3rd, 1920) the discovery of *Treponema pallidum* in the seminal fluid was first made by the authors in 1910, although previously Finger and Landsteiner had been able to communicate syphilis to monkeys by inoculation of the seminal fluid from patients in the secondary stage of the disease. More recently Pinard and Hoch have repeated this observation in three cases, in one of which (as in the original case) no pathological condition of the urethra could be demonstrated.

189. New Preservative for Cadavers.

A note in the *Journal of the American Medical Association* draws attention to the use of liquid petrolatum for the preservation of cadavers. Myer (*Science*, December, 1919) has experimented with this fluid with satisfactory results. The introduction of phenol in 1867 and formaldehyde in 1890 may be said to have revolutionized research in anatomy. Neither substance is ideal, the irritating effects on the eyes and nose of formalin vapour being most trying to the dissector, and the contraction of tissues by shrinkage leads to a considerable distortion. Further, the drying of the extremities (the nose and face, the fingers and toes, and the genitalia) can only be prevented by care more assiduous than students can usually command. Liquid petrolatum is practically odourless; its specific gravity is low, so that bodies readily sink in it; it softens and protects the epidermis, is not expensive, and can be used over and over again.

Correction.

The last paragraph of the Epitome of August 7th (para. 130, p. 16) was an abstract of an article by Dr. Drew which appeared in the *British Journal of Experimental Pathology*, not "*Medicine*," as printed. The new journal is published by H. K. Lewis and Co.; the *Journal of Experimental Medicine* is published in America.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

190. Extrasystole.

BARAZZONI (*Il Morgagni*, February 25th, 1920) says that extrasystoles are due to abnormal excitation of the heart (of extra- or intra-cardiac origin) or to abnormal cardiac excitability. They may be functional or organic, and the question can often be determined by the conditions in which the arrhythmia arises—for example, after taking thyroid or smoking tobacco. At times the differential diagnosis is difficult, the age of the patient, his antecedent history, his habits, the state of his vessels, the condition of his digestive apparatus, the characteristics of the irregularity, its frequency, intensity, and development, have all to be examined. If the irregularity is not very marked, its intensity is variable, and its appearance capricious and due to insignificant causes, if it diminishes during sleep, then the arrhythmia is almost always functional. On the other hand, an extrasystole which is more or less permanent, lasting for months or years, and is unmodified by suspension of respiration, especially if it occurs in an individual of rather advanced age, is most likely organic. One way of deciding whether an extrasystole is functional or organic is to inject atropine (1–2 mg.) which, by paralysing the cardiac filaments of the vagus, eliminates those causes which act on the heart by way of the nervous system. In extrasystole of extracardiac origin the subjective sensation of altered rhythm is more constant and more clearly felt than in extrasystole due to an organic lesion of the heart. The prognosis depends on the cause.

191. Tuberculosis amongst the First-born.

HANSEN (*Ugeskrift for Laeger*, March 18th, 1920) discusses this subject in the light of his own statistical investigations and those of Karl Pearson, comparing them with investigations, published in 1920, by Kjerrulf. The latter has shown that, among school children examined in Stockholm since the outbreak of the war, the first-born did not show a greater proportion of positive von Pirquet reactions than others. Why, then, asks the author, is the tuberculosis of adult life comparatively common in the first-born? He is inclined to interpret these observations as indicative of active endogenous factors in the conversion of latent into active tuberculosis. One of these, he suggests, must be a congenital lack of powers of resistance in the lungs of the new-born, traceable to malnutrition in fetal life. But this want may also be due to heredity, and he considers the relation of heredity to pulmonary tuberculosis as a problem which has not yet been solved.

192. Obscure Abdominal Pain.

VAN WAVEREN (*Nederl. Tijdschr. v. Geneesk.*, May 15th, 1920) states that when the diagnosis of appendicitis is uncertain and laparotomy is performed because no relief is obtained by any other treatment, pericolitis may be found in place of appendicitis. Whether the pericolitis is the cause of the pain is uncertain. As a rule such cases occur in neurasthenic or hysterical individuals. Von Waveren records an instance of this kind in which appendicectomy was performed, but the patient continued to suffer from abdominal pain and constipation just as much as before the operation. Relief was effected by administration every other day of 25 mg. of suprarenal gland.

193. Applications of Electro-therapy.

S. SLOAN (*Archiv. Rad. and Electro-therap.*, April, 1920) reports varied conditions in which much benefit had followed electro-therapeutic treatment of various kinds. In a case of complete alopecia in which there was no trace of hair on any part of the body, and which had for years resisted all kinds of treatment, three courses of high-frequency treatment with the vacuum electrode were followed by growth of fine hair over the whole of the scalp; hair returned on the eyebrows and a complete fringe of normal hair returned on each eyelid. In trifacial neuralgia of the most severe type (tic-douloureux) two cases out of three reacted favourably, but the other did not respond to treatment by the vacuum electrode. The successful cases remained without pain for at least one year.

194. Delirium in Lethargic Encephalitis.

ACCORDING to BOSC (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920), delirium was the most constant symptom in an epidemic of lethargic encephalitis at Montpellier. It was sometimes accompanied by a number of other symptoms, and sometimes by somnolence alone. In 4 cases it was the only symptom of the disease. In every case the delirium presented the same general features as those which had been observed in the influenza epidemic of 1919. In the cases in which delirium constituted the only symptom the disease was sometimes apyrexial and sometimes accompanied by a rise of temperature.

195. The Ascitic Form of Hydatid Disease of the Liver.

ACCORDING to ROBIN, WEIL, and BITH (*Ann. de méd.*, No. 2, 1920), ascites is an uncommon event in the course of hydatid disease of the liver. They record a case in a woman, aged 23, who gradually developed symptoms of dyspepsia about an hour after food, pain in the region of the liver, and then progressive increase in size of the abdomen. Examination showed a striking contrast between the emaciated supra-diaphragmatic part of the body and the infiltrated and voluminous subdiaphragmatic region. The lower limbs were oedematous, the subcutaneous veins of the abdomen distended, and there was a considerable degree of ascites. The liver was much enlarged in all its dimensions, but no enlargement of the spleen could be detected on percussion. The function of the liver cells was found to be intact. Weinberg's test was positive, and there was an eosinophilia of 20 per cent. The diagnosis of hydatid cyst was confirmed by laparotomy. The ascites in such cases is to be attributed to a mechanical or inflammatory obstruction of the inferior vena cava, or more frequently, perhaps, of the portal system.

196. The Pilomotor Reflex.

ACCORDING to A. THOMAS (*La Médecine*, February, 1920), the pilomotor centres in the upper limbs are situated in the fourth to seventh dorsal segments, and those in the lower limbs in the ninth to twelfth dorsal segments, the first lumbar segment, and probably the second lumbar segment. In the first three dorsal segments there are centres for the face and neck and the upper part of the thorax, which is innervated by the fibres of the cervical plexus. Investigation of the pilomotor reflex enables one to judge of the condition of the centrifugal and centripetal tracts. The pilomotor reflex caused by cervical stimulation persists and may even be increased on the paralysed side in cerebral hemiplegia when sensibility is not affected in the region stimulated. In unilateral or bilateral lesions of the cord the presence or absence of the reflex below a certain level indicates the severity and depth of the lesion. Lesions of the grey substance which destroy or irritate the sympathetic, such as syringomyelia, haematomyelia, or intraspinal tumour, cause considerable disturbance of the reflex. Lesions of the cauda equina within the spinal canal do not affect the reflex, but it is lost in the lower limb when the sympathetic is divided below the origin of the pilomotor nerves of the lower limbs. Any lesion of the roots, plexuses, or peripheral nerves modifies the reflex, either increasing it or abolishing it, according to the nature of the lesion. The reflex is modified in lesions of the sympathetic. Interruption of the sympathetic chain above the spinal origin of the pilomotor nerves of the brachial plexus abolishes the reflex in the upper limb, and if the section is at the level of the first dorsal ganglion and lower cervical ganglion, the reflex is abolished also in the neck and face. A loss of the reflex occurs in herpes zoster. When a divided nerve is regenerating, reappearance of the pilomotor reflex is an early phenomenon. Lastly, in some persons even a slight lesion of the limbs or trunk may cause an exaggeration of the pilomotor reflex in the corresponding half of the body with its maximum in the immediate neighbourhood of the lesion.

197. Etiology of Angina Pectoris.

L. GALLAVARDIN (*La Médecine*, March, 1920) emphasizes the following points in a paper based on the study of 100 cases of true angina pectoris: (1) Angina pectoris is much commoner in men than in women, only seven of his cases occurring in women. It is much commoner in private than in hospital practice, only two of his cases being observed in hospital patients. (2) As regards the age, the affection may in exceptional cases (4 per cent.) occur below 40. In 24 per cent. of the cases it was found below the age of 50, in 47 per cent. between 50 and 60, and in 29 per cent. beyond 60. (3) Syphilis, although a very important is far from being the exclusive factor in the causation of angina pectoris. In 91 cases the question of syphilis was carefully investigated, and in the remaining 9 only superficially or not at all, with the following results: In 32 per cent. syphilis was certain, in 5 it was doubtful, and in 63 there was no reason to suspect its existence. Even allowing for error, syphilitic infection does not appear to enter into the etiology of true angina pectoris in more than half the cases. In those cases in which angina pectoris was associated with aortic insufficiency (which according to Gallavardin is almost always syphilitic in origin) the proportion of cases due to syphilis was considerably increased. Out of 15 cases in which the two affections coexisted, syphilis was certain in 13, one of the two remaining being due to rheumatic fever. Gallavardin suggests that in addition to syphilis there are other unknown causes of aortitis and arteritis, and that the predominance of angina pectoris in private practice may be explained by intellectual and emotional strain.

198. Pellagra among Turkish War Prisoners in Egypt.

BOYD (*Edin. Med. Journ.*, June, 1920), records his experience of pellagra occurring among Turkish prisoners in Egypt. The earliest clinical features were pigmentation and dryness of the skin, first noticeable on the backs of the hands and the face; other symptoms were dyspepsia, diarrhoea, muscular atrophy, achlorhydria, hyperpiesis, and mental dejection. The clinical features resembled those of a profound suprarenal inadequacy. There was no evidence of a specific protozoan or bacterial infection. The digestive disturbance accompanied by defective secretion of hydrochloric acid appeared to lead to disturbance of pancreatic function and malassimilation of protein and fat. There seemed to be an intimate connexion between the proportion of biological protein in the diet and the causation of pellagra. The relation between maize and pellagra appeared not to be due to any toxic properties inherent in the maize, but to its poverty in biological protein. Treatment by increasing the intake of the latter was speedily successful.

SURGERY.

199. Foreign Bodies in Heart and Vessels.

[illegible] (*Bull. et Mém. Soc. de Chir. de Paris*, March, 1919) discusses the difficulty of ascertaining by means of x rays whether a foreign body is or is not in the heart. In one of his cases a clear space could be seen between the piece of shell and the heart; yet at operation the fragment was found embedded in the posterior wall of the left ventricle. He concludes that all cases of projectiles near the heart should come to operation. ROBINEAU (Ibid.) believes that the character of the movements of the missile are diagnostic. The excursion of the missile, if it is within the heart or its walls, is swift, with a large amplitude, and a [illegible] similar to that of the cardiac contractions. LE FORT (Ibid., May, 1919) thinks that diagnosis is not difficult; a surgical approach must be made which is capable of easy enlargement. [illegible] (*[illegible] del Cuore*, 1919, 5) records a case in which a portion of shell was clearly seen embedded in the postero-inferior wall of the left ventricle. [illegible] (*Hygea med.*, February, 1919) removed a shell fragment from the pericardium two years after injury. [illegible] and [illegible] (*Bull. et Mém. Soc. de Chir. de Paris*, December, 1918) successfully removed a projectile from the inferior aspect of the ventricle, using a thoraco-abdominal incision. [illegible] (Ibid.) had, up to that time, collected 59 cases where projectiles were embedded in the wall of the heart; of these, 23 recovered without operation, and 13 out of 16 recovered after operation. There were also 27 cases where the missiles were within the heart, with 12 recoveries out of 17 not operated upon, and 7 recoveries out of 10 which came to operation. Duval advised operation for all intrathoracic foreign bodies, believing that they either embedded themselves in the walls of the heart or left by the great vessels as emboli. The heart, he found, seemed to tolerate the presence of small intramural missiles; if they were large, a plastic pericarditis was apt to cripple the cardiac function. [illegible] (Ibid., April, 1919) records a case in which a bullet entered the chest and was seen by x rays to be lying in the anterior wall of the heart. A month later radioscopy showed that the bullet was lodged at the bifurcation of the right common iliac artery; there were no ischaemic signs, but the right femoral pulse was absent. The bullet was removed, but the pulsation did not return, obliterative endarteritis having occurred; neither circulatory nor functional disturbances followed. BULLER (*Journ. Amer. Med. Assoc.*, May, 1919) reports a stab wound 1 cm. long in the wall of the left ventricle, the ventricular cavity not being opened. The patient made a good recovery after suture. FEIL (Ibid., June, 1919) describes a case in which a peculiar murmur of metallic quality was audible over the heart. The patient had received a shell wound of the left chest, and had had much intrapleural haemorrhage. Radiography revealed a small piece of shrapnel at the level of the fifth thoracic vertebra. It was impossible to tell the precise relationships of the missile, and Feil remarks that the murmur may have been due to a vascular kink produced by adhesions.

200. Supracondylar Fracture of the Humerus with Compression of the Brachial Artery.

W. FORSSELL (*Hygiea*, May 16th, 1920) notes that although supracondylar fracture of the humerus in childhood is commonly, and rightly, regarded as a comparatively straightforward lesion which responds satisfactorily to treatment, it is sometimes associated with injury to the brachial artery. If this possibility is not borne in mind, compression of the artery may be overlooked till irreparable harm has been done and no alternative remains to operation. This complication is not common. In 1896 Kocher had only seen two such cases; Forssell has seen only two cases, with an interval of sixteen years between them. His first patient was a girl, between the age of 6 and 8, whose fracture was set by a doctor. After putting up the elbow in plaster, he dismissed the child, telling the parents to bring her to him next day if she complained of pain. She did so, but the parents ignored it, and felt reassured when the pain gave place to anaesthesia. When the author saw the patient several days later gangrene had already set in and there was no alternative to amputation. He found the brachial artery compressed between two fork-like prongs, formed by the jagged end of the upper fragment of bone; one of the prongs was still embedded in the artery. His second case, treated in hospital soon after the accident, showed how difficult it may be, owing to the oedema provoked, to decide whether the arteries of the forearm are pulsating. After two hours' observation the author concluded that the brachial artery must be compressed. Accordingly he cut down and found both muscles and artery nipped between the two fragments of bone. The artery was not, however, seriously injured, for with the readjustment of the soft tissues and the correction of the bony displacement, uneventful and complete recovery was effected.

201. Abortive Treatment of Boils and Carbuncles.

D. [illegible] (*Il Policlinico*, Sez. Prat., May 17th, 1920) recommends the following method, which he has carried out successfully in a large number of cases, including himself. An ordinary small hypodermic syringe is filled with a 10 per cent. solution of tincture of iodine, and the needle is driven into the centre of the boil midway between the apex and the base, and half to three-quarters of the fluid is injected according to the severity of the case. It is supposed that the tincture of iodine immediately arrests the development of the staphylococci either by its bactericidal action or by making the soil unsuitable for their growth.

202. Primary Intra-articular Sarcoma.

AUVRAY (*Bull. et Mém. Soc. de Chir. de Paris*, 1920, 46) describes a rare condition, primary lipo-sarcoma within the knee-joint. The case presented an infra-patellar swelling, bulging on either side of the ligamentum patellae, movable beneath the fingers, and suggesting the presence of a large loose body. At operation a large fibro-lipomatous mass was found arising from the posterior surface of the patellar ligament; it was removed, and proved to be a lipo-sarcoma. Auvray states that there are only eighteen primary intra-articular malignant growths recorded in the literature, generally sarcomata. They are sometimes pedunculated, sometimes diffuse, and are rarely diagnosed before operation.

203. Obturator Hernia.

I. [illegible] (*Med. Klinik*, 1919, No. 51) recapitulates the chief clinical signs of obstructed obturator hernia. These are (1) the general signs of intestinal obstruction; (2) local signs, such as pain in the groin, the thigh being flexed, adducted, and rotated inwards. There is also pain on pressure beneath the middle third of Poupart's ligament, and paralysis or paresis of the obturator nerve through the direct pressure of the hernia. Operation should be performed by median laparotomy. Unfortunately it is rare for an obturator hernia to be discovered, unless it has become strangulated; often the gut has been so long incarcerated that a resection or enterostomy must be performed. As a rule, closure of the hernial opening from the pelvic side is easy.

204. Cholecystitis and Gastralgia.

A. P. Ortiz (*Rev. de med. y cir. prat.*, May 7th, 1920) states that it is relatively frequent for patients to seek advice for severe pain in the stomach simulating gastric ulcer or at least intense hyperchlorhydria. Examination of the gastric juice does indeed show that the acidity is increased, as in these conditions, but the usual treatment for such cases affords only a temporary relief. On examination of the abdomen it will be found that the pain is most pronounced in the lower part of the epigastrium on the right side, and on palpation below the last rib the gall bladder is found to be inflamed and tender. Although there may be no distinct jaundice there is a subicteric tint of the conjunctiva and lips. Bile pigment will easily be found in the gastric juice and urine, and the gastralgia will be readily cured by appropriate treatment, which consists in the administration of skimmed milk, Vichy water, infusion of buchu, and cholagogues, such as calomel, salicylic acid, and ox bile.

205. Gastric Spasm in Cholelithiasis.

Lüdin (*Korrespondenzbl. f. Schweiz. Aerzte*, 1919, No. 38) describes two cases of gastric spasm in gall-bladder disease. In both cases the pars pylorica was affected, and on Roentgen examination stood out in sharp contrast with the fundus by reason of the poor response of the former to each peristaltic wave. The picture resembled closely that of a carcinoma of the pyloric end of the stomach, and one of the two cases came to operation with that diagnosis. Gall stones were found, but the stomach was quite healthy.

206. Mastoiditis without Otitis.

Van Gangelen (*Nederl. Tijdschr. v. Geneesk.*, June 5th, 1920) states that two forms of mastoiditis without otitis have been described. In the first there is an infection of the bone by the blood stream, and in the second the mastoid becomes affected after the otitis has cleared up. Two illustrative cases are described: The first was that of a girl aged 8 years, who developed an extradural abscess of the cerebellum following purulent mastoiditis about five weeks after symptoms of otitis media had subsided. The second case was that of a man aged 35, who had purulent mastoiditis four months after the onset of otitis and about five weeks after all signs and symptoms of otitis had disappeared.

207. Radiographic Rareties.

Florence Stoney (*Archiv. Rad. and Electro-therap.*, April, 1920) reports two cases which are of interest as showing the necessity of urging *x*-ray examinations in doubtful conditions. In one case a soldier reported himself with an abscess in the neck and with chronic asthma. An *x*-ray examination showed a tracheotomy tube low down in the trachea. He remembered nothing about it, but inquiry from his mother elicited a history of "bronchitic croup" at 2 years of age. The tube was removed and the asthma cured. In the other case a missing watch was found in the oesophagus of a lunatic soldier, who, although much worried at the loss of his watch, could give no clear history. He was brought, half in jest, to the *x*-ray department, and the missing watch was found in the oesophagus at the level of the upper end of the sternum.

208. Nephrectomy Statistics.

Judd (*Minnesota Medicine*, May 4th, 1920) records 239 cases of nephrectomy performed at the Mayo clinic, with 7 deaths—2.9 per cent. Of these deaths three were associated with tuberculous bronchopneumonia, miliary tubercle, and bilateral pleurisy respectively, in patients who had renal tuberculosis. One death was due to haemorrhage and one to thrombo-phlebitis of the inferior vena cava and the iliac veins; these two patients had pyonephrosis. One patient with hypernephroma died of an infection, and one who had carcinoma of the kidney died of acute nephritis and pulmonary metastasis.

OBSTETRICS AND GYNAECOLOGY.

209. Caesarean Section under Local Anaesthesia Combined with Morphine and Scopolamine Narcosis.

Irving (*Boston Med. and Surg. Journ.*, June 3rd, 1920) pronounces Caesarean section under local anaesthesia combined with morphine and scopolamine narcosis to be a useful and successful method of delivery in some of the graver complications of pregnancy, especially in cardiac disease where one or more attacks of failure of compensation have occurred, in diabetes, nephritis, cardio-renal disease, pulmonary tuberculosis, and asthma. In general it finds its application in those cases where it is desired to avoid the pain and physical exertion of labour, the danger of general anaesthesia, and the shock of operative pelvic delivery. Plenty of time must be allowed for both the general medication and the local anaesthetic to act, and deliberate opening with studious avoidance of roughness are enjoined as essential to success. The number of cases operated on by this method is not stated.

210. Primary Carcinoma of the Fallopian Tube.

Thaler (*Zentralbl. f. Gynäk.*, May 29th, 1920) records two cases of this condition in which the patients remained well three and a half and two years respectively after operation. The outlook in cases of tubal cancer is usually unfavourable, and the author has only been able to find in the literature six cases of apparent cure. His first case was that of a woman of 40, who had been quite well until August, 1916, when a very profuse menstruation occurred, accompanied by pain and fever. A month later she showed slight pyrexia and severe anaemia. An extremely tender swelling extended from the pelvis into the hypogastric region, and the diagnosis was made of a pediculated cyst or an exacerbation of chronic pelvic inflammation. At laparotomy there was found a serous cyst (exhibiting chronic inflammatory adhesions) in connexion with the right adnexa, as well as extensive adhesions of the uterus and left appendages to the intestine. Supravaginal amputation of the uterus and the appendages of both sides was performed. Histological examination showed the existence of a papillary carcinoma, the size of a small nut, in the isthmus of the right tube. The second case was that of a nullipara, who had passed the menopause nineteen years, and for several weeks had suffered from a watery discharge, becoming blood-stained, and from slight pain in the back. Bimanual examination showed that the uterus, which contained a small fibroid, was in a position of fixed retroversion; curetting, performed for diagnostic purposes, gave negative findings. Suspecting a sarcomatous degeneration of the fibroid, the author undertook vaginal hysterectomy; on opening the pouch of Douglas he found it to be filled by soft masses of tumour arising in connexion with the right adnexa. As much of this material as possible, together with the left (normal) appendages, and a right carcinomatous tube, were removed; subsequently radium was applied on two occasions. The patient was reported to be free from symptoms of recurrence.

211. Ovarian Carcinomata.

Massabuau (*La Gynécol.*, February, 1920), as the result of the study of 250 cases, proposes the following classification of ovarian carcinomata: (1) Carcinoma of alveolar structure; the epithelial proliferation begins in the surface epithelium. (2) Cylindrical epithelioma of Wolffian origin. (3) Hyaline-celled epithelioma, the cells of which resemble those of testicular seminomata. It is suggested that these tumours are derived from the germinal epithelium of the indifferent genital cells which give rise to the primordial ovules. (4) Chorio-epithelial epithelioma comparable with the similar tumours arising in the uterus.

212. Intra-abdominal Fibromyoma of the Round Ligament.

Durand (*Bull. et Mém. de la Soc. Anat. de Paris*, April, 1920) records the case of a woman of 50, who had slight abdominal pain for seven years, followed by a painful crisis in which the history and the bimanual findings suggested the diagnosis of twisted ovarian cyst. The patient improved, and at laparotomy seven weeks afterwards there was found a tumour of a round ligament of the size of a fetal head, adherent to the anterior abdominal wall, intestine, and round ligament. Microscopically this was found to be an oedematous fibromyoma presenting zones of haemorrhage and necrosis.

213. Pregnancy and Diseases of the Heart, Lungs, and Kidneys.

Hüssy (*Korrespondenzbl. f. Schweitz. Aerzte*, No. 31, 1919) has examined the after-history of 35 pregnant women who suffered from diseases of the heart, 76 from pulmonary tuberculosis, and 15 from chronic nephritis (the nephropathies of pregnancy being excluded). Valvular disease is a grave complication; although the primary death rate is not very large, many of the patients died in the year after delivery. Mitral stenosis is specially dangerous, and relatively few women suffering from this condition survived their pregnancy. In pulmonary tuberculosis the prognosis is better: latent cases are not influenced by pregnancy, and in active forms the author believes that an improvement not infrequently follows (see British Medical Journal, August 21st, 1920, p. 287). In patients with chronic nephritis the outlook is bad; pregnancy appears to exercise a detrimental effect in this condition, a secondary nephritis being often superimposed on the existing chronic renal affection. In the author's cases 20 per cent. of chronic nephritis cases died and 20 per cent. became much worse.

214. Torsion of Pedicle in Ovarian Cysts.

Bloch (*La Gynécol.*, February, 1920), as the result of analysis of case-histories, gives the following clinical classification of this condition: (1) Acute torsion, with sudden violent pain, tachycardia, and vomiting. Usually these symptoms persist and are associated with abdominal distension and tenderness, and occasionally with the systolic souffle and synchronous pulsation of the tumour described by Mouls. Very rarely the pedicle of the tumour may be felt *per vaginam*. Sometimes haemorrhage into the cyst or intracystic suppuration followed by rupture occurs; not infrequently intestinal obstruction is closely simulated. (2) Temporary torsion: The symptoms abate after a few days, but recur in a few weeks or months. The author remarks that it has been claimed that each twist in the pedicle corresponds to a single temporary torsion; the subsequent amelioration of symptoms, according to this view, is due to the establishment of a new circulation in the adhesions which are formed, or to a compensatory readjustment of the circulation in the pedicle. It is probable, however, that these attacks are followed by untwisting of the pedicle. (3) Chronic torsion: As an example of this condition Bloch recounts the case of a 3-para, aged 49, who four months previously had suffered from moderately severe pain, accompanied by vomiting, and since then had had metrorrhagia. As a consequence of the obesity of the patient, bimanual examination gave indefinite findings. At operation a twisted ovarian cyst was found having many adhesions to the small intestine. The symptomatology of chronic torsion is indefinite, and the condition is, as a rule, only established at operation.

PATHOLOGY.

215. Serological Types of Diphtheria Bacilli.

Durand (*C. R. Soc. Biologie*, May, 1920) has succeeded in preparing agglutinating serums for diphtheria bacilli by giving repeated series of intravenous injections of living bacilli to the horse. Agglutination is more rapid at 45° to 55° than at the ordinary incubator temperature. The readings are taken at the end of six hours, and the agglutination is easily visible to the naked eye. The author has studied the serological differences in 255 strains of true diphtheria bacilli along with 84 strains of pseudo-diphtheria bacilli. Of the former, 18 either did not give a sufficiently stable emulsion for testing, or failed to agglutinate under the influence of any serum. The remainder were divisible into six groups. The first five of these groups were clearly defined, in that all the members were agglutinated to a high titre by one or other of the antiserums produced. These groups, distinguished as A, B, C, D, and E, comprised respectively 16, 8, 25, 61, and 40 strains. The remaining 87 diphtheria bacilli were not agglutinated by any of these five type serums. Of these a certain number of strains, as shown by absorption tests, were allied to the five groups, whilst the others were strongly individualized and called forth in animals the formation of agglutinins specific for themselves alone. Amongst the pseudo-diphtheria bacilli none was agglutinable by any of the type serums. In the adsorption experiments it was found that no non-diphtheritic organisms nor pseudo-diphtheritic bacilli adsorbed the agglutinin for any diphtheria bacilli; that no diphtheria bacillus agglutinated by a type serum adsorbed the agglutinins for a diphtheria bacillus belonging to a different group; that all the diphtheria bacilli agglutinated by a type serum adsorbed all the agglutinins for the bacilli of that type; and that a certain number of diphtheria bacilli, either through not giving a stable emulsion or by being non-agglutinable, adsorbed the agglutinins for one type of bacilli and for that type alone, thus permitting a classification.

216. Pathogenesis of Endocrinic Syndromes.

From examination between October, 1914, and October, 1919, of 115 children who showed various disturbances of the glands of internal secretion, such as myxoedema, hyposuprarenalism, and mongolism, O. Pentagna (*La Pediatria*, May 15th, 1920) came to the following conclusions: (1) In 46 per cent. the presence of syphilis was established either by the history (syphilis being admitted by the parents) or by biological tests (Wassermann and Noguchi). (2) In 25 per cent. the probability of syphilis was shown either by the history (repeated abortions of the mother) or objective signs (splenomegaly, chronic rhinitis, enlarged epitrochlear glands, malformed teeth, etc.). (3) In 23.4 per cent. syphilis could not be found by a consideration of the family history, biological tests, or the presence of objective signs. In some of these there was a history of alcoholism or endocrinic disturbance in the parents or disease during pregnancy and labour. (4) Syphilis is the most important factor in the pathogenesis of endocrinic disturbance. In the majority of cases, however, the influence of syphilis should be regarded, not as a direct effect, but as due to the action of syphilitic toxins on the embryo, giving rise to congenital lesions in the glands of internal secretion.

217. General Paralysis amongst Arabs.

Porot and Sengès (*Ann. de Méd.*, January, 1920), who have had considerable experience of mental and neurological cases amongst the native races of Algeria, agree that general paralysis of the insane is extremely rare amongst them, and are inclined to doubt the diagnosis of the very few cases of general paralysis reported amongst North African natives. The rarity of general paralysis is peculiarly striking in view of the fact that syphilis is very widespread amongst the Arab population, and that positive Wassermann reactions of the spinal fluid have often been obtained by the authors and others. This immunity of the nervous system has been explained by the lower social condition of the natives, the comparative absence of the worries of modern civilization, and the uneventful lives of the people. But the great war largely changed these circumstances; their active participation in actual fighting, with its physical and mental strain, certainly enlarged their field of experience and modified the factor of social inferiority. Nevertheless, during three years' experience in the neurological centre at Algiers the authors found only a single case of general paralysis; this was a native non-commissioned officer who had had twenty years of military service. The evolution of the disease was very slow; in all probability he was the subject of the disease before war broke out, but he was able to undergo more than three years of European warfare before finally breaking down. The authors are inclined to associate the rarity of general paralysis with the habitual absence of emotion and anxiety amongst Arabs; it is possible, however, as some have maintained, that the disease is due to a particular strain of the *Spirochaeta pallida* which is not so widely disseminated as the ordinary virus.

218. Early Lesions in the Gall Bladder.

MacCarty and Corkery (*Amer. Journ. of Med. Sci.*, May, 1920) describe early lesions in the gall bladder which do not alter its external or internal naked eye appearances. Of 4,998 gall bladders removed 4,824 (96.5 per cent.) showed gross pathological lesions; of the remaining 174, 157 showed slight lesions, and 17 appeared normal, but microscopically showed definite changes in the villi. These early changes consist of (1) congestion and oedema of the villi; (2) lymphocytic infiltration causing slight enlargement of the villi; (3) lymphocytic infiltration of the mucosa and submucosa; (4) fibrosis in the villi, sometimes extending to the submucosa; (5) the presence of a finely granular or lipoid substance in or just below the epithelium, and (6) the presence in the mucosa and sometimes in the submucosa of large spheroidal cells filled with finely granular lipoid substance. These slight pathological conditions are frequently seen in association with stones, but as they are only detected microscopically, some observers have been led to believe that stones may occur in normal gall bladders.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

219. Intestinal Pathology in the Functional Psychoses.

COTTON, DRAPER, and LYNCH (*Med. Record*, May 1st, 1920) publish a preliminary report of the surgical findings, procedures, and results in the insane, with special reference to intestinal infections. The good results which followed treatment of local foci of infection in the teeth, tonsils, stomach, and cervix led them to go further afield, and where no good effects followed these lines of treatment to explore the abdomen. All modern methods of investigating by radiology were practised, and an exploratory operation followed. Even the lesser methods seem to have been singularly successful, for out of 410 cases of functional psychosis 310 were fit to be discharged after attention to the local foci of infection. Further investigation showed a great frequency of pathological conditions in the abdomen of the insane. In a first group of cases developmental reconstruction of the colon, resection of the terminal ileum, the caecum, the ascending colon, and part of the transverse colon, and (in a few cases) resection of the descending colon and sigmoid were performed. This group comprised 50 cases, of whom 10 recovered sufficiently to leave the hospital, 6 were much improved, 3 improved, 3 not improved, 14 died, and 14 are still under observation. The most definite finding at autopsy was a chronic myocarditis due to prolonged toxaemia. In the second group, 29 cases were operated upon by appendectomy, oöphorectomy, or cholecystectomy. This included 13 manic-depressive cases and 14 of dementia praecox; out of the 13, 5 recovered, and out of the 14, two. The authors do not lay so much stress on the therapeutic results as on the pathological findings; they have been astonished at the prevalence and intensity of the intestinal infection, and believe that much valuable work on these lines remains to be done. They were struck by the frequency with which they found extensive enlargement of the mesenteric glands, usually infected with coli bacilli or streptococci. Caeco-colonic delay of the bismuth meal from four to seven days' duration was a common finding, generally the result of a pericolic membranitis. Surgery merely directed towards the correction or faulty position of the viscera is futile; removal of the infected area is the only hopeful procedure.

220. Administration of Adrenalin by the Digestive Tract.

LESNÉ (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 17th, 1920) has found that oral ingestion or intrarectal injection of adrenalin, even in large doses (2 mg. in children aged 5–10 years or 3–4 mg. in adults), has no constant action on the arterial pressure. He considers, however, that when given in these large doses by mouth or rectum, the drug has a distinct effect on the signs of acute or chronic suprarenal insufficiency. The method of introduction of adrenalin into the digestive tract is of importance, for Lesné and Dreyfus have shown that the toxicity of adrenalin disappears when it is ingested. On the other hand, it remains very toxic when injected into the rectum in the same doses as when given subcutaneously. The liver, however, neutralizes the poison. Lesné recommends that rectal injection of adrenalin should be used whenever possible in preference to oral administration, as more rapid, and definite effects will be produced with smaller doses.

221. Ocular Symptoms in Lethargic Encephalitis.

RAVLECHON and WORMS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920) record 15 illustrative cases, in 4 of which the ocular symptoms appeared at the onset of lethargic encephalitis and in 6 at various stages of the disease, while in 5 the retrospective diagnosis of lethargic encephalitis could be made from the character of the ocular sequelae. In the first group the ocular symptoms predominated, so that the patients sought advice at an ophthalmic department. The first case showed complete paralysis of the third nerve, the second slight disturbance of accommodation, the third ophthalmic migraine, and the fourth attacks of transient amaurosis. The ocular symptoms during the course of the disease consisted in ophthalmoplegia, inequality of the pupils, weakness of response to light and accommodation, and in one case choked disc. In 4 cases there was an exclusively unilateral localization of the third nerve paralysis. In the rest the symptoms were bilateral in the form of more or less transient paresis, or more pronounced paralysis with ptosis (almost always asymmetrical), slight strabismus, and limitation of lateral and up-and-down movements. Nystagmiform jerkings towards the end of the illness were the most frequent expression of paresis of associated movements. Severe and often persistent neuralgia in the course of the ophthalmic division of the fifth nerve was frequent. The sequelae, which were noted some months and even years after the attack of lethargic encephalitis, consisted of diplopia, weakness of accommodation, and persistent nystagmiform jerkings, frequently accompanied by other involuntary movements such as blinking.

222. Diminution of the Vesicular Murmur in the Right Lung in Catarrhal Jaundice and Cholelithiasis.

ACCORDING to RAMOND, VINCENT, and CLÉMENT (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920), on systematic auscultation of the lungs in cholelithiasis and catarrhal jaundice there is a striking difference in the respiratory intensity on the two sides. Whereas on the left the vesicular murmur possesses its normal amplitude, on the right there is a well marked diminution in both inspiration and expiration; this is most marked at the base, but also present over the middle part of the lung. At the apex this phenomenon does not possess any importance, as weakness of heart sounds is frequently found normally at this site. In some cases the heart sounds at the right base are so weak that the patient has to be made to take a deep breath to enable the sounds to be heard at all. The weakness of the heart sounds is not accompanied by any changes in the normal percussion note or vocal fremitus, and there are no adventitious sounds. The phenomenon is apparently due to the right side of the diaphragm being immobilized by a reflex originating in the liver. The reflex limits the excursions of the diaphragm, and consequently the displacement of the liver at each respiratory movement. In two-thirds of the cases this view is confirmed by radioscopy, which shows that the excursions of the diaphragm on the right are 1 to 3 cm. shorter than on the left. In a third of the cases, however, the excursions of the diaphragm appear to be equal on both sides. It is possible that in such cases there is a reflex contracture of the bronchial muscles, which also originates in the liver and diminishes the respiratory capacity of the right lung. The writers have found this sign of value in differentiating cholelithiasis from ulcer of the pylorus and first part of the duodenum.

223. Conjugal Tuberculosis.

IN his annual report, 1919, for Landeskogen Sanatorium, HOLTER (*Tidsskrift for Den Norske Laegeforening*, May 15th, 1920) publishes the following figures: 58 men had wives, 50 of whom were well and 6 suffered from or had died from tuberculosis. Of 41 married women, 39 stated that their husbands were well, and one that her husband had died of tuberculosis. The remaining husband had died of another disease. These 97 couples had given birth to 213 children, of whom 108 were well, 16 were tuberculous, and 6 had died of tuberculosis. The remaining 11 had died of other diseases. In 70.5 per cent. of all the sanatorium cases there was a family history of tuberculosis; among these "family" cases there were 2.7 per cent. in which both parents were tuberculous, 7.7 per cent. in which the father was tuberculous, and 11.2 per cent. in which the mother was tuberculous.

224. Thyroid Metabolism.

MARIE KROGH (*Ugeskrift for Laeger*, April 22nd and 29th, 1920) has carried out a series of investigations into the metabolism of patients in bed; he measured the amount of the expired air and the percentage of oxygen and carbon dioxide in this air. The patients were classified according as they suffered from (1) Graves's disease, (2) goitre unaccompanied by other signs of Graves's disease, (3) myxoedema, and (4) adiposity without myxoedema. In the first class metabolism was increased by 40 to 80 per cent. above normal. In the second class this increase of metabolism was only from 5 to 25 per cent. above normal.

In several cases the clinical evidence was in favour of Graves's disease, but this diagnosis was not made because the metabolism was perfectly normal, and there was, therefore, evidently no pathological increase of iodothyrin. In one case there was considerable enlargement of the thyroid, with exophthalmos, a rapid irregular pulse, lassitude, and several nervous symptoms. But as the metabolism was perfectly normal the diagnosis of Graves's disease was rejected. The authoress concludes that the estimation of the absorption of oxygen by the body as an index to the metabolism is a useful diagnostic test, of special value in the differential diagnosis of indefinite forms of Graves's disease and myxoedema. This index of metabolism is also useful as showing the effect of treatment on both these diseases.

225. Tabes Dorsalis simulated by Focal Infection.

CRANCE (*Med. Record*, April 10th, 1920) records the case of a man who suffered from "lightning pains" and "a rope sensation round the waist"; the pupils reacted sluggishly to light, Romberg's sign was doubtful, and the patellar reflexes were diminished but not absent. The gait was somewhat suggestive of ataxia. For nine years the patient received antisyphilitic treatment, but the pains gradually became worse. *X*-ray examination showed the existence of several abscesses in connexion with the teeth, the extraction of which was followed by a complete cessation of the subjective symptoms.

226. Complete Alopecia of Emotional Origin.

TODDE (*Rif. Med.*, April 17th, 1920) publishes (with photographs) a case of complete alopecia in a man, aged 34, apparently due to emotion and war strain. The whole body was affected, starting with the uncovered parts and then going on to the covered areas. There was some slight enlargement of the thyroid and mild exophthalmos with moderate tachycardia (pulse 120 in the erect posture, 10 lying down). Romberg's sign was absent. The hair first began to come off in August, 1918. So far it has not grown again. The treatment suggested is by pluriglandular opotherapy.

SURGERY.

227. Hepatopexy.

MOSTI (*Rif. Med.*, December 13th, 1919) reports a case of marked hepatoptosis in a woman of 41, who had to give up work owing to gastric symptoms (anorexia, sense of weight and pain after food, nausea, vomiting). On examination there was resonance in the ordinary hepatic area and a tumour (dull on percussion) in the lower part of the abdomen on the right. This was evidently the liver. Santucci's operation for supporting the liver was performed; the patient was completely cured of her symptoms. Hepatoptosis may be partial or total; in addition to displacement the liver acquires an abnormal mobility. Two signs are of importance in the differential diagnosis: (1) The presence of abnormal resonance in the hepatic area; (2) the discovery of a tumour in the abdomen having the characteristics of the liver. The author discusses the various surgical procedures practised to remedy this condition, and decides in favour of Santucci's operation, which makes the liver rest on a band formed from the parietal peritoneum; it is suspended from the right costal arch by means of stitches traversing the hepatic margin, with which the abdominal wall, deprived of its peritoneal investment, will rapidly form adhesions.

228. Treatment of Familial Haemophilia.

In the course of fifteen years P. E. WEIL (*La Médecine*, March, 1920) has treated more than 50 cases of haemophilia without a single death. His treatment consists in subcutaneous injection of 20 c.cm. of normal human or horse serum every two months. The serum also possesses a local haemostatic action, the haemorrhage ceasing as soon as the wound is freed from clots, and is dressed with gauze soaked in the serum. Weil considers that treatment of haemophilia by thyroid, ovarian, or suprarenal extracts, calcium, or gelatin is useless, and should be abandoned.

229. Ectopic Adenomyoma.

CULLEN and [illegible] (*Journ. of Lab. and Clin. Med.*, January, 1920) record ten cases of adenomyoma, of which four occurred in the rectovaginal septum, two in the groin, two in the abdominal wall, and one each in the rectum and pelvic colon. On section these tumours, in uterine adenomyomata, showed large cystic areas. Generally the tumours are benign, and occasionally they are said to swell or become painful during menstruation.

230. Spontaneous Subarachnoid Haemorrhage.

BLOM (*Norsk Mag. for Laegevidenskaben*, June, 1920) is able to record two cases of spontaneous subarachnoid haemorrhage, although this condition has not hitherto been reported in the Norwegian medical press. The salient features of the first case were bradycardia and headache. The patient was a carter, aged 47, who suddenly felt his knees give under him while he was unloading goods from a cart. He soon lost consciousness, and when it returned he experienced severe headache with shivering and vomiting. On admission to hospital three days later he was perfectly conscious, his pulse was 43, his respirations 16, and his temperature 37.6° C. There was definite cervical rigidity, and Kernig's sign was positive. Lumbar puncture, which afforded instant relief, yielded blood-stained fluid under high pressure. The blood was uniformly distributed in the cerebro-spinal fluid, and could not therefore come from a blood vessel opened by the act of puncture. The cerebro-spinal fluid was sterile, contained degenerated blood cells, and gave a negative Wassermann reaction. Its colour after standing was brownish-yellow. Lumbar puncture was repeated two days later, and a week after this the patient felt well, and his pulse was normal. Complete recovery ultimately occurred. The second case was at first mistaken for one of lethargic encephalitis. The onset of the symptoms was less sudden, and intense headache dominated the clinical picture. Lumbar puncture yielded blood-stained fluid at high pressure, and afforded great relief. It was repeated nine times; after the tenth puncture there was practically no blood in the cerebro-spinal fluid. By the nineteenth day convalescence was established, but Kernig's sign and cervical rigidity were still demonstrable.

231. Epithelioma of the Thyroid Gland.

ACCORDING to JACQUES (*Rev. méd. de l'Est*, May 15th, 1920), who records a case in a woman aged 45, epithelioma of the thyroid gland is a rare occurrence, and can only be explained by accidental inclusion in the rudimentary thyroid of branchial ectoderm, which after a prolonged latent period shows, as the result of some indefinite irritation, or perhaps owing to some temporary change in the local state of nutrition, a tendency to new growth. Tumours of this kind are especially liable to occur in women at the menopause. The onset is insidious and simulates that of subacute thyroiditis, enlargement of the lymphatic glands occurring either late or not at all. Generalization of the growth is rapid. Jacques regards the character of the pain as of diagnostic value. In acute thyroiditis lancinating pain may occur in the region of the cervical plexus, but is associated with obvious inflammation of the gland, and usually subsides in the course of the second week, as resolution occurs. In malignant disease, on the other hand, pain develops early, radiates to the ear and occipital and parietal regions, and, instead of diminishing, persists for months in spite of all treatment.

232. Facial Paralysis associated with Vestibular Paralysis in Acute Otitis Media.

ARY DOS SANTOS (*Rev. de laryng., d'otol., et de rhinol.*, May 31st, 1920) records the following case: A soldier, aged 25, who had contracted syphilis two years previously, developed left acute otitis media as the result of a chill, and shortly afterwards showed typical symptoms of labyrinthine involvement—namely, deafness, tinnitus, and vertigo. Three days later complete left facial paralysis supervened. Recovery took place under treatment by injections of pilocarpine hydrochlorate associated with iodide of potassium given internally.

233. Anthrax from the Shaving-brush in America.

CAREY (*Amer. Journ. of Med. Sci.*, May, 1920) reports a case of anthrax shaving-brush infection. Twenty-four similar cases have occurred in America; in six the bacillus was cultivated from the brushes, and there is little doubt that the remainder were also infected, the unsuccessful attempts to isolate the bacillus being chiefly due to the fact that cultural methods were used rather than animal inoculations. Clinically malignant pustule was the most frequent type, but occasionally septicaemia, and intestinal and pneumonic infections, were noted.

234. Habitual Dislocation of Patella.

G. MARWEDEL (*Zentralbl. f. Chir.*, 1920, 47) states that there are almost fifty different methods of operating for habitual patellar dislocation. The author makes a curved longitudinal incision, convex outwards, over the inner part of the patella. This cut divides the fibrous capsule and the fibres of the vastus internus. The synovial membrane is left intact. The fascia is dissected outwards over the front of the patella for a short distance and the inner cut fascial edge pulled in underneath and sutured to the patella as far towards its outer border as is practicable. This point will rarely be more external than the centre of the bone. The outer fascial flap is then sewn down to the front of the inner in a "double-breasted" or overlapping manner. Marwedel has done this operation with good results in three patients, including one bilateral case already operated upon by another method.

235. Chronic Appendicitis.

GIBSON (*Amer. Journ. of Med. Sci.*, May, 1920) records the results of operations for chronic appendicitis (555 cases). In 259 of these the patients on re-examination had no complaints whatever; in 65 there were no complaints attributable to the former condition; in 102 there was no improvement; 126 could not be traced, and there were 3 deaths. The greater proportion of good results were obtained in males; operations on women should be more cautiously undertaken, particularly in the more mature patients, in whom other lesions may coexist which may be mistaken for appendicitis. Operations on neurasthenics of any age or either sex are, if possible, to be avoided.

OBSTETRICS AND GYNAECOLOGY.

236. Treatment of Acute Gonorrhoea in Females.

BLOCK (*Amer. Journ. of Med. Sci.*, April, 1920) discusses the treatment of acute gonorrhoea in females under the headings of acute urethritis and acute endocervicitis. The former condition is best treated by absolute rest in bed and no local treatment during the period of acute purulent discharge, but the average patient has to be treated as an ambulatory case, by giving 10 minim doses of sandalwood oil t.d.s. and a mixture every three hours containing tinct. hyoscyam. ♏ v, sod. brom. gr. x, and liq. pot. citrat. ℨj. In two or three weeks, when the discharge is better, the entire length of the urethra is swabbed with a 5 per cent. solution of silver nitrate, after the patient has urinated and the urethra has been swabbed dry. In acute endocervicitis hot douches of 1 to 8,000 pot. permang. solution are given four or five times a day for about a fortnight, to be followed by cervical medication with 10 to 12.5 per cent. silver nitrate solution, after previously dissolving any mucus by spraying the cervix with an alkaline solution. The applications of silver nitrate solution are immediately followed by a similar application of tincture of iodine; silver iodide is thus formed in the canal. Cure follows the above treatment, provided the gonococcus has not passed the internal os.

237. Treatment of Chronic Gonorrhoeal Vaginitis in Children.

WACHS and MAZER (*New York Med. Journ.*, June 5th, 1920) give a preliminary report of the treatment of 58 chronic cases by means of Dakin's oil (1 per cent., freshly prepared). The child having been placed in the Trendelenburg position and the vulva cleansed, the vagina was filled with oil by means of a two drachm medicine dropper. Subsequently the labia were compressed for a few minutes. The treatment was carried out every other day. In 25 cases it was possible to discontinue treatment in three months. Six cases, although much improved, still showed many bacteria on microscopic examination at the end of four months. Four per cent. of all applicants to a babies' hospital are said to have been found to suffer from this malady.

238. Induction of Labour by Modified Champetier de Ribes's Bag.

MAXWELL (*Amer. Journ. of Obstet.*, November, 1919) discusses Reed's series of cases in which among 200 patients the average duration of labour was reduced to eight hours. Maxwell has analysed 2,750 institutional cases; bags were employed in sixty cases to induce labour, the average duration of which was twenty-seven and twenty hours in primiparae and multiparae respectively. In explanation of the discrepancy the author points out that 79 per cent. of the sixty cases exhibited diminution of uterine irritability; Reed's cases were largely unselected and uterine irritability was normal. In Maxwell's cases the average time between the insertion of the bag and the onset of pains was over five hours; the bags remained in the cervix for an average of thirteen hours, although the majority were expelled within ten hours. Nine children died among the author's sixty cases and twelve among Reed's 200 cases.

239. Experimental Extrauterine Pregnancy.

L. LOEB (*Proc. Soc. Exper. Biol. Med.*, 1914, 11) was successful in producing extrauterine pregnancies in guinea-pigs. His earlier attempts, which included ligation of the Fallopian tubes at the uterine end and incisions into the tubes and walls of the uterus, failed. In the experiments here described, nearly three days after copulation incisions were made into the uterus, extending upwards through the greater part of both horns. Eighteen days later a young embryo was found superficially embedded in the peritoneal surface of the Fallopian tube. Loeb has found that in the guinea-pig connective tissue other than that of the uterus is unable to produce "decidua," so that outside the uterine cavity it is impossible for development to proceed far. In the human subject decidual tissue can to some extent be formed at certain places other than the uterine mucosa.

240. Pregnancy in the Rudimentary Horn of a Bicornuate Uterus.

BRODHEAD (*Journ. Amer. Med. Assoc.*, May 22nd, 1920) reports the case of a patient who had had four normal confinements and became pregnant in the rudimentary left horn of a bicornuate uterus. The pregnancy continued uneventfully to about the eighth month, when she experienced slight pain in the left half of the abdomen during eight hours, and then suddenly collapsed, dying within a few minutes. At the autopsy a large amount of blood and a dead child weighing 4⅝ lb. were found in the abdominal cavity. The left ovary contained the corpus luteum of pregnancy; although there was a well marked fimbriated tubal extremity the left tube could not be discovered. The uterus and right adnexa were normal.

241. Sequelae of Attempted Abortion.

POTVIN (*Gyn. et Obstét.*, 1920, i) records the case of a married woman who complained of amenorrhoea and of abdominal pain, and in whom the only abnormal physical finding was the presence of an extremely hard swelling high in the right fornix. At operation this was found to be a gum-elastic sound, of which three parts lay within the small intestine and the remainder in the right Fallopian tube. The sound had been introduced, unsterilized, three weeks before; there appeared to have been no inflammatory sequelae.

242. Chemical Examination of Blood and Urine in Pregnancy.

LOSEE (*Bull. Lying-in Hosp.*, City of New York, March, 1920) examined the blood and urine in normal pregnancy, pre-eclampsia, eclampsia, and pernicious vomiting (21 cases altogether). He concludes that although modern biochemical technique is of great scientific interest, and has disproved the acidosis, the amino-acid and the nitrogen reduction theories of the causation of pregnancy-toxaemia, it affords little assistance in the daily routine of clinical obstetrics. In the diagnosis of eclampsia the large amount of albumin in the urine and a normal blood urea content are the most significant laboratory findings.

243. Acute Infectious Diseases during Pregnancy.

NERKING (*Zentralbl. f. Gyn.*, April 3rd, 1920) examined forty-two recorded cases in which pregnancy was complicated by erysipelas, pneumonia, small-pox, measles, scarlet fever, diphtheria, and typhus. In general, the infectious disorder was not modified in its course and no obstetrical complications occurred.

244. Utero-adnexal Torsion.

MASMONTEIL (*Bull. et Mém. de la Soc. Anat. de Paris*, 1919, p. 351) records the case of a woman of 73 in whom a diagnosis of intestinal obstruction had been made, and who presented at operation a very large left ovarian cyst, which, together with the uterus, had undergone torsion to the extent of two and a half revolutions. Subtotal hysterectomy was performed and the healthy right ovary was left; the patient died on the eighth day from hypostatic pneumonia.

245. Weaning during Intercurrent Pregnancy or in Mild Typhoid.

MULHERIN (*Med. Record*, May 15th, 1920) discussed at the annual session of the American Medical Association the advisability of weaning the children of mothers in whom there occurred an intercurrent pregnancy or a mild attack of typhoid fever. The opinion was expressed, and endorsed in a subsequent discussion, that in the former condition slow weaning should be advised, and in the latter it was permissible to continue the suckling of the child.

PATHOLOGY.

246. Leucocyte Counts in Influenza.

In the winter of 1918-1919 [illegible] (*Norsk. Mag. f. Laegevidensk.*, February, 1920) carried out a series of investigations at the Ullevaal Epidemisykehus on [illegible] cases of influenza, most of which were complicated by pneumonia. His leucocyte counts were carried out at midday on the first or second day after the patient's admission to hospital. Of the 64 cases of influenza uncomplicated by pneumonia or other diseases, only 6, or 9.4 per cent., exhibited a leucocytosis ranging from 10,700 to 21,200. In 39, or 60.9 per cent., the number of leucocytes was below 6,000; sometimes it was as low as 1,700 or 2,200. All the patients with uncomplicated influenza recovered. Of the 126 patients with pneumonia, 31, or 24.6 per cent., showed a leucocytosis ranging from 10,400 to 28,000. As a rule, both influenza and influenzal pneumonia were associated with leucopenia more often than with leucocytosis. The mortality from pneumonia with leucocytosis was lower than when it was associated with leucopenia.

247. Myelocythaemia in Influenza.

[illegible] and [illegible] (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 27th, 1920) state that the presence of myelocythaemia enables one to distinguish epidemic influenza from seasonal influenza in which it is absent. In cases of high fever and severe disturbance of the general condition the presence of myelocythaemia is in favour of influenza rather than of enteric fever. Lastly, lobar pneumonia, except when it is a complication of influenza, is never accompanied by myelocythaemia.

248 Acetone in the Cerebro-spinal Fluid in Tuberculous Meningitis.

G. [illegible] (*La Pediatria*, May 15th, 1920) examined for acetone the cerebro-spinal fluid of 23 cases of tuberculous meningitis in children, and with four exceptions found an intense reaction with Ricci and Frommer's tests. The urine in each of the 23 cases showed a large quantity of acetone except in 5 cases, in which only a small amount was present. The cerebro-spinal fluid in these cases showed an absence of acetone.

249. The Cerebro-spinal Fluid in Typhus.

A. [illegible] (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, January 21st, 1920) examined the cerebro-spinal fluid in 15 cases of severe typhus which all ended fatally and found the streptococcus in each case. In 12 of these it was also present in the blood. He considers that its presence in the cerebro-spinal fluid is due to septicaemia. Its absence in 3 cases does not negative this hypothesis, as a single blood culture is not conclusive.

250. Alcohol in Cerebro-spinal Fluid.

According to [illegible] and PAULIAN (*Bull. et Mém. de la Soc. Méd. des Hôp. de Bucarest*, May 26th, 1920), the occurrence of alcohol in cerebro-spinal fluid was first demonstrated in [illegible]. The authors find that the meninges are permeable to alcohol, which appears in the cerebro-spinal fluid an hour and a half after ingestion of large quantities, diminishes after forty-eight hours, but persists for as long as [illegible] days; other authors have been able to detect it up to the [illegible] day. The presence of alcohol in the fluid does not denote any active meningeal reaction. [illegible] of alcohol [illegible] diagnostic [illegible] regard to [illegible], and from [illegible] point of view.

251 The Virus of Encephalitis Lethargica.

[illegible] and [illegible] (*[illegible] Med.*, April [illegible], 19[illegible]) report that they [illegible] in reproducing the [illegible] picture of encephalitis lethargica in the rabbit by inoculating the brain with [illegible] from a patient dead from influenza. Similar [illegible] followed injection into the peripheral [illegible]. The symptoms [illegible] consisted in torpor, [illegible]. The virus [illegible] cultivated [illegible] methods [illegible] to [illegible] and filters easily through [illegible] filter. After [illegible] passages through rabbits it [illegible] kills the animal in [illegible].

252. The Pathogenesis of Noma

[illegible] and [illegible] (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, February 4th and 18th, 1920) record the results of their investigations of [illegible] cases of noma which occurred in Rumania in 1918-19 during the enemy occupation. Most of the cases were in children between the ages of 6 months and 13 years. Only eight cases were seen in adults, three of whom were suffering from scurvy. The patients were classified in two groups, according as noma (1) was secondary to gastro-intestinal disease, typhoid fever, measles, scurvy, or ulcero-membranous stomatitis, or (2) occurred as a primary affection. The writers regard noma as a local infection, developing in individuals whose nutrition is inadequate, and suggest that noma should be grouped with the deficiency diseases.

253. Flies and Bacillary Dysentery.

J. PARAF (*Rev. d'hygiène*, April, 1920) made the following observations in a hospital which contained dysentery patients and in which flies were very prevalent: (1) Flies swarming round dysenteric dejecta were frequently found to be carriers of the Shiga bacillus (in 12 out of 30 cultures). (2) The Shiga bacillus was found in the bodies of flies caught in wards in which cases of dysentery had occurred. (3) The dysentery bacillus was found in food exposed to the air in the surgical wards in which there were swarms of flies. Thus 6 out of 12 cultures of milk and 1 out of 12 cultures of bread were positive. (4) Cultures of flies' legs and wings were positive in only 2 out of 16 cases, whereas cultures of the alimentary canal were positive in 11 out of 24 cases. (5) The duration of the survival of the dysentery bacillus in the fly's intestinal tract was found to be as long as five days; after that time the cultures were negative.

254. The Ferric Chloride Test for Diacetic Acid in Urine.

MAXWELL (*Med. Journ. of Australia*, May 15th, 1920) found that if sodium bicarbonate were added to normal urine and then ferric chloride, the urine showed a red colour similar to that obtained in the presence of diacetic acid. The urine of a healthy subject who had ingested 6 grams of sodium bicarbonate during twenty-four hours also gave a red colour on the addition of ferric chloride. Heat did not prevent the appearance of the red colour on the addition of ferric chloride in these cases. It is concluded that in all cases of acidosis which are being treated with alkalies it is essential to exclude the possibility of sodium bicarbonate being responsible for the production of a red colour when ferric chloride is added to the urine; if this precaution be overlooked the dosage of alkali may be increased in the hope of overcoming an acidosis which in reality does not exist.

255. Bile Pigments in Pernicious Anaemia.

THE records of 78 patients ill with pernicious anaemia are tabulated by SCHNEIDER (*Journ. Amer. Med. Assoc.*, June 26th, 1920) for a period of three years. The average number of months the patient had been ill when first seen was fifteen. The average total length of illness of those who died was 2.6 years, the shortest being six months and the longest six and a half years. The average red blood cell count was 2,000,000 per cubic millimetre. The average haemoglobin was 40 per cent. The average haemoglobin index was 1 and the average white blood cell count 4,400. The degree of cord involvement was: 20 severe, 20 moderate, 20 slight, 18 none. The average total bile pigments (urobilin and urobilinogen) was 3,330 units, the highest total being 6,800, and the lowest 800; these figures were determined by the author's spectroscopic method of examination of the fluid removed by Einhorn's tube from the fasting duodenum. Three patients out of the total gave normal pigment values, two of which were re-estimated with the same result. One is dead, two are living. Two are certainly cases of pernicious anaemia; in the other there are still a few elements of doubt. Of 75 patients traced, 52 are dead. Of the 1915-16 series only one, and that a splenectomized patient, is living. Of the 1917-18 series, 14 are dead and 12 living. Of the 1919-20 series, 11 are dead and 10 living.

256. Cutaneous Vaccination against Anthrax.

[illegible] (*C. R. Soc. de Biologie*, May 29th, 1920) states that if the first vaccine of anthrax be rubbed into the shaven skin of the guinea-pig, a local inflammatory reaction is produced which persists usually for four to six days. If, however, the second vaccine or the virus itself be used, the reaction is always fatal, death from septicaemia resulting about the fourth day. A guinea-pig into which the first vaccine has been rubbed successfully withstands friction with the second vaccine, and later with the virus; further, it resists subcutaneous inoculation with the second vaccine and the virus. The rabbit is as easily, if not more easily, vaccinated by these means. The degree of protection given is very great.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

257. Kidney Disease during the War.

CESA-BIANCHI (*Rif. Med.*, November, 1919) says there is general agreement that the prolonged sojourn of the soldier at the front, with its strange conditions of life, was damaging to the kidney, establishing by degrees a renal inadequacy, manifested clinically by a pre-nephritic albuminuria, and followed in some cases by trench nephritis. Trench nephritis is not a specific disease, but merely nephritis occurring in war. The type was usually an acute diffused glomerular nephritis of a scarlatinal type. No single cause and no specific germ could be traced; it was a product of several causes. Perhaps the commonest predisposing condition was some form of streptococcal infection; intensity and duration of war service, and exposure to cold and wet, also played their part. It should be remembered that the renal capillaries are not the only capillaries affected; affection of the peripheral capillaries also causing oedema and raised blood pressure. The clinical symptoms are well known; uraemic symptoms are uncommon, and there is never much retention of nitrogen. The immediate prognosis is good, but the same cannot be said for the ultimate prognosis. Relapses occur, and about 10 per cent. of the cases become chronic. In the more fortunate cases a certain renal "delicacy" is left. The nephritis which was often associated with infective jaundice was of a different type, the lesions being of a degenerative nature, and affecting the epithelial apparatus, whilst the glomeruli were spared. The nephritis of influenza was of two kinds: (1) severe and almost always fatal: an acute glomerulo-nephritis with scanty albuminuria; (2) a degenerative type, with intense albuminuria, no haematuria, and no cylindruria—this type was often associated with pulmonary lesions. Intermediate types were also seen.

258. Tetany of the Vegetative Nervous System.

DANIELOPOLU (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, July 22nd, 1920) records the case of a boy of 18 recovering from cystitis with pyelonephritis. In the course of three months he had four typical attacks of tetany, lasting thirty-five to forty minutes; the pain and the contractures were rather more intense on the left. In addition, and frequently as often as once or twice a day, he had attacks of profuse perspiration, which almost invariably affected, for the first thirty to sixty minutes, the left side of the body only; during the remainder of the attack (ten to forty minutes) both sides sweated equally. During these periods the systolic blood pressure was from 7 to 25 mm. higher in the right brachial artery than the left, and the axillary temperature was about 0.4° C. less on the left; the knee-jerk was exaggerated, and there was hypo-aesthesia to tactile, painful and thermal stimuli in the left leg. The author believes that this is the first record of attacks of tetany in which the objective manifestations concerned the vegetative nervous system on one side of the body; he regards the excessive sweating as vagotonic.

259. Decapsulation for Suppurtaive Nephritis.

GIULIANI (*Lyon Méd.*, 1920, 129) records a case of post-pneumonic infection of the kidneys, in which the patient had purulent urine, oscillating fever, and emaciation. The kidneys were enlarged and tender, but no abscess could be made out. Giuliani performed a bilateral exploration of the kidneys. Both presented miliary abscesses beneath the true capsule—some very small, others the size of a pea or small nut. Decapsulation was performed with good results; the temperature fell progressively, the urine became clear, and the patient made a complete recovery.

260. Acetone in the Cerebro-spinal Fluid in Lethargic Encephalitis.

MANTOUX (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, May 27th, 1920) records a case of lethargic encephalitis characterized by very pronounced somnolence, sometimes amounting to loss of consciousness, transient incontinence, and abolition of the knee-jerks, and ending in rapid and complete recovery. Examination of the cerebro-spinal fluid showed the presence of distinct traces of acetone and amino-acids.

261. Rheumatic Fever.

WHITE (*Amer. Journ. of Med. Sci.*, May, 1920) summarizes observations on 73 soldiers with acute rheumatic fever treated in the spring of 1918; 50 per cent. gave a previous history of rheumatic fever and 40 per cent. showed large and ragged tonsils. In order of frequency the joints involved were the knee, ankle, shoulder, wrist, foot, elbow, hand, and hip. Acute pericarditis, usually transient, occurred in 10 per cent. of the cases and acute pleurisy in 19 per cent. Of the cardiac lesions, mostly of long standing, 40 per cent. showed evidence of mitral endocarditis and 8 per cent. of combined mitral and aortic endocarditis; acute temporary heart-block was seen in 4 per cent. In two cases streptococcal septicaemia was demonstrated by blood culture, but both men returned to full duty two months later. All the cases responded well to salicyl-therapy; usually 30 grains of aspirin were given 4-hourly in the initial stages.

262. Predisposition to Tuberculosis.

P. KECKZEH (*Blätter f. Vertrauensärzte der Lebensversicherung*, 1920, xi) makes mention of lack of nourishment and overstrain as predisposing factors. The greater number of members of the family afflicted among the ascendants, the greater is the predisposition of the individual. There is a greater tendency to tuberculosis if the brothers and sisters of an individual had died from infectious diseases. The nearer the birth of the child to the death of the parents from tuberculosis, the greater is the danger of the child's death from the same complaint. The body-weight, the circumference of the chest, as well as anomalies of the first rib, and the thoracic opening, also receive critical consideration.

263. Congenital Heart Disease and Tuberculous Heredity.

ACCORDING to ECHEVARRIA (*Rev. Españ. de med. y ciruj.*, April, 1920), tuberculous heredity, either alone or in association with congenital syphilis, is an important factor in the development of congenital heart disease, especially of mitral stenosis. The influence of tuberculous heredity is twofold. In the first place, it may give rise to specific lesions, more frequently sclerotic lesions, and, on the other hand, it may determine a dystrophic condition which predisposes to heart disease through the action of slight infection or toxic causes. In congenital as in acquired heart disease *x*-ray examination supplies useful information, as do also the biological tests for syphilis and tuberculosis which play an important part in the etiology of these lesions.

264. Tuberculosis and Marriage.

ACCORDING to SABOURIN (*La Médecine*, 1920, viii), a phthisical patient without any local or general reaction, or one cured for eighteen months or two years and now in good health, may be allowed to marry. A patient with curable lesions, well on the way to recovery, may be allowed to marry if his hygienic surroundings are suitable. In a woman, if pregnancy has been uneventful, the child should be suckled for as long as there is plenty of milk, in order to delay the appearance of menstruation as long as possible.

265. Intravenous Injections of Urotropin in Typhus.

GLATARD (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, July 1st, 1920) has treated 114 cases of typhus by intravenous injections of urotropin. The doses given at first were 1.50 grams for adults and 0.75 grams for children, but were afterwards raised to 3 grams daily. The number of injections ranged from one to eight, the average being three. The results were as follows: (1) In the great majority of cases (104 out of 114) the intravenous injection of urotropin favoured defervescence, which occurred as a rule after the second injection. (2) It caused abundant diuresis and therefore facilitated elimination of toxins. (3) It lowered the mortality, which was 14 per cent. among those treated by urotropin as compared with 29 per cent. among cases not so treated. (4) It should not be given, after the temperature has fallen, for the other complications of typhus, such as myocardial asthenia. This condition is best treated by camphor oil, strychnine, and nucleinate of soda injections.

266. Lichen Trichophyticus.

G. RIEHL (*Wien. klin. Woch.*, May 20th, 1920) states that this condition was first described by Jadassohn in 1911 as occurring chiefly in children with kerion, and in rare cases in men with parasitic sycosis. The eruption, which consists of bright red scaly papules localized to the hair follicles of the trunk and limbs, may be accompanied by fever and enlargement of the spleen and lymph glands and frequently by leucocytosis. The lesions often react locally to injections of trichophytin. Hitherto the trichophyton fungus has been found in only two cases. The condition is frequent in Germany and Switzerland but rare in Austria. Recent observations have shown that in addition to lichen trichophyticus there are other eruptions due to the trichophyton which may be of a macular, erythematous, or papulo-necrotic type. In a few cases lesions resembling erythema nodosum have been found.

267. Acromegaly of late Onset.

A. HAMANT and L. CAUSSADE (*Rev. méd. de l'Est*, May 1st, 1920) state that it is generally agreed that acromegaly of late onset is exceptional; to examples recorded by Widal, Gilbert Ballet, and Laignel-Lavastine, they add the following case: The patient was 53, the mother of three children; the first symptoms—enlargement of the hands and feet—had appeared four or five years previously, at the time of the menopause. Subsequently the skin of the face and neck grew thick. Deformities of the trunk, affection of the internal organs, and signs of compression were absent, but the diagnosis of acromegaly was confirmed by x-ray examination, which showed enlargement of the sella turcica.

268. Cadmium Poisoning.

STEPHENS (*Journ. of Industrial Hygiene*, August, 1920) records the case of a spelter worker of 67 who for ten years had been thought to suffer from plumbism, the chief symptoms being weakness, wasting, and bronchitis. At the autopsy the kidneys showed chronic interstitial inflammation, and the heart was hypertrophied. The liver contained no lead, but traces of copper, cadmium 0.91 grain per pound, and zinc, 0.77 grain per pound. The author has seen eight other cases where the analysis showed similar amounts of these metals. Most authorities agree that zinc is non-poisonous. Stephens believes that men with cadmium poisoning are often thought to have atypical lead poisoning; the severe colic of that disease is absent, diarrhoea may occur, and there is well marked epigastric pain or tenderness.

SURGERY.

269. Treatment of Wounds of the Liver.

AIEVOLI (*Rif. Med.*, March 13th, 1920) points out that whilst in war by far the greater proportion of liver wounds are made by shell fragments, etc., in civil life the wounds are mostly made by cutting instruments, so that the lessons derived from the war may not in all cases be utilized in civil practice. The size of the liver made it a frequent resting place for flying fragments during the war, and its division into a thoracic and an abdominal area corresponds to differing results from injury. Attempts have been made to draw up a scheme for the localization of the effused blood according to the part of the liver injured, but it seems doubtful whether this is reliable. In spite of the experience of the war there is still wide difference of opinion as to whether it is desirable to operate. Soulcyran intervened 221 times out of 297 and refrained in 76. Of the 221 operated on, 135 died and 86 were cured; of the 76 not operated on, 15 died and 61 recovered. The liver may be approached by various abdominal incisions, through the thorax or through the pleura. The wound itself may be treated by thermo-cautery, ligature, plugging, or suture.

270. Umbilical Ecchymosis in Liver Wounds

[illegible] (*Lyon Chir.*, 1919, 16) calls attention to the tracking of blood along the falciform ligament and ligamentum teres to the umbilicus, in wounds of the liver. In his patient, seventeen days after the injury a small circumscribed ecchymosis was found at the upper part of the umbilicus. The effusion gradually disappeared. Much of the value of this diagnostic sign is destroyed by the lateness of its appearance. It can be expected only when the anterior or superior surface of the liver is injured.

271. Continuous Pyloric Spasm and Dilatation of the Stomach.

ACCORDING to RAMOND and CLÉMENT (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, May 13th, 1920), most writers are of opinion that spasm of the pylorus can cause only a slight and transitory dilatation of the stomach, and that the organ rapidly resumes its normal size as soon as the spasm ceases. They record, however, a case which shows that this rule does not always hold good. The patient was a man, aged 56, who had suffered from gastric trouble for fifteen years, and presented an enormously dilated stomach. Death took place from peritonitis due to perforation of a gastric ulcer. At the autopsy the stomach was found to be two and a half times the normal size, and there was an ulcer on the lesser curvature two fingerbreadths above the pylorus. There was a hypertrophy of the pyloric musculature similar to that found in infants, and due to a more or less continuous spasm, which in its turn must have been produced by a reflex originating in the ulcer in the lesser curvature.

272. Treatment of Parotid Fistula.

STROPENI (*Rif. Med.*, April 24th, 1920) reports a case of obstinate salivary fistula which would not heal—cured by alcohol injections into the trigeminal nerve at the foramen ovale. By injecting the nerve the auriculo-temporal branch becomes paralysed and the salivary secretion arrested, allowing the wound to heal. The first injection (3 c.cm.) was given on June 20th. Half an hour later the salivary secretion was decidedly less, and this diminution continued throughout the next day. On June 22nd–23rd the secretion was almost as much as before. On June 29th another alcohol injection was given, after which the secretion ceased completely for twenty-four hours, but recurred next day. On July 1st no saliva escaped, and no return of secretion occurred subsequently. Probably the temporary return of saliva after injection was due to the nerve filaments which the parotid receives from the facial and sympathetic nerves, and which were not affected by injecting the trigeminal nerve.

273 The Interval between Infection and a Positive Wassermann Reaction.

H. BOAS (*Hospitalstidende*, June 16th, 1920) admits that the demonstration of a positive Wassermann reaction is of less diagnostic value than that of spirochaetes; but the former is important, particularly when the primary sore is "mixed," when there is gangrenous induration, or when the chancre has healed and the demonstration of spirochaetes is no longer feasible. The earliness with which this reaction becomes positive is also significant as far as the prognosis is concerned. The author's study of the literature has convinced him that the estimates of various authorities as to the length of the period between infection and the development of a positive Wassermann reaction differ greatly according as they bracket infection with the patient's last coitus or previous indulgences. The author has tackled the problem backwards, taking the outbreak of secondary syphilis as the period by which to calculate the length of the interval between infection and the development of a positive Wassermann reaction. To do this, he accepts as proven Fournier's hypothesis that the average interval between infection and the outbreak of secondary phenomena is ten weeks. Of 49 cases, 35 developed a rash one to seven days after the Wassermann reaction had become positive. In 5 cases the development of the two phenomena was simultaneous, and in the remaining 9 cases the rash appeared either two or three weeks after or just before the Wassermann test became positive. The author concludes that the Wassermann reaction becomes positive, at the earliest, seven weeks after infection; it does not, as a rule, become positive till the ninth week after infection.

274. Gas Cysts of the Intestine.

SLOAN (*Surg., Gyn., and Obstet.*, May, 1920) records a case in which, at autopsy, after perforation of a pre-pyloric ulcer, some two feet of the lower ileum were found to be covered with gas-containing cysts. These were in the anti-mesenteric area of the gut, were transparent and vascular, and had no communication with the lumen of the bowel. The report of this typical case of gas cysts is important on account of the very careful microscopical examination carried out by Karsner. This observer found a quantity of granulation tissue in relationship with these cysts, some of which were partly obliterated by invasion of bulb-like granulations with giant cells; many of the cysts were, however, smooth-walled, lined with a single layer of endothelium. All the cysts were subperitoneal, none being found in the muscular or submucous coats. No bacteria were seen. Histological examination of the pyloric ulcer revealed two cysts in the subserosa. The ileum showed a chronic catarrhal inflammation of the mucosa, of moderate grade. Karsner discusses the etiology of the condition (mechanical, bacterial, or neoplastic?). He inclines to the mechanical theory, pointing out how fine a needle puncture may lead to interstitial emphysema. He believes that the lesions in these cases of gas cyst may well be so small that they escape the notice of the surgeon or pathologist. Karsner remarks that such analyses of the gases as have been made in these cases are contradictory and incomplete, perhaps owing to the small quantity examined; no conclusions can be drawn from these analyses as to the cause of the cysts.

275. Loose Bodies in Hydroceles.

GLASS (*Zentralbl. f. Chir.*, 1920, 47) remarks that the finding of loose bodies in hydrocele sacs is an uncommon but not a new observation. In operating on a hydrocele of sixteen years' duration Glass found a loose body the size and shape of a shrapnel ball. It consisted of convolutions of fibrous tissue with a little chalky material at the centre, but had no definite nucleus. The bodies are generally believed to originate from blood coagulum, fibrin masses, or from layers of epithelium shed from the sac.

276. Soft Sore of the Tongue.

BRÜNAUER (*Dermat. Woch.*, No. 4, 1920. in *Zentralbl. f. inn. Med.*, June 12th, 1920) reports the case of a man, aged 24, whose frenum linguae was thickened and enlarged and showed a small ulcer with yellowish deposit and deeply undermined edges. There was painful swelling of the submaxillary glands. The diagnosis of soft chancre was established by inoculation of the left arm, streptobacilli being found in the lesion. A cure was effected by applications of hydrogen peroxide and cauterization.

277. Auto-mutilation of the Tongue.

MOLIN DE TEYSSIEU and BELOT (*Journ. de Méd. de Bordeaux*, 1920, 91) record the case of a melancholic woman of 60 years who cut off the terminal inch of her tongue. Standing before the glass while alone, she held the tip of the tongue with her left hand and deliberately cut off the end by means of a table-knife. She was found a few minutes later seated with blood pouring from her mouth. The patient appeared to feel no pain. The wound healed well. The recorders of the case state that auto-mutilation of the tongue is an uncommon occurrence. In 1906 Blondel could find only six examples.

OBSTETRICS AND GYNAECOLOGY.

278. A Case of Malignant Chorio-epithelioma.

STORK (*Zentralbl. f. Gynäk.*, May 29th, 1920) records the case of a woman of 38, who had had six children, and from whom in August, 1919, a hydatidiform mole was removed. Menstruation was regular until December, when on the 25th (ten days after the period had been expected) severe haemorrhage began and lasted continuously for eight days, and intermittently until the end of February, 1920. At that date the haemoglobin index had been reduced to 48 per cent. The external os was patent, and in it could be felt the lower end of a soft, smooth tumour of the size and shape of a pear, originating by its narrow upper end within the body of the uterus. Examination was followed by a very severe haemorrhage which prevented the removal of a fragment for purposes of microscopical examination. The diagnosis of malignant chorio-epithelioma was made, and total hysterectomy was performed with extirpation of the adnexa. Wide hysterectomy was rejected on account of the patient's enfeebled condition, and in the fear of promoting metastasis by venous routes. The diagnosis was confirmed microscopically.

279. Action of Pituitary Extract on the Pregnant Uterus.

PRICE (*Public Health News*, State of New Jersey, May 19th, 1920) says that many effects of grave consequence to the life and health of both mother and child may follow the injudicious use of pituitary extract. In certain women it acts precipitately; the uterus is thrown into tetanic convulsions, the pains become agonizing and unremitting, the cervix, if not fully dilated, is torn, and the perineum is ruptured. Fatal cases of asphyxia of the newborn and cases of dangerous *post-partum* haemorrhage coming on an hour after labour can often be traced to the abuse of pituitary extract. In cases of pre-eclampsia, by raising the blood pressure, it tends to precipitate the eclamptic seizures; in some instances it produces hour-glass contraction with retention of the placenta and membranes. The most serious consequence, however, is ruptured uterus, of which a large number of cases have been reported. The author suggests that the dose of pituitary extract should be carefully regulated, and that 3 minims repeated every twenty minutes until satisfactory pains are established "is a good rule to follow"; 1 c.cm. should be the maximum quantity used in any case of labour. To administer the drug judiciously the attendant must have a lively appreciation of the proportions of the pelvic inlet and outlet, and must assure himself of the exact position of the child and the amount of dilatation of the cervix. It appears from a public health report in the same journal that it is strongly suspected that many New Jersey midwives improperly give injections of pituitary extract (see BRITISH MEDICAL JOURNAL, June 19th, 1920, p. 829).

280. Complement Deviation in the Diagnosis of Pregnancy.

FIEUX and MAURIAC (*La Gynécol.*, February, 1920) reported to the Brussels Congress of September, 1919, a series of 151 cases, with the following conclusions: (1) With antigen derived from young chorionic villi, complement deviation was found in 31 cases out of 34 in the serum of women pregnant from one to four months, and also in the serum of women who within a few hours had been prematurely delivered of a living embryo. (2) Deviation was never obtained with the serum of non-pregnant women, of women more than five months advanced in pregnancy, nor of women retaining a dead embryo or a portion thereof. (3) Within well defined experimental conditions the reaction was accurately diagnostic, but owing to its great delicacy and difficulty of execution it was not suitable for ordinary clinical use. In the subsequent discussion Daels reported having found the reaction positive in 30 cases of pregnancy of from two to ten months, and absent in 15 normal women. He had also found positive results in cancer, myoma, and pelvic suppuration. Henneberg had found the reaction positive among pregnant women, as well as in cases of adnexal inflammation and of cancer.

281. Non-ligature of the Proximal End of the Umbilical Cord.

BOTHAMLEY (*Med. Journ. of Australia*, April 24th, 1920) found that among 15 cases in which the cord was tied and cut in the usual manner the average time of delivery of the placenta was forty minutes, and in 4 cases it was retained for one hour. In 13 cases in which the distal end was ligatured and the proximal or placental end was permitted to bleed, the average time of delivery was 21.3 minutes—that is, 18.7 minutes less than in the former series; in every case the placenta had been expelled within one hour. The author concludes that if the blood is allowed to drain from the placenta in consequence of non-ligature of the proximal end of the umbilical cord, the villi collapse more speedily, and thus placental detachment is easier and quicker.

282. Treatment of Co-existent Uterine Cancer and Pregnancy.

HAENSCH (Inaug. Diss., Breslau, quoted in *Zentralbl. f. Gynäk.*, June 5th, 1920) records seventeen cases of cancer of the cervix associated with pregnancy, and concludes that the best method of treatment is radical abdominal hysterectomy of the unopened uterus, performed during the early months of pregnancy; or (if the child be viable) abdominal Caesarean section followed by wide extirpation of the uterus and appendages. Maternal mortality, as in most recorded series of cases, was high; in seven cases a living child was born.

283. Treatment of Vesico-vaginal Fistula.

MARION (*La Gynéc.*, March, 1920) expresses preference for the treatment of vesico-vaginal fistula by the transvesical method, the bladder having been incised extraperitoneally after suprapubic approach. In this way he has cured extensive fistulae, some of which have withstood so many as five operative attempts made by the vaginal route; very rarely two successive transvesical operations have had to be undertaken. After the operation the bladder is drained by a Pezzar catheter until the fifteenth day; for a few days the patient lies on the belly, with intervals spent in the left or right lateral position.

284. Rupture of a Gravid Accessory Uterine Cornu.

THALER (*Zentralbl. f. Gynäk.*, May 29th, 1920) records the case of a three-para of 29, who had suckled a child for twelve months, during which only one menstruation had occurred—namely, in the tenth month. At operation for signs of severe haemorrhage, accompanied, however, by no external bleeding, an embryo 7 cm. long was found to be in process of extrusion from a freshly ruptured accessory cornu situated on the right side of the uterus. This cornu, together with the appendages of the same side, was detached from the remainder of the uterus and removed; the patient recovered.

285. Infections of the Cervical Endometrium.

LANGSTROTH (*New York Med. Journ.*, June 5th, 1920) is impelled, as the result of his observations, to believe that 50 to 75 per cent. of all parous and 20 to 25 per cent. of nulliparous women have infections of the cervical endometrium. Any marked increase in secretion, so that it becomes noticeable at the vulval orifice, is an almost positive evidence of cervical infection. The majority of women suffering from endocervicitis will eventually need surgical treatment. The infection from the endocervicitis spreads via the lymphatics, causing diseased conditions of the uterus and adnexa. The only method of cure in these cases is complete removal of the endometrium and cervix up to the internal os, and careful relining of the denuded area with a flap of mucosa from the vaginal surface of the cervix; this should be done before the tubes and ovaries are hopelessly diseased. The technique of the operation—which was invented and first described by Sturmdorf—is specified. Langstroth has had very good results in 75 patients operated on by this method.

286. Hemiplegia in Pregnancy.

DUHOT and PACQUET (*Gaz. des Hôp.*, 1920, vi) record two cases of hemiplegia occurring during pregnancy; the blood urea and arterial tension were estimated, the complement deviation test was performed, and the cerebrospinal fluid was examined. One case was due to cerebral haemorrhage in the Sylvian region, and the other to meningeal haemorrhage of unknown cause. The authors conclude that hemiplegia in pregnancy is accidental, and the term "hemiplegia of pregnancy" should not be used.

PATHOLOGY.

287. Changes Produced in the Vessel Walls by Injection of Adrenalin.

B. POLETTINI (*Arch. per le Sci. med.*, Fasc. 1-2, 1920), by repeated injection of rabbits with fractional doses of adrenalin, given either intravenously or intraperitoneally, constantly obtained aortic lesions consisting in degeneration and necrosis of the smooth muscle fibres of the tunica media; this gave rise to a mechanical distension followed by atrophy, rupture, and destruction of the elastic fibres, and an extensive calcification of the bones thus degenerated. These changes were found to be identical with those which occur in rabbits as the result of spontaneous arteriosclerosis, so that it could be affirmed that arterio-sclerosis in the rabbit could be produced experimentally by adrenalin. In another series of experiments Polettini painted adrenalin (1 in 1,000 solution) on the outer surface of the carotid and femoral arteries of rabbits and dogs, and obtained degenerative and necrotic lesions primarily of the muscular fibres and secondarily of the elastic fibres of the tunica media. Direct injection of 5-10 c.cm. of 1 in 1,000 solution of adrenalin into the bladder of these animals did not cause any changes in the smooth muscle fibres of the vesical wall, but only gave rise to haemorrhages due to diapedesis from the vessels in the submucosa. Adrenalin, therefore, seems to act on the muscle fibres of the vessel by direct contact rather than by the hypertension which it causes.

288. Haemorrhages and Symmetrical Gangrene in Anaphylaxis

H. POZZO (*Il Policlinico*, Sez. Prat., May 24th and 31st, 1920) describes the autopsy in a case of anaphylaxis following repeated injections of polyvalent antistaphylococcal serum for acute rheumatism in a man aged 54. There were purpura on the forearms, symmetrical gangrene of both palms, and thrombo-phlebitis of both common iliacs with secondary oedema. The liver and spleen showed acute fatty degeneration.

289. Non-specific Sero-therapy in Diphtheria.

TOWARDS the end of 1918 Bingel of Brunswick published a thesis in which he discussed his experiences of an epidemic of diphtheria. In 466 cases normal horse serum, and in 471 other cases specific horse serum (antitoxin), was given. The results obtained in these two series of cases were practically identical. P. AASER (*Tidsskrift for Den Norske Laegeforening*, July 15th, 1920) has checked these results by experiments on guinea-pigs. He gave intracutaneous injections of diphtheria toxin, as used for the titration of diphtheria serum, in a series of guinea-pigs, and first ascertained the quantity required to provoke necrosis of the skin at the site of injection. He found that these injections were followed in about twenty-four hours by early signs of necrosis, which was fully established after forty-eight hours. Practically the same results were obtained when the diphtheria toxin was combined with normal serum, the only appreciable effect of which was to defer the necrosis for about twenty-four hours. But when an intracutaneous injection was given of diphtheria toxin combined with diphtheria serum (antitoxin) only a very slight reaction occurred after twenty-four hours, and no necrosis followed. Again, complement fixation tests showed that normal serum contained no specific amboceptors. Turning to Bingel's figures, the author points out that his average mortality was about 10 per cent., and in 1913 it was even above 13 per cent. No such high mortality has been recorded in Christiania within the last twenty-five years, and in the period 1895-1919 it was only about 5 per cent. The author suggests that this great difference between his and Bingel's death rates may be due to the latter's timid dosage of antitoxin, and that to give 1,000 to 5,000 units in severe disease, and not to repeat an injection when the result has been unsatisfactory, is tantamount to withholding sero-therapy altogether. It is therefore not strange that Bingel's results should be equally bad, whether he used specific or normal serum.

290. The Haematology of Influenza.

STOICHITIA (*Clujul med.*, April 1st, 1920), from examination of the blood of 31 cases of influenza, 10 of which were free from complications and 21 complicated by pneumonia, came to the following conclusions: (1) In the mild and uncomplicated cases there is a leucopenia, and a normal number of leucocytes is exceptional. (2) In mild cases of influenzal pneumonia there is a leucocytosis which sometimes appears before any other manifestations of lung involvement. (3) In severe cases of pneumonia there is a hyperleucocytosis which may become very pronounced. (4) Leucopenia in cases with grave clinical symptoms, such as bronchopneumonia, is an unfavourable prognostic.

291. Leucopenia and Influenzal Pneumonia.

LEUCOPENIA in influenzal pneumonia has been assigned diagnostic significance and its persistence is regarded as of bad import. ROSENOW (*Journ. of Infect. Diseases*, Chicago, June 20th, 1920) finds that leucopenia follows injection of material from patients with influenza; streptococci and other bacilli associated with the diseases have a power by growth *in vitro* and *in vivo* to produce a soluble, filtrable substance. The filtrates from broth cultures and from influenzal lungs and sputum, when given intrathecally to guinea-pigs, lead to sudden leucopenia. This phenomenon was not seen regularly after similar injections either of streptococci isolated from patients suffering from diseases associated with leucocytosis or of type pneumococci.

292. Cholesterol Metabolism in Infants.

BLACKFAN and GAMBLE (*Trans. Amer. Ped. Soc.*, xxi, 1919, estimated by a modification of the method of Autenreith and Funk the cholesterol in the milk and stools of healthy infants, and found that in all the experiments the cholesterol contents of the stools were from one and a half to three times as large as of the milk ingested. Evidence is thus obtained that infants possess the power of synthesizing cholesterol.

293. Etiology of Encephalitis Lethargica.

PALFANI (*Rif. Med.*, May 22nd, 1920), examining the cerebro-spinal fluid in two definite cases of lethargic encephalitis, isolated a pathogenic germ capable of reproducing in the rabbit a characteristic group of symptoms, agglutinable by the blood of other cases of encephalitis (also of influenza), and belonging to the group of organisms which were associated with the recent epidemic of influenza. The germ grows best in broth and sugar agar, does not develop in gelatin nor coagulate milk, and does not ferment mannite nor acidify glucose; it has slight haemolytic action.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

294. The Dangers of Intravenous Injections of Calcium Chloride.

DISCUSSING the arrest of haemorrhage by the intravenous injection of calcium chloride, MCDOUGAL (*Hospitalstidende*, June 16th, 1920) records two fatalities, one of which occurred directly after an injection, the other after a short interval. Both patients suffered from extensive pulmonary tuberculosis. The first patient collapsed on the day following a single injection; he became cyanosed, and his pulse was hardly palpable. He rallied after an injection of camphor, but died next day. The second patient was given an intravenous injection of 5 c.cm. of a 5 per cent. solution of calcium chloride. Directly afterwards he complained of "feeling queer." The pulse was, however, good. Five minutes later he lost consciousness; the pulse could not be felt, and he was much cyanosed. An injection of camphor was given with good effect on the pulse; artificial respiration was practised for some minutes, followed by oxygen inhalation. Automatic respiration returned as gasps separated by intervals of five to forty seconds. Unconsciousness continued, and there was no reaction to the injection of ether. The pupils were contracted, but the conjunctival reflex could still be elicited. The cyanosis passed off during the administration of oxygen, recurring as soon as it was discontinued. After this state of affairs had lasted five hours, the pulse suddenly ceased, and in spite of various stimulants, the action of the heart was not resumed. At the necropsy, in addition to extensive bilateral pulmonary tuberculosis, numerous tuberculous ulcers of the intestine were found. There was no sign of embolism; the brain, however, was not examined. After these experiences the author discontinued the intravenous injection of calcium chloride as a haemostatic.

295. The Etiology of Acute Digestive Disturbances in Infancy.

BLOCH (*Ugeskrift for Laeger*, June 10th, 1920) reviews at some length the theories of the German school which regards gastro-intestinal disturbances in infancy, not as a problem of microbial infection, but as one of chemical poisoning by various substances in the diet. The author points to the numerous contradictions in which the sponsors of this teaching have become involved, and maintains that acute gastro-enteritis in infancy is an infectious disease, due to the various bacteria included in the typhoid-coliform group. Most of the coliform bacteria belong to the group that is not pathogenic to adults or to children above a certain age. But in more than 10 per cent. of his cases the disease was due to infection with the paradysenteric, typhoid, and paratyphoid groups. Clinically, there was little difference in the reaction of the infantile organism to the coliform, paradysenteric, typhoid, and paratyphoid groups. The author's cases were treated at the Rigshospital, Copenhagen, in the period 1911–1918 inclusive.

296. Radiotherapy for Acute Superior Mediastinal Obstruction.

NOBÉCOURT, SEVESTRE, and DUHEM (*Bull. de la Soc. de Péd. de Paris*, October, 1919) have reported to the Société de Pédiatrie de Paris two cases in which radiotherapy led to speedy relief of obstruction of the superior mediastinum. The first was that of a child of 5½ years, suffering from intense dyspnoea and cyanosis; catarrhal signs were audible on auscultation over both lungs. The left lung was retracted, and there were sternal and parasternal dullness. Radioscopy showed a large mass in the superior mediastinum; tumour of the thymus was suspected, but in view of the pulmonary signs and of a coexistence of Pott's disease, a diagnosis of tuberculous enlargement of the mediastinal glands was made. The dyspnoea disappeared rapidly after ten minutes' exposure to x rays, and after the third treatment the tumour was found to have disappeared. Similar although less striking results have been reported by Ribadeau-Dumas, Albert-Weil, Saissel and d'Œlsnitz. The second case recorded is that of a boy of 13, suffering from a large swelling in the front of the neck and from intense dyspnoea of about a fortnight's duration. The face, the neck, and the upper part of the thorax were oedematous and the superficial veins were distended. The eyes were prominent and the lips cyanotic. Dullness extended two fingerbreadths to each side of the manubrium sterni. Radioscopy showed well marked and extensive opacity in the superior mediastinal region. Four hours after treatment by x rays the dyspnoea was much improved, and within three days the cervical tumour, the oedema, and the mediastinal shadow were found to have disappeared. This patient subsequently suffered from grave anaemia, purpura, and enlargement of the spleen, liver, and lymphatic glands; within a month a typical blood picture of lymphatic leukaemia had developed.

297. Convoluted Pachydermia of the Scalp.

LENORMANT (*Ann. de Derm. et de Syph.*, No. 5, 1920) describes an affection of the scalp characterized by the presence of thickened projections of the skin separated from one another by more or less deep grooves. In well marked cases the appearance bears some resemblance to that of the cerebral convolutions. The condition, first described by Jadassohn in 1906, was named "cutis verticis gyrata" by Unna, "encephaloid scalp" by Calle, and "convoluted pachydermia of the scalp" by Audry. Although only about thirty cases have been reported, Lenormant thinks that the condition is not very uncommon. In mild cases, in which it merely consists in a wrinkling of the scalp, it may easily escape notice owing to the absence of any symptoms. The majority of cases have occurred in men at or beyond middle age with a thick growth of brown or black hair. Only two cases have been recorded in women. According to the differences in the underlying anatomical condition, two varieties of the disease may be described. One is of an inflammatory nature, generally limited in extent, chiefly occurring in adult life and probably associated with chronic inflammation of the scalp. The other is a congenital malformation, which usually affects a large part of the scalp and anatomically is closely related to naevi. Treatment consists in the removal, in one or more séances, of the most prominent portions of the pachydermia, which becomes replaced by scar tissue.

298. Musculo-spiral Paralysis of Malarial Origin.

FONZO (*La Pediatria*, June 1st, 1920) records two cases, occurring in a girl aged 7 and a boy aged 12 respectively. In the first case the symptoms developed about a month after an attack of malignant tertian fever, and in the second during an attack of benign tertian. All causes for the paralysis except malaria could be excluded. Some writers attribute the nervous complications of malaria to anatomical causes, such as punctiform haemorrhages due to stasis in the cerebral capillaries of corpuscles infected by the malarial parasites. Other writers attribute the nervous complications, especially neuritis, to a toxic factor. Schupfer regards anaemia as a predisposing cause.

299. Relapses in Scarlet Fever.

VYSOKY (*Zentralbl. f. inn. Med.*, May 29th, 1920) in 748 cases of scarlet fever had 6 cases with a relapse and 1 with a second attack. The relapses occurred on the twelfth, thirteenth, fourteenth (2 cases), and nineteenth days (2 cases) respectively, and the second attack a year after the first. The relapses were preceded by an apyrexial interval of several days. In 2 cases the relapse followed necrotic angina, and in another case it occurred three days after an eruption of varicella. In all cases the rash of the relapse was accompanied by the characteristic symptoms of scarlet fever—namely, reappearance of fever and sore throat, strawberry tongue, and desquamation. The course of the relapses was favourable; 5 recovered, and the fatal case was complicated by suppurative otitis, rheumatism, nephritis, and septicaemia. The second attack developed three days after a burn of the second and third degree, affecting almost the whole of the front of the body.

300. Increase of the Danger of Infection from Bovine Tuberculosis during the War.

SCHAEFFER (*Zeitschr. f. Tuberk.*, 1920, xxxii) has endeavoured to find out whether such an increase has taken place, and from an examination of the clinical features and frequency in men and in cows, and of the rules for the protection of the milk supply, he concludes that there has been no increase of infection in men or in cows, but that, the rules for the protection of the milk supply being less stringent, the danger to children has been increased.

301. Tabetic Retention cured by Division of the Sphincter.

RUBRITIUS (*Wien. klin. Woch.*, July 29th, 1920) alludes to the recent paper by Freudenberg (Epitome, January 10th, 1920, p. 6, No. 38), and records a case in which retention of urine of tabetic origin was cured by removal of a wedge-shaped portion of the internal sphincter after suprapubic cystotomy under local anaesthesia.

SURGERY.

302. Wounds of the Knee-joint.

BAZIN (*Canadian Med. Assoc. Journ.*, May, 1920) summarizes 195 cases of penetrating wounds of the knee-joint, with two amputations and three deaths due to complications. Cases with only a blood-stained effusion into the joint were placed in suspension and extension, the joint being aspirated as often as necessary to prevent tension, and 10 to 12 c.cm. of 2 per cent. formalin in glycerin being injected. In haemarthrosis the joint was opened, thoroughly irrigated to remove all clot, and then closed. A similar procedure was adopted for foreign bodies, bone lesions being curetted, and care being taken to avoid bruising the synovial endothelium. Complete immobilization of the joint at 30 degrees on a Thomas splint was found essential, the limb being suspended with accurately counterpoised weights and 6 lb. extension in order to secure physical and functional rest to the joint. Excessive tension was prevented by frequent aspirations of the accumulating fluid. If the periarticular tissues became involved and tracking abscesses developed, they were opened and drained (preferably under local anaesthesia without removing the limb from the position of immobilization). Passive movements were contraindicated in the presence of acute infection, but, when the temperature and joint condition appeared normal, might be begun on the fifth day, gradually increasing in range. Flexion to 45 degrees was usually obtained in from eight to ten days.

303. Occlusion of the Duodenum by the Mesentery.

THE superior mesenteric artery crosses the infrapapillary duodenum in its ascending part just before the duodenojejunal flexure is reached. Many years ago Albrecht advanced the view that the mesentery of the small intestine, and especially the superior mesenteric artery, could in certain circumstances occlude the duodenum and produce acute dilatation of the stomach. DELBET has recently had a case in which chronic obstruction arose from this cause (*Bull. et Mém. Soc. de Chir. de Paris*, 1920, 46). In Delbet's case the diagnosis was juxta-pyloric ulcer; at operation dense adhesions were encountered between the posterior surface of the transverse mesocolon and the posterior wall of the abdomen; the ascending portion of the duodenum was seen to be greatly dilated in consequence of compression by the thickened root of the mesentery. Deeming it useless to separate the adhesions, Delbet performed posterior gastro-enterostomy with a beneficial result.

304. Exostoses following Nerve Wounds.

NATHAN (*Ann. de Méd.*, No. 2, 1920) records the case of a soldier, aged 24, who was wounded by a revolver bullet in the left calf, and subsequently developed neuritis of the left external popliteal nerve, and especially of its musculocutaneous branch. X-ray examination showed a sessile exostosis, the size of a small hazelnut on the antero-external surface of the head of the first metatarsal, and a similar exostosis on the antero-internal aspect of the head of the fifth metatarsal. Nathan regards the exostosis as a trophic change similar to the hyperostosis met with in syringomyelia.

305. Gangrene of an Ectopic Kidney.

The true "floating kidney"—a kidney with a mesentery of its own, and therefore freely movable within the peritoneal cavity—is a rare condition. RANSOHOFF (*Surg., Gyn., and Obst.*, May, 1920) has met with such a case. The pedicle of this congenitally abnormal kidney was twisted to such an extent that gangrene had occurred, and nephrectomy had of necessity to be performed. The patient, a female aged 12, had suffered for three weeks from abdominal cramps. On admission to hospital there were slight rigidity of the lower parts of the recti, and moderate tenderness on the right side. In consequence, no doubt, of occlusion of the ureter by the twisting of the kidney and suppression of urine on the affected side, the urine showed no abnormality.

306. Inter-ilio-abdominal Amputation.

IACOBOVICI (*Clujul med.*, May 1st, 1920) records a case in which this operation was performed successfully for sarcoma of the femur in a man aged 23. The patient's condition was satisfactory at the time of publication of the paper, forty days after the operation. Iacobovici has found records in the literature of only 15 other cases of this operation, which was first performed by Billroth in 1889. In 11 cases death occurred during or immediately after the operation, and 4 survived, their cases being reported by Girard, Bardenheuer, Salistscheff, and Nanu respectively. Girard's patient, however, died six months after the operation from a relapse, and Nanu's patient died twenty days after the operation. With the exception of Bardenheuer's and Girard's cases, in which the operation was performed for advanced tuberculosis of the hip, the reason for operation in all the cases hitherto recorded has been sarcoma.

307. Torsion of the Spermatic Cord.

HAGNER (*Trans. Amer. Assoc. Genito-Urin. Surg.*, 1919, xii) describes 3 cases of torsion of the spermatic cord in which the testicle was fully descended. It is generally conceded that torsion is commoner in those whose testes have been arrested in descent, and Hagner states that only 30 cases of torsion of the normally placed testis have been recorded. In Hagner's first case the mesorchium was so twisted that the arterial as well as the venous supply was interfered with, the testes being small and gangrenous. As a rule only the veins are obstructed, leading to a considerable engorgement of the organ, which eventually dies. If the case is seen early enough, detorsion may be performed by manipulation. In the discussion following Hagner's paper Chute described a case in which he had untwisted the testis with complete success without opening the scrotum. There is, of course, always the danger of recurrence, and orchidopexy is indicated. Another speaker claimed to have seen 6 cases of torsion of the cord (presumably in fully descended testes) in Cabot's clinic at Boston. As a rule, the chance of rectifying matters is not accorded to the surgeon until too late, when nothing but orchidectomy can be done. This paper contains two pastels of twisted testes *in situ*.

308. Sarcoma of the Omentum in a Child.

SALA (*La Pediatria*, June 1st, 1920) records a fatal case of small-celled sarcoma of the omentum in a boy aged 4. The following points are illustrated: (1) Tumours of the omentum in children may attain very considerable dimensions, and in consequence of their size and relations with neighbouring parts may lose the mobility which is the principal characteristic of peritoneal tumours, so that the diagnosis is almost always difficult. (2) Pain is an almost constant symptom of tumours of the omentum. (3) The symptoms due to pressure on the subjacent organs almost entirely dominate the clinical picture. (4) Sudden death is liable to occur, not as the result of cachexia, but owing to the compression exercised by the large size of the tumour.

309. Cervical Ribs.

LIVIERATO (*Rif. Med.*, April 24th, 1920) reports (with radiogram) a case of exceptionally large supernumerary cervical ribs. Starting from the seventh cervical vertebra, the right rib extended as far down as the fifth rib, and the left to the upper margin of the fifth rib. The shadows of these long ribs were at first misinterpreted, being taken to indicate some tuberculous trouble at the apex of the lung.

310. Resuscitation by Heart Massage.

DALY (*Proc. Roy. Soc. Med.*, June, 1919) describes a case of sudden collapse on the operating table; transdiaphragmatic heart massage was successful in reviving the patient. Llewelyn Powell and Shipway described two further cases in the discussion which followed. LAPEYRE (*Bull. et Mém. Soc. de Chir. de Paris*, December, 1918) reports another similar experience. Here massage had to be kept up for half an hour before the normal rhythm returned. This case, like Daly's, died a few hours later.

311. Melanosarcoma of the Ocular Conjunctiva.

ACCORDING to WOLFF and DEELMAN (*Nederl. Tijdsch. v. Geneesk.*, June 19th, 1920), while intraocular melanosarcoma is not uncommon, a tumour of this kind in the external eye is exceptional. Heller, who collected 80 cases from the literature, found 37 in the limbus of the cornea, 4 in other parts, 17 in the conjuntiva, 7 in the caruncula, and one in the sclerotic. The growth is slow, and is directed outward. Recurrence after removal is very frequent. In contrast with intraocular melanosarcoma, metastases are very slow in forming. The present writers record a case of melanosarcoma of the temporal side of the left ocular conjunctiva in a woman aged 35. The tumour was removed, together with a large piece of conjunctiva, and found to be a melanosarcoma of the alveolar type. *X*-ray treatment was employed, but a local recurrence took place, and the eye was enucleated. The following year a similar tumour was found in the temporal region, and was successfully removed.

312. Diagnosis and Treatment of Amoebic Hepatitis.

CASTIGLIOLA (*Rif. Med.*, April 17th, 1920) points out the difficulty of diagnosing abscess of the liver in its earlier stages. Pain and localized tenderness are valuable signs; fever is usually present, but apyrexia may be met with. Increase in the size of the liver is almost constant; the upper limit of dullness is sharp and convex as opposed to the dullness of a pleural effusion. In the author's experience right pleurisy has not been so commonly associated with abscess of the liver as other writers have asserted. Exploratory puncture and the results of emetine treatment will usually settle the diagnosis. Needles of 1.5 to 2 mm. diameter and 15 to 20 cm. long should be used. With needles of small diameter the danger of haemorrhage, air entry, etc., is lessened. It is useless to perform preliminary operations, to establish adhesions between the liver and peritoneum. The abscess cavity should be explored with the finger and careful search made for contiguous abscesses. The mortality of amoebic hepatitis is high (varying between 20 and 40 per cent.), but emetine given intramuscularly in full doses (12 cg.) is very valuable.

313. Pseudo-coxalgia and Phimosis.

VEYRASSAT (*Lyon Chir.*, 1919, 16) recalls the fact that Adams in 1887 and Reverdin in 1888 drew attention to phimosis as a possible cause of pain in the hip-joint simulating tuberculous arthritis. Since then at rare intervals various writers have mentioned the fact. Veyrassat illustrates the point by a case of his own, treated by immobilization for many months without improvement. The hip-joint could be moved fairly easily, rigidity was only slight, and there was no muscle wasting. The child had an adherent prepuce and enlarged glands in both groins. Circumcision was followed by the immediate disappearance of all pain in the hip, and the child put on three kilograms in weight in one month.

OBSTETRICS AND GYNAECOLOGY.

314. Functional Uterine Bleeding.

ACCORDING to NOVAK (*Journ. Amer. Med. Assoc.*, July 31st, 1920), functional uterine bleeding, usually taking the form of menorrhagia, is commonest about the menopause and near puberty. The most frequent histological finding is that of hyperplasia of the endometrium, with overgrowth of its epithelial and stromal elements, but no evidence of inflammation. The hyperplasia is regarded as secondary to an "endocrine disturbance of the ovary"; the secondary character of the hyperplasia affords an explanation of (1) the failure of scraping to effect a permanent cure; (2) the disappearance of the haemorrhages after double ovariotomy, or after the menopause.

315. GEIST (*Surg., Gyn., and Obstet.*, August, 1920) returns to the discussion of the etiology and treatment of "essential uterine haemorrhage," in which well marked hypertrophy of the endometrium, together with cystic dilatation of many of the glands, is a fairly constant anatomical finding. He has studied the ovaries in 41 cases of this condition, and has found constantly numerous cystic follicles, with degeneration of the epithelium and ova, together with lutein cysts of varying size. Curetting is not productive of lasting benefit; hysterectomy, with or without conservation of the ovaries, cures the condition at the cost of a great sacrifice to the patient, and the same is true of treatment by *x* rays. The author suggests, and intends to try, treatment by removal of the cyst-bearing areas of ovaries, or of a portion of the functioning ovarian tissue.

316. Recurrence in a Case of Chorion-epithelioma.

TEDENAT communicated to the Réunion Obstétrique et Gynécologique de Montpellier (April, 1920) the history of a woman in whom he had observed during the course of nine years the following sequence of events: (1) Meckel's diverticulum, with umbilical fistula, cured by five applications of electrolysis; (2) two years afterwards, chorion-epithelioma of the cervix, excised during the eighth month of pregnancy (labour occurred at term); (3) in the tenth month after the birth of the child, insanity leading to two years' treatment in a mental hospital; (4) in the seventh year, during ovariotomy for multilocular cyst, removal of a small chorion-epitheliomatous tumour from the region of the insertion of the pedicle; (5) finally, eighteen months afterwards, laparotomy was performed for a large abdominal tumour; the chorion-epithelioma had invaded the omentum and the liver.

317. Eclampsia at Budapest during the War.

VÁRÓ (*Zentralbl. f. Gynäk.*, May 15th, 1920) records the incidence of eclampsia at the Universitäts Frauenklinik as follows: From 1907 to 1910, 45 cases, or 0.64 per cent., among 6,986 births; from 1911 to 1914, 71, or 0.83 per cent., among 8,465 births; from 1915 to 1918, 49, or 0.55 per cent., among 8,753 births. The percentage mortality was—from 1907 to 1910, 26.6 per cent. among 45 cases; from 1911 to 1914, 22.5 per cent. among 71 cases; from 1915 to 1918, 14.2 per cent. among 49 cases. The figures for cases which from the beginning to the end of the eclamptic manifestations were in the clinic are: 1907 to 1910, 41 cases, of whom 10, or 24.1 per cent., died; 1911 to 1914, 66, of whom 13, or 19.7 per cent., died; 1915 to 1918, 46, of whom 4, or 8.7 per cent., died. During the war reductions in the incidence and mortality rate of eclampsia took place in Germany also; these alterations are ascribed, both in Austria and Germany, to changes in the national dietary.

318. Inguinal Hernia of the Uterus.

ROYSTER (*Southern Med. Journ.*, Birmingham, Alabama, April, 1920) records the case of a nulliparous married woman of 45 whose menstruation had always been vicarious. She had had a lump in the left groin since the age of 14; at operation this was proved to be an inguinal hernia containing an enlarged uterus harbouring a small fibroid. The pedicle was composed of the left tube, ovary, and broad ligament; these structures were absent on the right.

319. An Early Sign of Osteomalacia.

HAHN (*Wien. klin. Woch.*, quoted in *Zentralbl. f. Gynäk.*, August 21st, 1920) describes an early sign detected in 13 cases of "hunger osteomalacia." This consists in a flexibility of the ribs, best seen in the second ribs in the mammary line; as a result of gentle pressure, which is uncomfortable rather than painful, these bones bend inwards.

320. Freeing of the Placenta by Mechanical Distension.

FREY-BOLLI (*Korrespondenzbl. f. Schw. Aerzte*, 1919, No. 16) records three years' experience of fluid injections into the umbilical vein as a means of freeing the placenta *in utero*. The use of this method, which was described so far back as 1814, is said to diminish the number of cases in which it is necessary to have recourse to manual extraction of the placenta. It was employed in cases in which there was *post-partum* haemorrhage, or in which expulsion of the placenta did not occur within one hour of birth.

321. Primary Ovarian Cancer in Patients under 20.

ACCORDING to LUSINCHI (*Thèses de Montpellier*, April, 1920), this condition is not infrequent at puberty; the tumour, which is nearly always unilateral, is an alveolar carcinoma, more frequently solid than cystic. Growth is rapid and adhesions are rare. In the absence of metrorrhagia accompanying precocious signs of sexual maturity, diagnosis is usually obscure. ETIENNE and AIMOS (*Compte-rendu anal., Soc. des Sci. Méd. et Biol. de Montpellier*, April, 1920) record the case of a girl of 8 from whom a tumour, microscopically proved to be an alveolar cancer, was removed seven years ago; there had been no recurrence. Lusinchi recommends that in operable cases double ovariotomy should be performed, even if one ovary appears to be healthy.

322. A Case of Secondary Abdominal Pregnancy.

SCHOCKAERT (*Gyn. et Obstét.*, 1920, I, 4) records the case of a 9-para of 44 in whom a tubal gestation ruptured during the third month; retrouterine haematocele was diagnosed, but operation was refused. When examined again four months later, the patient had a large tumour on the left side of the belly, and the fetal head could be felt behind the cervix; the enlarged uterus was palpable in the right iliac fossa. Operation was performed at the beginning of the ninth month, in consequence of pyrexia, tachycardia, and abdominal pain. The gestation sac, which was accidentally opened during manipulation, was adherent to the uterus, appendages, and large intestine only. A well formed infant was extracted which weighed 2,000 grams, and lived for some hours. The placenta was attached to the posterior aspect of the outer wall of the uterus and to the left adnexa; it was removed together with the uterus and appendages, that portion of the sac which was adherent to the rectum being left *in situ*.

323. Fetal Malformations in Hydramnios.

FERNÁNDEZ (*Rev. méd. del Uruguay*, July, 1920) records a case of hydramnios in which delivery took place without any difficulty, a dead fetus being born with the following malformations: hydrocephalus, complete hare-lip, ascites, lumbar spina bifida, pes varus, syndactylism, achondroplasia, and absence of the right kidney and suprarenal. Fetal deformities are very often associated with hydramnios; according to Sallinger their frequency is 11 in 80. The mother's urine, in Fernández's case, contained albumin, and as the Wassermann reaction was positive in the cerebro-spinal fluid, though negative in the blood, the renal lesion was probably due to syphilis.

324. Laryngeal Tuberculosis and Pregnancy.

CANUYT (*Journ. de Méd. de Bordeaux*, June 10th, 1920) records the case of a 5-para of 36 who was observed during the course of three successful pregnancies, in each of which the laryngeal lesions (infiltration of the epiglottis, arytenoids, and vocal cords, with intra-arytenoid papillary inflammation) became aggravated, and there occurred hyperaemia with ulceration, as well as haemoptysis of bronchial origin. This case supports the opinion of Pinard that systematic induction of abortion should not be practised in pregnant women suffering from laryngeal tuberculosis of the second degree.

PATHOLOGY.

325. Experimental Transmission of Disseminated Sclerosis.

LA FANO (*Journ. of Nervous and Mental Disease*, May, 1920) summarizes the experimental investigations which have been made with regard to the etiology of disseminated sclerosis, and reviews the recent literature. By injecting cerebro-spinal fluid and blood, withdrawn under rigidly aseptic conditions from typical cases of disseminated sclerosis, various investigators in different countries have been able to produce in rabbits and guinea pigs a disease of the nervous system ending, after a variable period of incubation, in more or less extended paralysis and death. The inoculations may be intracerebral, intradural, intraperitoneal, intraocular, or subcutaneous; but the greatest chances of positive results appear to be offered by intraperitoneal injections into guinea pigs and intraocular injections into rabbits of blood and cerebro-spinal fluid withdrawn either from acutely developing cases or from patients passing through a period of exacerbation of the disease. Experiments made with the fluids from one and the same patient may be attended by positive or negative results, if conducted at different times. Other laboratory animals, such as cats, mice, monkeys, seem to be less, or not at all, suitable for the transmission of the disease. All rabbits and guinea pigs are not equally affected by the inoculation, some of them remaining healthy, some recovering from transitory period of paralysis. There is a certain amount of evidence that the disease caused in this way is further transmissible from animal to animal. An apparently specific spirochaete has been found, in positively inoculated animals, in the blood, in the blood vessels, in the capillaries of the liver, and in the cerebro-spinal fluid. An apparently identical living spirochaete has been detected in the brain substance of a case of disseminated sclerosis, the *post-mortem* examination of which took place two hours after death. The fact that the inoculation into rabbits of human cerebro-spinal fluid, kept for fourteen days in the ice-chest and filtered through unglazed porcelain, was still attended by positive results, suggests the idea that the lesions of the central nervous system observed in the diseased animals, and possibly also those characteristic of disseminated sclerosis in man, are probably due, not only to a living virus, but also to some toxin elaborated by it.

326. Studies on Tuberculous Infection.

KRAUSE (*American Review of Tuberculosis*, 1920, iv) has studied tuberculosis in the guinea-pig after subcutaneous injection, with particular reference to the tracheo-bronchial lymph nodes. He finds that (1) the superficial lymph nodes, and those of the pelvis, abdomen, and thorax, are abundant; the lungs show a small amount of lymphoid tissue, which is concentrated near the hilum; the tracheo-bronchial nodes are large. (2) Subcutaneously injected inert foreign particles set up inflammation at the site of injection; some particles are intercepted by adjacent lymphatics, but others pass through the nodes into the lungs, and thence to the various organs of the body. (3) Injections of tubercle bacilli have a similar fate. A lesion in the tracheo-bronchial nodes often exists without affection of the lung. In a consideration of some factors that influence the development of tubercle in the lymph nodes of the guinea-pig, the author finds that the existence of tubercle in this situation is contingent on the occurrence of lesions at a point peripheral to the node, and that the progression or retrogression of tubercle in the lymph nodes is chiefly dependent on the progression or retrogression of the peripheral focus.

327. Gastric Secretion after Subcutaneous Injection of Organ Extracts.

As a result of their study of the gastric secretion in dogs with Janeway fistulae of the stomach, ROGERS, RAHE, and ABLAHADIAN (*Cornell Univ. Med. Bulletin*, April, 1920) find that a slightly alkaline saline solution, or alcohol, extracts from the thyroid some non-coagulable material which, given subcutaneously, is a vigorous stimulant for the gastric secretion. This material produces its effects, at least in part, by intensification of the functions performed by the terminal filaments of the (gastric) vagus. Extracts similarly made from the pathological tissue of adenomatous human thyroids, or those removed for hyperthyroidism, are inert. Extracts of the adrenal gland vigorously inhibit gastric secretion. These extracts of the adrenal gland all contain more or less epinephrin, and therefore it is presumable that their effect is produced by intensification of the inhibitory function which is ascribed to the (gastric) sympathetic. Adrenalin is not as active a gastric inhibitor as the adrenal nucleo-proteins obtained from extracts of the whole gland; these adrenal nucleo-proteins contain only traces of epinephrin. Extracts of the pituitary gland also inhibit gastric secretion, but only about one-half as vigorously as do extracts of the adrenal.

328. Hydroceles Containing Spermatozoa.

WINSLOW (*Surg., Gyn., and Obstet.*, June, 1920) discusses the presence of spermatozoa in ordinary hydroceles of the tunica vaginalis. Six recent cases have been encountered by this writer; in his inquiry as to the route by which the spermatozoa have entered the hydrocele, he is unable to come to any definite conclusion. In only one of the six cases was there a history of injury such as might have liberated germinal cells. It is probable that there is often a coexisting spermatocele in the cleft between testis and epididymis. In one case seen by Winslow there was a hydrocele containing clear fluid, whilst contiguous but not communicating with it was another cyst containing a milky fluid in which were spermatozoa; had operation been deferred, it is quite likely that the spermatocele would have ruptured into the hydrocele. From the standpoint of prognosis and operative handling, the presence of spermatozoa in the hydrocele fluid is devoid of special significance.

329. Vincent's Spirochaete and Haemorrhage in Pulmonary Tuberculosis.

SINCLAIR of Hawaii (*American Review of Tuberculosis*, 1920, iv) finds that the presence of this spirochaete in the sputum makes haemorrhage a probable complication (76 per cent.); its absence is against the likelihood of haemorrhage (36 per cent.). Haemorrhage rarely occurs in incipient cases unless the spirochaete is present, and hence this organism should be sought for in all cases.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

330. The Incidence of Scarlatinal Middle ear Disease.

BACHE (*Tidsskrift for Den Norske Lægeforening*, June 1st, 1920) points out that the frequency of otitis media in scarlet fever has been estimated at 15 to 20 per cent. by Escherich and Schick, and at 18.6 to 36 per cent. by Holmgren. The author has examined the records of Ullevaal Epidemisykehus, near Christiania, for 1917, 1918, and the first half of 1919. Of the 1,395 cases of scarlet fever 167, or 12 per cent., developed otitis media. With a view to investigating the seasonal incidence of this complication, these cases were classified according to the time of year at which they occurred. It was found that the proportion of cases of otitis media was lowest in the first and last quarters of the year, and highest in the second quarter. It was also noted that the curve of unilateral otitis media ran parallel with that of bilateral disease. On the other hand, the curve of otitis media, whether it were unilateral or bilateral, did not correspond in any way with the curve showing the frequency of mastoiditis. In other words, the frequency of mastoid disease seemed to be independent of the frequency of otitis media. In cases of unilateral otitis media the right side was practically as often affected as the left; the average duration of this complication was thirty days. In a curve showing the stage in the scarlatina at which otitis media developed, the author points to the first two weeks as the period in which the incidence of otitis media was greatest; but the fall of this curve was only very gradual, even up to the sixth week. Thus, throughout convalescence the development of otitis media may be anticipated. Holmgren has calculated that about 50 per cent. of all cases of otitis media have developed within the first nineteen days of the scarlatina. In the author's cases, 50 per cent. had developed within the first fourteen days.

331. Industrial Rashes in Rubber Workers.

THE eruptions found in those employed in the rubber industry have, it is stated, become more prevalent and more serious since the introduction of accelerators such as aniline and urotropine. SHEPARD and KRALL (*Journal of Industrial Hygiene*, May, 1920) discuss the causation of these rashes, and describe an ingenious plan for their prevention. The problem was considered first by testing the effects of urotropine on normal people, whose skin it affected very little; next workers becoming affected were brought under observation, and such facts as could be obtained were collected and analysed. It was noted that the rash occurred on exposed parts, such as the face, neck, and arms; that it was prevalent in summer, and that certain individuals only were susceptible. A consideration of the composition of urotropine and the sweat led the investigators to the conclusion that acid sweat acting on urotropine produced formic acid as an end-product, and that this was the harmful irritant. Acting on this theory they instituted the following preventive measures: The skin was carefully washed, and then a solution of bicarbonate of soda was sponged over the surface and allowed to dry on as a powder. This was repeated several times a day. By these means rapid improvement of the rash was secured and its further spread was checked.

332. Lethargic Encephalitis.

BOVERI (*Rif. Med.*, February 28th, 1920) reports a case of encephalitis lethargica, and draws attention to certain points in the differential diagnosis. He says that a bronchial or pulmonary localization is hardly ever found, either at the beginning or in the course of the disease; in this respect it differs from influenza. The paralysis of the eye and of the facial nerve is incomplete and variable, more like a diminished function of the muscles than a true paralysis; an ocular paralysis (for example, of the internal rectus) present during repose may disappear when the patient wakes. Paralysis of the ciliary muscle is nearly always present. Retention of the urine is not uncommon in the early stages. In the cases seen by the author albumin and globulin were in excess in the spinal fluid, but there was no true leucocytosis.

333. Polyuria in Lethargic Encephalitis.

HOKE (*Wien. klin. Woch.*, June 24th, 1920) records a case of polyuria in a woman, aged 23, suffering from lethargic encephalitis of the myoclonic type; the amount of urine rose to 8 to 10 litres in the twenty-four hours. After injection of pituitary extract this fell to 3 litres. As it increased to over 5 litres a week later, another injection of pituitary extract was given, with the same result.

334. Hyperchlorhydria in Children.

KESLEY (*Med. Record*, May 8th, 1920) draws attention to hyperchlorhydria as a cause of defective appetite in certain children of the "runabout" age. These children have a capricious appetite, readily abandoning meals they have begun and having a frequent desire for food in the meal intervals. After a meal there are indefinite discomfort, flatulence, and (later) acid eructations. Their breath is usually offensive and their tongue coated; constipation is the rule. They are often anaemic and sallow looking, and tire easily. An antacid powder—for example, mag. carb., sod. bicarb., bism. carb.—taken fifteen minutes before meals, and a rhubarb and soda mixture with cascara give relief. The child should have nothing very hot or cold, very sweet or sour; and general attention should be paid to the diet.

335. Treatment of Tuberculosis by Sodium Morrhuate.

A. GRAPIOLO and C. SPADA, jun. (*Rev. Sud. Amer. de Endocrin.*, April 15th, 1920), treated 10 cases of tuberculosis, including 7 of pulmonary tuberculosis, 2 of surgical tuberculosis, and one of combined pulmonary and surgical tuberculosis, by subcutaneous followed by intravenous injections of sodium morrhuate, as recommended by Sir Leonard Rogers (BRITISH MEDICAL JOURNAL, February 8th, 1919, p. 147). Their conclusions were as follows: (1) Sodium morrhuate has a selective action on tuberculous lesions; (2) like tuberculin, it may produce local or general reactions which have an unfavourable influence on the course of the disease; (3) the 3 per cent. strength recommended by Rogers, and employed by the writers, is undoubtedly too much for some patients, and should be reduced, so as to avoid violent reactions; (4) in very sensitive patients the injections should not be given at frequent intervals, and a further injection should not be given until the reaction caused by the preceding one has quite subsided.

336. Diphtheritic Laryngitis at Montevideo.

ACCORDING to PELFORT (*Rev. med. del Uruguay*, April, 1920), who has compiled the statistics for the years 1909–18 from Professor Morquio's Paediatric Clinic at Montevideo, diphtheritic laryngitis was very frequent during this period, forming 50 per cent. of all the cases of diphtheria admitted to hospital. Its frequency was greatest during the first years of life. Diphtheria of the larynx secondary to diphtheria of the fauces was four times as common as primary laryngeal diphtheria. More than half the cases were admitted to hospital in the third stage of the disease. Most of the patients had not been treated by antitoxin before admission, and those in the first or second stage of the disease were easily cured by antitoxin alone. Intubation was the operation of choice, excellent results being obtained by early extubation within twenty-four or forty-eight hours. Tracheotomy was only used in rare cases. The best results were obtained by the early and liberal use of antitoxin. Fatal cases were almost confined to the third stage of the disease. Of 168 cases of laryngeal diphtheria 49 died—a mortality of 29.16 per cent.

337. Radiography of the Thoracic Aorta.

DELHERM and THOYER-ROZAT (*Journ. de Radiol. et d'Electr.*, No. 3, 1920) deal with the radiographic shadow of the thoracic aorta; their article is illustrated by diagrams, radiographs of the living subject, and by stereoscopic radiographs of the aorta injected, after death, with an opaque material. The chief aim of the authors is to establish the standard positions in which an examination of the living aorta should be made, and to show the effects on the radiographic image of slight changes in the angles at which radiographs are taken; they seek also to demonstrate the reasons of the differences in the shadows as this angle varies. They point out that it is not sufficient merely to specify left or right anterior or posterior oblique position, but that the precise angle should be measured. The two positions which are suggested as a result of their experiments are the left and right anterior oblique, at an angle of about 30 degrees.

SURGERY.

338. Blood Supply of Stomach and Duodenum.

REEVES (*Surg., Gyn., and Obstet.*, May, 1920), in an illustrated paper from the Mayo clinic, seeks by vascular analysis to find a cause for the common situation of peptic ulcers along the lesser curvature of the stomach and in the first inch and a half of the duodenum. Reeves, tracing the finer branches of the vessels, finds that all the arteries pierce the muscular coats of the stomach and then anastomose freely in the submucosa. The vessels are very tortuous, except those along the lesser curvature, which are much smaller, make fewer anastomoses, and run a distance very great in comparison with their size. From this submucosal system two sets of branches are given off, one passing to the mucosa, the other to the muscular coats. The former vessels take a tortuous course and end as terminal arteries, unconnected save by means of a capillary network. The effects of embolism in these terminal arteries would be unequivocal. The first inch of the duodenum is sparsely supplied with vessels which are not greatly different from those of the stomach. Reeves's conclusions are that the presence of end-arteries in the stomach and duodenum is a factor of no little importance in the causation of ulcer. The vessels are smaller along the lesser curvature, where the more or less permanent folds of the canalis gastricus do not give the vessels the same opportunity to straighten out that the vessels elsewhere possess. Their conductivity is therefore liable to suffer. The first part of the duodenum is poorly supplied with vessels, as all who remember the "bloodless spot" of Mayo will recall.

339. Operative Treatment of Cancer of the Larynx.

SCHMIEGELOW (*Hospitalstidende*, June 23rd and 30th, 1920) has treated 90 cases of cancer in which the disease was limited to the interior of the larynx. In 45 cases the primary position of the disease was in the vocal cords, and had it been possible to examine the remaining 45 cases early in the disease, Schmiegelow is convinced that in more than half the primary site would have been found to be similar. In 35 cases the disease was so advanced at the first examination that it was impossible to locate the position of the primary growth, but in many of these cases the first symptom had been hoarseness. The predominance of endolaryngeal cancer in the male was striking; in a group of 25 patients suffering from primary malignant disease of the vocal cords, only two were women. With regard to results, there were 22 cases which had not received any treatment, and all of which had terminated fatally. The other results were: Tracheotomy, 9 cases with 9 deaths; endolaryngeal removal, 5 cases with 4 deaths; thyreotomy, 39 cases with 22 cures and 17 deaths, 7 of which were in connexion with the operation and were not due to recurrence of the disease; pharyngotomy, 1 case with 1 death; partial resection, 4 cases with 4 deaths; total resection, 10 cases with 1 cure and 9 deaths. Since 1914 the author has operated under local instead of general anaesthesia, using novocain and suprarenalin. He found that this procedure enabled him to operate even on old and debilitated patients, who were able to sit up in bed and take fluids immediately after the operation. A day or two afterwards they could be up and about for some hours and take solid food.

340 Leucoplakia of the Bladder with Epitheliomatous Degeneration.

MARION (*Journ. d'Urol.*, No. 4, 1920) records the case of a woman, aged 51, who had suffered from obstinate cystitis since the age of 15. Cystoscopy showed that there was an extremely extensive area of leucoplakia, occupying the upper part and all the posterior surface of the bladder. At the lower part on the right, near the ureter, there were two projecting ulcerated areas. An operation was performed and nearly all the leucoplakia was resected together with the ulcers, which were found to be epitheliomatous. Considerable improvement followed the operation, but the right kidney became infected, and death took place a few days after nephrectomy.

341. Chemiotherapy of Tetanus.

FLORES (*C.R. Soc. Biologie*, June 26th, 1920) has studied experimentally in guinea-pigs the relative values of various drugs that have been recommended in the treatment of tetanus. Such substances have been given alone, but more often in addition to antitoxin. Flores employed guinea-pigs of the same race, weight, and age, and injected them all similarly with a fatal quantity of tetanus toxin. As soon as the first nervous symptoms appeared, the animals were treated with 1 c.cm. of a 25 per cent. solution of magnesium sulphate, with 3 c.cm. of a 1 per cent. solution of carbolic acid, with 2 c.cm. of a 4 per cent. solution of chloral hydrate, with 0.6 c.cm. of a 1 per cent. solution of curare, or with 1 c.cm. of physiological saline solution, and these doses were repeated daily. Magnesium sulphate and chloral hydrate appeared to give the best results (40 per cent. of cures in the former case and 55 per cent. in the latter case). The other drugs had practically no therapeutic value.

342. Ether-oil Colonic Anaesthesia.

LATHROP (*Journ. Amer. Med. Assoc.*, July 10th, 1920) gives details of his experience with this method in 1,002 cases of various kinds, chiefly goitre. He says that ether-in-oil colonic anaesthesia is contraindicated in conditions of rectal disease, or when pain is caused by its introduction. It is not recommended for routine use, as the time required for successful administration is too great, especially when a number of operations are to be performed. Its value is undoubted in cases in which absorption must be minimized on account of some lung, heart, or kidney lesion. The author's experience with this method in children has been very small, and has not been satisfactory, owing chiefly to lack of co-operation on the part of the patients.

343. Arterio-venous Aneurysms.

CALLENDER (*Ann. of Surg.*, 1920, 71) analyses 447 cases of arterio-venous fistula. He ascribes to William Hunter the credit of first describing this condition, and reproduces the original account of Hunter's two cases. The mechanism of the venous dilatation is dealt with; Callender points out that the internal jugular vein rarely dilates greatly when in fistulous communication with the common carotid. This is due to the relatively low pressure in this vein and the ease with which the entering stream of arterial blood can make its way to the auricle. The pressure conditions in the external jugular vein are different, and extensive venous dilatation is the rule. Reference is made to the arterialization sometimes undergone by the walls of veins. The author describes the changes which occur in the valves of the veins, and notes how rare it is to find a varicose condition of the internal saphenous vein in these cases, because of the powerful valves at its mouth and the sparcity of deep communicating vessels. The paper is largely occupied with the question of proximal dilatation of the artery and the reasons for the cardiac complications which are by no means uncommon in these cases. The various methods of treatment are briefly given, together with figures as to mortality and cures.

344. MATAS (*Ann. of Surg.*, 1920, 71) discusses the treatment of arterio-venous fistula, with special reference to the method which bears his name (transvenous endoaneurysmorrhaphy). Several cases are described in detail, an account being given of the steps to be employed as well as of the difficulties and dangers of intervention.

345. Radiotherapy in War Injuries of the Eye and Retinal Detachment.

VIGANO (*Journ. de Radiol. et d'Electrol.*, 1920, iv) records a number of early and late war injuries to the eye treated with good results by *x* rays. He concludes that radiotherapy should be more frequently used in such cases; it promotes the resolution of cicatricial adhesions and the absorption of haemorrhagic effusions and of inflammatory exudates and infiltrations. In cases of detachment of the retina it may be also useful, and a record is given of one case—a myope, aged 69—in whom the visual field became greatly enlarged after two months' treatment.

346 Tuberculosis of a Horse shoe Kidney.

MAGNUS (*Centralbl. f. Chir.*, January, 1920) reports the case of a man, 40 years of age, who presented the typical picture of tuberculosis of the bladder and kidney: frequency of micturition, with urine rich in leucocytes, blood, and tubercle bacilli. The right ureteral orifice emitted no urine, and did not allow of the introduction of a catheter. The patient complained of pain in the right side, where a large mass could be felt, tender on pressure, and not moving with respiration. The right lumbar region was explored, and a large right kidney found, riddled with cavities. The lower pole could not be distinguished, and the organ was found to extend across the vertebral column; it was evident that there was a horse-shoe kidney. The two portions showed well-marked differences—the right being thickened, fluctuating, bossed, and the left of normal consistence and thickness. The boundary line between the affected and the unaffected regions of the abnormal kidney was clearly defined; the isthmus, which was only two inches wide, was clamped and divided, and the part lying to the right of the middle line was removed without difficulty. The cut surface of the kidney was curetted without noteworthy haemorrhage and sutured with catgut. The patient died of cachexia seven weeks after the removal of the kidney.

OBSTETRICS AND GYNAECOLOGY.

347. Adnexal Inflammatory Tumours Treated by Turpentine.

HINZE (*Zentralbl. f. Gynäk.*, July 10th, 1920) alludes to the favourable report given by Klingmüller, Zöppritz, Kleemann, Fuchs, and others of the use of turpentine injections for the treatment of inflammatory tumours of the adnexa. Of 205 cases of inflammatory conditions of the adnexa admitted to the Brandenburg clinic from April 15th, 1919, to January 1st, 1920, 35 came to operation, 65 were treated by the usual conservative methods, and 105 received treatment by turpentine injected through a long, fine needle in the posterior axillary line from two to three fingerbreadths below the iliac crest. The injections were repeated at the end of five or six days' interval. By injecting deeply near the bone much of the pain produced by intramuscular or subcutaneous injections was thought to be avoided; other authors have recommended the injection of turpentine combined with local anaesthesia, but Hinze employed injections of a mixture of 0.1 c.cm. of oleum terebenthiae with 0.4 c.cm. of olive oil. The pain which resulted was not severe, and did not last longer than four or five hours; in 2 cases a hard, tender infiltration with redness of the skin was produced, but slowly disappeared. Renal complications did not occur, and increase of pyrexia rarely followed. The cases treated were 52 of acute adnexal swelling, 9 of acute pyosalpinx, 30 of chronic tumour of the adnexa, and 14 of adnexal tumour with coincident exudation. In general the beneficial influence of turpentine injections was found to be proportional to the acuteness of the pathological condition present. Specially striking results were obtained in the acute pyosalpinx patients, 8 of whom after from three to seven weeks' treatment were completely cured, or had only a slightly thickened tender swelling of the tube. The more chronic tumours appeared to be less responsive to this treatment, but the author concludes that even in these cases turpentine injections have a definite value.

348. The Post-mature Child.

REED (*Surg., Gyn., and Obstet.*, June, 1920) says that computation of duration of pregnancy can never be more than an approximation, and that gestation is often unaccountably prolonged. Post-mature babies are usually, though not necessarily, large and fat, and weigh 4,000 grams or more; a possible etiological factor is the frequent association of a large, well-formed placenta. These large babies rapidly lose a great deal of their weight after birth, and therefore possess no advantage over smaller ones. The author maintains that fetal maturity is a safer and more certain basis for the calculation of the end of gestation than is the menstrual history, the date of a known coitus, or the date of quickening. In Reed's experience of diagnosis the estimation of fetal size and head diameters is far more reliable than the customary endeavours to measure the pelvic diameters. For estimation of length Ahlfeld's method is used; one tip of the pelvimeter is placed under the upper fold of the genital crease and pushed upwards until it rests on the upper edge of the symphysis, the other tip being placed on the most distant point of the opposite pole of the child. From the scale reading 2 cm. are deducted; the result multiplied by two gives the length of the child. The diameters of the fetal head are estimated by McDonald's modification of Perret's method; by deep pressure into the inlet on both sides of the pelvis the occipito-frontal poles are engaged between the tips of the fingers. An assistant then measures with a pelvimeter the distance between the ends of the finger-tips. The biparietal diameter is gauged by deducting 2.5, 2.25, 2.0, and 1.5 cm. respectively from occipito-frontal diameters of 12, 11.5, 11.25, or 10.5–11 cm. The biparietal diameter obtained from the above measurements was exactly the same as the *post-partum* findings in 36 per cent., within 0.2 cm. in 37 per cent., and within 0.5 cm. in 25.8 per cent. of cases. Reed suggests that if the child is mature and the pelvis not seriously contracted, and if labour does not begin within a week, labour should be induced upon a set day—by giving castor oil and quinine, by using Voorhee's bag, or possibly Caesarean section should be performed.

349. Fistulous Communications after Radium-therapy.

WEIBEL (*La Gynéc.*, February, 1920) recorded at the Vienna Obstetrical Society the case of a woman of 62, in whom extended abdominal hysterectomy had been performed for cancer of the cervix; subsequently 50 mg. of radium metal had been applied for fifty hours. The patient returned three months later with vesico-vaginal and recto-vaginal fistulae. In the subsequent discussion Halban related having had a similar case. Latzo said he had had similar findings, and had renounced prophylactic radium-therapy. Adler related a case of inoperable cancer of the cervix clinically cured by radium; a vesico-recto-vaginal fistula formed and was treated by suture. The patient survived two years and died of uraemia; at the autopsy one of the ureters was found to be obliterated by scar tissue and the other to contain a stone. Careful examination failed to demonstrate any recurrence of the malignant condition. In his reply Weibel alluded to other cases which he had seen of fistulae following the application of small doses of radium.

350. Conservative Treatment of Eclampsia.

ALLAN (*Med. Journ. of Australia*, May 1st, 1920) records a series of 94 cases of eclampsia, of which 64 and 30 occurred in primiparae and multiparae respectively. The majority of patients were between 20 and 25, and in 8.5 per cent. of the cases there were twins. *Post-partum* fits occurred in 30 of the cases, with a mortality of 7 per cent. Of the 94 cases 8 died, a mortality of 8.5 per cent. Of 102 children born, 60 were alive and 42 dead; of the latter, 23 only were full-term children. The total mortality was 22 per cent., after the deduction of those children who were not viable. The principles of treatment are summarized as follows: (1) Delivery as soon as possible; labour was never induced, but after it had begun forceps were applied or the breech was extracted as soon as the os was fully dilated; pituitary extract was never used. (2) The restriction of metabolism by starvation, by administration of morphine, and by gastric lavage. (3) Eliminatory treatment by rectal lavage, by sweating (the use of pilocarpin being avoided), and by production of diuresis by giving copious draughts of water, and in severe cases by submammary infusion of sodium bicarbonate solution; venesection was not frequently performed. (4) Treatment of special symptoms. To control the fits, morphine was preferred to chloral, but chloroform was administered during gastric and rectal lavage. Cardiac weakness was treated by digitalin and alcohol. Operative methods were not used, conservative treatment being deemed to give better results.

351. Treatment of Gonorrhoea by Intravenous Injection of Collargol.

ROMEICK (*Zentralbl. f. Gynäk.* June 5th, 1920) notes that different authors have given conflicting reports of the value of this method of treatment, recommended by Menzi in 1918. Romeick used it in combination with local applications in 20 cases of gonorrhoea of the urethra, cervix, and Bartholin's glands. Two per cent. collargol solution was used in amounts of 2 to 11 c.cm. In 17 of the 20 cases the duration of treatment appeared to be definitely shortened as compared with that of cases in which local applications only were used. Pyrexia, severe headache, and albuminuria occurred in some of the injected patients; the treatment is said to be suitable for those patients only who are robust and can be carefully watched.

352. Caesarean Section in the Dead and Dying.

LINZENMEIR (*Med. Klinik*, 1920, 17) reports four cases, in three of which after the death of the mother living children were removed by Caesarean section—a procedure to which in these circumstances the author attaches great value. This operation will most often have to be contemplated in cases of pulmonary tuberculosis. In hopeless cases of this disease the usual counsel is to terminate an early pregnancy, and to allow an advanced pregnancy to continue to term, partly, at any rate, in the interests of the child. Linzenmeir contends that to await the death of a moribund mother before undertaking this operation is "a sin of omission." He advises anterior hysterotomy by vaginal operation in cases which are not likely to present operative difficulty, and in which the condition of the child remains good. If the child has been injuriously affected at the time of the death of the mother, abdominal Caesarean section must be employed.

353. Quinine Metrorrhagia.

CHALMERS and ARCHIBALD (*Journ. of Trop. Med. and Hygiene*, October 15th, 1919) record the case of an Egyptian native girl in whom metrorrhagia was present, and who for several months had taken bihydrochloride of quinine as a prophylactic against malaria. The metrorrhagia ceased after the quinine had been stopped and after she had been given 10 grains of calcium lactate twice daily. It is suggested that ingestion of quinine may be responsible for certain cases of metrorrhagia of the tropics.

354 Pedicular Torsion of Ovarian Cyst in a Child

GOLDSTINE (*Surg., Gyn., and Obstet.*, June, 1920) relates the case of a girl of 12 in whom the above-named condition was found at laparatomy for acute appendicitis.

355. The Physiology of Ovulation.

IN a preliminary report of experiments conducted on pigs, SCHOCHET (*Surg., Gyn., and Obstet.*, August, 1920) records the finding in the liquor folliculi of an enzyme similar to erepsin; apparently other proteolytic ferments are present, also a lipase. The author believes that these ferments play an important part in the process of extrusion of the ovum.

PATHOLOGY.

356 Antihaemolysins and Haemolysins in the Urine.

CONDORELLI (*Il Policlinico*, July 19th, 1920), as the result of his investigations, has come to the following conclusions: (1) In normal urine an antihaemolytic substance is constantly present. (2) This substance, which in all probability is a lipoid, has an antihaemolytic action on human blood corpuscles only. (3) Normal urine inhibits haemolysis: (*a*) by its molecular concentration; (*b*) by the presence of antihaemolysin, which gives the corpuscles a greater power of resistance. (4) The so-called urohaemolytic coefficient in normal urine is not constant, for though the quantity of urinary antihaemolysin is constant, the elimination of mineral salts, especially chlorides, is inconstant; they vary in the same individual according to the diet and the time of day. (5) The antihaemolytic substance in physiological conditions is not discharged in the same amounts at each micturition, and it is therefore necessary to work with specimens of the twenty-four hours' urine. (6) The only simple and exact method of determining the antihaemolytic power of the urine is to compare the haemolytic power of the same urine before and after the extraction of the haemolysin, for which purpose the writer uses pure animal charcoal. (7) In nephritis the antihaemolysin may be considerably diminished, entirely absent, or so altered that it causes only a temporary inhibition. (8) In the urine of chronic nephritic cases, especially those suffering from uraemic attacks, a haemolytic substance may be found, with absence of the antihaemolytic substance. (9) In acute nephritis the antihaemolytic substance may be normal in quantity and quality. (10) In numerous cases of carcinoma examined Condorelli has never been able, apart from those cases in which the patients were suffering from severe cachexia or had concomitant renal lesions, to find an abnormally high urohaemolytic coefficient nor a considerable diminution of haemolytic substance. (11) The so-called urohaemolytic coefficient is not the true expression of the quantity of urinary haemolysin, and such a view may lead to serious errors.

357 Cutaneous Tests for Hydatid Disease

GASBARRINI (*Il Policlinico*, sez. Med., 1919, 26) reviews briefly the work which has been done in order to establish a cutaneous test for the detection of echinococcus disease. That patients with hydatids are very sensitive to hydatid fluid has been shown by the grave results which have from time to time attended the rupture, or even the puncture, of hydatid cysts. Urticaria, dyspnoea, tachycardia, syncope, and convulsions have often been seen, suggesting anaphylactic shock. These symptoms and signs have been reproduced experimentally in the guinea-pig. An attempt was made to determine to what extent a local controlled reaction could be induced in man. Casoni perfected a technique, using a mixture of hydatid fluid and aqueous extract of hydatid membrane, which gave a positive result in 87.5 per cent. of cases of hydatid disease. Gasbarrini has tried the reaction in twelve cases. In the majority the presence of a hydatid cyst was confirmed at operation; in two, hydatid membrane was coughed up. Considerable stress is laid upon the technique employed. Clear hydatid fluid is collected aseptically from an ox, care being taken that only the most limpid fluid is obtained. After repeated filtration one drop of phenol is added to every 20 c.cm. of the filtrate, which is then stored on ice. Half a cubic centimetre is injected into the dermis, with the usual control. A positive reaction is indicated by the appearance, after three to twelve hours, of a local erythema with an oedematous infiltration of the skin. Sometimes there is a slight febrile reaction and a little pain; unless the subject is generally enfeebled there is no constitutional upset. The erythema lasts one to two days, the oedema of the skin two to four days. In eleven of the twelve cases Gasbarrini obtained a positive reaction. The negative result occurred in the case of a suppurating hydatid—a case, that is, in which the hydatid element was presumably destroyed. The author compares adversely other methods of investigation—enumeration of eosinophils, precipitin reaction, deviation of the complement, "meio-stagmin reaction," and Abderhalden's test. In none of his cases did eosinophilia give useful information. It is to be remembered that eosinophilia does not exclude the presence of ankylostoma, trichina, etc. Gasbarrini concludes by remarking that it remains to be seen whether the intradermal reaction is positive in hydatid disease of both short and long standing.

358. Framboesia Tropica.

GOODMAN (*Arch. Derm. and Syph.*, July, 1920), having studied cases of yaws in Porto Rico and Panama, was able to demonstrate in all the lesions the *Spirochaeta pertenuis* of Castellani. He has been unable to distinguish this organism morphologically from *S. pallida*. In all cases a positive Wassermann reaction was obtained (five of the patients were prostitutes), and treatment with arsenobenzol preparations gave beneficial results; the author, however, in agreement with most observers, believes that syphilis and framboesia are two distinct diseases. He saw a case of generalized framboesia in a hereditarily syphilitic boy who had the typical Hutchinson triad: notched spade upper incisors, marked iritis, and deafness. The fact that the disease is not transmitted from heavily infected parents to the offspring, during intrauterine existence of the fetus, is a strong argument in favour of non-identity of syphilis and framboesia.

359. Study of the Blood after Splenectomy.

HALL (*Amer. Journ. Med. Sci.*, July, 1920) records a case of splenectomy for traumatic rupture of the spleen, and his observations on the blood after the operation. The splenectomy resulted in a considerable increase in the total leucocyte count, which persisted with much irregularity for over three months. In the early period all types of white cells were increased in nearly the same proportion, although a slight increase of endothelial cells was noted at the expense of the lymphocytes. In an intermediate period both total and differential counts showed such marked variation as to render averages valueless, but the total count was usually high. In the final period a virtual equilibrium was reached, with a moderate increase in the total count, due entirely to lymphocytes and endothelial cells; the granular leucocytes showed strictly normal figures. The endothelial cells were constantly increased both relatively and absolutely. Observations on the Arneth index suggested that the increase in the count was, at least in part, due to the removal of some factor restricting the production of white cells. No eosinophilia appeared during the course of the work.

360. Tuberculous Meningitis with Normal Cerebrospinal Fluid

GIROUX (*Paris méd.*, July 10th, 1920) records two cases of tuberculous meningitis (in adults) secondary to pulmonary tuberculosis; the lumbar punctures were negative: not only were there no tubercle bacilli, but there was no lymphocytosis or excess of albumin in the cerebro-spinal fluid. Similar cases have been reported by Lackowicz (1901), Bernard (1901), and Villaret and Tixier (1905), but such an occurrence is very rare.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

361. Criminal Insanity.

Nolan (*The State Hospital Quarterly, New York*, May, 1920) has investigated 646 first admissions to Matteawan State Hospital from 1912 to 1918. The hospital is for the custody and care of insane persons committed by criminal courts, transferred thereto by the State Hospital Commission, or becoming (or being declared) insane while undergoing sentence. Of the 646 admissions 518, or 80.2 per cent., were males, and 128, or 19.8 per cent., females. Among the male patients 11.4 per cent. were charged with disorderly conduct, and 26.4 per cent. with vagrancy. Among the women 18 per cent. were charged with disorderly conduct, 16.4 per cent. with public intoxication, and 39.8 per cent. with vagrancy and prostitution. These three groups comprised 74.2 per cent. of the total female first admissions. The average age of the criminal insane appeared to be much younger than that of the civil insane. The criminal insane comprised comparatively few senile or arterio-sclerotic cases, but include high percentages of alcoholic, constitutionally inferior, and mental deficiency cases, which together accounted for 38 per cent. of criminal first admissions, compared with only 10.3 per cent. of the civil. Homicides and assaults were committed principally by alcoholic, dementia praecox, constitutionally inferior, and mental deficiency patients. Of those arrested for vagrancy or prostitution 8.5 per cent. were senile, 15.4 per cent. paretic, 13.8 per cent. alcoholic, and 35.1 per cent. dementia praecox. Of 449 patients who had previously been committed to penal institutions 26.1 per cent. had remained there for less than one month, 35 per cent. from one to two months, 21.2 per cent. from three to five months, 12 per cent. from six to twelve months, and 5.8 per cent. for more than one year. These facts appear to warrant the conclusion that a large part of the patients sent to penal institutions were insane at the time, and should have been committed to psychopathic hospitals or civil State hospitals.

362. The Oculo-pilo-motor Reflex.

J. A. Sicard and **J. Paref** (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 20th, 1920) describe the following new reflex, which may be called the oculo-sympathetic or oculo-pilo-motor reflex. Like the oculo-cardiac reflex, it is obtained by compression of the eyeballs. Its centripetal tract is the trigeminus nerve, its centre is in the mid-brain, and its centrifugal tract the sympathetic of the mid-brain and spinal cord. The reflex is obtained in the following way: If a subject in whom horripilation is readily produced has his eyeballs compressed, the cutaneous erection at once ceases, and does not reappear (in spite of energetic friction) as long as the ocular compression lasts, and even for some time afterwards. Unilateral ocular compression produces almost the same effect as bilateral ocular compression. Injection of adrenalin does not appear to have any effect on the cutis anserina or its inhibition. The occurrence of this inhibitory reflex shows, on the one hand, that there is a sympathetic tonus in the mid-brain which influences the spinal tonus, and on the other hand, that ocular compression may have various effects, as it acts not only on the vagus, as in the oculo-cardiac reflex, but also on the sympathetic, inhibiting the pilo-motor reflex.

363. Temperature and Malaria.

According to **Angus Macdonald** (*Journ. of the Royal Army Med. Corps*, August, 1920), the last authentic wide-spread occurrence of malaria in England—where, though it has occurred in the past, its endemicity is in doubt—took place in the years 1856–60, when four years of abnormally high and continued high temperature coincided with the importation of many malaria carriers. A great volume of malarial infection was introduced in the years 1917–19; indigenous malaria occurred in the years 1917–18–19 in numbers proportional to the extent of the malarial incubation temperature. There is epidemiological and experimental evidence for assuming that a mean temperature of 60° F. for sixteen days is necessary to establish infection; accordingly there are certain years, of which 1860 was an example, in which natural malarial infection cannot occur in England. The normal temperature of England is insufficient under modern conditions of domestic life to maintain the endemicity of malaria. Temperature decides infection and determines incidence; the inability to foretell the temperatures likely to be encountered in the summer months compels the taking of preventive measures in England in the face of a large importation of infection.

364. Goitre with External Ophthalmoplegia.

Den Boer (*Nederl. Tijdschr. v. Geneesk.*, June 19th, 1920) records a case of goitre in a woman aged 44; there were almost complete paralysis of the external eye muscles, slight paresis of the right facial, left recurrent laryngeal and hypoglossal nerves, and some functional disturbances. Although in Graves's disease cases of ocular paralysis have been described, no instances have previously been reported in connexion with simple goitre.

365. Streptothrix Meningitis.

Fabrio (*La Pediatria*, June 1st, 1920) records the case of an infant, aged 9 months, with congenital syphilis, who developed symptoms of meningitis in the course of broncho-pneumonia. The cerebro-spinal fluid was under hypertension and was clear; it showed a leucocytic reaction, and contained an anaërobic variety of streptothrix. In all the other recorded cases of streptothrix meningitis the spinal fluid was turbid and often definitely purulent. The issue of the case is not recorded.

366. The Diagnostic Value of Tuberculin Reactions.

Calmette (*La Méd.*, 1920, viii) says that subcutaneous injection produces a more severe reaction in the case of the less extensive lesions. Focal reactions should be avoided as far as possible. In ordinary cases the dose should not exceed $\frac{1}{10}$ mg. in adults, or $\frac{1}{100}$ mg. in children. Irregularity of the temperature or the presence of fever contraindicates diagnostic injections. Recent or old haemoptyses, convalescence from infectious diseases, cardiopathies, albuminuria, diabetes, and diseases of the nervous system or sense organs are also contraindications. In adults 96 per cent. show local reactions which are not of diagnostic value; in children they indicate recent infection.

367. Fox-Fordyce's Disease.

C. Rasch and **A. Kissmeyer** (*Hospitalstidende*, June 16th, 1920) confirm Fox and Fordyce in their recognition of a certain eruption on the pubes and in the axillae as a disease *sui generis*. It is characterized by a papular rash, associated with severe itching; it runs a chronic, well-defined course, and is peculiarly refractory to treatment. In both the authors' cases *x*-ray treatment proved at first futile, but in one case in which *x*-ray treatment was supplemented by local applications of coal-tar, definite improvement was observed. In both cases microscopic examinations were made of excised portions of skin. Hyperkeratosis, parakeratosis, and marked acanthosis were noticed, and broad pyramids of the epithelium were seen growing downwards into the corium. In this layer there was infiltration of the hair follicles and sweat glands, as well as about the blood vessels. This perivascular accumulation of cells about the blood vessels was particularly characteristic, but the same condition is also demonstrable in another skin disease associated with severe itching—Hyde's "prurigo nodularis."

368. Hereditary Spastic Paraplegia.

Mason and **Rienhoff** (*Bull. Johns Hopkins Hosp.*, June, 1920) have had the opportunity of studying three generations affected with hereditary spastic paraplegia. Usually the disease affects individuals in one generation only, but in seven of the families recorded in the literature symptoms of the disease were present in more than two generations. The cases reported by Mason and Rienhoff offer still further proof of the true hereditary character of this type of degeneration of the central nervous system. It is not possible to group the reported cases into rigid clinical types, on account of the variety of syndromes which have occurred from combinations of the symptoms associated with spastic paraparesis, such as tremor of the tongue, disturbances of speech, optic atrophy, nystagmus, ocular palsies, bulbar disturbances, scoliosis, ataxia, muscular dystrophies, and sometimes mental impairment. Though in a few cases the spastic paraplegia is the only feature, in the majority the symptomatology approaches that commonly observed in hereditary ataxia of the Friedreich or Marie type, and sometimes a differential diagnosis is impossible. In all three diseases the etiology, clinical course, and pathological anatomy are similar. The diseases usually commence about puberty, and progress slowly to a point at which they remain stationary. There is much evidence in favour of regarding them as clinical forms of the same morbid entity. In all there is a well marked combined sclerosis of the postero-lateral tracts. From multiple sclerosis this group can be differentiated by the familial occurrence of the disease and the absence of remissions, as well as by laboratory examinations of the spinal fluid. The differentiation of the three diseases within the group is only of academic interest.

369. Viscero-vasomotor Zones.

ZAK (*Wien. klin. Woch.*, June 17th, 1920) in cases of aortic disease has observed a crescentic area of flushing, the horns of the crescent being situated about the middle of the clavicles and the convexity over the sternum. In pronounced cases the crescent has a dark-red colour, while in less marked cases the whole of the area affected seems to be traversed by a network of fine anastomosing capillaries. Usually the horns of the crescent are fairly symmetrical, but sometimes one horn is more prolonged than the other and extends beyond the clavicle to the supraclavicular fossa. In some cases the right and left halves of the crescent assume the shape of a butterfly's wings, united to one another by a small central portion on the skin over the manubrium. The sign is not constant, for numerous cases of aortic disease, including aneurysm, do not show a trace of the crescent, and it seems as if only certain stages and varieties of aortic disease not yet determined give rise to it. Zak, however, has found that in cases of aortic disease in which the crescentic area of redness does not appear spontaneously, the skin vessels of the upper part of the thorax, especially of the manubrium, are more sensitive to mechanical and even psychical stimuli than in health. This spontaneous or provoked erythema, which may be regarded as an objective Head's area, is due to an irritable condition of the vasomotor cells and fibres in the spinal cord.

SURGERY.

370. Primary Epithelioma of the Meibomian Glands.

CAVARA (*Arch. per le Sci. med.*, 1920, Fasc. 1 2) has collected from the literature 18 cases of adenoma and 21 of epithelioma of the Meibomian glands, and states that probably some of the former are really examples of the latter condition. He also records a personal case of Meibomian epithelioma in a woman aged 67, in whom death took place from cachexia following a recurrence. Unlike adenomata, which in about half the cases have been observed in persons under 40, epithelioma of the Meibomian glands usually occurs at an advanced age. Males are most frequently affected by epithelioma, whereas adenoma has a predilection for the female sex. As regards localization, Meibomian tumours develop most frequently in the upper lid, whereas, according to Mayeda, the lower lid is most frequently affected in cutaneous cancer. Epithelioma appears to develop, as a rule, without any local predisposing cause; in some cases, however, the patient has had a chronic inflammation of the conjunctiva and margin of the lid, and in Cavara's case trachoma was present. Epithelioma commences insidiously in the substance of the lid and gradually increases in size. Its development is slow, but may be accelerated by incomplete removal. [illegible] before it reaches the size of a pea and causes the patient to seek advice. Owing to the deep situation of the tumour the skin over it is easily movable, even at an advanced stage, and it is only toward the palpebral margin that the skin becomes adherent to the tumour. Ulceration of the skin does not occur until very late, and especially in recurrences. On the other hand, the tarsal conjunctiva readily undergoes ulceration. When it has reached a very large size the tumour gives rise to [illegible] if it is situated in the upper lid, and to ectropion and epiphora if in the lower. Recurrences are frequent if the growth is not completely removed.

371. Adenoids in Adults.

L. [illegible] MURAS (*Rev. Españ. de Med. y Cirug.*, May, 1920), in a paper based on 62 cases of adenoids in patients aged from 15 to 50, states that in most cases of adenoids in adults the symptoms are similar to those in children. The following symptoms, however, are more frequent in adults: Headache, asthmatic attacks, reflex aphonia, dryness of the throat, and pseudo-haemoptysis in the form of blood-stained mucus from the naso-pharynx. The effects are often intensified by coexistent lesions, such as hypertrophic rhinitis, deviation of the septum, enlarged tonsils, and granular pharyngitis. The diagnosis is as easy as in the child, especially as posterior rhinoscopy is more readily carried out in the adult. Removal of the adenoids may be performed under local anaesthesia by application of a 10 per cent. solution of cocaine to the naso-pharynx, or without any anaesthetic at all, owing to the rapidity of the operation and the slight degree of pain connected with it. Immediate or secondary post-operative haemorrhage is more frequent in adults than in children, and may require plugging of the posterior nares and injection of emetine hydrochloride, gelatinized serum, diphtheria antitoxin, or calcium chloride.

372. Antiperistalsis of the Ureter.

WISLOCKI and O'CONOR (*Bull. Johns Hopkins Hosp.*, June, 1920) have studied experimentally the movements in the ureter of dogs and rabbits. They find that after partial ligation of the ureter spontaneous peristalsis and frequently antiperistalsis are encountered above the ligation. The completely ligated ureter seldom shows spontaneous peristalsis; when, however, part of the contained fluid is released, peristaltic or antiperistaltic movements occur similar to those observed in the partially ligated ureter. The presence in the dog's ureter of small glass beads, which ultimately become expelled into the bladder, does not obstruct the passage of peristaltic waves from pelvis to bladder. When a bead has become lodged antiperistaltic waves are not observed to arise spontaneously at the point of obstruction, although they may be readily called forth by gently pinching the ureter just above the bead. When moderate retention is produced in a rabbit's bladder possessing good muscle tone, the uretero-vesical sphincter is occasionally prevented from closing, as it normally does after each gush of urine from the ureter, and the intravesical pressure projects a column of fluid into the ureters. An antiperistaltic wave preceding the ascending fluid column is not demonstrable, and the speed of this column is different from that usually shown by antiperistaltic waves. Regurgitation can be produced somewhat less frequently in the dog. The authors believe that far more scepticism should prevail concerning the possibility of the conveyance of organisms up the ureter and the retrograde movements of urethral calculi as a result of antiperistaltic contractions. During catheterization of the ureters, even when fluid was allowed to enter the ureter by gravity through the catheter, the authors were unable to demonstrate reversed peristalsis.

373. Treatment of Haemorrhoids by Cupressus Sempervirens.

ACCORDING to LECLERC (*Bull. Soc. de Thérap.*, June 12th, 1920), the use of the cypress as a haemostatic and astingent dates from the time of Hippocrates. The preparations which are to be recommended are the fluid extract, the tincture (20 to 30 drops twice a day before meals), or the soft extract (0.15 gram to 0.20 gram daily). The fluid extract or 5 per cent. tincture can be applied externally; the soft extract as an ointment or suppository containing 0.15 gram of the active principle. Cases so treated show an attenuation of their inflammatory symptoms, and cessation or diminution of haemorrhage, pain, and spasm of the sphincter.

374. Foreign Bodies in the Cerebral Ventricles.

Il Morgagni (May 29th, 1920) points out that it is the exception for fragments of shot or shell to enter the ventricles directly; they usually penetrate later, some hours or days after entering the brain. Most of the fragments enter the lateral ventricles, then in order of descending frequency, the third and fourth. If small enough, the fragment may be mobile within the lateral ventricle; this can be ascertained by radiography. When the projectile enters the ventricle directly the surrounding damage is usually so severe that no localizing symptoms are possible, and if the fourth ventricle is entered, death occurs before any symptoms can arise. If the concomitant damage is not too great, life is quite possible with a foreign body in the lateral ventricle. The mind is clouded, and there are violent headache, slow pulse, myotic pupils, and possibly convulsions. Diagnosis is only possible by radioscopy; the only treatment is removal under radioscopic guidance.

375. Treatment of Gastric Syphilis.

Leven (*Bull. Soc. de Thérap.*, June 12th, 1920) maintains that before making the diagnosis of gastric cancer the practitioner should always think of syphilis and apply the therapeutic test regardless of the result of the Wassermann reaction. Leven recommends a twenty-one days' course of treatment as follows: First day, intramuscular injection of 0.02 gram of biniodide of mercury; second day, mercurial inunction; third day, mercurial suppository; fourth day, another injection; fifth day, inunction; sixth day, suppository; and so on until the twenty-first day, except that the inunction should be given only five times, an injection or suppository being substituted after five inunctions have been given. When the period of twenty-one days' treatment has been finished the patient is given fifteen to twenty days' rest, and then a second, and if necessary a third, course of treatment is ordered. Three grams of iodide of potassium are given daily simultaneously with the mercurial treatment. Arsenical compounds are not employed by Leven.

376. The Abortive Treatment of Whitlow.

Gioseffi (*Il Policlinico*, Sez. Prat., July 12th, 1920), after alluding to Pacieri's abortive treatment of boils and carbuncles by injections of tincture of iodine (see Epitome August 28th, No. 201), states that he has obtained in twenty-four to forty-eight hours a rapid cure of incipient paronychia by application of 10 per cent. solution of tincture of iodine, repeated two or three times in the twenty-four hours. He also uses the tincture of iodine prophylactically, before performing autopsies, by applying it to the grooves of the nails and around fissures and cracks on the fingers.

377. Tumours of the Cauda Equina.

According to Redlich (*Wien. klin. Woch.*, June 24th, 1920), operations on tumours of the cauda equina offer little prospect of success. The tumours are often metastatic growths, such as carcinomata, or large primary growths which cannot be completely removed. The symptoms for a long time are those of severe sciatica only. When the clinical picture is complete it consists of pain, sensory disturbances in the sacral segment, abolition of the tendon reflexes, pareses, and sphincter disturbances. The condition must be distinguished from affections of the conus. Unilateral symptoms or decided differences on the two sides suggest affection of the cauda equina. Redlich reports two cases of tumours of the cauda equina in which operation was successful. The first, in which the symptoms had been present for ten years, was that of a dermoid cyst; in the second (a fibro-endothelioma) the condition had lasted five and a quarter years.

OBSTETRICS AND GYNAECOLOGY.

378. Radium Treatment of Chronic Leucorrhoea.

In a series of forty-six cases reported by Curtis (*Journ. Amer. Med. Assoc.*, June 19th, 1920) the patients were subjected to a thorough pelvic examination, the reaction of the discharge was tested, smears were obtained from the cervix and vagina, and a set of cultures made. Gross pathologic lesions were corrected surgically. The usual hygienic measures were instituted. Unless the discharge is essentially of vulvo-vaginal origin, radium is advocated in all severe cases of persistent chronic leucorrhoea. After thorough dilatation the cervix and fundus may be curetted for diagnostic purposes; 50 mg. of radium—preferably two 25 mg. tubes in tandem—are introduced high into the cervix, held by a suture passed through the external os, and left for several hours. One or more subsequent radium treatments of shorter duration may be required at intervals of from ten to twelve weeks. Each radium tube employed in the treatment of this series of cases was screened by a double gold capsule with a total thickness of 2 mm. The capsule in turn was encased in dental rubber. Examination of cervical tissues after successful radium treatment reveals atrophy of the glands, relative increase in fibrous tissue, and disappearance of microscopic evidences of infection. Skene's ducts harbour the next most important focus. At the time of radium application or under local anaesthesia the blunt end of a needle held in forceps is threaded into the duct lumen, and its end is forced through the base of the duct so that the needle head protrudes into the vagina. The duct is split with a knife and the tract fulgurated. Bartholin duct infection may be eradicated by similar treatment. Infected Bartholin glands rarely require excision. The urethra is occasionally treated by dilatation, aided by instillations of weak silver nitrate solution. Twenty-five patients were cured, seven were improved, four were not improved; in ten cases no report had yet been made.

379. Torsion of an Ovarian Cyst in Pregnancy.

Hamont (*Rev. méd. de l'Est*, July 15th, 1920) reports the case of a woman, aged 36, who, in the sixth month of her third pregnancy, was seized with violent abdominal pain, which was at first attributed to an attack of appendicitis. On admission to hospital considerable swelling was found, in the right flank, independent of the gravid uterus. The operation showed that the condition was due to torsion of an ovarian cyst, which had given rise to an intense inflammatory reaction. Premature delivery took place two days after the operation, and the child died a few hours after birth.

380. Pyosalpinx due to B. coli.

Patel and Dujol (*Il Morgagni*, May 25th, 1920, and *Presse médical*, p. 48, 1919) record a case of pyosalpinx and pelvic peritonitis occurring in a pregnant woman, and due to *B. coli*. The commonest affection caused by this bacillus during pregnancy is pyelonephritis; cholecystitis and appendicitis have also been attributed to the same organism. The constipation which is so common in pregnant women probably contributes towards the escape of *coli* bacilli through the intestinal wall, and also lessens the resistance of the body. *B. coli* infections localized in the genital apparatus are not common during pregnancy, and the authors could only collect a few cases, mostly abortions. There are also recorded a few puerperal cases in which the uterus does not appear to have been infected from without.

381. Tuberculosis and Pregnancy.

Davis (*Wisconsin Med. Journ.*, 1920, viii) says that tuberculosis is a contraindication to marriage only secondary in importance to gonorrhoea and syphilis. Women with a history of tuberculosis should not marry until some years after all active signs of the disease have subsided. Before marriage such women should be instructed regarding the danger of recurrence consequent on pregnancy. The woman who develops tuberculosis after marriage should be instructed regarding the ordinary mechanical means of avoiding conception; it is useless to advocate long-continued abstinence. If, in spite of advice, she becomes pregnant, she should have sanatorium care. A healthy child may usually be expected, but nursing is rarely, if ever, advisable; it diminishes the mother's chance of recovery, and the child is practically certain to become contaminated.

382. Primary Tubo-ovarian Varicocele.

According to Chalier and Dunet (*Gyn. et Obstét.*, 1920, i, 3) this condition is rare. They relate the case of a single woman of 20 in whom, since its commencement at the age of 13, menstruation had always lasted six or seven days; for three years increasingly severe pain had been associated with the menstrual periods, appearing two days before them and continuing two days afterwards. The pain radiated to the loin; during the last few months it had become continuous and localized in the left iliac fossa. The pain disappeared when the patient rested in bed. Rectal examination showed the presence of a tender tumour the size of an egg, which could not be recognized at an examination conducted after the patient had been in bed for two days. At operation a large tubo-ovarian varicocele was removed. The most characteristic clinical features of this condition are said to be the radiation of the pain to the left lumbar region, the modification which the pain undergoes in conditions of differing posture, and especially the increase in size of the tumour in the standing position and its disappearance after the patient has been lying down. In this case, as in many others in the literature, the ovary was fibrocystic, and the authors suggest that tubo-ovarian varicocele is possibly consecutive to ovarian changes.

383. Treatment of Placenta Praevia.

Lönne (*Monats. für Geburts. u. Gynäk.*, li, 2) records the results of 200 cases of placenta praevia treated during about ten years; he concludes that treatment by Caesarean section has justified its extended use in cases of this condition. His figures show that treatment by vaginal methods gave a maternal mortality of 13.3 per cent. and a fetal mortality of 50 per cent., in cases of placenta praevia centralis; in placenta praevia lateralis the maternal and fetal mortalities were respectively 1.9 per cent. and 30.2 per cent. In 28 cases in which rupture of the membranes was the only treatment, the fetal mortality was 21.5 per cent. among children weighing more than 2,000 grams, and 53.6 per cent. among all children; there were two cases of maternal deaths. In 72 cases version (usually by Braxton Hicks's method) was performed, sometimes with and sometimes without previous metreurysis, but without immediate subsequent extraction. Of these cases the placenta was attached laterally in 53, and centrally in 19. Among the 53 lateral cases version was performed without dilatation by bag in 36, with a fetal mortality of 53 per cent. of children weighing less than 2,000 grams, and 80.6 per cent. of all cases. The corresponding percentages of fetal deaths among the 17 cases in which dilatation by bag was performed were 53 per cent. and 76.5 per cent. respectively. In the 19 cases of placenta praevia centralis the mortality after version and metreurysis was 63 per cent. of children under 2,000 grams, and 75 per cent. of all children; where metreurysis had not been performed the percentage mortalities were 50 per cent. and 81.8 per cent., according to these respective modes of reckoning. Version followed by extraction was performed in 45 cases of placenta praevia lateralis (32 with metreurysis, 13 without), and in 14 of placenta praevia centralis (9 with metreurysis, 5 without). A fetal mortality of 16.6 per cent. (fetus under 2,000 grams), or 37.5 per cent. of all cases, was observed in lateral cases after metreurysis; the fetal mortality according to both methods of reckoning was 22.5 per cent. in central cases after metreurysis. It appeared, however, that metreurysis was accompanied by high maternal mortality; in only 40.3 per cent. of all cases was a bag employed, but 6 out of the 9 total deaths occurred in this group of cases. On this ground the author regards laparotomy as the method of choice; he has employed it in 10 cases, with no maternal deaths and 2 fetal deaths. His general conclusions are as follows: (1) In cases of placenta praevia lateralis, in which rupture of the membranes usually suffices, the question of Caesarean section seldom arises. (2) In private houses Braxton Hicks's version is preferable to metreurysis; the fetal mortality is, however, greater. (3) The employment of a bag diminishes the fetal mortality, but adds to the danger of overstretching of the lower uterine segment, and predisposes to atonic conditions of the uterus after birth. (4) Caesarean section is the method of choice. (5) Suspected cases of placenta praevia should be admitted to hospital; in cases where a long journey is to be undertaken a plug should be inserted.

PATHOLOGY.

384. The Race Factor in Cancer Transplantations.

Roffo (*C.R. Soc. Biologie*, June 26th, 1920) states that he has two strains of white rats bred for ten years, in one of which, comprising 10,000 descendants, 28 spontaneous tumours of different kinds have developed. Transplanting portions of these tumours to other rats of that particular strain, he obtained 95 to 100 per cent. positive results. In the other strain of rats, comprising 12,000 animals, no spontaneous tumours were found, and when he attempted to transplant tumours from the former strain he obtained only 5 per cent. of positive results. By crossing the strains he gradually increased the receptivity, the first generation giving him 15 per cent. success, the second 30 per cent., the third 60 per cent., and so on until finally 80 per cent. proved receptive. Hitherto the wild rat has proved practically completely refractory. Roffo succeeded in crossing a wild rat with one of the susceptible white rats. In the first generation the progeny was white, but in the second there were white, black, and piebald individuals. At this generation the grafts "took" in the white rats and in 65 per cent. of the piebald rats, but in the black rats there was complete failure. By grafting in succeeding generations of this cross, success was obtained in the black rats. Transplants were then made from one of these last black rats into the wild rat, and carried on in the latter until finally 70 per cent. of the transplants were successful, the virulence, volume, and rate of growth of the tumour were as great as in the controls.

385. Splenic Grafts

Marine and Manley (*Journ. Exp. Med.*, July 1st, 1920), who have studied the results of transplantation of various tissues in animals, find that in the case of portions of spleen tissue introduced into other animals of the same species the grafts may establish vascular relationship with the host, but in all cases they are fairly rapidly absorbed. Even when the rabbits were closely related, when the age of the animal was suitable, or when splenectomy had been performed, absorption of the transplant within a fortnight was the invariable rule. In the case of grafts from some other organs, such as the thyroid, adrenal cortex, or sex gland, survival for a month may be expected in a tenth of the experiments. In marked contrast to rapid absorption of grafts into other animals, autografts usually survive, and failures are due to errors of technique. Age is an important factor in the growth of autografts; the younger the animal the better the growth. Removal of the spleen is a powerful stimulus to the growth of transplants; its effect varies inversely with the age, and usually is negligible after sexual maturity. The influence of age and of splenectomy suggests that the spleen is most important in early life, and that after sexual maturity either it is unimportant or its functions may readily be assumed by other haematopoietic structures. There is a tendency for grafts to involute or atrophy with age, and grafts made in old rabbits without removal of the spleen may undergo complete atrophy. On the other hand, grafts made in young rabbits, accompanied by splenectomy, have been observed by Marine and Manley for more than three years, and are probably permanent. From observations made on a few rabbits that died of pneumonia, the authors consider that splenic autografts react to infections in the same way as the intact spleen. Such experiments are of considerable importance in view of the curious claims that have been made for the transplantation of testicular substance in combating the effects of old age.

386. A Case of Multiple Myeloma.

According to Goia (*Clujul Med.*, June 1st, 1920) multiple myeloma is a very rare disease. Hirschfeld in a review of the literature found only 90 cases on record, very few of which were confirmed by autopsy, the rest being probably cases of endothelioma or primary medullary chondroma. Goia's case occurred in a man, aged 27, whose principal symptom was severe pain in the bones. On examination he showed marked anaemia of a cachectic character, well-defined tumours principally situated on the flat bones, and enlargement of the cervical glands. In spite of the absence of fragilitas ossium and Bence-Jones albumosuria the diagnosis of multiple myeloma was made and was confirmed by the autopsy.

387. Squamous Cell Carcinoma of Kidney.

The literature on cancer of the kidney is reviewed by Primrose (*Journ. Amer. Med. Assoc.*, July 3rd, 1920), and a case of squamous-cell cancer, associated with a calculous pyelitis, is reported in detail. The unusual anomaly of a horseshoe kidney was also present. As the result of a critical study of recorded cases, Primrose concludes that the usual form of renal tumour, described as squamous-cell cancer, is a growth having its origin in the transitional epithelium of the calices and renal pelvis, with subsequent invasion, by direct extension, of the kidney substance. Its development is closely associated with the production of villous growths which, at first benign, may develop malignancy. In certain instances also there may be extensive metaplasia of the transitional epithelium of the calices, pelvis, and ureter. The entire process is in all probability preceded by chronic inflammatory changes produced by some irritant, such as the presence of stone.

388. The Sachs-Giorgi Reaction.

L. Kumer (*Wien. klin. Woch.*, June 24th, 1920) examined by the Sachs-Giorgi and Wassermann reactions the serum of 1,245 patients suffering from skin diseases, diseases of the eye, and various medical and surgical complaints. In 1,011 both reactions yielded the same result, being positive in 187 and negative in 824. In 234 the results of the two reactions differed, the Wassermann reaction being positive and the Sachs-Giorgi reaction negative in 71; the Wassermann reaction negative and the Sachs-Giorgi reaction positive in 43; differences in the intensity of the reactions was present in 120. The frequency of agreement in the two reactions was therefore 81 per cent., which was increased to 91 per cent. on disregarding the difference in the strength of the reactions. These figures include 55 examinations of cerebro-spinal fluid, of which 48 gave negative Wassermann and Sachs-Giorgi reactions, two positive Wassermann and Sachs-Giorgi reactions, and five weakly positive Wassermann and negative Sachs-Giorgi reactions. From repeated examination of the serums, Kumer concluded that the two reactions did not become negative simultaneously, the Wassermann reaction remaining positive the longer.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

389. Meningococcal Purpura and Perforation of the Septum.

NETTER, SALANIER, and STRAUSS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920) record a case of generalized purpura associated with abdominal pain, uncontrollable vomiting, and haemorrhagic diarrhoea. In spite of the absence of meningeal symptoms, Netter diagnosed meningococcal septicaemia. Intrathecal and intramuscular injection of antimeningococcal serum was followed by rapid improvement. Cultures of the blood and cerebro-spinal fluid were negative, but smears obtained by scarification of the purpuric patches showed the presence of meningococci. In convalescence the child developed perforation of the cartilaginous part of the nasal septum at the site of an old purpuric lesion. The occurrence of abdominal pain, vomiting, and bloody stools showed that purpuric lesions were also present in the intestine, as in Henoch's purpura and angioneurotic oedema.

390. Significance of the von Pirquet Reaction.

MUIR (*British Journal of Tuberculosis*, July, 1920), from the examination of 100 patients, of whom 42 were over 14 years old, concludes that the von Pirquet reaction is of little value as a diagnostic and prognostic agent, except in a very limited number of cases. A negative reaction is no proof that a patient is non-tuberculous; a negative reaction may be obtained in advanced cases, but a markedly positive reaction does not necessarily indicate a good prognosis. Except in advanced cases, the reaction is always positive when tubercle bacilli are present in the sputum. All these findings apply to adults; in children the author finds that the reaction may be negative in 30 per cent. of those having pulmonary tuberculosis, but that after sanatorium treatment the percentage may be reduced to 17. This reduction indicates an improvement in the immediate prognosis.

391. Acute Infectious Enteritis Complicated by Polyneuritis.

FARNELL and HARRINGTON (*Amer. Journ. Med. Sci.*, July, 1920) record an outbreak of 47 cases, which they classify in three groups. In the first, which consisted of 19 cases, the gastro-intestinal symptoms were well marked, and the polyneuritis was also prominent. In the second group (7 cases) the gastro-intestinal symptoms were serious (in one case fatal), but the neuritic symptoms were less severe. In the third group, which comprised 21 cases, the gastro-intestinal disturbances were the principal feature, only a few showing polyneuritis. Bacteriological examination showed that the condition was due to a virulent, rapidly growing staphylococcus introduced into the gastro-intestinal tract, the organism being found in the milk, throat cultures, blood, faeces, and urine. Pathologically there were an acute haemorrhagic gastro-enteritis, multiple focal necroses of infectious origin in the liver, and acute haemorrhagic neuritis.

392. Hereditary Anosmia and Epilepsy.

ALIKHAN (*Rev. de lar., d'otol., et de rhinol.*, June 15th, 1920) describes a family of thirty members, eleven of whom had anosmia, four hyposmia, and two epilepsy. The olfactory disorder was transmitted by the female members, who suffered from anosmia. None of the males was married. As the result of his experiments on eighteen cases, Alikhan found that epileptics showed disturbance of the olfactory function, in the form of hyposmia or anosmia, not only after the fits, as Féré had observed, but also in the intervals. In this connexion it may be noted that the cornu Ammonis, which constantly shows sclerosis in epilepsy, forms part of the olfactory convolution. Alikhan concludes that hyposmia and anosmia are frequent symptoms of epilepsy, and that some cases of hereditary anosmia have some ill-defined relations with epilepsy.

393. Hyperthermia in an Infant.

MAMMELE (*Monats. Kinderheilk.*, April, 1920) records the case of an infant of 17 months in whom no cause could be discovered for the constantly high temperature; the autopsy demonstrated sclerotic processes in the basal ganglia.

394. Coexistence of Tabes and a Syphilitic Eruption in the same Patient.

SIMON (*Bull. Soc. Franç. de Derm. et de Syph.*, April 21st, 1920) reports the following case, which is of interest owing to the rarity of the simultaneous occurrence of tabes and a syphilitic eruption. The patient, who had contracted, nineteen years ago, a chancre on the lip (for which he had been treated by mercurial pills), and had subsequently had no other signs of syphilis, showed a reddish-brown scaly eruption on the trunk and arms, belonging to the type of late syphilides described by Brocq as quaternary. Systematic examination of the nervous system showed an Argyll Robertson pupil and loss of the knee and ankle jerks and medio-plantar reflexes. There was no disturbance of function.

395. Intravenous Injections of Calcium in Tetany.

BROWN, MACLACHLAN, and SIMPSON (*Amer. Journ. Dis. Child.*, June, 1920), working at this subject, found that constitutional reactions (drowsiness, dyspnoea, collapse) followed intravenous injection of calcium lactate in 1.25-gram doses, but usually passed off in from one to seven hours. A temporary absence (seven to ten hours) of both electrical and mechanical signs of tetany followed the intravenous injections, but the authors found that they exerted no lasting beneficial effect unless supplemented by cod-liver oil and phosphorus. In these conditions reduction was a little more rapid than with the use of cod-liver oil and phosphorus alone. Cod-liver oil and phosphorus produce an increase in the blood calcium, with a corresponding reduction in the mechanical and electrical signs, in from ten to seventeen days.

396. The Throat in Botulism.

VERNIEUWE (*Rev. de lar., d'otol., et de rhinol.*, June 15th, 1920) discusses the appearance of the throat in botulism, and the features which distinguish it from those seen in diphtheritic paralysis. Absolute dryness of the mucous membrane of the mouth, pharynx, and larynx is constant in botulism, frequently giving rise to atonic ulcers, but is absent in diphtheritic paralysis. Paralysis of the palate, which is found in both diseases, is usually unilateral, or at least predominates on one side in diphtheritic paralysis, whereas in botulism complete paralysis of the palate is the rule. The course of the disease will probably clear up the diagnosis, although certain symptoms are common to both conditions—for example, albuminuria, muscular weakness, cardiac atony, anaemia, and loss of reflexes. But the differential diagnosis between diphtheritic paralysis and the paralyses of botulism can best be made by a careful examination of the ocular manifestations, the differences in the two conditions being as follows: (1) In botulism accommodation and the sphincter pupillae are generally affected simultaneously if not in the same degree. In diphtheritic paralysis, on the other hand, the reaction of the pupil is unaffected in the great majority of cases. (2) The external eye muscles are very rarely affected in diphtheritic paralysis (in 1 case in 1,000 according to the literature), whereas in botulism affection of the external eye muscles as well as ophthalmoplegia externa is not uncommon. (3) In botulism the ocular paralysis often appears on the first day, more frequently on the second or third day after consumption of the infected food, whereas post-diphtheritic paralysis does not occur as a rule till about four weeks after the sore throat. (4) The duration of the paralysis in botulism exceeds that of diphtheritic paralysis, being four to eight weeks in diphtheria as compared with five to eight months in botulism. Vernieuwe also emphasizes the resemblances between the symptoms of botulism and those of atropine poisoning, in which, however, there is never any ophthalmoplegia externa.

397. Hypertonus of the Vagus in Asthma.

LIAN and CATHALA (*Paris méd.*, July 10th, 1920) record twenty-one cases of emphysema subject to frequent attacks of bronchitis with paroxysmal nocturnal attacks of dyspnoea, in all of whom the oculo-cardiac reflex was more or less markedly positive. The writers conclude that exaggeration of the oculo-cardiac reflex is a very frequent accompaniment of asthmatiform dyspnoea in bronchitic subjects, and probably of essential asthma, and that therefore asthma may be regarded as a manifestation of the vagotonic syndrome. The practical bearing of these observations is that belladonna, which acts by paralysing the peripheral terminations of the vagus, should be given in large doses in asthma, and in cases of emphysema with asthmatiform attacks.

398. Encephalitis Lethargica.

GASBARRINI and GRADI (*Rif. Med.*, May 1st, 1920) give the results of certain observations in cases of lethargic encephalitis. They found retention of urine in 3 out of 19 cases, incontinence in 3, and albuminuria in 9; glycosuria, acetonuria, and the diazo reaction were not found; indican was frequently found. Mydriasis after adrenalin was observed in 9 out of 12 cases. The blood changes were not very marked, and consisted in slight leucopenia in the early stages, followed by leucocytosis and slight eosinophilia. The cerebro-spinal fluid came out under slightly increased pressure in 8 cases, under normal pressure in 11; it was always quite limpid. The centrifugalized sediment was chiefly made up of lymphocytes. The Wassermann test was positive only in one case. No organisms could be grown in blood cultures. Inoculation of cerebro-spinal fluid into animals gave negative results. Von Pirquet's reaction was positive in 2 and freely positive in 6 out of 10 cases. Positive reactions were obtained in 13 patients after injecting the skin with a vaccine made from Pfeiffer's bacillus.

399. Emetine in the Treatment of Haemoptysis.

ACCORDING to COLBERT and BAZIN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920), the differences in opinion as to the value of emetine in tuberculous haemoptysis are due to the fact that the drug is only active in cases of hypertension, and occasionally in cases of low tension where the haemoptysis is accompanied by a rise of blood pressure. Waller's experiments have shown that the most favourable conditions for haemostasis consist in arterial vaso-constriction, with diminution of the energy of the heart-beat. The writers found that emetine acts on the maximum and minimum arterial pressure, and on the oscillometric index. The treatment consists in giving an intramuscular injection of 0.04 gram of emetine, which is repeated once or twice in the day. As soon as the blood pressure falls the dose is reduced, but the drug should not be discontinued too soon. Administration of emetine should be associated with purgation by sodium sulphate and restriction of the diet. Adrenalin and horse serum should be avoided, as they often raise the blood pressure. If the temperature is too high, small doses of antipyrin should be ordered, as this drug has also a hypotensive action.

SURGERY.

400 Treatment of Habitual Shoulder Dislocation.

LÖFFLER (*Zentralbl. f. Chir.*, 1920, 47) describes an operation for habitual dislocation of the shoulder-joint. The author bores a hole vertically through the acromion process and makes a tunnel in the greater tuberosity of the humerus. A strip of fascia lata cut from the thigh is rolled up into a cord, carried through the tracks made, and firmly tied. The humerus is thus strung up to the acromion. Löffler's patient, an epileptic, had put the shoulder out twenty to thirty times.

401. OLLERENSHAW (*Journ. Orthoped. Surg.*, 1920, *New Series*, ii) has operated upon four cases of habitual dislocation of the shoulder-joint. The shoulder had "come out" on 19, 29, 18, and 15 occasions respectively. The author employed the Clairmont technique for dealing with the condition. This method entails the use of a deltoid flap taken from the posterior edge of the muscle, carried through and fastened down to the front of the shoulder-joint, where it acts as a powerful muscle sling below the head of the humerus. The operation is carried out in two stages performed at one sitting. An anterior incision is made splitting the deltoid, dividing part of the insertion of the pectoralis major, exposing the quadrilateral space. An incision is now made along the posterior border of the deltoid, which is split from its insertion to the level where the circumflex nerve enters it. The quadrilateral space is next cleared from behind, a pair of long forceps is inserted through it from the front, and the deltoid flap pulled through. Clairmont recommended that the end of the flap should be sutured to the split deltoid in front. Ollerenshaw has found it a better plan to sew it to the subscapularis tendon. The operations were too recently performed for the cases to be regarded as permanent cures, but so far there has been no recurrence of dislocation in any one.

402. Treatment of Undescended Testis.

FRANGENHEIM (*Zentralbl. f. Chir.*, 1920, 47) opposes the commonly accepted view that the Bevan operation for undescended testis does not seriously impair the blood supply of the testicle. It will be recalled that Bevan, in 1903, advocated the division of the major portion of the pampiniform venous plexus, after which it usually is easy to place the testis in the scrotum. Frangenheim suggests that the inguinal canal should be fully opened up, the deep epigastric vessels defined, and the testis threaded through behind these, and so brought by a more direct route to the scrotum. He advocates the fastening of the testis to the bottom of the scrotum by a suture carried through to the skin of the thigh. Ten cases have been operated upon by the method described above; in all the testis was placed with ease into the bottom of the scrotal sac.

403. GLASS (Ibid., p. 174) mobilizes the spermatic cord and the undescended testis, which is sutured to the lowest point of the scrotum. To prevent the testicle being pulled up again into the inguinal canal, he sutures the cord to the periosteum on the front of the os pubis and fixes the scrotum to the thigh.

404. Cranial Haemorrhage in the Newborn.

FOOTE (*Amer. Journ. Dis. Child.*, July, 1920) reiterates his opinion, expressed in 1918, that the so-called haemorrhagic tendency of the newborn, frequently expressed in haemorrhages from the mucous surfaces in various portions of the body, is an important factor in intracranial haemorrhage occurring during or soon after birth. During the last fifteen months the author has performed lumbar puncture on all newborn infants showing within twelve to twenty-four hours after birth respiratory distress and blueness, with or without muscular rigidity and twitching. In each case—seven in all—the fluid removed contained small amounts of blood, or occasionally small clots. Horse serum and thromboplastin were given hypodermically; six cases recovered uneventfully and one died. Foote believes that practically all cases show partial atelectasis of one or both lungs. The intracranial haemorrhage may be a local manifestation of a general haemorrhagic tendency.

405. Alcohol Injections in Trigeminal Neuralgia.

ACCORDING to HARVEY CUSHING (*Journ. Amer. Med. Assoc.*, August 14th, 1920), deep extracranial injections of alcohol into the maxillary and mandibular nerve trunks near their foramina of exit have completely superseded peripheral neurectomies. In neuralgias limited to one of the two lower divisions, and possibly not extending into the other trigeminal areas, alcohol injections are the treatment of choice. When the neuralgia has spread beyond its original area and come to affect that supplied by the adjacent division, a trigeminal neurectomy must be contemplated; but if no preceding deep injection has been given, it may be useful not only in defining the type of the neuralgia, but in giving the patient some warning as to what the numbness resulting from the neurectomy may amount to. Injections are sometimes useful, furthermore, in determining in doubtful cases whether the syndrome is a true neuralgia of the tic-douloureux type or one of the peculiar and rare pseudo-neuralgias not amenable to relief either by injections or neurectomies. Even the extracranial injections are not entirely free from risk, and in no cases should they be purposely pushed to the point of attempting an injection of the Gasserian sheath itself. With such perfect and permanent results as may be secured to-day by a trigeminal sensory root avulsion, the prolonged and repeated use of injections in refractory cases which concern more than one division should be deplored.

406. Haematuria in Surgical Practice.

CHUTE (*Boston Med. and Surg. Journ.*, June 17th, 1920), from a study of 100 consecutive cases of haematuria, regards the symptom as one not to be considered lightly, since in more than half the cases it indicates a serious condition only remediable if recognized and treated early. The type of haematuria is relatively of little diagnostic value, since in nearly every case the source of bleeding must be determined by cystoscopy, ureteral catheterization, or radiography. Of the 100 cases, 64 were due to new growths, 50 being malignant bladder tumours, 8 hypernephromas and 6 prostatic cancer; the remainder were due to nephritis (7), renal tuberculosis (5), renal calculus (4), ureteral calculus (3), prostatic calculus (1), hydronephrosis (3), Banti's disease (3), polycystic kidney (1), diverticulum of the bladder (1), papillary cystitis (1), and benign prostatic enlargement (7). Since nothing can be expected from conservative treatment in bladder tumours, these should all be considered as potentially malignant, and even in infiltrating growths an attempt made at wide removal. The bleeding in the five cases of renal tuberculosis was not so profuse as to modify the usual procedure of removal of the affected kidney. In the absence of special contraindications, stone in the kidney should be removed, since if left alone the organ is threatened with ultimate destruction. Haematuria apparently occurs far more frequently in association with the large benign prostate than with the malignant type, and its presence with an obstructing prostate does not materially affect the treatment to be adopted.

407. Gastro-enterostomy and Jejunal Ulcer.

DELORE (*Lyon Méd.*, May, 1920) has had five cases of jejunal ulcer arising amongst a series of upwards of 300 gastro-enterostomies. The possibility of such an ulcer must always be thought of when symptoms and signs of gastric disturbance reappear after a period of freedom from the old troubles. This period may be long (eleven years, Hartmann) or short (three months). Delore believes that if a six months' healthy interval elapses after gastro-enterostomy the recrudescence of symptoms denotes a jejunal ulcer rather than the continued evolution of the old ulcer. Acting on this belief, Delore has twice had his judgement confirmed at operation. He believes that cicatricial stenosis of the stoma without ulceration occurs within three or four months, and only after the Murphy button has been used. As to the genesis of jejunal ulceration, Delore in 1914 laid the blame on the suture material, and believed that the use of absorbent catgut would obviate ulceration. In the five cases under consideration, all of which have been met with since that date, no trace of suture material could be distinguished in the wound. He now performs his gastro-enterostomies with a gentleness hitherto foreign to the operation. Great care is taken of the fragile mucosa, clamps are avoided save in exceptional cases, and catgut only is used. In the past six months he has used only catgut Nos. 0 or 1, with suture in three layers. Delore hopes by these means to reduce the frequency of his gastro-jejunal ulcerations, but believes that even now he will not entirely escape them. The author thinks that if the ulcers depended purely on questions of technique the period of post-operative well-being which is so characteristic would not be of such long duration as is generally the case; he believes that recurrence of ulceration is rarer if the original ulcer is removed in the first instance.

408. Treatment of Fractures of the Olecranon.

ACCORDING to CHALIER and VERGNORY (*Lyon Chir.*, June, 1920), fractures of the olecranon present close analogies with those of the patella and are largely amenable to similar treatment. Exceptions must be made of fractures of the extremity which do not open into the joint, and of transverse fractures (with much displacement) in muscular subjects; the former condition calls for orthopaedic treatment, the latter for metallic co-aptation of the fragments. The authors believe that transverse fractures of the middle portion of the bone, accompanied by displacement, mobility, and loss of extension, should be treated by evacuation of the joint, removal of interposed fibrous tissue, and suture of the ruptured periosteum and aponeurosis. They record three illustrative cases, in which, after operation, the elbow was immobilized by plaster in extension for two or three weeks.

409. Congenital and Familial Ophthalmoplegia.

CROUZON, BÉHAGUE, and TRÉTIAKOFF (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) describe the case of a woman who belonged to a family affected with congenital ophthalmoplegia, and died at the age of 37 from pulmonary tuberculosis. During life she presented complete paralysis of the superior and inferior rectus muscles on both sides; incomplete paralysis of the levator palpebrae and rectus externus, complete paralysis of the rectus internus and of the obliques on the right. On the left there was complete paralysis of the levator palpebrae and superior oblique muscles, while the external and internal recti were intact, and the inferior oblique was partially preserved. The findings of the autopsy were as follows: (1) Malformation of the falx cerebri, the anterior half of which was very poorly developed; (2) extreme atrophy of both oculo-motor nerves, especially the right; (3) thickening of the meninges enclosing the emergence of the third cranial nerves.

OBSTETRICS AND GYNAECOLOGY.

410. Heteroplastic Bone Formation in the Fallopian Tube.

ASAMI (*Amer. Journ. Med. Sci.*, July, 1920) records the case of a woman, aged 37, whose fibroid uterus, inflamed Fallopian tubes, and right ovary were removed. On section, the lumen of the right Fallopian tube showed a spicule of bone, about 5 mm. wide and less than 1 mm. thick, firmly embedded in the substance of the tube. The wall of the tube and mesosalpinx also contained many small bony areas. No bone-like material was found in the ovary. On microscopical examination there were found to be present both cartilages undergoing ossification and calcific deposits with surrounding organization tissue, some of which had been converted into osteoid tissue. The possible mechanism involved in the conversion of the connective tissue into cartilage and of the cartilage into bone is left by the writer for a future experimental investigation.

411. Radium Treatment of Uterine Cancer.

HANSEN (*Ugeskrift for Læger*, Copenhagen, March 11th, 1920) reports sixty-six cases of uterine cancer, mostly inoperable, which received radium therapy more than five years ago. Six per cent. died from intercurrent disease or could not be traced, but 27.3 per cent. are known to be still living.

412. Causation and Treatment of Cystitis in Women.

E. DEDDES (*Nederl. Tijdschr. v. Geneesk.*, July 3rd, 1920) emphasizes the importance of the urethra as a source of cystitis in women, especially of relapses. The patient should not be kept too long in bed. As soon as the acute symptoms have subsided, local treatment of the vesical mucous membrane should be instituted by injection of a ½ per cent. (or weaker) silver nitrate solution. The urethra should also be treated at the same time, part of the fluid being injected into the bladder, and the rest being used for the urethra after partial withdrawal of the catheter. In cases of *B. coli* infection of the bladder Deddes recommends injection of lactic acid bacteria, in view of the antagonism between the two organisms, and reports two cases successfully treated by this method.

413. Degenerate Sarcoma of the Uterus.

JACOB and POULAIN (*Bull. et Mém. de la Soc. Anat. de Paris*, June, 1920) record the case of a woman of 55, who for one month had suffered from irregular haemorrhage, which supervened five years after the menopause. A mobile rounded tumour, of regular outline and extremely hard consistence, was found three fingerbreadths below the umbilicus. It was continuous with the uterus, but the lower part of the tumour was soft; invasion of the broad ligaments had occurred. A diagnosis was made of malignant tumour of the uterine body, or of degenerate fibroma. At operation the upper part of the tumour was found to have undergone calcareous and its lower part colloidal degeneration; the lower portions of the uterine wall had almost been penetrated. The tumour was regarded as a sarcoma, although histological examination had not been made at the time of reporting.

414. Differential Diagnosis of Extrauterine Pregnancy.

WAGNER (*Zentralbl. f. Gynäk.*, July 17th, 1920) says that administration of pituitary extract exerts in most cases an inhibitory effect on uterine haemorrhage which is due to ovarian causes—such as metropathia haemorrhagica, adolescent and climacteric bleeding, bleeding accompanying inflammatory conditions of the adnexa. In cases where the haemorrhage is not attributable to ovarian causes this therapeutic effect is not to be produced. The external bleeding which accompanies disturbances of extrauterine pregnancy is not influenced by giving pituitary extract; this test may be of considerable value in differential diagnosis.

415. Contracted Pelvis: Meningeal Haemorrhage during Spontaneous Birth.

BALARD and RIVIÈRE (*Journ. de Méd. de Bordeaux*, June 10th, 1920) record two cases in which primiparae with a moderate degree of pelvic contraction gave birth spontaneously, after twenty and thirty hours' labour respectively, to children who did not cry. The infants died within the first two days; in both cases blood was obtained on lumbar puncture, and meningeal haemorrhage was demonstrated.

PATHOLOGY.

416. Vaccination against Whooping-cough.

LUZZATTI (*Il Morgagni*, August 15th, 1920; *Il Policlinico*, April 19th, 1920) gives his experience with the antipertussic vaccine prepared by Nicolle. He did not find that it had any appreciable effect in lessening the intensity or duration of the attack, but as a prophylactic it seemed useful—for example, in one family of three children the eldest sickened and was not isolated; the other two children were given seven prophylactic injections on alternate days, and escaped the disease; in two other families also the injected children failed to develop whooping-cough. The limited success attained in prophylaxis with this vaccine helps to support the claim that Bordet's bacillus is the specific agent in causing pertussis. One child exposed to whooping-cough, and showing the early catarrhal signs of that disease, was injected with vaccine, and no further development of the catarrh occurred.

417. The Formation of Agglutinins by the Typhus Virus.

WEIL and FELIX (*Wien. klin. Woch.*, July 22nd, 1920) allude to their previous paper (see EPITOME, August 7th, No. 128) in which they described the constant presence of X_{19} agglutinins in rabbits which had been injected with the brain of guinea-pigs infected with the typhus virus, thereby proving that the typhus virus produces the same reaction in the rabbit as in the human subject. Intraperitoneal injection of typhus virus in the rabbit produced agglutination of X_{19} in each of the twenty-three cases examined. The serums were tested at all periods after infection, and it was found that no agglutination of other organisms was produced. As in the rabbit typhus virus usually fails to produce any disease, changes in the organs if present at all were very slight, and secondary changes in the serum did not occur. There can be no doubt that the living virus is the cause of the agglutination, for the killed virus does not cause any agglutination in the experimental animal.

418. Vitamines in Carrots.

ZILVA (*Biochemical Journ.*, July, 1920) has found that alcohol extracts the fat soluble factor from cabbage and carrots. The alcoholic extract equivalent to 10 to 12 grams of fresh carrots given daily promotes normal growth in rats whose diet is lacking in the fat-soluble factor. An ethereal extract from the alcoholic fraction equivalent to 25 grams of fresh carrots has been found to promote recovery and renew growth in rats declining in weight on account of fat-soluble factor deficiency. The alcoholic extract from carrots contains also the antineuritic and, to a smaller extent, the antiscorbutic factor.

419. Generalized Syphilis Experimentally Produced in the Rabbit.

BROWN and PEARCE (*Med. Record*, August 14th, 1920) reported to the Association of American Physicians a series of studies made in rabbits. In 126 cases the animals showed lesions at the site of the inoculation; in the testicles and scrotum the reaction was very well marked. It was found that if a lymph node from an infected rabbit was planted into the testicle of a second (normal) rabbit, the organism could be recovered, from seven to a hundred days after the transplantation, from the blood of the heart of the second rabbit. If, forty-eight hours after its inoculation, the testicle of the second rabbit was amputated, the generalization of the treponema was not prevented from occurring. Under certain conditions generalized syphilis might develop.

420. Lethargic Encephalitis.

HARBITZ (*Norsk Mag. for Laegevidenskaben*, June, 1920) has carried out *post-mortem* examinations on cases of lethargic encephalitis in Christiania, and, after making a careful study of the changes in the central nervous system, he comes to the conclusion that lethargic encephalitis differs so much from other known forms of encephalitis that it must be regarded as a disease *sui generis*. He admits, however, that this disease crops up in connexion with epidemics of influenza, and he suggests that influenza may predispose to lethargic encephalitis in the same way that it predisposes to severe streptococcal and pneumococcal infections. In two of his cases he found a small Gram-positive diplococcus in the central ganglia of the brain. It grew in pure culture on ascites-agar plates, forming small transparent colonies which could be subcultured, but which soon died out. The author is doubtful as to the significance of this find, pointing out that the demonstration of micro-organisms in the central nervous system and their correlation with diseases of this system present numerous pitfalls to the unwary.

421. Serological Studies on Tuberculosis.

NISCHIDA and PETROFF (*Amer. Review of Tuberculosis*, July, 1920) find: (1) Dead tubercle bacilli or products of the same do not produce as high a titre of antibodies as the living organism. (2) Complement-fixing antibodies resist heat better than the antibodies producing the Wassermann reaction. A temperature of 60° C. will not destroy the tuberculous complement-fixing antibodies obtained in experimental animals. (3) *X*-ray radiation does not destroy the antibody, antigen, or complement when a full dose, sufficient to produce erythema, is given. (4) Ultra-violet rays destroy the antibodies and complement, but only slightly affect the antigen. (5) Sunlight at 1,600 feet elevation has a slight effect on antibodies, but more on complement, and least on antigen. (6) Complement-fixing antibodies are colloid. (7) They are not lipins: either they are globulins or they are adsorbed by the globulin.

422. The Blood in Influenza.

MILIO (*La Pediatria*, July 1st, 1920) examined the blood of twenty children suffering from influenza, and noted that: (1) Both in simple and complicated forms there was a slight diminution in the haemoglobin and red cells. (2) The number of leucocytes and the leucocyte count was often affected, the following changes being noted: (*a*) In uncomplicated forms of influenza there was a leucopenia with diminution of the polymorphs and increase of the lymphocytes in 75 per cent. of the cases, in 25 per cent. the number of leucocytes remaining normal; (*b*) in complicated forms of influenza there was a leucocytosis and polymorphonucleosis in 70 per cent. of the cases; even in those in which the number of leucocytes remained normal there was an increase of polymorphonuclears in the leucocyte formula. (3) The viscosity of the blood, as determined by Hess's viscometer, was not affected. (4) The coagulability of the blood, as determined by Wright's method, remained normal.

423. Ice box Incubation in Wassermann Tests.

ACCORDING to BURDICK (*Arch. of Derm. and Syph.*, Chicago, August, 1920), prolonged primary incubation for twelve hours in an ice-box possesses decided advantages over incubator or water-bath treatment lasting half an hour. Serums giving doubtful reactions by the latter method of primary incubation are often frankly positive according to the former method. In a series studied, both methods gave negative results in all cases clinically shown to be non-syphilitic, and positive results in all untreated cases in the secondary stage. In secondary treated cases, however, the methods gave different results; a higher percentage of positive reactions was obtained by the first-named method. This method likewise gave a much higher percentage of positive results in tertiary cases, treated and untreated. The author finds that in the examination of spinal fluids from patients with cerebro-spinal syphilis it not infrequently happens that a positive reaction is obtained by a prolonged ice-box incubation and a negative by the water-bath method.

424. B. aërogenes Septicaemia after Abortion.

[illegible] (*Med. Record*, September 11th, 1920) records a case in which, after criminal induction of abortion by passage of a catheter into the uterus, there were methaemoglobinaemia, methaemoglobinuria, leucocytosis, and characteristic pigmentation of the skin and kidneys. There was crepitation in the superficial veins, and after death *B. aerogenes capsulatus* was recovered from the blood.

425. The Upper Air Passages as an Environment for Bacterial Growth.

BLOOMFIELD (*Amer. Review of Tuberculosis*, June, 1920) finds that the free surfaces of the normal intact membranes of the upper air passages are unfavourable for the growth of certain organisms experimentally inoculated: various bacteria inoculated on these surfaces are disposed of chiefly by mechanical means. Perhaps a preliminary injury to the mucous membrane is necessary. The experiments were carried out on *Sarcina lutea*, *Staphylococcus albus*, *B. coli*, and *B. influenzae*.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

425. The Diagnosis of Lethargic Encephalitis.

SCHEEL'S (*Ugeskrift for Laeger*, July 15th, 1920) experience of eight cases of lethargic encephalitis, treated at the Bispebjaerg Hospital, has impressed him with the extraordinarily polymorphous character of this disease. He suggests that there must be many cases of what he terms "encephalitis ambulatoria"; the patient is drowsy and disinclined for work, but he does not feel ill enough to go to bed, and the true character of the disease is overlooked. Referring to the monosymptomatic forms of the disease, the author notes that of late in Denmark several persons have complained of hiccough, lasting for one or more days. As for the pareses, their predilection for the muscles of the face and eyes is very suggestive of epidemic encephalitis; but one arm or leg may also be affected. The transitory character of these pareses is also of diagnostic importance, and in one of the author's cases complete paresis of one arm disappeared in the course of a few days. Vesical paresis appears to be a common symptom, but it seldom lasts long enough to necessitate the use of a catheter. When the onset of the disease is insidious, lethargy and pareses often supervene, whereas a sudden onset is commonly followed by myoclonia and pain.

427. The Nature and Treatment of Tuberculous Haemoptysis.

ROSENTHAL (*Ugeskrift for Laeger*, July 29th, 1920) has investigated the 157 cases of haemoptysis treated at his hospital in the period 1908–1918. The course of the tuberculosis was benign in 132 cases, and rapidly progressive or erratic in 25. Classifying these cases according to the severity of the haemorrhage, he found that on the whole the proportion of benign cases was somewhat greater when the haemoptysis was slight than when it was severe; but even when more than one litre of blood was lost 60 per cent. of these cases ran a benign course. In 77 cases there had been signs of exacerbation of the disease prior to the haemoptysis. In 37 cases there had been one or several haemoptyses a considerable time before admission to hospital, yet they had not led to progress of the malady beyond a small limited area of benign disease. Among the 132 benign cases there were 46 which were consistently afebrile. The author concludes that exacerbations of the disease provoke haemoptyses rather than vice versa. A comparison of the duration of the haemoptysis in his cases with that of the haemoptysis in Bang's cases, showed that the latter's advocacy of getting the patient up early is ill-advised. The author prefers immobilization with use of morphine and ice-bags.

428. The Treatment of Haemoptysis by an Artificial Pneumothorax.

BEGTRUP-HANSEN (*Hospitalstidende*, June 16th, 1920) has treated 9 cases of haemoptysis at Silkeborg Sanatorium by the induction of a pneumothorax. The indication for this treatment was either the severity or the protraction of the haemoptysis, but in most cases the haemoptysis had ceased before the pneumothorax was induced, and this treatment was undertaken to prevent the recurrence of the haemorrhage. Induction of a pneumothorax at the time of the haemoptysis was usually considered too risky an undertaking on account of the danger of an aspiration pneumonia. In 6 cases the pneumothorax was complete or nearly so; in 3 it was incomplete. In all cases the immediate effect was good, no haemorrhage occurring directly afterwards. The permanency of the effects seemed to depend on the completeness of the pneumothorax, for in the 6 cases in which adequate collapse of the lung was effected there was no recurrence of the haemoptysis, whereas in the 3 cases with incomplete collapse of the lung attacks of haemoptysis took place subsequently. In two of these cases a thoracoplastic operation was undertaken to induce collapse of the lung and of the cavities from which the bleeding presumably started; in both cases the desired effect was obtained. In a tenth case of haemoptysis an unsuccessful attempt to induce a pneumothorax was made; the haemoptysis persisted and pneumonia developed, terminating fatally. The necropsy failed to reveal the site of the haemorrhage, and it is possible that it did not come from the lung, the collapse of which it was unsuccessfully attempted to induce. Only in one case did the author abandon Forlanini's principle of giving frequent small injections of gas. His preference for this cautious dosage and his distrust of the large single injection were based on the considerations that the arrest of haemorrhage depends rather on immobilization than compression of the lung, and that the risk of an aspiration pneumonia is reduced when the lung collapses slowly.

429. A Contraindication to Artificial Pneumothorax.

RAUTENBERG (*Zeit. f. Tub.*, 1920, xxxii) has treated 73 cases of tuberculosis by this method, in two of which death resulted from heart weakness. In both cases the male patients were 50 years of age, with rigid thorax and distended lungs; and such a combination the author thinks is a contraindication to the treatment.

430. Schick's Reaction in Soldiers.

RIEUX and ZOLLER (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 27th, 1920), from observations of diphtheria, non-diphtheritic angina, and diphtheria carriers in soldiers, agree with Zingher and other writers as to the value of Schick's reaction, and regard it as probable that individuals with a negative reaction are protected from diphtheria for several years, or even for life. The writers recommend that in a garrison or barracks in which diphtheria breaks out every year, Schick's test should be performed on all the new recruits, and the results noted in the soldiers' health records. Only those with a positive reaction would require immunization. In a discussion on this paper L. Martin maintained that Schick's reaction was not of great help in combating diphtheria for the following reasons: (1) Although it showed that certain individuals were more or less insusceptible to a mild attack of diphtheria, it could not be stated that they were also insusceptible to epidemic or familial diphtheria. (2) The reaction was negative in diphtheria carriers, and therefore the examination for carriers would have to be made among individuals with a negative reaction.

431. Henoch's Abdominal Purpura.

BANG (*Tidsskrift for Den Norske Laegeforening*, July 1st, 1920) notes that there is still disagreement as to the causation of Henoch's abdominal purpura, but that many regard it as an infectious or toxic disease. In this connexion he refers to Morgan's metacolon bacillus No. 1, which was first isolated from the faeces in a series of cases of infantile diarrhoea in 1905 and 1906. In confirmation of the association of this bacillus with Henoch's purpura, the author records a case of this disease in which the mucus and watery faeces yielded Morgan's bacillus in practically pure culture. Later in the case, when the motions were formed, this bacillus could no longer be found; nor could it be isolated in the blood-stained urine. Blood cultures were also negative.

452. An Epidemic of Nephritis.

ROSET (*Rev. Españ. de med. y cir.*, May, 1920) records a small epidemic of 21 cases of acute nephritis which occurred at Valls in April, 1904. The outbreak was preceded by a considerable fall in the temperature and coincided with attacks of erysipelas, puerperal infection, and non-diphtheritic angina. Both sexes and various ages were attacked, the youngest patient being aged 3 years and the oldest 62. As the population of Valls in 1904 was 13,229, the attack rate was about 1.6 per 1,000. With three exceptions, in which the attack was severe, the disease ran a mild course, and did not last more than one to three weeks.

433. Primary Cardiac Tumour.

WELTMANN (*Wien. klin. Woch.*, June 17th, 1920) records a case in a woman, aged 20, who was mentally and physically a degenerate. The symptoms were those of an isolated tricuspid stenosis with progressive cardiac insufficiency unaffected by drugs and associated with attacks resembling Adams-Stokes disease. The necropsy showed a lobulated tumour in the right auricle which on histological examination proved to be a pseudo-myxoma.

434 Fordyce's Disease and Koplik's Spots.

Regan (*Amer. Journ. Dis. Child.*, vol. 19, No. 6) draws attention to certain spots (resembling Koplik's spots) which may appear in Fordyce's disease, a chronic disease of the buccal mucous membrane, occurring mostly in adults, and characterized by the presence of whitish or yellowish spots along the line of the teeth. Koplik's spots only last three to six days; Fordyce's spots persist for weeks. Fordyce's spots are *café-au-lait* colour, larger than Koplik's spots, and often coalescent; they have no definite areola. Although Fordyce's disease is uncommon at ages under 20, it may occur in childhood. Coloured drawings of the two kinds of spots are given.

435. A Case of Hyperpyrexia.

Velasco (*Rev. de med. y cir. pract.*, May 28th, 1920) records the case of a woman, aged 25, suffering from influenza complicated by pneumonia, whose temperature for several days was 105.4°. It then rose to 107.6°, and finally caused the column of mercury to rise to the end of the thermometer—that is, to exceed 111.2° F. Recovery, however, took place.

SURGERY.

436. Otitic Meningitis.

Lannois and Sargnon (*Rev. de laryng., d'otol., et de rhin.*, July 15th, 1920) state that from the opening of the ear, nose and throat department of the Hôpital Desgenettes in Lyons in November, 1914, up to December, 1918, 24,600 patients were treated in the out-patient department and 5,500 were admitted; 630 operations on the ear were performed, of which 34, or 5.4 per cent. were for otitic meningitis. The number of deaths among the admissions was 74; of these, 26, or 35.13 per cent., were due to otitic meningitis. The number of cases of meningitis was thus considerably higher among soldiers during war time than in the civilian population under ordinary circumstances. The writers attribute this excess partly to defective hygiene, especially during the winter, the overstrain of a long campaign, and the unavoidable neglect of treatment in a number of cases. In a few rare instances there were injuries to the skull and ear which opened up the path for infection. Of the eight cases which recovered only two showed micro-organisms in the cerebro-spinal fluid—namely, diplococci not staining by Gram, enterococci, and a few meningococci; the other six cases were examples of serous meningitis with a more or less marked polymorphonuclear reaction. In the fatal cases, on the other hand, organisms were readily found in the cerebro-spinal fluid: in ten cases there was a pure growth of streptococci, in one streptococci were associated with staphylococci and in one with pneumococci, and in three pneumococci were present in pure culture or associated with other organisms. The cases of streptococcal meningitis were the most serious. As regards their course, three varieties of otitic meningitis could be distinguished—namely, fulminating, acute, and subacute. The fourteen fulminating cases in this series were all fatal. Six of the severe cases recovered, and the two subacute cases also survived. Treatment consisted in surgical measures (curetting the mastoid and removal of every purulent focus beneath the dura and round the sinuses), repeated lumbar puncture, and hot baths of about half an hour's duration twice a day.

437 Pseudo myxoma Peritonei

Seelig (*Surg., Gyn., and Obstet.*, June, 1920) describes a new case of pseudo-myxoma of the peritoneum in the male. He recalls that the sole outstanding feature of this condition is the presence in the peritoneal cavity of a collection of colloid exudate, varying in consistency from a syrup to solid gelatinous masses. It is now established that the substance is pseudomucin. In the female it originates from rupture of a pseudomucinous cyst of the ovary; in the male the appendix is the sole responsible agent for the condition. Under certain circumstances the lumen of the appendix or diverticula therefrom contain pseudomucin and epithelial cells. Rupture of such cysts [illegible] inaugurates the gelatinous change in the [illegible]. The exudate may remain localized to the right iliac fossa, forming there a sausage- or kidney-shaped mass, or it may extend all over the coelomic cavity. In the latter case the prognosis is bad, but the disease may run a benign or a malignant course without furnishing any macroscopic or microscopic criteria of differentiation. Treatment consists in removal of the primary focus of the disease and scooping out such of the exudate as can be conveniently reached. Seelig's patient, a man 42 years of age, had undergone appendectomy some three months previously; his abdomen became diffusely distended, and two months later he died. At necropsy an extremely diffuse form of pseudo-myxoma peritonei was found, the intestines being closely glued together and covered by a translucent jelly. Histologically this material consisted of laminated, cell-free, faintly staining amorphous substance.

438. A New Method of Marking Varicose Veins.

Coopernail (*Med. Rec.*, May 8th, 1920) says that an aqueous solution of brilliant green is an excellent dye with which to mark varicose veins before operation. The veins should be marked out the day before operation and the solution allowed to dry. The stain is not removed by alcohol or ether and shows well through iodine discoloration.

439. Primary Syphilitic Jaundice.

Milian (*Paris Méd.*, August 21st, 1920) describes the occurrence in certain cases of a syphilitic jaundice contemporary with the chancre and appearing before the eruptive signs of the secondary stage. It is said to manifest itself a few days before or after the primary sore and is accompanied by little, if any, general disturbance of health; the liver is slightly enlarged and the urine reacts positively to Gmelin's and Hay's tests; fever, absent at first, appears at the same time as Wassermann's reaction becomes positive. Three illustrative cases are recorded in which the jaundice lasted twelve, twenty-two, and twenty-seven days respectively.

440. Cystic Lymphangioma in Scarpa's Triangle.

According to Froelich (*Rev. méd. de l'Est*, July 15th, 1920), who recently showed a case of this kind at the Nancy Medical Society, congenital cystic lymphangioma is rarely found in the inguinal region, being much more frequent in the neck and axilla. The tumour is unilocular or multilocular and is attributed to a congenital malformation of the lymphatic system; its contents consist of a yellow serous fluid rich in albumin. Frequently part of the cyst communicates with the venous system. Treatment at birth consists in simple puncture, but more frequently the main tumour will have to be extirpated; the small tumours which remain cease to develop after the operation. In Froelich's case, which occurred in a boy aged 6 years, the subject of hereditary syphilis, the tumour was of the size of a mandarin orange and almost translucent. The skin over it was movable, but its base was attached to the deeper structures.

441. Sign of Viability of Colon.

Hedri (*Zentralbl. f. Chir.*, 1920, 47) calls attention to a simple method of deciding whether any given piece of colon is viable. This consists in cutting off one of the appendices epiploicae and noting whether bleeding results. Not only during resections of the colon, but also in the course of operations on the stomach during which the mesocolon is sometimes liable to damage, it may be difficult to know whether a sufficient blood supply has been left for the colon. Hedri's sign is regarded by him as a "sure sign of viability."

442. An Anomalous Position of the Colon.

Swezey and Black (*Amer. Rev. of Tuberculosis*, June, 1920, No. 4) record a case of unusual position of the colon discovered during routine clinical and radiological examination. The colon was found on the anterior surface of the liver, the latter being pushed backwards. The colon was in contact with the diaphragm, reaching the summit of the dome on the abdominal side.

443. Köhler's Disease.

According to Colsen and Blauwkuip (*Nederl. Tijdschr. v. Geneesk.*, June 12th, 1920), who record a case in a boy aged 6 years and give a review of the literature, the condition first described by Kohler in 1908 is a disease of childhood in which the tarsal scaphoid is affected at a period when the ossific centre is developing and cartilage is being transformed into bone. The disease develops slowly in children between the third and ninth year of life, being manifested by pain, redness, and swelling over the middle of the foot. As a rule there is no past history of trauma. On x-ray examination the scaphoid is found to be reduced to a half or a third of its normal size. Recovery invariably takes place in two or three years' time. The prognosis is thus absolutely favourable. Treatment consists in applying a suitable bandage to the foot.

444. The X-ray Treatment of Sarcoma.

BLUME (*Ugeskrift for Laeger*, July 22nd, 1920) has analysed the 35 cases of sarcoma treated in the period 1914-18 at Nordentoft's Hospital. Cases treated before this period were not included because the technique was imperfect and adequate filtration of the rays was not provided. In 7, or 20 per cent. of the total, the disease proved refractory. In the remaining 28 cases improvement was rapid and marked; in most cases the tumours disappeared, but 14 patients had subsequently died. One of these deaths was due to pneumonia, another to diabetes; in neither case were there signs of recurrence of the disease. Of the 12 patients who died of sarcoma only 2 were symptom-free for more than a year after treatment. One patient had been treated for two years, but with repeated exacerbations of the disease. Of the remaining 13 patients (37 per cent. of the total) all were still alive and symptom-free for periods ranging from one and a half to five years. Twelve had been symptom-free for more than two years. As none of the fatal cases was symptom-free for so long a period, and as the interval between primary and secondary sarcoma is, as a rule, very short, the author believes that the recoveries in most of these 13 cases will prove to be permanent. Of the 25 tumours which disappeared (macroscopically) under treatment, 19, or 76 per cent., showed no local relapse, but in some of these cases fatal metastases occurred. Grouping his cases according as they exhibited or did not exhibit signs of metastases at the time of treatment, the author shows that the recoveries constitute 50 per cent. in the latter case and only 23.5 per cent. when metastases were already demonstrable.

445. "Tonsillar Adenitis."

PORTMANN (*Rev. de laryng., d'otol., et de rhinol.*, June 30th, 1920) describes two cases of tonsillar adenitis which he defines as subacute tonsillitis with lymphoid hyperplasia, without any other naked-eye manifestations, but with a considerable increase in size of the tonsils. The condition takes three or four days to develop, and is accompanied by cervical adenitis without much fever or general disturbance. There was slight difficulty in swallowing and interference with speech and respiration. After two or three weeks the symptoms begin to subside, and at the end of four or five weeks the tonsils have resumed their normal appearance. In exceptional cases one or both tonsils remain hypertrophied. This tonsillar adenitis, which may recur at relatively short intervals, is to be distinguished from chronic enlargement of the tonsils, which is a permanent condition and is almost always bilateral and subject to no change save attacks of acute inflammatory tonsillitis. The chief distinction, however, is that chronic hypertrophy does not subside in a few weeks. Treatment consists in a single application of a solution of zinc chloride (1 in 40 or 50), followed by use of an emollient throat-wash containing borax and benzoate of soda, and later of an astringent gargle containing guaiacum and rhatany.

ERRATUM. In No. 407 of last week's EPITOME—"Gastro-enterostomy and Jejunal Ulcer" a mistake appeared in the tenth line from the bottom of the paragraph. The sentence should read: "In the past *ten years* he Delore has used only catgut Nos. 0 or 1 with suture in three layers," and not "In the past *six months* . . ." as printed.

OBSTETRICS AND GYNAECOLOGY.

446. The Pelvic Articulations in Pregnancy.

THE question of the expansion of the female pelvis in pregnancy and labour has been a matter of interest from the earliest times. Over a hundred years ago Le Gallois showed that the pelvis of the female guinea-pig was only some half the size of the fetal head. Three weeks before parturition the ligaments joining the pubis became soft, thick, and resilient, until at the time of labour a separation to the extent of one fingerbreadth occurred. Duncan and Barlow described the changes in the joints of the parturient cow. That similar events took place in the human female has been for many years stoutly asserted by some, but hotly repudiated by others. The accumulations of fluid in the centre of the symphysis pubis have been variously regarded as synovial fluid or as evidence of local degeneration; by some they have been disregarded. Matthews Duncan did a great deal to establish the fact that the pelvis is not immobile and that rotation of the sacrum is a normal occurrence. These considerations have caused LYNCH (*Surg., Gyn., and Obstet.*, June, 1920) to radiograph the pelves of women in pregnancy and in labour. Some of his studies are suggestive of a very definite separation at the symphysis pubis. Especially is this the case in an 18-year-old primipara photographed in labour, forty-five days later, and again after eighteen months. This series shows a progressive decrease in the gap between the pelvic bones. The difficulties of drawing definite conclusions except from an enormous mass of material are too obvious to need emphasis, and Lynch refrains from propounding any definite statement as to the universality or extent of the symphyseal separation; further observations are needed.

447. Manual Extraction of the Placenta.

HAMMERSCHLAG (*Zentralbl. f. Gynäk.*, July 17th, 1920) discusses the indications for manual extraction of the placenta, which is called for in two conditions: (1) In cases of haemorrhage which does not respond to other means of treatment; here the author is accustomed to remove the placenta by hand after bleeding to the extent of 700 grams. (2) In cases of placental retention; here Hammerschlag recommends that extraction should be made in all cases in which the third stage of labour is not completed within twelve hours in hospital practice, or six hours in household practice. Removal of a placenta retained more than twenty-four hours is said to lead to risk of severe uterine infection, from which the author lost three cases in succession; his fourth case was successfully treated by abdominal hysterectomy.

448. Icterus and Ectopic Gestation.

NORRIS (*Surg., Gyn., and Obstet.*, July, 1920) records the presence of jaundice in two cases of tubal pregnancy with intraperitoneal haemorrhage. In a third case the blood serum was of a dark brown colour, and the Gmelin test gave a positive result in the urine; these findings sufficed, prior to the development of jaundice, to exclude the alternative diagnosis of uterine gestation with threatened abortion. The author concludes that jaundice is not an uncommon symptom of ectopic gestation, and may frequently determine the differential diagnosis; it is probably due to the absorption of pigments produced by the haemolysis of the extravasated blood. The blood serum often contains considerable quantities of blood pigment (haemoglobin, haematin, haemochromogen, haematoidin).

449. A Rare Case of Placenta Praevia.

PLATERO (*Rev. med. del Uruguay*, July, 1920) records the case of a woman aged 38, a 7-para, in whom there were no signs of placenta praevia until after labour had begun, when profuse haemorrhage took place. The placenta was expelled into the vagina, causing death of the fetus, which was in transverse presentation, and was delivered by version. The puerperium was normal, apart from a slight rise of temperature on the fourth day.

450. Unilateral Radiotherapy for Uterine Haemorrhage.

ACCORDING to PAPE (*Zentralbl. f. Gynäk.*, July 10th, 1920) the successful results following *x*-ray castration for bleeding at the climacteric make it worth while to try radiotherapy for haemorrhages occurring before the menopause; the problem arises of grading a dose so that menstruation becomes diminished without being suppressed. Owing to the varying position of the ovaries it is difficult to avoid the production of permanent amenorrhoea: on the other hand, insufficient doses may be followed by continuous or profuse bleeding. Reference is also made to the possibility, owing to injury to the germ cells, of the procreation of a damaged child. For the prevention of these dangers the author has tried the use of unilateral radiation. Among twenty-three cases, aged from 39 to 42, curetted before the *x*-ray therapy, the author obtained successful results in sixteen. Ten women aged from 25 to 39 were treated without preliminary curetting; in six of these the duration of the menorrhagia was reduced very considerably.

451. Pubiotomy Technique.

JELLETT (*Surg., Gyn., and Obstet.*, June, 1920) describes a modified Döderlein technique in which the needle is passed from above downwards. A small incision is made in the skin and fat directly above the proposed point of entry of the needle; this incision is carried down to the bone, and the periosteum is cut where it passes from the upper to the posterior surface. The point of the blunt Döderlein needle is then pushed through the opening and downwards beneath the periosteum. Special care is necessary in the incision of the periosteum. It is said that according to this method the danger of penetration of the bladder is only a fraction of that which exists when, as in the Bumm method, the needle is passed from below upwards.

PATHOLOGY.

452 Estimation of the Blood Platelets.

THOMSEN (*Acta med. Scandinav.*, v, 1920) describes the following new method of counting the blood platelets. The blood is drawn by venipuncture and discharged into a specially graduated tube containing ½ c.cm. of a 10 per cent. solution of sodium citrate. The blood platelets are held in suspension unchanged for at least six hours, while the red and white corpuscles have sedimented after two to three hours. The number of blood platelets contained in the citrated plasma is then determined by a Thoma-Zeiss counting chamber for red corpuscles. Thomsen has found that the number of platelets varies in health from 206,700 to 413,400, as a rule being 250,000 to 300,000. In 10 cases of influenza and 5 of scarlet fever the figures were high throughout (300,000 or over).

453. The Nitrogen of the Blood in Cancer.

RODIN (*Paris Méd.*, August 7th, 1920), at the Académie de Médecine de Paris, controverted the statements made by German authors that in patients suffering from cancer the albuminous content of the blood serum is diminished. He finds that in 75 per cent. of such patients the blood protein is augmented to 15 per cent. above the normal content. A small protein blood-content occurs in advanced cases, and is a measure of the degree of oedema, anaemia, and cachexia. Loeper and Tonnet (ibid.) reported to the Société de Biologie that the albuminous content of the blood may be normal, diminished, or increased, in these patients. An increased content may correspond to desiccation of the tissues as a result of copious and repeated vomiting; but true hyperalbuminosis, so great even as 80 per cent. above normal, may be found in cases of ovarian, mammary, gastric, and especially hepatic cancer.

454. Blood Findings after Splenectomy.

CARPENTER (*Med. Record*, August 28th, 1920) records thirteen complete blood examinations made during six weeks in a boy of 10, whose spleen had been removed five years before on account of familial haemolytic jaundice of the Chauffard-Minowski type. The average count showed haemoglobin 82 per cent., red cells 4,288,000, and white cells 15,000. Prior to the operation the haemoglobin had been as low as 23 per cent., and the red cells had been about two millions. Evidence of marrow regeneration appeared still to be present, as shown by the high colour index, moderate chromatophilia, poikilocytosis, reticulation of the erythrocytes, and leucocytosis with high transitional and eosinophil counts. There was an unusually quick coagulation time in spite of a rather low platelet count. Evidence of lymphatic activity was found in enlargement of the external lymph glands and of the tonsils, as well as in an absolute lymphocytosis.

455. X Ray Studies of Bronchial Function.

BULLOWA and GOTTLIEB (*Amer. Journ. Med. Sci.*, July, 1920) observed the following phenomena on fluoroscopic examination of dogs who had been injected with adrenalin after their bronchi had been filled with barium: (1) A bellows-like action in the trachea and bronchi which might be limited by contraction of the bronchial muscles. (2) A peristaltic action of the bronchial muscles which seemed adequate to empty them, apart from ciliary movement. The action of adrenalin, benzyl benzoate, ether, and muscarin was also observed by this method.

456. Changes in Blood Chemistry after X-Ray Treatment of Leukaemia.

MINOT and DENIS (*Amer. Journ. Med. Sci.*, August, 1920) give the results of chemical examination of the blood in four cases of myelogenous leukaemia treated by x rays. After treatment, a steady fall of the non-protein nitrogen (previously very high) was noted. In the most severe case urea accounted for only 30 per cent. instead of the normal 50 per cent. of the non-protein nitrogen; creatinin values were normal. The suggestion is advanced that in leukaemia there is present, possibly as a constituent of the white cells, some nitrogenous substance not accounted for in the present scheme of blood analysis. The uric acid blood content was increased, but did not become modified by the diminution in leucocythaemia which occurred as the result of treatment.

457 Lethargic Encephalitis.

DESSY and GRAPIOLO (*Rev. Sud Amer. de Endocrin.*, July 15th, 1920) record three cases of lethargic encephalitis which occurred last June at Buenos Aires, where the disease is little known. In each case they isolated from the cerebro-spinal fluid a diplo-streptococcus whose morphological and cultural characters resembled those of the diplo-streptococcus which was found by numerous observers in the last pandemic of influenza. As, however, inoculation did not reproduce lethargic encephalitis in monkeys, its etiological nature could not be established.

458. The Relation of Phlyctenular Ophthalmia to Tuberculosis.

BORDEN, VEEDER, and HEMPELMANN (*Med. Record*, August 21st, 1920) reported to the American Pediatric Society a study of 196 children with phlyctenular conjunctivitis. The skin tuberculin tests were positive in more than 92 per cent.; the results of the complement fixation test for tuberculosis were similar to those obtained in cases of proved tuberculosis. In more than one-half the cases tuberculous lesions of organs other than the eye were demonstrable, and in children observed for one year or more, more than 80 per cent. gave clinical evidence of tuberculosis. Brennemann reported having found a positive tuberculin test in 98 per cent. of the cases, and Talbot stated that of a series of 100 cases of phlyctenular ophthalmia, the Von Pirquet reaction was positive in all chronic cases, and 21 per cent. showed other evidence of tuberculosis.

459. Fat Digestion in the Absence of Bile from the Intestine.

HUTCHINSON and FLEMING (*Glasgow Med. Journ.*, August, 1920) record a case of congenital atresia of the bile ducts in a male aged 4 months; no bile entered the intestine. Analysis of the stools showed that the digestion of fat by fat-splitting was only slightly inhibited, but fat absorption was greatly decreased. The conclusion is drawn that bile has only a slight influence on the lipolytic properties of the pancreatic secretion; its chief part is to aid fat absorption. At the autopsy the pancreas was found to be normal and its duct patent; the liver showed advanced monolobular cirrhosis.

430. Congenital Atresia of the Oesophagus.

ACCORDING to SHAW (*Med. Record*, August 28th, 1920), about 150 cases of congenital atresia of the oesophagus have been reported. One case was described as early as 1682, and another in 1703 by Dr. Gibson, physician-general to the British army, and a grandson of Oliver Cromwell. The outlook in cases which come to operation is poor, not so much on account of the inanition of the patients as of the great tendency to haemorrhage.

461. Sedimentation of Erythrocytes in Citrated Blood in Nervous and Mental Disease.

PLAUT (*Muench. med. Woch.*, March 5th, 1920) has examined the rate of sedimentation of erythrocytes in the citrated plasma of 220 cases of nervous and mental diseases. The rate is found to be distinctly different in the majority of cases of general paralysis, neuro-syphilis, and arteriosclerosis on the one hand, and the majority of cases of psychopathia, melancholia, dementia praecox, and epilepsy on the other. Sedimentation in the former group takes place more quickly; in general paralysis the time is usually one-sixth of that required in dementia praecox. Sedimentation is more rapid in women than in men; a probable factor is agglutination of the corpuscles. Sedimentation is accelerated during pregnancy.

462. Blood Cysts on the Heart Valves of the Newly Born.

JONSSON (*Acta med. Scandinav.*, v, 1920) examined the hearts of 71 cases aged from the sixth month of intra-uterine existence to the third month of life, and found cysts in the heart valves in 45 cases, or about 63 per cent. They were most frequent on the mitral and tricuspid valves (23 cases). Microscopical examination made in 3 cases showed that the cysts arose from canals lined by epithelium derived from the surface of the valve.

433. Phosphate Retention in Nephritis.

DENNIS and MINOT (*Arch. of Internal Med.*, July, 1920) found unmistakable evidence of phosphate retention, as shown by an increase of the inorganic phosphate content of the blood plasma, in about 65 per cent. of nephritic and cardio-renal hospital in-patient cases. In lethal cases the increase was rapid and progressive; sometimes ten times the normal phosphate content was found. The increase found in non-lethal cases was relatively slight. These results suggest that the phosphate retention test may afford valuable prognostic indications in cases of nephritis.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

464. Treatment of Leprosy.

McDONALD and DEAN (*Pub. Health Reports, United States*, August 20th, 1920) record the treatment in Hawaiian hospitals of 186 cases of leprosy. Over 25 per cent. appeared to become clinically and bacteriologically free from the disease as a result of intramuscular injection of derivatives of the fatty acids of chaulmoogra oil. The authors report that these acids and their ethyl esters give good results alone or in combination with iodine; there is no proof, however, that the addition of iodine increases the efficacy of the material used. By fractionation of the fatty acids it has not yet been possible to demonstrate the particular acid, or associated substance, to which the therapeutic effect is due. Oral administration of the acids is probably much less effective than their injection. Injection of the ethyl esters into leprous nodules is followed by considerable swelling, with ultimate disappearance of the lesions.

465. The Curability of Tuberculous Meningitis.

HARBITZ (*Norsk Mag. for Laegevidenskaben*, July, 1920) has come to the conclusion that the many records of recovery from definite tuberculous meningitis do not represent the whole case for the modern view that tuberculous meningitis is a disease from which many recover, for they do not indicate the frequency with which patients recover from the mildest forms of this disease, as shown by transitory headache and other signs of "meningism." Between the cases which terminate fatally in a few weeks and those which end in complete recovery, he describes an intermediate type of case in which the duration of the disease is a matter of several months. In this connexion he records the case of a man, aged 38, who, apart from an attack of influenza, had been well until November, 1918, when he developed headache, fever, giddiness, and vomiting, which lasted for about a week. The same symptoms recurred in February, 1919, and he was admitted to hospital with the diagnosis of cerebral tumour. Hiccough, vomiting, and headache persisted till his death on July 16th. The necropsy showed signs of a diffuse tuberculous encephalitis, myelitis, and poliomyelitis. The duration of this case was five months at least, possibly eight months; in another of the writer's cases the disease lasted three to four months; he also includes in this intermediate class a case recorded in 1914 by Rössle, in which the duration of the symptoms was about seventeen months.

466. Treatment of Diabetes Complicated by Pulmonary Tuberculosis.

THE fact that the untreated diabetic is more likely to develop pulmonary tuberculosis than the diabetic who is kept sugar-free by modern methods, is emphasized by the experience of JANNEY and NEWELL (*Journ. Amer. Med. Assoc.*, July 17th, 1920). In a series of sixteen diabetic cases complicated by pulmonary tuberculosis showing activity, twelve patients definitely improved during a course of institutional treatment; diabetic symptoms disappeared in all but two cases, observed for but a short period. Tuberculous symptoms improved in the majority of cases. Principles of treatment recommended are the judicious employment of sufficient under-nutrition, combined with rest, to maintain the patient sugar-free and control the tuberculosis. Fasting is unnecessary to obtain good results. Ill advised fasting may lead to a fatal outcome. Rest is at least as important as in the treatment of uncomplicated pulmonary tuberculosis.

467. Spengler's Immune Bodies in the Treatment of Tuberculosis.

BORGOGNO (*Tubercolosi*, April, 1920), director of the antituberculosis dispensary of Alessandria, who has made an extensive use of Spengler's immune bodies, has come to the conclusion that they have no effect in severe forms of open tuberculosis associated with pronounced toxaemic manifestations. On the other hand, he found that they may benefit the general condition in apyrexial forms of tuberculosis, and are most effective in pretuberculous states and in the initial stages of tuberculosis in which symptoms due to tuberculous toxins dominate the clinical picture.

468. The Effect of Tonsillectomy on Rheumatic Recurrence.

ST. LAWRENCE (*Med. Record*, May 8th, 1920) has made a careful study of seventy-five children subject to recurring attacks of rheumatism. Their tonsils and adenoids had been thoroughly removed from two to six years previously; since the operation the children had been seen at intervals of four or five months. In a fifth of the cases a second operation was necessary to ensure complete removal of all the tonsillar tissue; many of the cases presented cardiac lesions. In 84 per cent. of the cases having rheumatic manifestations there had been no recurrence of the rheumatic attacks since operation. Two-thirds of these cases had had the last attack of rheumatism within one month of the operation. The cardiac cases were improved by tonsillectomy, and in cases of malnutrition the good effects were equally striking. The author has no doubt as to the beneficial effect of the tonsillectomy.

469. Pseudo-senile Cachexia in Syphilis.

SMIT (*Nederl. Tijdschr. v. Geneesk.*, July 31st, 1920) has collected from the literature three cases of this rare condition (of which King Stanislaus's celebrated dwarf Bébé was an example), and has seen nine cases himself. The condition is characterized by more or less constant pain in the right parietal region, and complete or partial senility. The principal signs of senility in Smit's patients were as follows: (1) Apparent diminution in height, caused by kyphosis; (2) great diminution in weight; (3) restricted movement of the chest; (4) complete or partial loss of the sexual function; (5) loss of hair of the scalp and beard, with complete or partial loss of pigmentation; (6) spontaneous loss of teeth; (7) remarkable looseness of skin (cutis laxissima), which was sometimes very dry and scaly; (8) marked discrepancy between the appearance of the patient and his real age; (9) loss of memory and intelligence; (10) locomotor disturbances and great debility. Vascular lesions manifested by apoplexy occurred in a large proportion of cases. Eye diseases, such as cataract, glaucoma, optic neuritis, and nystagmus, were frequent, the right eye being always affected either alone or to a greater extent than the left. Antral deafness in the right ear was found in three cases. Three of the patients were probably examples of inherited syphilis; in the others infection had taken place from eighteen to twenty-five years previously.

470. Beading of the Ribs.

HESS and UNGER (*Amer. Journ. Dis. Child.*, May, 1920) point out that the beading of the ribs, which is a common feature of rickets, need not always be due to rickets, but may be of scorbutic origin. They quote cases of beading which has been cured by antiscorbutic diet, whereas cod-liver oil and anti-rachitic treatment did no good. Experiments undertaken to see how far the greater mobility of the middle ribs accounted for the greater frequency of beading in those ribs, as compared with the upper and lower ones, were inconclusive. In one series of cases the ribs on one side were strapped for about two hours to lessen their mobility; in another series the costo-chondral junctions were subjected to daily vibration. No differences were noticed in the beading. SCHWARZ, in the same number, from an examination of nearly 5,000 infants, concludes that slight degrees of rib beading are normal and not an indication of rickets, except in association with other signs of that disease. He found that 35 per cent. of the children (up to 12 months) had rib beading; 13 per cent. exhibited this during the first month.

471. Rapid Variation in Cutaneous Hyperaesthesia in Encephalitis Lethargica.

KRUISINGA (*Nederl. Tijdschr. v. Geneesk.*, June 19th, 1920) records a case of encephalitis lethargica, in a youth aged 17, which was remarkable for the rapid change in position of the hyperaesthesia of the skin. When the patient was first seen he showed marked hyperaesthesia of the skin at the level of the umbilicus. A few days later the skin of the neck and back of both arms was hyperaesthetic. The following day the hyperaesthesia disappeared, but a few days later there was hyperaesthesia of the skin of the abdomen, and subsequently of the extensor surfaces of the arms and legs.

472. Treatment of Jaundice by Sweetened Urotropin.

WEIL (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 27th, 1920) recommends treatment of mild infective and toxic jaundice with drop by drop rectal injections of a solution consisting of one litre of boiled water containing 45 grams of sugar and 1.50 grams of urotropin. The injection should be given so that the patient can absorb it in twenty-four hours and not return it in the stools but in the urine. As the result of the treatment the course of the disease is shortened, diuresis rapidly sets in, the digestive functions are restored, and with the return of appetite the patient rapidly recovers his weight. The method was frequently successful in jaundice due to gall stones, but always failed in cases of cirrhosis and new growths. This therapeutic test may therefore be of some diagnostic value in distinguishing between simple jaundice and that due to latent cirrhosis.

473. The Treatment of Cerebro-spinal Meningitis.

POULSEN (*Hospitalstidende*, June 23rd, 1920) has treated during the past three years, at the Viborg Hospital, 19 cases of meningococcal infection. He gave morphine, camphor, and digalen, and in 16 cases meningococcal serum. At first he gave only intraspinal injections of serum, later he followed up an intraspinal injection with an intravenous injection. The first patient to receive this combined treatment nearly died under it. Immediately after the intravenous injection of 10 c.cm. of serum respiration ceased, the pulse could not be felt, and there were signs of severe collapse. After this condition had lasted about two minutes slight muscular twitchings occurred, and these were followed by the resumption of what the author calls a comatose type of respiration. Although he had been delirious before the injection the patient was perfectly conscious next morning. Another patient, admitted to hospital pulseless, was given an intramuscular injection of 2 c.cm. of serum shortly before an intravenous injection of the serum; this also produced shock, restlessness, and vomiting, but next day marked improvement was observed. The author's impression of this treatment was so favourable that he repeated the intraspinal and intramuscular injections till there were clinical signs of definite improvement, the cerebro-spinal fluid was almost clear, and the intraspinal pressure more or less normal. Thus one patient might be given from three to twelve intraspinal injections, and the last patient treated was given altogether 335 c.cm. by intraspinal injection, and 55 c.cm. by intramuscular injection.

SURGERY.

474. Sympathectomy for Goitre.

LERICHE (*Lyon Chir.*, 1920, 17) points out how little is known of the secretory nerves of the thyroid gland. Jaboulay claimed success for excision of the superior cervical ganglion in Graves's disease, and the Mayos have shown that this manœuvre is of value in the treatment of severe exophthalmos persisting after thyroidectomy. It has occurred to Leriche, as an outcome of his earlier work on sympathectomy carried out on the vessels of the limbs, to dissect off the sheaf from the superior thyroid artery; this step has the double value of diminishing the size of the vessel and of cutting off possible secretory fibres to the gland. He has performed the operation in one patient, a young man with a large thyroid of many years' duration, non-toxic in character. Sympathectomy was performed on the right superior thyroid artery, and at the end of one month the enlargement of the right lobe had disappeared, the left lobe remaining *in statu quo*. Leriche intends to give the method an extensive trial, and the present paper must be regarded as a preliminary note only.

475. Spontaneous Rupture of the Gall Bladder.

[illegible] and [illegible] (*Lyon Méd.*, July 25th, 1920), describe the case of a female patient of 62, in whom, at operation for severe obstructive jaundice of two months' duration with enlargement of the liver, distension of the gall bladder, and normal temperature, clear bile was found in the peritoneal cavity; the greatly distended gall bladder was found to have a minute perforation at the site of a gangrenous patch. Cholecystenterostomy was performed. The condition was due to malignant disease of the head of the pancreas.

[illegible]

476. Bone Grafting for Tuberculosis of the Spine.

ACCORDING to MEYERDING (*Minnesota Medicine*, May 4th, 1920), of 405 patients with Pott's disease observed in the Mayo clinic, 100 were operated on by the modified Albee bone-grafting method; the bone grafts used were curved to fit the deformity. Eighty-six per cent. were relieved of clinical symptoms, three patients were unimproved, three had not been heard from; eight died subsequent to operation.

477. Ocular Symptoms Caused by Osteomyelitis of the Upper Jaw in Infants.

E. MARX (*Nederl. Tijdschr. v. Geneesk.*, July 24th, 1920) has collected 35 cases, including 3 of his own, in which ocular symptoms in infants, aged from 3 days to 9 months, were caused by osteomyelitis of the upper jaw. The causal organisms in the few cases in which a bacteriological examination was made were staphylococci, streptococci, and gonococci. The causes of the osteomyelitis in the various cases were infection of the breast, facial erysipelas, instrumental injury, and septic vaginitis. The ocular symptoms consisted in palpebral oedema, palpebral and lacrymal fistula, conjunctivitis, chemosis, and exophthalmos. Eighteen recovered, 10 died, and in 7 the issue was not recorded.

478. Epiphora of Aural Origin.

PUGNAT (*Rev. de laryng., d'otol., et de rhinol.*, July 15th, 1920) considers that too much importance is attributed to naso-lacrymal obstruction in the causation of epiphora, and that there is a tendency to neglect the importance of reflex causes, which are more frequent than is generally supposed, and may originate not only in the nasal fossae, but also in the external auditory meatus, tympanitic membrane, or middle ear. Pugnat has recently observed a case of intermittent lacrymation of the left eye of a year's duration, which occurred whenever the ear on the corresponding side was blocked by wax. As soon as the passage was freed the lacrymation diminished and stopped entirely within a few days.

479. Gonorrhoeal Arthritis Treated by Antigonococcal Serum.

LANGERON and BOECK (*Lyon Chir.*, June, 1920) record 13 cases of severe gonorrhoeal arthritis, acute or subacute, successfully treated by large doses of antigonococcal serum prepared by the Pasteur Institute. The authors found that the serum had a speedy action on the pain, which in all cases was greatly diminished (or became suppressed) within three days of the injection; the objective phenomena were more slowly improved. They believe that in certain cases septicaemia was prevented; another beneficial factor was that passive movements could be begun from four to ten days after the treatment. Frequently a generalized serum reaction was well marked. In severe cases from 150 to 200 c.cm. were given, divided into three or four daily doses; in other cases not less than 100 c.cm. were given in all. The injections were made intramuscularly or subcutaneously. The treatment should be combined with other therapeutic measures, and does not seem to have any influence on the urethritis.

480. The Treatment of Large Tibial Gaps.

BRANDES (*Deut. Zeit. f. Chir.*, July, 1920) describes a procedure that he has been driven to adopt in the treatment of extensive loss of bone in the tibiae of children who have had osteomyelitis. Four cases are described, with gaps of 8 to 20 cm. In the first three, one or more free bone transplantations had been performed, but the material used had in each case become either absorbed or sequestrated. After these failures he tried the manœuvre recommended by Hahn, and after division of the fibula below the neck embedded the shaft in the free end of the upper extremity of the tibia. The healing was relatively uneventful in all the cases, and organic continuity was established. A long period of fixation and subsequent ambulatory treatment gave a limb which, owing to the instability of the ankle, showed considerably reduced, but still severe, functional incapacity. The tibial side of the leg and foot was unable to share in the weight bearing function of the limb. A final stabilizing manœuvre was accordingly devised. This consisted in splintering off and implanting into the lower piece of tibia a portion of the lower end of the fibular shaft. This two stage operation gave satisfactory results in the four cases. The first two patients, seven years after the final operation, are now actively employed in occupations necessitating prolonged weight bearing, and have discarded all mechanical support. According to

Brandes, the main reasons for the failure, in such cases, of the free bone graft are: (a) the unsatisfactory nature of the graft bed, in which massive cicatricial changes have taken place; (b) the loosening of the fixation points of the graft by the collateral fibular growth; (c) fibrous and atrophic changes in the tibial extremities.

481. Chondromata.

MEYERDING (*Journ. Orthop. Surg.*, 1920, N.S. 2) says that the cartilaginous tumours of bone consist of hyaline cartilage supported by a fine framework of connective tissue poor in vessels. Enchondromata arise from areas not normally associated with cartilage; ecchondromata arise from the sites of pre-existing cartilage. In many cases the chondroma tends to arise near the epiphyseal line, and to invade the epiphysis as well as the diaphysis. This is an important differential diagnostic point; fibrocystic disease of the long bones does not affect the epiphyses. As a rule the heavy and coarse trabeculations of the chondroma are clearly visible under *x* rays, and serve to distinguish this condition from myeloma. Early incision and curettage of the cavity are indicated. Where the bone shell has been greatly thinned out it is well to crush the bone cortex in; this step not only helps to obliterate the cavity, but also reduces the deformity. The paper is illustrated by photographs and radiographs.

482. Suprarenal Insufficiency and Acute Post operative Dilatation of the Stomach.

ACCORDING to GILIBERTI (*Il Policlinico*, Sez. Chir., June 15th, 1920), acute post-operative dilatation of the stomach must be regarded as a rare occurrence. The first symptoms, which rarely appear later than the second day, consist in a feeling of weight in the epigastrium and considerable distension of the abdomen. There is difficulty in breathing, owing to pressure on the diaphragm, heart, and vagus; the pulse is small and the expression anxious. The condition only becomes serious when vomiting occurs. Although recovery takes place in the majority of cases, the prognosis should always be guarded. The condition has been attributed by Arcangeli to suprarenal insufficiency, with which it has the following points in common: feeble pulse, subnormal temperature, grave asthenia, and gastro-intestinal disturbance in the form of meteorism and intestinal obstruction. Giliberti records a fatal case in a woman, aged 47, operated on for strangulated femoral hernia. Vomiting, epigastric pain, meteorism, and intestinal obstruction set in seventy-two hours after the operation, and the autopsy showed tuberculosis of both suprarenals, pigmentation of the buccal mucosa, though not of the skin, and cystic degeneration of the hypophysis.

OBSTETRICS AND GYNAECOLOGY.

483. Treatment of Persistent Occipito-posterior Positions.

WHEN the head is high and floating, DE LEE (*Journ. Amer. Med. Assoc.*, July 17th, 1920) says that interference is not necessary; but a careful search should be made for any condition that may demand treatment for its own sake. Rupture of the membranes should be prevented, if possible, because labour is more often retarded than hastened. The woman should lie on the side to which the occiput points; this is supposed to favour flexion, engagement, and rotation. Morphine and scopolamine are used in the first stage to prevent exhaustion of the mother and child, but it is not wise to let the labour drag on too long. By means of a colpeurynter the dilatation of the cervix may be completed and the case thus prepared for interference if required. After complete dilatation of the cervix, De Lee usually waits an hour or two to see whether or not the head will engage. If it does not, the membranes are punctured—the patient being on her side, to prevent prolapse of the cord. If the head does not engage very soon, under deep anaesthesia the whole hand is passed into the uterus, pushing the head up and out of the pelvis if necessary. That hand is selected which will have its palm directed toward the face of the infant. The posterior shoulder of the child is sought, and with the tips of the fingers is swung round to the front, past the promontory of the sacrum. The head, fitting into the palm of the hand, goes with the trunk. When the inside hand is leading the occiput into the pelvis in its new position the outside hand forces the head down by pressure on the occiput, which is now to be felt over the pubic ramus. It may be advisable to draw the head down deep into the pelvis with forceps, await from four to six labour pains, remove the forceps, and leave the case to Nature or to follow a later indication. This plan is especially successful in primiparae, because the moulding of the head and the softening of the tissues produced by a few hours' labour and the progress of the head toward the outlet facilitate the subsequent delivery. De Lee warns against the use of forceps in these high head cases. If descent, rotation, and extraction are forcibly effected by forceps, the child is always injured, often killed. This is one of the commonest causes of stillbirth and puerperal infection.

484. Oxyuris Embedded in the Cervix.

KLEE (*Zentralbl. f. Gynäk.*, August 21st, 1920) records the case of a woman, aged 59, who had had slight vaginal haemorrhage for eighteen months; the posterior lip of the cervix was thickened and bled easily. A diagnosis was made of cancer of the cervix, and a portion of the tumour was removed for examination. Microscopically a female oxyuris and its eggs were recognizable, embedded in chronic inflammatory tissue; at one portion of the section a commencing squamous-celled carcinoma was detected. The author believes this to be the first recorded case of oxyuris found in this situation.

485. Amenorrhoea, Uterine Fibroma, and Pregnancy.

CLEUET and DELILLE (*L'Écho Méd. du Nord*, July 3rd, 1920) record an unusual observation in a 5-para of 41. During her 36th year, which was spent in Lille during the German occupation, her menstruation gradually ceased. At the age of 39 she began to feel ill and to have a feeling of weight in the lower part of the body. In August, 1919, the uterus was found to be hard, bossed, and mobile; its fundus was three fingerbreadths below the umbilicus. None of the signs of pregnancy could be found, and the diagnosis was made of interstitial or subperitoneal fibroid. At a laparotomy the uterus was found to be fibromatous, but gravid. On September 12th all the signs of pregnancy were still absent, although the fundus was now palpable above the umbilicus. On November 22nd, when the patient was found to have pyelonephritis, signs of pregnancy had become demonstrable. On March 25th, ten weeks after labour, the uterus was found to be hard, but no larger than the size of a fist; the presence, therefore, of a very small fibroma appeared to have been sufficient to conceal the presence of the fetus.

486. Primary Pneumococcal Infection of the Genital Organs.

HORNUNG (*Zentralbl. f. Gynäk.*, July 31st, 1920) supports the opinion of Bondy that in the case of pneumococcal infections the difficulty of deciding whether bacterial infection of the genital tract is primary or secondary is very considerable. The literature, including the contribution of Foulerton and Bonney, is critically reviewed, and the author records three personal cases, two of which followed criminal abortion, and are regarded as clear instances of primary pneumococcal infection of the genital organs. In one case pneumococci were found in the blood, vaginal secretion, and cerebro-spinal fluid on the second day after the induction of abortion by injection of soap and water: the autopsy showed recent endocarditis, as well as meningitis and endometritis. In the other, pneumococci were found in the blood nine days after the induction of abortion, and death was due to endocarditis and septicaemia; it does not appear, however, that pneumococci were found in the genital tract.

487. Pregnancy Toxaemia in a Patient with One Kidney.

BRODHEAD (*New York Med. Journ.*, June 5th, 1920) relates the case of a woman of 26, who, three years after having her right kidney removed for multiple infarcts with suppuration (not apparently tuberculous), became pregnant. At about seven months the urine showed 10 per cent. by volume of albumin, and the blood pressure rose to 160 mm. Under eliminative treatment the albuminuria diminished; microscopical examination of the urine showed no blood, a moderate amount of pus, and a small number of hyaline casts. The diagnosis was made of pyelitis with renal involvement. Two modes of treatment were suggested: (1) To interrupt the pregnancy by means of a bag or bougie; (2) Caesarean section. Chiefly because the first method of treatment would leave the patient exposed to the danger of again becoming pregnant, the second plan was adopted, the patient being sterilized during the operation. The child lived and the renal infection subsided, although there continued to be some albuminuria.

PATHOLOGY.

488. Rectal Absorption of Glucose.

TALLERMAN (*Quart. Journ. of Med.*, July, 1920), in view of the many doubts that have been expressed regarding the power of the rectum efficiently to absorb glucose or other substances, carried out a series of experiments to determine by blood analysis the rise in blood sugar following rectal injection of glucose. A solution of 60 grams of glucose in 180 c.cm. of normal saline was slowly run into the rectum, and half-hourly samples of the blood were examined by Maclean's method. The figures obtained were compared with those of samples of blood taken before the injection. The experiments proved that absorption did take place, the maximum being usually attained in about an hour and twenty minutes and the average rise being 0.03 per cent. In the case of carbohydrate taken by mouth, the maximum rise of blood sugar occurs in about half an hour, and reaches 0.05 to 0.06 per cent. Thus rectal absorption proceeds at a much slower rate, taking three times as long. The blood sugar settles down to its normal level in about four hours, whereas when the carbohydrate is given orally the return to normal level is much quicker. In these experiments the injection of glucose, even in high concentration, was found not to set up rectal irritation. The estimation of the rise of blood sugar in the systemic circulation probably does not cover the total absorption, which is beyond mensuration in the case of human beings, but it certainly gives an indication that there is a definite absorption of glucose from the rectum. In Van Noorden's recent experiments dextrin is recommended as being of greater value for the purpose of rectal feeding: it is cheaper, it can be used in higher concentrations, and it is equally efficacious.

489. Measurement of Blood Coagulation Time.

LOVE (*Med. Record*, September 11th, 1920) describes a method of measuring the blood coagulation time; the principle resembles that of McGowan's method. The blood is obtained by puncture of a vein; finger stabs are said to have little or no value. The blood is collected in a paraffined test tube. Two or three long capillary tubes, with a lumen of from 0.3 to 0.5 mm. diameter, are filled by suction with blood and are laid flat, the time of entry being recorded. About two minutes before coagulation should occur about 2 cm. of one tube is broken off; the separated part, held in transmitted light, is broken between the fingers in such a manner that the proximate ends may be drawn apart in the long axis of the fragment. This process is repeated at intervals; the end-point occurs when a thread of fibrin will stretch 7 to 10 mm. across the break. If the end-point is reached in the first tube the others are not used except for a final control. The author has constructed a graph showing the variation of the coagulation time with atmospheric temperature; the reading given by the capillary tube method is translated by reference to this graph into terms of 25° C.

490. A Non-toxic Dysentery Antigen.

JOTTEN (*Zeitschr. f. Immunitätsforsch.*, 1920, 29) has found that treatment by antiformin in concentrations of 1 per cent. or more kills and detoxicates the dysentery bacillus. To a culture of Shiga's bacillus grown for twenty-four hours on an agar plate is added 2 c.cm. of antiformin solution (1 per cent.); at the end of sixty seconds neutralization is effected by the addition of sulphuric acid (10 per cent.), and dechlorination is secured by admixture with sodium sulphite (10 per cent.). Such a solution formed an effective non-toxic antigen. Similar results were obtained with Y and Schmitz's bacilli.

491. A Modified Stain for Tubercle Bacilli.

JÖTTEN and HAARMANN (*Münch. med. Woch.*, June 11th, 1920) describe a modification of the Spengler method for the demonstration of tubercle bacilli. The smear, stained with carbol-fuchsin, is decolorized for twenty seconds with 15 per cent. nitric acid; after a momentary rinsing it is treated again for ten seconds with the acid, rinsed again, and then counterstained for about thirty seconds in a mixture of equal parts of diluted aqueous picric acid and diluted alcohol. After being again rinsed the slide is allowed to dry.

492. Glomerulo-nephritis complicating Subacute Streptococcus Endocarditis.

BAEHR and LANDE (*Journ. Amer. Med. Assoc.*, September 18th, 1920)—one of whom has previously shown that microscopic study of the kidneys of individuals dying of subacute streptococcus endocarditis reveals, with few exceptions, a typical glomerular lesion due to minute bacterial emboli—report a series of seventy-seven cases of subacute streptococcus endocarditis. Nine, or about 11.5 per cent., died in uraemia due to an intercurrent attack of acute glomerulo nephritis, or what is regarded as its sequel—chronic diffuse nephritis. If glomerulo-nephritis, which is apparently initiated only during the bacterial stage of the endocarditis, fails to cause the patient's death, the renal process then progresses to the development of a chronic diffuse nephritis.

493. The Spirochaeta pallida in Aortic Aneurysm.

ACCORDING to MANOUÉLIAN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 3rd, 1920), who records two illustrative cases, the presence of the *Spirochaeta pallida* in the lesions of aortic aneurysm has hitherto only been described by Wright and Richardson in 1909 and by Warthin in 1919. In Manouélian's cases the organisms were found in large numbers in the necrotic tissues and the surrounding region.

494. The Blood Sugar in Anaesthesia and Nervous Diseases.

CHANTRAINE (*Zentralbl. f. inn. Med.*, July 24th, 1920) came to the following conclusions as the result of determination of the blood sugar by Bang's method in ether and ethyl chloride anaesthesia in men and animals, and in injuries and diseases of the nervous system: (1) In ether anaesthesia there is an increase in the blood sugar by a third or a half. In ethyl chloride anaesthesia there is no hyperglycaemia. (2) After severe cerebral concussion artificially produced in animals there is no hyperglycaemia. (3) As a general rule, there is no hyperglycaemia in diseases of the nervous system.

495. Bacteria in the Urine during Pregnancy.

BÖTTCHER (Inaug.-Diss., Breslau, quoted in *Zentralbl. f. Gynäk.*, July 31st, 1920) records the examination of catheter specimens from 50 women during the course of normal pregnancy. In 9 cases no bacteria were found; in 34 instances staphylococci, in 2 streptococci, in 4 *B. coli*, and in 22 Gram-positive rods were detected.

496. The Wassermann Reaction after Death.

GRAVES (*Journ. Amer. Med. Assoc.*, August 28th, 1920) tabulates the results of Wassermann tests made *post mortem* in 492 subjects. In 73.5 per cent. the *post-mortem* serology harmonized with the anatomical findings or clinical histories, usually with both. In 124 cases showing evidence of syphilis, *post mortem* or clinical, 90.5 per cent. gave a positive Wassermann reaction *post mortem*. The reliability of the test depends very considerably on the care used in obtaining and keeping the blood; the author recommends taking the blood with a sterile pipette through a hole made by piercing the seared surface of the right auricle with the heated point of a pair of scissors. Kolmer has shown that a trace of acid or alkali as low as 1 in 10,000 affects the reaction sufficiently to give an incorrect reading. Graves holds that cholesterinized antigens are the most delicate; properly used and controlled, they do not give false positive reactions. It is suggested that the *post-mortem* test may have medico-legal applications.

497. Lymphoid Leukaemia with Leucopenia.

MUSSIO FOURNIER (*Arch. des mal. du coeur*, July, 1920) records a fatal case of this condition occurring in a woman, aged 25, who showed a generalized purpuric eruption, retinal haemorrhages, haematemesis, gangrene of the right tonsil and high fever. Death took place suddenly on the tenth day without any enlargement of the liver, spleen, or glands having been detected. Examination of the blood showed a leucopenia of 4,000 and the following differential count: Neutrophils, 13 per cent.; small and medium lymphocytes, 60 per cent.; large mononuclears, 5 per cent.; lymphoidocytes, 13 per cent.; myeloblasts, 10 per cent.; eosinophils, 0; basophils, 0. Fournier could find only four similar recorded cases of leukaemia with leucopenia. Thus in Jeanselme's case (in a child) and Rivet's two cases (in adults) the number of leucocytes ranged from 4,000 to 5,000, and the lymphocytes were as high as 70 to 80 per cent. Ricca Barberis and Lasagni observed a patient of 16 with 5,400 leucocytes and a lymphocytosis of 79 per cent. which persisted until death.

498. A Fallacy in the Sulpho-salicylic Test for Albumin.

ACCORDING to SCHALL (*Münch. med. Woch.*, February 6th, 1920), the addition of sulpho-salicylic acid to urine containing large amounts of calcium may produce a precipitate closely resembling that given by albumin.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

499. Prophylaxis of Typhus by Convalescents' Serum in Persons Contaminated by Infected Lice.

According to Nicolle and Conseil (*Compt. rend. Soc. de Biol.*, July 3rd, 1920), the serum of convalescents from typhus fever was first employed therapeutically by Raynaud and Legrain, but without any definite results. On the other hand, Nicolle and Conseil have shown that the serum of typhus convalescents and of monkeys which have recovered from the experimental disease possesses definite preventive properties. The immunity conferred is only of short duration, and the serum is only active when it has been obtained during the first few days after the temperature has become normal. During a recent outbreak of typhus in Tunis the writers employed the method in seven cases, and none of the persons so treated contracted the disease. Four of the cases were given a single injection of 20 c.cm. and three had two injections, with a few days' interval between each; the writers regard the two injections as best.

500. Secondary Syphilis of the Heart.

According to Oddo and Mattei (*Arch. des mal. du coeur*, July, 1920), secondary syphilis of the heart may assume two different forms. The first, the prognosis of which is good, is characterized by disturbance of cardiac rhythm, and the second by hyposystole or asystole, which may prove lethal. The lesions may affect the vessels, and secondarily the pericardium; the myocardium may also be attacked, and more rarely the endocardium. The diagnosis is made by the history of the patient, the clinical course, the Wassermann reaction, and the effect of treatment. The prognosis should be very guarded. Specific treatment should be instituted before administration of cardiac tonics, mercury being used in preference to salvarsan, which is liable to give rise to cardiac collapse and pulmonary oedema.

501. Trional in Epilepsy and other Nervous Diseases.

According to Braune (*Zentralbl. f. innere Med.*, June 26th, 1920), trional in doses of 0.5 gram twice daily is suitable for the treatment of epilepsy and is at least as valuable as the bromides. The danger of intoxication should not be disregarded, but can be avoided. The drug is contraindicated in patients with debilitating diseases. Regular action of the bowels and proper functioning of the kidneys must be maintained and opportunities afforded for a long stay in the open air. Baths should be given several times a week and plenty of alkaline water ordered. Temporary interruption of trional treatment is necessary if larger doses than 0.5 gram twice daily are given. Bromides and other drugs can be combined with trional. Braune has found that trional diminishes the number and severity of the fits, shortens or prevents post-epileptic stupor, makes the patient more peaceful, and improves the mental condition. Trional is also of value in increased irritability of the brain and nervous system.

502. Treatment of Whooping-cough by Ether.

Audrain (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, June 17th, 1920) has found that in pure whooping-cough, as distinct from whooping-cough associated with adenoids, a cure can be obtained by three injections of ether, a fourth rarely being required. The injections should be intramuscular and given in the postero-superior part of the buttock. One c.cm. is sufficient up to the age of 7 or 8 months, and then 2 c.cm. can be used every two days. In the subsequent discussion Dalché and Variot recorded other cases of whooping-cough, including one in an adult, successfully treated by this method, and Courcoux related a case in which the treatment failed.

503. Pyodermia of the Face and the External Ear.

Bar (*Rev. de lar., d'otol., et de rhinol.*, June 30th, 1920), who records an illustrative case in a girl aged 3 years, states that pyodermia of the face may invade the concha and external auditory meatus and give rise to an extensive simple or complicated otitis externa. The inflammation is usually confined to the external ear, and propagation to the middle ear is exceptional. Though superficial, the inflammation may be serious and give rise to periostitis, osteomyelitis, and thrombophlebitis of the sinuses. An exaltation of the virulence of the organisms may lead to generalized septicaemia. In all cases of pyodermia of the face antiseptic precautions should be taken to prevent the ear being infected.

504. Intolerance to Milk.

Rocaz (*Gaz. Hebdom. des Sci. Méd. de Bordeaux*, June 27th, 1920) says that it is extremely rare to find an infant intolerant of the breast; if intolerance exists it is due to too great frequency of suckling, irregular feeding, or some anomaly in the milk. It is better for the mother to empty one breast rather than to give milk from both breasts at one feed and never fully to empty either, as the milk left behind tends to revert to a colostral condition. Intolerance to cow's milk may be relatively slight, and be manifested by regurgitation after each meal, vomiting of partially digested milk, pasty offensive pale stools, and attacks of diarrhoea, with disturbed sleep, patchy eczema on the face, and erratic temperature. In more severe intolerance the ingestion of milk is almost immediately followed by uneasiness, colic, and copious vomiting of milk almost unchanged; the general state is one of progressive wasting. This type of intolerance is usually slow to develop, and occurs several months after birth, and is often a sequel of acute gastro-enteritis. In a third class of cases, intolerance occurs when milk is again given after it has been withheld for some little time before; a very small quantity of milk sometimes suffices to cause severe symptoms in this class of case, which recalls the phenomena of anaphylaxis. Acting on this anaphylactic hypothesis Rocaz has given injections of milk in 34 cases of milk intolerance. Amongst the crèche babies success was hardly ever noted, but where the conditions of life could be better arranged the results were much more encouraging. Injections of 5 c.cm. of sterilized cow's milk were given under the abdominal skin. Absorption was very slow, taking two or three days to be complete. Slight rise of temperature and a little malaise almost always followed injection; the reaction was most marked where the intolerance had been most pronounced. In the majority of cases a single injection sufficed to make a definite cure. The best results were obtained in the second and third groups, especially in the third.

505. Diabetic Coma in Pregnancy.

According to Umber (*Wien. klin. Woch.*, June 24th, 1920), it is very exceptional for diabetic patients to die during pregnancy. He reports three fatal cases, two of which had been under observation before pregnancy began. In these two cases there was considerable acidosis in the fourth and sixth months of pregnancy without sugar appearing in the urine. Both cases developed coma very rapidly and died without abortion taking place. In the third case the aggravation of diabetes by pregnancy was very pronounced; Caesarean section was performed during coma, but neither the mother nor the child could be saved.

506. Treatment of Tuberculous Adenitis.

Dufour (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 27th, 1920), after trial of various methods, has found that the most successful mode of treating tuberculous adenitis is by oral administration of freshly made tincture of iodine in doses of 120 to 150 drops daily in milk. Tincture of iodine had previously been recommended by Guéneau de Mussy for tuberculous adenitis, but in by no means such large doses.

507. Haemorrhagic Suprarenitis.

Foster (*New York Med. Journ.*, July 17th, 1920) records the case of a male who died forty-eight hours after admission to hospital for pyrexia, slight abdominal pain, and some vomiting. Physical signs, save for a moderate degree of tympanites, were absent. At autopsy no lesion was discovered except in the adrenal glands, which were practically destroyed by numerous recent haemorrhages. The diagnosis of haemorrhagic suprarenitis was subsequently hazarded (and confirmed by *post-mortem* examination) in a patient who showed similar symptoms and signs, accompanied by convulsive seizures.

SURGERY.

508. Carcinoma of the Pancreas.

SPEED (*Amer. Journ. Med. Sci.*, July, 1920) has collected from his private practice and the statistics of the Chicago County Hospital for the last six years fifty-two cases of primary pancreatic cancer. The average age at the time of diagnosis was 57, the youngest 36, and the oldest 76. The most constant symptom was cachexia, which was present in 90 per cent., and was apparently caused by the loss of fat in the stools. Jaundice was found in 80 per cent. Pain, usually of cardialgic or gastralgic character, was present in 61 per cent. The discovery of an abdominal tumour by the patient or the doctor was made in 55 per cent., ascites was present in approximately 20 per cent., as was also haemorrhage, which occurred in 11 patients—in 2 from the mouth, in 4 from the nose, in 1 from the bowel, in 2 from the skin, and in 2 from the stomach. Oedema of the lower limbs occurred in 6 per cent.; steatorrhoea (excess of fat) and azotorrhoea (presence of undigested protein in the stools) were not constant or reliable symptoms, and did not occur till late. Speed maintains that there is no pathognomonic pancreatic symptomatology; the disease is too often overshadowed by symptoms of affection of the neighbouring organs, such as the stomach, duodenum, gall bladder, bile ducts, and colon. In the eleven cases which came to autopsy the head of the pancreas was most often affected by cancer, the body next, and the tail least often. None of the cases showed pancreatic calculi. Metastases usually occurred first in the neighbouring lymphatic glands and gall-tract areas; of the adjacent viscera the liver was most often invaded. Thirteen of the patients were operated on, mostly for gall-bladder drainage or removal.

509. Radium in Inoperable Malignant Disease of the Mouth, Throat, and Nose.

SCHMIEGELOW (*Hospitalstidende*, May 26th, 1920) suggests that the scepticism still prevalent in certain quarters as to the efficacy of radium in malignant disease is a relic of the early days when the preparations used were too weak or even totally deficient in radio-active properties. He has not yet been able to give a final verdict on the conflicting claims of radium and the *x*-rays, and with regard to epithelioma of the skin he notes that complete and permanent cures may be effected by either; in such cases the operator's choice is best determined by his mastery of the technique of one or the other remedy. But in the case of deep-seated malignant disease the author quotes Forsell as finding radium superior to the *x* rays. Between 1915 and 1917 the author's attempts to treat malignant disease with radium were disappointing; his dosage was too timid, and his technique faulty. Since 1917 he has adopted Berven's prosthesis technique, placing the capsules of radium in Stent's plastic fittings. These facilitate the maintenance of the capsules in close proximity to the diseased area, and though the moulding and insertion of the plastic fittings present certain difficulties, the results are very promising. The author gives details of each of the 13 cases he has treated on these lines during the past two years. Some had relapsed; some were still under treatment; others already showed complete disappearance of the disease, and this was the case both with sarcoma and carcinoma.

510. Intestinal Perforation in Typhoid Fever.

LEOTTA (*La Clinica Chirurgica*, January-February, 1920) recalls fourteen cases of intestinal perforation in typhoid fever; they were operated on at the Institute of Clinical Surgery of the University of Rome, and seven recovered. In thirteen the perforation was sutured and in one intestinal resection was performed. Three varieties of peritonitis due to intestinal perforation in typhoid fever are distinguished—namely, slowly developing peritonitis, acute peritonitis, and asthenic peritonitis. The importance of an early diagnosis and rapid operation is emphasized. It is essential to treat both the perforation and the peritonitis, and on this account Leotta does not recommend Murphy's appendicular drainage, which he holds only to give good results when peritonitis is not accompanied by perforation.

511. Four Cases of Abnormal Tetanus.

ABOULARAGE (*Il Policlinico*, Sez. Chir., July 15th, 1920) records two cases of delayed tetanus which were fatal and two of local tetanus which recovered. In the first two cases tetanus developed ninety days after the wound. (In the cases recorded by Julien the symptoms developed 297 and 153 days respectively after the wound.) The explanation of these cases is that the tetanus bacillus, or its spores, lie latent in the wound, or are englobed in the leucocytes, and subsequently become liberated as the result of a slight trauma, such as the cleaning up of an amputation stump, as in the writer's case. Contrary to the general rule in local tetanus, in which the incubation period is usually long, in one of the writer's cases it was only four days. The relatively mild course of local tetanus is attributed by Aboularage to three factors acting separately or in combination—namely, incomplete prophylactic treatment, a small number or weak virulence of the bacilli, and lack of receptivity of the spinal cord segments.

512. Treatment of Parotid Fistula.

THE treatment of parotid fistula by exsection of the branch of the auriculo-temporal nerve which conveys secretory fibres to the gland has already been referred to (EPITOME, April 24th, 1920, p. 67). OLIVIER (*Lyon Chir.*, 1919, 16) reports three cases in which he has performed the operation; the first two cases were fistulae the result of shell wounds. In the third a "preventive" operation was done after operation for parotid tumour; three weeks after the operation a collection of parotid secretion had formed beneath the scar. Resection of the auriculo-temporal nerve caused this to disappear. An incision is made in front of the ear over the nerve, the temporal artery identified, and a twig of the auriculo-temporal nerve found. This twig is now followed until the main branch comes into view. The dissection is pushed backwards and inwards internal to the neck of the condyle of the mandible, and the nerve is seized with forceps and avulsed. The same evening the saliva is found to be greatly diminished in amount and of viscid character.

513. Intrapleural Hypertension for Evacuating Pus through Bronchi.

THIS method of treatment was employed by MEYER and STIVELMAN (*Journ. Amer. Med. Assoc.*, July 24th, 1920) in a case of spontaneous pyopneumothorax with persistent bronchial communication. When the air was introduced for the first time the initial pressure was from 0 to +2 cm. of water; the final pressure was 20 mm. of mercury. The patient expectorated about 60 c.cm. of pus and the pressure fell to about 1 mm. of mercury. At the fourth injection 1 c.cm. of a saturated alcoholic solution of methylene blue was also injected. Immediately thereafter 150 c.cm. of air were injected, and during the procedure about 150 c.cm. of blue sputum were coughed up. The fever chart showed an average reduction of 2° for three days following this diagnostic injection. At the fifth attempt 50 c.cm. of 1 in 10,000 watery iodine solution were injected into the pleural cavity. The patient brought up about 150 c.cm. of pus during the operation. The iodine solution did not cause any unusual irritation. At the sixth attempt no hypertension was obtainable even for a short period.

514. Variations in the Ejaculatory Ducts.

ANCEL (*Journ. d'Urol.*, 1920, 8) finds that the common ejaculatory ducts are by no means constantly present. It will be remembered that these ducts generally debouch into the prostatic urethra, one in each lip of the utriculus prostaticus or uterus masculinus of the verumontanum. The urologist, in the course of urethroscopic examination, is sometimes called upon to catheterize these ducts. Ancel, in the course of an examination of 22 cadavers, found conditions varying from those usually described in 4 cases (18 per cent.). The most usual variation is the failure of the vas deferens to unite with the duct of the seminal vesicle to form a common ejaculatory duct; instead of this the ducts open separately, sometimes into the utriculus, sometimes on the surface of the verumontanum at considerable distances apart. These variations are reminiscent of the several different modes in which the common bile and pancreatic ducts open into the duodenum.

515. Sialorrhoea and Cholelithiasis.

RICALDONI (*Rev. Españ. de med. y cir.*, July, 1920) has observed several cases of cholelithiasis characterized by attacks of profuse salivation. This phenomenon did not occur during the period of violent colic but in the subacute stage, irrespectively of the age of the patient or the duration of the disease. In some cases the saliva was fluid and clear and in others thick and frothy. The salivation usually occurred after the attacks of colic, but in one case, in which the patient had suffered from gall stones for several years, it regularly preceded the colic. Ricaldoni regards the salivation as a reflex phenomenon similar to that occurring in stricture of the oesophagus and hyperchlorhydria.

OBSTETRICS AND GYNAECOLOGY.

516. Antipyrin Oedema of the Female Genitals.

In a review of the multiform eruptions which antipyrin may provoke, Boas (*Ugeskrift for Laeger*, July 8th, 1920) points out that this drug may give rise to rashes simulating those of measles and scarlatina and to urticaria, purpura, or herpetiform vesicles, which, on breaking, leave shallow erosions suggestive of syphilis. He also notes that a single observer (Ehrmann) has seen as many as a dozen cases of oedema of the genitals in men as the result of antipyrin poisoning. But no one, apparently, has hitherto recorded a case of oedema of the female genitals due to this drug. The author's patient was a servant girl, aged 19, suffering from secondary syphilis. To relieve her severe headache a doctor prescribed 30 cg. of phenacetin with 30 cg. of antipyrin. She took this powder three times a day, and the headache disappeared with the tenth powder. Five days after she took the first powder her genitals and eyelids became oedematous, and two days later her feet and ankles were also affected. On examination both labia minora were found to be greatly swollen, the right labium minus being as large as a hen's egg. The preputium clitoridis was also very oedematous, the genitals were very tender, and the skin was excoriated in several places. The temperature was slightly raised, and she felt giddy and unwell. The urine was normal and there was no history of previous attacks of oedema. She had not, however, taken antipyrin before. The oedema disappeared in the course of eight days, but when, as an experiment, antipyrin was given again, the oedema of the face returned.

517. Fibroids as a Complication of Pregnancy.

Heineck (*Gaz. Heb. des Sciences Méd.*, September 12th, 19th, and 26th, 1920) has collected, from the literature and from his own observations, 380 cases of uterine fibroids complicating pregnancy and necessitating surgical treatment. Of these cases 19 occurred during first pregnancies; in 101, 30, and 12 there had been one, two, and three antecedent pregnancies respectively; in 30 there had been from four to fourteen pregnancies, and in 188 the degree of parity is not recorded. Of 272 cases in which the age was recorded, the youngest was 19 and the eldest 45. The condition occurred most frequently in those from 30 to 40. There were 7 cases of twin gestation, and fourteen instances in which the associated pregnancy was extrauterine. In 154 cases the fibroma was single, in 22 cases there were 2, and in 56 more than 2. With regard to treatment, the author concludes that operation is indicated whenever in a pregnant woman fibroids give rise to symptoms which permit the recognition of their existence; early operation is compatible with conservative treatment, while delay may render necessary the sacrifice of the uterus. Treatment by the induction of abortion is never to be recommended—necessitating the sacrifice of the child without protection to the mother, it is illogical; and on account of the danger of haemorrhage, placental retention, infection, and subinvolution, it is dangerous. Myomectomy was successfully practised at all periods of gestation; it was the sole treatment adopted in 117 patients, with three maternal deaths. In 85 of these 117 cases pregnancy continued to term. The objections advanced against myomectomy are that it does not prevent recurrences, and that there is a possibility of rupture of the uterus during subsequent pregnancies; this accident, however, did not occur in any of the series. Vaginal myomectomy has limited indications, and should be performed in the case only of sessile or pediculated cervical fibroids whose situation is such as to render haemostasis easy and certain. It is contraindicated when there are pathological conditions of the adnexa or adhesions of the myoma to the intestine, or when there is suspicion of a malignant modification of the tumour. Abdominal myomectomy is preferable because it gives the operator a clearer view and better access, facilitates the removal of adhesions and the arrest of haemorrhage, and allows treatment of coexisting adnexal affections. Myomectomy is preferable to hysterectomy, vaginal or abdominal, for the following reasons: (1) Subsequent pregnancy is possible; (2) continuation of the current pregnancy is permitted; (3) delivery *per vias naturales* is possible; (4) post-operative shock is slight and convalescence is quick; (5) if myomectomy is found to be impossible it is still open to the surgeon to perform hysterectomy. When the pregnancy has reached or is near term, the infant being living, Caesarean section is indicated in cases in which natural delivery (1) would injure the tumour, thereby predisposing to infection or degeneration; (2) would be difficult by reason of the presence of numerous multiple fibroids, which would interfere with uterine contraction; (3) would be mechanically impossible; (4) would seriously injure the maternal tissues, or would endanger the life of the mother and child. In the series recorded 65 Caesarean operations were undertaken; 59 living infants were born; there were 10 deaths, of which 2 were consecutive to septicaemia, 1 to ileus, and 1 to pyonephrosis. In 7 cases Caesarean section and myomectomy were performed at the same operation, without maternal or fetal mortality. In 38 instances Caesarean section was followed by hysterectomy—in 19 cases total, in 19 subtotal or supravaginal. Hysterectomy finds its justification as a mode of treatment: (1) if the patient is near the menopause; (2) if enucleation is impossible on account of the situation, size, or multiplicity of the tumours; (3) if the patient refuses to submit to the risk of continued pregnancy and to await Caesarean section; (4) after Caesarean section in order to guard against subsequent pregnancy, which might be dangerous; (5) if the cervix is manifestly abnormal, especially if there is a suspicion of malignancy; (6) if, after enucleation, there is troublesome haemorrhage; (7) if the uterus contains very numerous small fibromata. For hysterectomy—which is preferably supravaginal—the abdominal route should, as a rule, be chosen. Heineck's articles are accompanied by an exhaustive bibliography.

518. The Artery of the Round Ligament.

Baldwin (*Surg., Gyn., and Obstet.*, July, 1920) declares, as the result of dissections and of demonstrations at operation, that, in contrast with the usual textbook statements, no blood supply reaches the uterus through the round ligament. A minute artery which runs outwards in the ligament, carrying blood away from the uterus, is so small that in the ordinary technique of hysterectomy the ligament can be cut across with impunity. In more than 3,000 cases of hysterectomy the author only once found that section of the round ligament caused arterial bleeding; in this case—one of puerperal infection—there were multiple abscesses in the wall of the uterus, and the haemorrhage was ascribed to abnormal dilatation of the blood vessels. Professor Buck, of the anatomical department of Ohio University, confirms the author's anatomical statement.

519. Prevention of Congenital Syphilis.

Pinard and Lévy-Solal (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 23rd, 1920) record two instances in which healthy infants were born at term, in spite of having been conceived during the fourth and fifth months respectively after syphilitic infection of the father. The fathers had been submitted, before conception took place, to intensive courses of treatment by arseno-benzol or novarseno-benzol. In neither case did the mother show clinical signs of syphilis, but in one the Wassermann test was positive; both were given during gestation several series of arseno-benzol injections. The children appeared healthy, and had negative Wassermann reactions at the age of 7 months.

520. Ureteral Catheterization in Gynaecology.

Mock and Doré (*Gyn. et Obstét.*, 1920, I, 4) advocate the use of a moderately large sound (15) for diagnostic ureteral catheterization. Stenosis of the ureter is usually found to occur at the base of the broad ligament, 4 to 6 cm. from the vesical orifice; after the point of stenosis has been passed, as much as 40 c.cm. of urine may be drawn from the pseudo-cystic dilatation of the ureter. By ureteral catheterization hydronephrosis is not infrequently detected. The authors advocate that in every case of extended hysterectomy ureteral sounds should be passed before the patient is anaesthetized; the subsequent isolation and protection of the ureter is thus greatly facilitated. In vaginal hysterectomy and in operations for fibroma or salpingitis, this procedure has a similar value. Boeckel and also Jeanbrau have recorded cases of post-operative uretero-vaginal fistula (due to incomplete division of the ureter) cured by ureteral catheterization of some days' duration.

521. Bilateral Tubal Pregnancy.

Foster and Pherson (*Amer. Journ. of Surg.*, June, 1920) record a case of bilateral tubal pregnancy, ruptured on the right and necrotic on the left, occurring in a nullipara of 39. The diagnosis was confirmed by microscopical examination, and the patient recovered. The authors, by inquiries in America, have obtained brief particulars of four other cases, three of which recovered.

PATHOLOGY.

522. Pathological Changes in Malignant Malaria.

GASKELL and MILLAR (*Quart. Journ. of Med.*, July, 1920), from their experience of malaria amongst the Serbian soldiers in Macedonia, extending over a period of two and a half years, believe that there are three distinct pathological processes by which malignant malaria causes death, and that they are all directly dependent upon the liberation of toxin by the malignant parasite, either locally or generally. The toxin produces fatty degeneration, affecting primarily the endothelial walls of the blood vessels, though other structures, such as the heart muscle, are also affected to a varying degree. In the first group, the true cerebral type, characterized by signs of a definite cerebral lesion with consequent paralysis, the cause of death is chiefly an intense invasion of the brain by malarial parasites. The brain apparently assumes the function, usually ascribed only to the spleen and bone marrow, of being the factory for all forms of the parasite. The lesions found are haemorrhages into the white matter brought about by fatty degeneration of the vessel walls. In this type there is no general increase of the malignant parasite throughout the body, and the condition is probably invariably lethal. The second, or septicaemic, type shows an intense proliferation of the parasites throughout the blood stream generally; in consequence, an intense toxaemia arises which affects all organs, producing signs of cerebral irritation, which lead on to coma, and damage to the heart (manifested by rapid dilatation and failure). When this condition is fully established it is too late for treatment to be of any value, but ample warning of the approach of the condition may be obtained by watching the blood count. In the third, or cardiac, type, characterized clinically by signs of heart failure only, without cerebral manifestations, the lesion is a chronic degeneration of the heart muscle. The authors lay stress on the almost constant presence of polymorphonuclear myelocytes in the peripheral blood in the severe anaemia of chronic malignant malaria, and consider that their identification is of great value when no parasites are to be found. The parasites in quiescent periods tend to be stored up in certain situations, notably in the undifferentiated protoplasm around the nucleus of the cardiac muscle fibres.

523. The Wassermann Reaction in Scarlet Fever.

LOEDERICH and BORY (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, 1919, 43), using antigens of different degrees of sensitiveness, examined the Wassermann reaction during the various stages of the disease in twenty cases of scarlet fever. They found that the reaction was constantly positive during the first few days of the illness, provided that a very sensitive antigen was used. Previous observers had given conflicting reports on the presence of the reaction in scarlet fever.

524. The Thymus in Early Life.

[illegible] (*La Pediatria*, August 15th, 1920), as the result of the study of the thymus in 41 infants, came to the following conclusions: (1) From the topographical point of view three groups of thymuses may be described, which in order of frequency are thoracic, thoraco-cervical, and cervical, the last being an ectopic thymus. (2) As regards lobulation, four groups of thymuses may be described—namely, bilobar, unilobar, trilobar, and multilobar; the great majority of enlarged thymuses are bilobar. (3) The colour of the thymus is related to the state of general nutrition, to local and general disease, and to the *post-mortem* condition. In premature infants the thymus is often congested and haemorrhagic, but it has yet to be shown whether this is due to prematurity or to concomitant asphyxia. (4) The relative weight of the thymus varies within fairly wide limits.

525. The Vaso-dynamic Action of Pituitrin.

KEPINOW (*Compt. rend. Soc. Biol.*, July 24th, 1920) has been induced by his investigation on the vaso-dynamic properties of pituitrin to find out if the action of this substance on the vessels depends on some modification, in the sense of an increase, of the adrenal secretion. It seemed to him that to study the proper effect of pituitrin on the vessels the action of the adrenals ought to be cut out. This he did by ligating the afferent vessels of the two glands in curarized dogs. When the action of the adrenals was thus eliminated he found that the injection of pituitrin did not produce any increase of blood pressure. In some experiments in which forceps had temporarily been applied to the afferent vessels and the injection of pituitrin brought forth no response the removal of the forceps was followed by increase of the blood pressure, just as happens usually after injections of pituitrin. Thus, in one of his experiments the increase was 17.8 per cent., accompanied by the characteristic phenomena of slowing of the pulse and increase in the length of the pulse waves, the latter reaching 7 to 12 mm. Shortly afterwards, when the action of the pituitrin, injected before the forceps were removed, had begun to work off, the blood pressure diminished slightly and the pulse resumed its former character. If, however, the function of the adrenals were once established the effects of a second injection of pituitrin were soon felt. The blood pressure increased markedly, the pulse slowed, and the pulse wave lengthened. The action of the pituitrin passing off, the pressure and the pulse resumed the former state. And so on with subsequent injections: the cutting out of the adrenals always prevented the action of the pituitrin. These experiments show that there is a functional interdependence between the vaso-constrictive action of pituitrin and the intact functioning of the adrenals.

526. Blood Sugar Tolerance in Gastro-intestinal Cancer.

FREUND, in 1885, pointed out the existence of hyperglycaemia in patients suffering from cancer. Trinkler found that the hyperglycaemia was much greater in cancer of the internal organs than of the skin or mucous membranes, and that it bore no relation to the presence of cachexia. Many subsequent observers have found characteristic blood sugar curves after the administration of 100 grams of dextrose to normal, cancerous, and other subjects respectively. FRIEDENWALD and GROVE (*Amer. Journ. of Med. Sci.*, September, 1920) have studied the blood sugar tolerance test in health as well as in various affections of the intestinal tract; they describe four types of blood sugar curve. That observed in carcinoma of the gastro-intestinal tract usually shows a high sugar content (even in the fasting stage), followed by an initial rise to 0.24 per cent., or more, within forty-five minutes after the ingestion of dextrose, and remaining at this level for at least 120 minutes. At no time during this period does it fall below 0.20 per cent. Characteristic curves occur in the presence or absence of cachexia and independently of the extent of the growth. Although further investigation is required, it is regarded as probable that the test may be of value in the diagnosis of early cases of gastro-intestinal cancer.

527. The Colloidal Gold Test in the Cerebro spinal Fluid in Secondary Syphilis.

KYRLE, BRANDT, and MRAS (*Wien. klin. Woch.*, August 19th, 1920) state that since their previous paper on the study of this test in 720 cases of syphilis in all stages of the disease (see EPITOME, February 21st, 1920, para. 208), they have made more than a thousand further examinations, which serve to confirm their previous observations. They maintain that a strongly positive colloidal gold reaction is of considerable prognostic importance in secondary syphilis, as it shows that the infection of the spinal fluid has not yet cleared up, and that exacerbations of the disease may occur.

528. A Culture Medium for Diphtheria Bacilli.

KLEIN (*Deut. med. Woch.*, March 11th, 1920) describes a medium for the culture of diphtheria bacilli: nine parts of blood serum and one part of a 15 per cent. solution of sodium hydroxide are kept at a temperature of 37° C. for forty-eight hours; after neutralization with hydrochloric acid, four parts of nutrient agar are added and the mixture is heated for half an hour to 105 C. This medium is said to be sterilizable, transparent, and stable; it can be poured, and requires little blood serum.

529. Coagulation of Spinal Fluid.

[illegible] (*Revue Neurolog.*, April, 1920) reviews thirty-eight cases (compiled from the literature) of massive coagulation of the spinal fluid obtained by lumbar puncture; of these cases five were characterized by meningitis, and twenty-eight by paraplegia. As a rule spinal fluid aspirated by puncture at higher levels did not show similar clotting. In fourteen of the cases the termination was lethal, and five only could be considered cured. In every case but one there was pronounced xanthochromia. The condition was associated with an increased albumin content and the presence of fibrin.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

530. Allergy in Infants and Children.

During the last seven years S. Bloss (*Amer. Journ. of Dis. of Children*, June, 1920) has studied 122 cases of this condition. Although the intracutaneous test is rather more delicate, for practical purposes the cutaneous test with various proteins is sufficient. It is best to use a preparation representing all the food proteins. Amongst the vegetable proteins, the proteoses give the most marked cutaneous reaction. In a good cutaneous reaction the urticarial wheal is 5 mm. or more in diameter. It is important to remember that temporary desensitization (27 to 45 days) may follow an attack of urticaria, so that cutaneous tests applied then may fail. Allergy is closely analogous to anaphylaxis in animals experimented on; it is often a family inheritance, but may be acquired. Experiments on guinea-pigs showed that when sensitized, feeding them with large amounts of the protein to which they were sensitive caused distinct symptoms. Clinically allergy may appear as acute urticaria, asthma, or symptoms of shock, and is usually due to milk or egg, occasionally to beef. Horse serum injections may cause similar symptoms. As a rule, very little of the food is swallowed, and within a few minutes swelling of the lips, collapse, etc., occur. All urticaria is not due to sensitization. Fourteen cases of angio-neurotic oedema were tested: three of these had factitious urticaria and were ruled out, two reacted to milk and wheat and to egg and beef respectively. Of seven cases of erythema multiforme tested, one was found sensitive to pork and was immunized by injections of pig's blood serum. In 53 cases of eczema in infants under 16 months, 40 gave cutaneous reactions; in 24 cases older than 16 months, 10 gave positive cutaneous tests—milk or egg protein seemed chiefly at fault, but at present it seems impossible to express any definite opinion concerning the allergic nature of infantile eczema. Dermatitis due to ragweed and dandelion pollen were much benefited by immunizing injections of the extracts of the pollens. Allergy may be treated by eliminating the foods to which the patient reacts, or by desensitizing the patient (most useful in pollen cases) by a process of immunization by the administration of gradually increasing amounts of the offending protein or food until toleration is established—for example, dry egg or milk protein is given in capsules (2 to 5 mg.) three times a day, or, in young infants, one-twentieth of a drop of milk.

531. Lethargic Encephalitis.

Chauffard (*Rif. Med.*, February 21st, 1920), after describing the now well-known symptoms of this disease, draws attention to certain special points. He says that whereas lymphocytosis was absent in previous years, the later cases have shown a fairly high percentage, sometimes associated with only a slight degree of hyperalbuminuria. Unlike the lymphocytosis of syphilitic or tuberculous meningitis, the type in question is temporary and may disappear. In lethargic encephalitis one may have (1) a series of inhibitory phenomena—for example, somnolence, ocular paralysis; and (2) an irritative series—for example, delirium, convulsions, myoclonus. Anatomically the chief seat of the lesions is in the cerebral peduncles, especially the locus niger. If there is any unity in the different types of the disease it must be sought in its pathogenesis rather than in its pathological anatomy. Probably it is allied to influenza and a nervous localization of that disease; the virus is probably filtrable like that of poliomyelitis and rabies. Encephalitis epidemica is held to be a better term than encephalitis lethargica, since stupor is by no means constant.

532. Lethargic Encephalitis at Alexandria.

Valassopoulo (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 13th, 1920), at a meeting of the Société Médicale des Hôpitaux de Paris on May 7th, stated that for some months previously there had been an epidemic of influenza in Egypt, and that several of the cases had been complicated by obstinate hiccough. At the same time there had been numerous cases of lethargic encephalitis (not only of the ordinary type but also of the myoclonic and ambulatory varieties), showing that there was a close relationship between influenza and lethargic encephalitis.

533. Clinical Forms of Epidemic Encephalitis.

Ronchetti ((*Il Policlinico*, Sez. Prat., June 21st, 1920) describes four types of epidemic encephalitis—namely, a lethargic type, a type characterized by delirium, a spasmophilic type, and a neuralgic type. Of 32 cases recently observed by him 24 presented the classical syndrome (consisting of lethargy and paralysis chiefly affecting the fourth and seventh cranial nerves) in an almost pure state or accompanied by only slight symptoms of delirium or neuralgia. In three cases the delirious syndrome, the neuralgic syndrome, and the syndrome of electric chorea respectively existed in almost a pure condition; in three the myoclonic syndrome was associated with the classical type of lethargy and paralysis; in one case the neuralgic type was combined with the delirious type, and in one the myoclonic syndrome was associated with the delirious type.

534. Amoebic Abscess of the Liver: Pyothorax: Cure by Medical Treatment.

Proust and Ramond (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 29th, 1920) record the case of a man, aged 59, who forty years ago had had, when in Cuba, an attack of dysentery, and who for three years had pain in the upper part of the abdomen. This became much more severe, and slight icterus was noticed; the liver did not appear to be enlarged. After three months' ineffectual treatment the abdominal pain quite suddenly disappeared; at the same time the right side of the chest became uncomfortable and there was dyspnoea. Next day there were signs of extensive pleural effusion, which puncture showed to be purulent but sterile. Fever was absent throughout the illness. The condition was unaffected by administration of emetine hydrochloride in daily doses of 2 cg., but responded satisfactorily to treatment by novarsenobenzol (10 cg. in a keratinized capsule, given daily, with intermissions), with occasional courses of subcutaneous injection of emetine hydrochloride (4 to 8 cg. daily for six days). Cure was completed six months after the appearance of the empyema; during this time aspiration was performed on three occasions. Amoebae were not detected in the pus; this, however, is a not infrequent finding, and the history of the case as well as the characters of the fluid effusion led the authors to diagnose amoebic abscess of the liver, with rupture into the right pleural cavity. The sterile character of the pus caused the abandonment of a projected operation for empyema.

535. Hydatid Disease of the Lung.

Van der Tak (*Nederl. Tijdschr. v. Geneesk.*, July 3rd, 1920) records the case of a woman aged 38, who suddenly had a severe attack of haemoptysis. She had previously always enjoyed good health, and had had no symptoms suggestive of tuberculosis. Physical examination showed an urticarial eruption on the chest, which the patient said she had had a fortnight previously, and there was dullness and impairment of breath sounds to the right of the manubrium. Von Pirquet's reaction was negative on two occasions. The diagnosis of hydatid disease of the lung was then suggested, and was confirmed by a positive fixation of the complement test, although no echinococcus cysts were found. The patient was living in Friesland, where hydatid disease is not uncommon.

536. Bullous Eruption Complicating Measles.

Neff (*Amer. Journ. of Dis. of Children*, June, 1920) reports an example of this extremely rare condition. A girl, aged 6, became ill on October 31st. Next day blotches of measles appeared on the face and neck; a day later bullae appeared on the ears and arms and rapidly spread all over the body. The bullae varied from 6 to 10 cm. in diameter and were accompanied by separation and maceration of most of the superficial layer of the skin, resembling an extensive burn. No culture was made of the fluid contained in them. The child was markedly "toxic" from the first. The temperature kept constantly at about 103.5°. Slight leucocytosis (18,000) was present. The patient died suddenly on the fifth day. No autopsy was allowed. Erysipelas and small-pox were definitely excluded. The author refers to fourteen similar cases reported in foreign literature. The bullous rash was probably an accidental contagious coincidental manifestation of a pemphigoid nature, which became virulent owing to the lowered resistance due to the measles.

SURGERY.

537. The Operative Treatment of Scarlatinal Ear Disease.

S[illegible] ([illegible], July [illegible], 1920) has come to the conclusion that conservative treatment of the ear complications of scarlet fever is the most effective. Among his 57 cases of periauricular abscess treated by simple incision none terminated fatally; the results were better than if he had indulged in further operative interference, such as opening the mastoid process. With regard to incisions of the tympanum, which were almost invariably undertaken early in the development of ear disease, he notes that they sometimes relieved and sometimes aggravated the pain already present. They achieved no other object, and failed to avert severe complications, as the detailed records of several of his cases show. He also remarks that the tympanum, which is as thin as paper in children, can hardly be expected to offer much resistance to the rapidly destructive processes occurring in scarlatinal otitis. Opening up of the mastoid process after absolute deafness has set in is, in his opinion, futile, and he refers to one case in which this impression was confirmed in practice. As for the cases of pyaemia, with or without cerebral symptoms, he admits that it is tempting to operate in search of foci of inflammation, but the results he has seen follow this procedure were far from satisfactory, and in some cases harm was undoubtedly done by operating, although the technique was sound and the after-treatment efficient.

538 Osteo-arthritis Deformans Coxae Juvenilis.

[illegible] (*Arch. di ortopedia*, Fasc. 1, 1920) describes cases of this condition, which is sometimes known as Perthes's disease, recently observed at the orthopaedic clinic at Milan. Some of the cases had developed in subjects of congenital dislocation of the hip who had been treated by the bloodless method of reduction; in others the first signs of the disease had followed a severe trauma of the lower limb, which might have affected the hip-joint; other cases were apparently idiopathic. The cases showed the varied appearances assumed by the disease at the onset, as contrasted with the comparative uniformity which characterized the advanced stage, the course of which is [illegible] in many respects with the adult and senile form.

539 Dupuytren's Contracture.

According to [illegible] (*Zentralbl. f. Chir.*, July 24th, 1920), any satisfactory theory as to the etiology of this condition [illegible] its hereditary incidence and [illegible] on the ulnar side. He advances a theory which, based on the researches of [illegible] of the palmaris brevis, satisfies [illegible]. In the [illegible] a [illegible] can be identified which [illegible] to the four fingers. In more highly developed [illegible] to disappear, and, if present [illegible] slips running to [illegible]. In adult human subjects the sole remaining muscular representative of [illegible] has, however, [illegible]

540 Double Coloboma of the Iris and Choroid in Hereditary Syphilis

[illegible], No. [illegible], 1920) [illegible] coloboma of the iris and choroid. [illegible] hereditary syphilis, was associated with other stigmata of that condition—namely, well marked frontal protuberances, atrophied and adherent lobe of the ear, radiating scars round the lips, and a very definite Carabelli's tubercle on both sides. The Wassermann reaction was positive, but this could be explained by the presence of the acquired disease.

541. Pseudo-tuberculosis of the Peritoneum.

Puccinelli (*Riv. Osped.*, July 15th, 1920) records two cases, one of which was that of a perforated duodenal ulcer and the other that of a perforated appendix, in which at laparotomy the peritoneum presented the appearance of tuberculous peritonitis, being sprinkled over with small nodules resembling tubercles. On microscopical examination, however, no tubercle bacilli were found, and, apart from giant cells, which may occur in many other conditions, there was nothing resembling a tubercle. The nodules were due to the reaction of the tissues round the foreign bodies which had escaped from the perforated organs into the peritoneal cavity.

542. Fractures of Atlas and Axis Vertebrae.

Dumont (*Korrespondenzbl. f. Sweiz. Aerzte*, 1919, No. 41) has reported an injury to the axis caused by a forward fall whilst ski-ing. The patient complained of occipital neuralgia, difficulty in swallowing, and pain on movements of the head. A loud click could be heard when the head moved, and under *x* rays the odontoid process of the axis was seen broken off at its base. There was no injury to the cord and the patient recovered.

543. Kolisko (*Virchow's Arch.*, Bd. 222) has conducted necropsies on three cases in which a fall on the forehead led to sudden death. In all three the odontoid process was broken through; in one case there was a bilateral fracture of the atlas as well. Examination of the cranium and brain revealed no injury to these structures. The line of fracture ran through the base of the odontoid process. In the extreme backward bending of the head produced by a severe blow on the forehead the relaxation of the ligamenta alaria allows the odontoid to press heavily against the anterior arch of the atlas or against the anterior rim of the foramen magnum of the occipital bone. The force concentrated on the odontoid process causes it to give way.

544. Rare Complications of Wisdom Teeth.

At the recent French Congress of Oto-rhino-laryngology Mouret (*Rev. de laryng., d'otol., et de rhinol.*, July [illegible], 1920) recorded the following cases in which the presence of a wisdom tooth gave rise to unusual symptoms: (1) Examples of submaxillary adenitis with enlargement of the tonsils simulating an ordinary attack of tonsillitis; (2) cases of recurrent parotitis, attributed at first to calculi in the duct, whereas ectopic wisdom teeth were alone responsible; (3) a case of suprahyoid phlegma, in a man aged 65, due to a carious wisdom tooth which was still encased in the gum, as was shown by *x* rays. In the subsequent discussion Koenig related a case of peritonsillar abscess with torticollis and violent pain in the right side of the neck; and Raoult reported two cases of facial paralysis due to the same cause. Raoult alluded to a case of fatal suppurative meningitis, reported by Heydenreich, caused by a suppurative process which had extended from the wisdom tooth along the sheath of the vessels.

545. Bony Tumours of the Orbit.

According to Betti (*La Clinica Oculistica*, January-February, 1920), who records an illustrative case, bony tumours of the orbit are among the rarest occurrences in ocular pathology, only about 200 cases having been described in surgical and ophthalmological literature, including cases which have originated in the accessory sinuses and invaded the orbit secondarily. The cause of these tumours is unknown. There is often a history of trauma of the orbit or neighbouring region. In Betti's case there had been a fracture of the nasal bones. The left orbit is more frequently attacked than the right; the tumours are commonest between 11 and [illegible] years of age; sex does not appear to have any influence. Of 157 cases, 90 occurred in males and 67 in females. The tumours are almost always single; in rare cases there are more than one on the same side, or the affection is bilateral. The majority have a broad base of implantation, and it is rare for them to be pedunculated. Their growth, as a rule, is very slow. If left to themselves, they may attain very large proportions (500 grams in weight and the size of a fetal head at term). The ocular symptoms are not usually very pronounced, or at least are not always proportionate to the character of the lesion. The most constant symptom is displacement of the eyeball (exophthalmos and lateral deviation), which sometimes may be so marked as to amount to complete dislocation of the eye from the orbital cavity. The movements of the eye only appear to be limited at the point where the tumour is situated. Owing to the displacement of the eye there is often diplopia, but this only occurs at the onset, and the patient soon learns to correct it. Less constant symptoms are pain, usually of an intermittent and transitory character, epiphora, inflammatory lesions of the lids, conjunctivitis, keratitis, and corneal ulcer. The visual function is not infrequently quite intact; in other cases it is more or less diminished, and there may even be complete blindness. Complete removal of the tumour is indicated.

OBSTETRICS AND GYNAECOLOGY.

546. Intestinal Obstruction by a Retroverted Uterus.

LEFEVRE (*Gaz. Heb. des Sciences Méd.*, June 20th, 1920) relates the case of a woman, aged 32, who, on January 30th, was suddenly seized with abdominal pain; on February 3rd there was complete intestinal obstruction, with faecal vomiting. Vaginal examination showed a slightly enlarged retroverted uterus and slightly enlarged left appendages; rectal examination showed the rectum to be completely obstructed by the fundus of the uterus, which was not reducible. It appeared from the history that on November 15th there had been an abortion, with inflammatory sequelae. The obstruction was relieved when the position of the uterus was rectified by means of a gum-elastic sound. On February 11th the uterus was removed, together with a chronically inflamed right tube and a cystic left ovary.

547. Advanced Cancer of the Cervix. Pregnancy: Delivery aided by Cautery.

SHOEMAKER (*New York Med. Journ.*, June 5th, 1920) relates the case of a 7-para, aged 47, admitted in labour, who suffered from abdominal tuberculosis, and for six months had had irregular uterine haemorrhage, which during the last two days had been so great as to require packing. Pyrexia was present, the membranes had ruptured, and the cord had prolapsed. There was inoperable cancer of the cervix of hyperplastic globular form; the cervical canal had not begun to dilate. Under gas-ether anaesthesia the electro-cautery was used to separate the bladder in front, to peel it well off, and to ring the diseased area round. The growth was rapidly excised by scissors and cautery, and the fetal head extracted by means of lion-jaw forceps. There was little bleeding; the patient was up in three weeks.

548. Extrauterine Pregnancy beyond Term.

LUNDEQUIST (*Hygiea*, July 16th, 1920) records the case of a nullipara, aged 34, whose last menstruation occurred on December 10th, 1917. In March, 1918, there was a slight haemorrhage, and a little later she suffered from giddiness and violent abdominal pain. In April there was another haemorrhage lasting for about two days. Early in October there was a short bout of abdominal pain. When she was examined on November 11th the fetus was alive, the breech could be felt in the right iliac fossa, the head in the left abdomen, and the back facing to the left. When she was examined again on November 19th the position of the fetus was unaltered, but the fetal sounds were no longer audible. The cervix was accordingly dilated, but with the exploring finger no membranes nor fetal parts could be felt. Pregnancy in a horn of a double uterus was diagnosed; extrauterine pregnancy, since it was exceedingly difficult to palpate the different parts of the fetus, was considered highly improbable. A sound could not be introduced for more than 9 c.cm., and it passed backwards and to the right. On November 27th, when the abdomen was opened, the uterus was found displaced forwards and to the right. It merged without any definite line of demarcation into the fetal sac, which was plastered by adhesions to the intestines and omentum. With great difficulty uterus and sac were removed together, and a well-developed 51 cm. long male fetus was found. Its intraligamentous development may have accounted for its going to term, but it was surprising that so few disturbances should have occurred during the pregnancy. The patient was discharged from hospital eight weeks later.

549. Vesical Implantation of the Ureter.

TISSERAND (*Lyon Chir.*, June, 1920) discusses the procedures which may be adopted after accidental division of the ureter during pelvic operations, and believes that the best results are to be obtained by vesical implantation of the ureter according to the method described by Bazy in 1893. The abdomen being opened, the upper end of the divided ureter is mobilized, and the bladder is distended with air after the passage of a Nélaton's sound (12 or 14). The bladder is perforated by bistoury at the site chosen for the anastomosis; the sound is passed through the aperture thus made, and cut so that its lateral opening is made terminal. It is passed from 1 to 2 cm. within the ureter, to which it is attached by a fine catgut suture; by pulling the other end of the sound a length of about 1 cm. of the ureter is invaginated within the bladder. The bladder and ureter are united by two series of external non-perforating interrupted sutures. A catheter is introduced into the bladder side by side with the ureteral catheter; the latter is withdrawn on the twelfth and the former on the fourth day. Two illustrative cases are recorded.

550. A Rare Case of Pelvic Tumour.

WEIBEL (*Zentralbl. f. Gynäk*, May 29th, 1920) relates the case of a woman of 47, who had had four normal labours, the last being eighteen years ago, and for six months had had pain in the back and belly, more severe during the last four weeks. The uterus was found to be displaced to the right and forwards by a cystic tumour, the size of the fetal head, fixed in the true pelvis. Ovarian cyst was diagnosed, but at laparotomy the tumour was found to be wholly extraperitoneal. The peritoneum was incised, and endeavour was made to remove the tumour, the wall of which was found to be composed of an external harder, and an internal thinner, layer; clear fluid issued from a perforation. The cyst, which proved to be an anterior sacral meningocele, communicating by a large opening in the anterior surface of the sacrum with the sacral canal, was resected; the wound was drained *per vaginam*.

551. Treatment of Osteomalacia.

HERHOLD (Inaug.-Diss., Breslau, *Zentralbl. f. Gynäk.*, August 21st, 1920) records the results of double ovariotomy in nine non-pregnant women, of whom four were nulliparous. The operation conferred no benefit in one case; three were greatly improved, and the rest could not be traced. The same treatment was adopted in five pregnant women, with one death, three satisfactory results and one unascertained sequel. The author recommends: (1) in patients with osteomalacia who are not pregnant, castration; (2) in pregnant women with signs of active bone softening and marked pelvic deformity, Porro's operation; (3) in pregnant women with healed osteomalacia, Caesarean section; (4) in pregnant women with slight osteomalacia and little pelvic deformity, medical treatment by exhibition of phosphorus.

552. Spontaneous Rupture of a Suppurating Ovarian Cyst.

MOURE and THOUVENIN (*Bull. et Mém. de la Soc. Anat. de Paris*, June, 1920) record the case of a woman, aged 36, operated on for acute peritonitis. Odourless sero-purulent fluid was found free in the peritoneal cavity, and proceeding from a flaccid ruptured ovarian cyst, with a broad non-twisted pedicle. Suprapubic and vaginal drainage were successfully employed. The ovary was found to contain mucous and dermoid cystic elements. The case is noteworthy for the spontaneous rupture of a cyst which, though suppurating, was neither adherent nor twisted.

553. Premature Detachment of the Placenta.

AT the twelfth congress of Scandinavian surgeons (*Gyn. et Obstét.*, 1920, i, 5) ALBECK reported a series of 158 cases, divisible into three groups. In the first group (extensive placental detachments) the maternal mortality was 8.77 per cent., the fetal mortality was 75.5 per cent., and there was albuminuria in 67.2 per cent. In the second group (marginal detachments) there was no maternal mortality, the fetal mortality was 28.8 per cent., and albuminuria was present in 33.3 per cent. In the third group (detachment accompanied by no clinical signs but demonstrated by the presence of small depressions on the surface of the placenta) the fetal mortality was 8.9 per cent., and albuminuria was noted in 48.3 per cent. In a series of 1,015 placentas, 293 (30.3 per cent.) obtained from 967 normal cases showed intraplacental haemorrhages; in 37 cases of small retroplacental haemorrhages there were 27 cases (73 per cent.) of intraplacental haemorrhage. Out of 11 cases of clinically significant detachment, 10 showed the presence of intraplacental haemorrhage. Haemorrhage, retro- or intra-placental, was found in 70 per cent. of cases of eclampsia, and 44.5 per cent. of cases of albuminuria. It is concluded that placental haemorrhages are frequently attributable to a toxaemia in pregnancy. In the treatment of grave cases of accidental haemorrhage, abdominal Caesarean section is preferred by the author. In the discussion which followed, Hesselberg reported that severe albuminuria had been present in 38 per cent. of 21 cases of accidental haemorrhage encountered during the last two and a half years.

554. Femoral Hernia of the Ovary.

According to Grant (*Journ. Amer. Med. Assoc.*, July 31st, 1920) hernia of the ovary is eight times as common in the inguinal as in the femoral variety. Femoral ovarian hernia, which is usually unilateral, is more common in multiparae than in primiparae. The author records two cases in which it was suspected before operation that the ovary constituted the main content of the hernia.

555. Rupture of the Spinal Cord.

Kooy (*Journ. Nerv. and Ment. Dis.*, July, 1920) records a case of nearly complete rupture of the spinal cord at the level of the ninth and tenth thoracic segments. The presentation was transverse; the child was born by podalic version and extraction. Until her death at the age of 9 the patient suffered from paraplegia (except for flexion at hip-joint), from almost total loss of sensibility of the legs, and from bedsore in the sacral region, as well as incontinence of urine and faeces.

PATHOLOGY.

556. Are Serum Disease and Anaphylaxis Identical?

Ustvedt (*Norsk Mag. for Laegevidenskaben*, July, 1920) gives several reasons for his inability to conform to the view that serum disease and anaphylaxis are more or less identical. The solution of this problem by experiments on animals is far from satisfactory, for they do not react to parenteral injections in the same way as man. Thus, the first injection of horse serum into guinea-pigs provokes no symptoms, whereas the second injection provokes shock, which is usually fatal. In man, on the other hand, a first injection produces in a certain proportion of cases a reaction with definite symptoms of varying intensity. A second injection provokes the same symptoms, but more frequently, earlier, and more violently than the first injection. The author has given about 18,000 persons prophylactic injections of serum, and at least 600 subsequently developed diphtheria for which, in most cases, a second injection of serum was given. Yet in no case was any sign of shock seen. Again, in several cases of meningitis, in which two intraspinal injections were given with a certain interval, no shock was provoked. Serum disease was observed in 35 per cent. of 1,669 patients given a first injection of horse serum, and in 77.5 per cent. of the 89 patients given a second injection.

557. Saprophytism of Venereal Organisms.

According to Gougerot (*Internat. Journ. of Public Health*, September, 1920), certain clinical observations and bacteriological findings prove the occasional existence, on mucous membranes, of virulent venereal organisms—*Spirochaeta pallida*, Ducrey's bacillus, and the gonococcus—in the absence of any lesion which can be detected even by a careful clinical observation. This occurs most frequently in the case of the gonococcus. The practical bearing is that even though clinical examination be negative, it is not possible to be perfectly sure that a patient is non-infective; patients who appear to be cured must be kept under prolonged clinical as well as bacteriological observation.

558. Ophthalmoscopic Demonstration of Variations in the Suspension of Cells in the Blood

Ploman (*Hygiea*, June 16th, 1920) has carried one step further investigations [illegible] in 1918 by Fahraeus. This writer showed that when a superficial cutaneous vein in the forearm is compressed at two points, 10 cm. apart, and when the portion of 10 cm. of vein does not communicate with other veins, variations in the stability of the suspension of cells in the blood may be demonstrated. The forearm is held so that the vein is kept vertical for [illegible] minutes, after which the vessel is punctured [illegible] the upper point of compression. Connected with the needle is a rubber tube to which a glass tube is attached. Fahraeus found that, in [illegible] pregnant women, the first lot of fluid aspirated was plasma, whereas in the control it consisted of blood. This difference could be more simply demonstrated without puncture by noting that the upper portion of the vein gradually lost its characteristic blue colour owing to gravitation of the blood cells. Fahraeus also conducted similar investigations *in vitro*. Ploman's investigations were carried out on eighty-three persons, whose eyeballs were gently compressed till the ophthalmoscope showed partial or complete arrest of the circulation in the retinal vessels. The time taken between the suppression of the arterial pulse and the first appearance of settling of the blood cells in the retinal vessels was recorded. It was found that the variations in the stability of the red cells in suspension coincided in a striking manner with the observations made by Fahraeus *in vitro*.

559. The Therapeutic Action of Milk and other Proteins given Para-enterically.

Corinaldesi (*Il Morgagni*, September 5th, 1920, and *Rif. Med.*, May, 1920) discusses recent experiences in the injection of various heterologous vaccines in disease, chiefly typhoid. The earliest experiments were in the treatment of erysipelas by antidiphtheritic serum; since this proved as successful as antistreptococcal injections various heterologous serums, instead of specific serums, were tried in other diseases, such as typhoid. Here similar results were obtained. Many serums were tried, and other protein substances such as milk; recently, in 32 cases of typhoid, Manté has used with success a microbic emulsion of a saprophyte isolated from the water of a spring. Are these good results of heterologous serums due to a generic function of the albuminoids introduced or to a polyvalent action of the serums and vaccines? Injections of deutero-albumoses, milk, etc., show that these latter are capable of bringing about marked resolution and abortion in various infective diseases. Whether they do this by exciting the production of ferments, or by a kind of anaphylaxis, or by a toxico-pyrogenic action, or by a direct protoplasmic stimulus, or by transporting bactericidal antibodies from the blood into the tissues, is at present unsettled; but whatever the exact *modus operandi*, there are now sufficient observations to show that heterologous vaccines are often beneficial.

560. The Pathology of Intrabronchial Insufflation of Acids.

Winternitz, Smith, and McNamara (*Journ. of Exper. Med.*, August 1st, 1920) found that intrabronchial insufflation of 0.1 to 0.25 per cent. solution of hydrochloric acid caused in rabbits intense oedema and congestion of the lung, with haemorrhage, dilatation of the bronchioles, and hyaline degeneration of the bronchial and alveolar epithelium; lobular and lobar consolidation, more usually sero-fibrinous, but occasionally haemorrhagic, or even purulent, were also found to occur. Repair might be effected rapidly; if epithelium alone had been injured, the processes of repair were confined to epithelium. After damage extending beyond the epithelium, production of granulation tissue occurred in addition to epithelial regeneration. Over-production of epithelium might extend into the peribronchial tissue or lead to the formation of bronchiolar polypi. Intrabronchial insufflation of acid was followed also by thrombosis of the alveolar vessels; in certain cases the clotting spread to the larger vessels, and a lesion was produced which was indistinguishable from a haemorrhagic infarct.

561. A Gastro-enteritis Epidemic due to B. enteritidis Infection of Smoked Mackerel.

Bitter (*Zeit. f. Hyg. und Infectionskr.*, 1920, 90) records an epidemic of gastro-enteritis affecting 300 persons in Kiel, and others living elsewhere, who had eaten mackerel dispatched (fresh and ice-packed) from Denmark and smoked in Kiel. Not all the consignment was poisonous, and the appearance and taste of the infected specimens were not impaired. *B. enteritidis* was detected, during life, in the urine and stools of those affected, and after death in the blood and viscera of three fatal cases. The organism was agglutinated to titre by "Breslau" serum, but only slightly by Gaertner or paratyphoid B serum.

562. The Sachs-Giorgi Reaction.

According to Pradella (*Il Policlinico*, Sez. Prat., September 6th, 1920), the Sachs-Georgi reaction is more simple and practical than the Wassermann reaction. Like the latter, it is claimed to be specific for syphilis, but it is somewhat less sensitive in cases of incipient disease of the nervous system. Although the new reaction cannot at present be substituted for the Wassermann reaction, it may serve to confirm its results and may frequently clear up doubtful cases.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

563. Treatment of Scleroderma.

IZAR (*Rif. Med.*, May 22nd, 1920) publishes, with a portrait, a case of scleroderma in a child of 7, cured by hypophysis treatment. The pathogenesis of scleroderma is uncertain, but most authorities associate it with some fault in the endocrine system. In the author's case some evidence of impaired function of the hypophysis was found in the adiposity of the mother and sister. The sella turcica of the patient was somewhat enlarged (19 mm. × 7 mm.), there was a certain degree of adiposity, marked scleroderma and pigmentation, cold sweating of the palms and soles, and "solid oedema" impairing the movement of the limbs, especially in flexion. Injections of hypophysin and pituitrin (½ c.cm.) were given alternately every day for fifteen days and then on alternate days. After the sixth injection a decided improvement was noted, beginning with the skin of the face and abdomen and then spreading to other parts; the skin became more elastic, the itching disappeared, and the sweating of the hands and feet diminished. The injections were discontinued after thirty-two had been given, but a half-tabloid of hypophysin was given on alternate days. Treatment was begun in May, 1919; when the child was seen again in January, 1920, every sign of scleroderma had disappeared. Except for tiny scattered areas of atrophy, the skin was quite normal.

564. Treatment of Polyarthritis.

BOORSTEIN (*New York Med. Record*, July 17th, 1920) describes the treatment of polyarthritis (arthritis deformans). He states that the disease has no relation at all to rheumatism, and the use of all forms of salicylates, even aspirin, should be avoided: they upset the digestion and make the condition worse. Lithia and radium waters are valueless, as are also electrical treatments. In every case of arthritis, where tuberculosis, malignancy, or trauma is not self-evident, foci of infection should be sought and removed. The arrest of infection does not mean that the joint will be cured, unless orthopaedic measures also are employed; prevention of deformities should be the main aim of the practitioner. Acutely inflamed joints should be encased in well-padded plaster for eight to ten days, when the plaster is split and gradually discarded. As the acute symptoms subside treatment by passive hyperaemia (Bier's bandages), and active hyperaemia (hot dry air) may be instituted. Active and passive exercises are useful; massage calls for the exercise of the greatest care and skill. To assist digestion, bowel activity, and the circulatory organs, strychnine, arsenic, iron phosphates, laxatives, and cod-liver oil may be given. Glandular extracts and vaccines are useless.

565. The Period of Remission in Plague.

TOTTA (*Arch. Rio Grand de Med.*, May, 1920) describes a period of remission in plague similar to that which occurs in tuberculous meningitis. When the symptoms are fully developed the patient suddenly shows signs of remission, or rather retrogression, of the disease; the temperature falls, the buboes become painless, the delirium subsides, consciousness returns, and the face regains its natural expression. The improvement, however, is only the prologue to a lethal end. The pulse remains feeble, soft, small, and irregular, and in a few hours death takes place.

566. Radiological Diagnosis of Incipient Phthisis.

GUARINI (*Rif. Med.*, May 1st, 1920) gives the result of 6,000 radiological examinations in a chest hospital. His findings are: Clear apices with concomitant lesions in other parts of the lungs, 1 per cent.; paralytic thorax, 5 per cent.; impaired diaphragmatic movement, on the side of the lesion 30 per cent., on the opposite side 9 per cent.; peribronchial shadows, 89 per cent.; diminished expansion on the side of the lesion, 59 per cent.; first costal cartilage calcified, 3.7 per cent.; hilus glands calcified, 54 per cent., non calcified, 41 per cent.; mediastinal glands calcified, 30 per cent.; "small median heart," 68 per cent.; "drop" heart, 0.15 per cent.; apices opaque, 93 per cent.—in 43 per cent. both apices affected. These figures show how rarely the apices are clear and how frequently peribronchial shadows are present. The percentage of calcified first costal cartilage is lower than that given by other authors. The "drop" heart is a heart with hypoplasia due to an arrest of development of the heart and aorta, and differs from the atrophic heart. Its angle of inclination to the median line is low (25 degrees); the small median heart varies from 25 to 55 degrees in inclination.

567. Five Cases of Pernicious Anaemia in the Same Family.

MEULENGRACHT (*Ugeskrift for Laeger*, June 17th, 1920) gives details of five cases of pernicious anaemia in four brothers and one of their nephews. In the case of one of the brothers he had to rely on second-hand evidence for the diagnosis; the remaining four cases showed definite clinical and laboratory evidence of typical pernicious anaemia. After discussing various hypotheses, the author comes to the conclusion that this family must exhibit certain qualities predisposing to the development of pernicious anaemia. In other words, the endogenous factors in these cases were hereditary.

568. The Action of Opium in Fatigue and in Normal Conditions.

USING the methods described in the BRITISH MEDICAL JOURNAL of November 6th, 1920 (p. 710) MCDOUGALL and SMITH (*Med. Research Council Report*, No. 56, 1920) investigated, besides the action of alcohol, that of opium and certain other drugs upon the ability to perform tasks demanding a high degree of mental activity and neuromuscular co-ordination. Opium, both in normal conditions and those of fatigue, was found to produce, 75 to 115 minutes after taking 40 to 60 minims of the tincture, a definite diminution in the number of errors made. Strychnine and strong tea, given in a few experiments, led to similar improvement. So far as the authors' observations can be made the basis of generalizations, they conclude that while alcohol and chloroform act chiefly and immediately by raising the resistance of the synapses in all parts of the brain, opium, strychnine and caffeine produce their opposite effects by lowering the synaptic resistance. It is suggested by the diminution in errors which characterizes the initial stages of fatigue consequent on loss of sleep that the nervous system, when subjected to strain, maintains its efficiency for a time by producing a substance similar in its effects to the drugs of the second group (possibly, like them, an alkaloid).

569. Determination of Sex by Cranial Measurements.

FRAIPONT and STOCKIS (*Paris Méd.*, October 30th, 1920) criticize the contention of Baudoin that the "condylar index," based on comparative measurement of the breadth and length of the occipital condyle, furnishes a reliable indication of sex. They point out that the precise measurement of these diameters presents technical difficulties, and that the measurements frequently show well-marked differences on the two sides. In addition, they find that the condylar index (said by Baudoin to vary in males between 40 and 50) may be as high as 68; in the majority of 17 male cases it was over 50 on one or both sides. They concur with Baudoin in his measurement of the index in females (60–70). Fraipont and Stockis admit that the index is usually lower in males than in females, but deny that the test has that certainty which was claimed by Baudoin.

570. Therapeutic Injection of the Cisterna Magna.

MCCUSKER (*Boston Med. and Surg. Journ.*, October 21st, 1920) records the administration to a patient suffering from old-standing syphilis, who for several years had had intraspinal therapy for tabetic pains, and in whom the Wassermann test was negative in the blood and markedly positive in the spinal fluid, of an intracisternal injection of 15 c.cm. of diarsenolized serum. The technique used was that of Aver. A needle was introduced (in the slightly upward direction of a plane passing through the glabella and the upper edge of the external auditory meatus) for a distance of 5 cm. from a point of puncture situated in the middle line, just above the spine of the axis; the injection of the serum was preceded by the withdrawal of 15 c.cm. of fluid from the cisterna magna. According to McCusker, puncture by this method is more easy, without being more dangerous, than spinal puncture.

571. Malignant Haemorrhagic Scarlet Fever.

TRON (*Riv. di Clin. Ped.*, July, 1920) states that during the last fifteen years, during which 5,000 cases of scarlet fever were admitted to the Milan hospital for contagious diseases, there were only four cases of the haemorrhagic form of scarlatina. The first occurred in a boy aged 15, who on the sixteenth day of disease developed copious haematuria and gingival haemorrhage. He was treated with normal horse serum; recovery took place after a prolonged period of anaemia. The other three cases, which were all fatal, occurred during the first week of scarlet fever in women aged 19, 22, and 33 respectively, and were characterized by the presence of petechiae, haematuria, and metrorrhagia. The necropsies showed subpleural, subepicardial, and subperitoneal haemorrhages, as well as haemorrhages in the submucous coat of the intestine and of the uterus. The haemorrhagic form of scarlet fever is distinguished from haemorrhagic small-pox by a history of exposure to other cases of scarlet fever, the mode of onset, the behaviour of the temperature, and the symptoms shown on the day of appearance of the eruption.

572. Scarlatiniform Rashes in Influenza.

GIOSEFFI (*Rif. Med.*, July 24th, 1920), during the influenza epidemic of October, 1917, treated 12 cases of scarlatiniform rash which he believes were of influenzal origin and not true scarlatina. Factors against scarlatina were the absence of nephritis (only one case had albuminuria), strawberry tongue, or suppurating cervical glands, the common association with coryza, the furfuraceous nature of the desquamation, and the fact that several infected cases developed all the other symptoms (sore throat, coryza, etc.), but showed no rash. None of the cases having a rash was fatal, and the epidemic came to an end at the beginning of November, when true scarlatina is usually starting rather than declining.

573. The Ocular Manifestations of Lethargic Encephalitis.

MICHAIL (*Clujul Med.*, July 1st, 1920) records 3 cases of lethargic encephalitis in persons aged 23, 27, and 45 respectively, who, in addition to paresis of the internal rectus, presented signs of papillary congestion, which in one case amounted to "choked disc." The functional symptoms consisted in one case of well marked retinal photophobia, and in another of profound disturbance in the peripheral perception of colours, giving rise to great reduction of the visual field. The macula lutea was normal in all cases.

SURGERY.

574. Actino-therapy in Chronic Disease of the Mastoid Process.

At the Finsen Institute in Copenhagen STRANDBERG (*Hospitalstidende*, April 28th, 1920) has treated 21 cases of disease of the mastoid process with actino-therapy. He prefers the carbon arc light to that of the quartz-mercury lamp, and he divides his cases into two groups: In the first group, including 8 cases, there was little doubt as to the tuberculous character of the disease. In 7 of these cases recovery was complete, and there had been no sign of relapse; the remaining case was still under treatment. The second group consisted of 13 cases of chronic relapsing ostitis of the mastoid process, many of which had failed to respond to prolonged operative and other treatment. One of these cases had lasted ten years, and owing to retention of pus it had been necessary to repeat the operation frequently. Of the total of 13 patients in this group 5 were still undergoing treatment and 8 were cured. The author is greatly impressed by the value of this method but insists that it should supplement, not replace, operative treatment. He is also convinced that to obtain the best results the cases should be in hospital and should not run the risks of ambulatory treatment.

575. Serous Cyst of the Kidney.

[illegible] (*[illegible]*, July 17th, 1920) reports the case of an old woman whose left kidney [illegible] more than the right, and was deformed by a solitary subcapsular cyst, the size of an orange, probably of congenital origin. The fluid contents were transparent and of the colour of veal broth. Chemical examination showed albumin [illegible] grams, urea 1.8 grams, chlorides 6.6 grams, per litre; glucose and mucin were absent. Microscopically the cyst wall was lined by regularly arranged endothelial cells.

576. Fractures of Atlas and Axis.

JEFFERSON (*Brit. Journ. Surg.*, 1920, 7) records four fractures of the atlas vertebrae and has collected 46 further examples from the literature. The posterior arch is that most frequently broken, then the anterior arch; a supplementary injury, such as rotatory dislocation of the atlas on the axis, fracture of the odontoid or of the lower cervical vertebrae, is a common event and occurred in more than half the cases. Cord injury was absent in 50 per cent. of the cases. Forty-six per cent. of the total cases recovered. The mechanism of fracture is very fully discussed, and Jefferson propounds a new explanation of the manner in which fracture of the atlas is brought about. This is shown to depend on the method of transmission of force from the cranium to the vertebral column, the lines of force being such that the lateral masses of the atlas are forced apart and the atlas ring breaks at its weak points—that is, the narrow portions of the anterior and posterior arches. BLECKER (Inaugural Dissertation, Bonn, 1919) met with a fracture of the odontoid process in a patient who fell from his horse on his face and forehead. Immediate death resulted from disruption of the cord. Blecker's monograph is particularly directed to the causation of fracture of the epistropheus from injuries applied to the face. He notes that immediate death is not always the result of this type of axis injury, but it may follow from secondary displacement of the fragments or from tardy blood extravasation.

577. Pneumococcus Peritonitis in Childhood.

BEAVEN (*Amer. Journ. of Dis. of Children*, October, 1920) reports nine cases of pneumococcus peritonitis occurring in infancy or early childhood. In three cases the pneumococcus peritonitis, which was secondary to a pulmonary infection, presented no abnormal clinical signs, and was only revealed at autopsy. In four cases symptoms of peritonitis appeared from one to four weeks after the onset of pneumonia, and in the remaining two cases, classified as idiopathic pneumococcic peritonitis, there was no evidence in the history, the physical signs, or the findings at autopsy of any disease other than the peritonitis. In the last-named group the onset was severe and sudden, with acute vomiting, pain, pyrexia, and speedy prostration; the abrupt and stormy onset of this affection appeared to be a significant point in the differentiation of this disease from acute, apparently idiopathic, streptococcus peritonitis. The acuteness of the onset was greater than that usually characteristic of acute appendicitis. The author believes that unless a localized abscess has formed operation is of no benefit.

578. Intravenous Mercury Bichloride for Syphilis.

BASTRON (*Amer. Journ. Med. Sci.*, July, 1920) states that the intravenous administration of mercury bichloride is a comparatively recent method of treatment. The advantages claimed for it are that earlier results are obtained, a more accurate grading of dosage is made possible, and the course of the disease can be more closely observed, since the patient is seen oftener than with other methods of treatment, and frequent opportunity is given to obtain blood for the Wassermann reaction. In syphilis Bastron gives the injections three times a week, starting with gr. $\frac{1}{10}$, giving gr. $\frac{3}{20}$ to gr. $\frac{2}{10}$ as the second dose, gr. $\frac{3}{10}$ to gr. $\frac{1}{4}$ as the third, and gr. $\frac{3}{10}$ as the fourth. When signs of salivation appear, such as slight soreness in the teeth when the jaws are suddenly closed, the treatment is reduced to one or two injections a week. The treatment is continued for at least six weeks, and longer if the Wassermann reaction remains positive. The one serious drawback to intravenous injection of mercury bichloride is the frequent occurrence of thrombosis, with the possibility of embolism. Thrombosis is somewhat less frequent, though not entirely avoided, if the drug is suspended in serum before injection.

579. X-ray Examination in Chronic Appendicitis and Morbid Syndromes in the Right Iliac Fossa.

[illegible] and [illegible] (*Rev. méd. de l'Est*, July 15th, 1920) maintain that x-ray examination should be systematically performed in chronic appendicitis, and all morbid conditions in the right iliac fossa. The examination should be as complete as possible, radioscopy being combined with radiography. Abnormal shadows, as has been shown by J. Roux of Lausanne, may be produced by enteroliths, calculi in the kidney or ureter, calcified mesenteric glands phleboliths, exostosis of the pelvis, prostatic concretions, calcification of the blood vessels, retrogressive calcification of tumours, and opaque appendicular calculi.

580. The Carrel-Dakin Treatment of Wounds.

NICOLAYSEN (*Norsk Mag. for Laegevidenskaben*, August, 1920) reviews the results obtained in the first 36 cases treated by Carrel-Dakin's method at the surgical department of the Communal Hospital in Bergen. These cases included 5 of compound fractures, 5 of extensive wounds of the soft tissues, 2 of pyarthrosis, 4 of osteomyelitis following sequestrotomy, 15 of empyema, 4 of abscess cavities, and 1 of acute tendo-vaginitis. Union of the bones was effected in all the 5 cases of fracture. From a purely bacteriological point of view the result in the 5 cases of extensive wounds of the soft tissues was disappointing; sterility was not achieved. The results in the 2 cases of pyarthrosis were also poor. With regard to empyema, the treatment was a great success when it was confined to the terminal stages, and it was desired to close short fistulae persisting after operative treatment. But the attempt made in 3 cases to sterilize large thoracic cavities invariably failed; the immediate clinical effect was strikingly good, and the number of micro-organisms was appreciably reduced, but when drainage tubes were removed and the wound was closed sepsis again developed, and it was necessary to re-establish drainage. The author reports that he did not achieve absolute sterility, and whenever the *Bacillus pyocyaneus* was present before treatment it never wholly disappeared. His verdict is reserved; he has achieved many good results.

581. Chronic Balanitis Simulating Epithelioma.

THIBIERGE (*Bull. Soc. Franç. de Derm. et de Syph.*, No. 5, 1920) records a case in a man aged 51, who consulted him for lesions on the glans penis of a year's duration. They consisted of dark red pruriginous patches occupying the upper part of the glans, and closely resembling the condition named "erythroplasia" by Queyrat and "epithelioma planum of the glans" by Darier. There was, however, no infiltration, and the lesions rapidly improved under daily applications of an alkaline lotion. There was no history of syphilis, and the Wassermann reaction was negative. The urine did not contain any sugar. Thibierge regarded the condition as a rare form of circumscribed chronic balanitis, independent of diabetes, and possibly due to seborrhoea, signs of which were present on the face.

OBSTETRICS AND GYNAECOLOGY.

582. Pernicious Anaemia of Pregnancy.

SIGNORELLI (*Rif. Med.*, July 10th, 1920) reports the case of a woman, aged 34, who had suffered from mild anaemia as a child and slight attacks in the early months of her three previous pregnancies. In her fourth pregnancy she showed signs of severe anaemia, aggravated by an attack of influenza. Labour occurred normally at the ninth month and the child was healthy. The woman was intensely anaemic, with dimness of sight, haemorrhagic retinitis, diarrhoea, and febrile temperature. Red corpuscles were 1,650,000 per c.mm.; the haemoglobin was 35 per cent., the colour index 1.18; leucocytes 20,000, blood plates scanty, erythroblasts 22 per cent. After the child was born the mother slowly improved and a year later the blood showed: red corpuscles 4.45 million, haemoglobin 82 per cent., colour index 0.92, white corpuscles 6,400, no erythroblasts. These cases of "pernicious anaemia of pregnancy" differ from the cryptogenic types and from those due to haemotoxic poisons, in their mode of origin, their course, and especially in their ultimate issue. They cannot be diagnosed from ordinary pernicious anaemia except by their course in relation to pregnancy.

583. Dysmenorrhoea Caused by Myoma.

HARTMANN (*Gyn. et Obstét.*, 1920, i, 5) reported to the twelfth congress of Scandinavian surgeons eight cases of solitary uterine myoma, giving rise to dysmenorrhoea, which was cured by their extirpation. In the majority of cases the pain was of premenstrual incidence, and was thought to be explicable by the pressure exercised by the tumour, and augmented by premenstrual congestion. In the subsequent discussion Gammeltoft drew attention to the possibility of confusion of such cases with cases of rudimentary uterine cornua; for this reason, he declared, minute examination of the excised "myoma" is necessary.

584. Subcutaneous Symphysiotomy.

ZARATE (*Gyn. et Obstét.*, 1920, i, 4) gives a historical account of this method of treatment as employed in the Argentine; since the author reintroduced it in 1915 it has been widely used, and has replaced pubiotomy. A modified technique is described, and in the after-treatment neither bandage nor belt is used. According to Zarate, the operation is absolutely indicated in cases of dystocia due to purely osseous causes when the obstetric conjugate is greater than 7½ cm. or 8 cm., in cases of simple flat or generally contracted pelves respectively; it is possible that in multiparae, with normal presentation and dilated or dilatable cervix, it may come to have a less restricted scope. A number of relative indications are set forth; the contraindications specified are (1) smaller pelvic measurements than those mentioned above; (2) in primiparae, infection or manifest fetal distress; (3) deformities of the soft parts of the maternal tract. The chief complications observed in European clinics have been haematoma and thrombo-phlebitis, ascribed to wounds of the corpora cavernosa. Zarate believes that these injuries are prevented by his method of reserving for the last stage of the operation the section of the subpubic ligament, which is only divided when a separation of more than 1 cm. has been effected. In the 30 cases recorded no haematoma occurred; of these, 6 were primiparae. It was never attempted to separate the pubes by more than 2 cm.

585. Calcified Fibromata and Carcinoma of the Uterine Body.

DUVERGEY and DAX (*Journ. de Méd. de Bordeaux*, September 10th, 1920) record the case of a woman, aged 62, who had been aware for twenty-one years of the existence of an abdominal tumour, and for two months had suffered from yellowish offensive discharge accompanied by pain and loss of weight. Examination showed the existence of several calcified fibromata (demonstrable also by x rays), but the cervix appeared to be normal. Total hysterectomy was performed, and the suspected existence of a coincident cancer of the body was confirmed.

586. Treatment of Placenta Praevia.

STOCKEL (*Zentralbl. f. Gyn.*, July 17th, 1920) records 21 cases of placenta praevia treated by Caesarean section, in all of which the mother survived and the child was born alive. Nine of the children were premature. Of the full-time children only one, a twin, died; of the premature children, five. The method constantly chosen was that of intraperitoneal abdominal Caesarean section of the cervix, which the author prefers to incision of the body, on the grounds that by the former method incision is made over the site of placental attachment, and therefore permits more surely of controlling haemorrhage, and that it has a wider field of application.

587. Gangrene in a Fibromatous Uterus.

DUVERGEY (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, July 11th, 1920) records the case of a nullipara, aged 52, who for four years had had menorrhagia and for four months abdominal pain and abundant fetid discharge. She was found to show signs of septicaemia and to have a large and extremely tender uterus extending to the umbilicus; on the right the tumour was fluctuant, on the left more resistant. Total hysterectomy was performed under spinal anaesthesia; the uterus contained a large gangrenous fibroid, and two-thirds of its wall, including the whole of the fundus, had become gangrenous.

588. Induction of Labour in the Tuberculous.

SCHMEDES (Inaug.-Diss., Breslau, 1918, quoted in *Zentralbl. f. Gynäk.*, July 17th, 1920) records the treatment at the Breslau clinic of 86 cases of pregnancy combined with tuberculosis observed from 1908 to 1916 among 8,537 births. In about 27 per cent. artificial interference was not proposed, and in the great majority of them an aggravation of the tuberculous condition was found to follow the birth; these were moderately advanced cases. About 7 per cent. of the patients declined to have labour induced. In the remaining 55 cases (64 per cent.) this procedure was carried out; of the less advanced pregnancies (three to four months) 20 were treated by metreurysis, with or without administration of pituitrin—the subsequent course of the tuberculous infection did not seem to be modified. Dilatation and curetting (8 cases) was thought to give better results. In the later months of pregnancy vaginal hysterotomy was performed under local anaesthesia in 23 cases, with satisfactory results. Sterilization was effected twice by vaginal hysterectomy and once by abdominal extirpation of the adnexa, the right ovary excepted. In all three cases the outcome was favourable.

PATHOLOGY.

589. A Test for Sugar in Urine.

LEVINE (*Science*, October 20th, 1920) describes a new test for sugar in the urine, based on the reduction to elemental tellurium of a 2 per cent. solution of sodium tellurite in 10 per cent. sodium carbonate. With small amounts of sugar the free tellurium forms a colloidal solution, which is a characteristic brown in a dark light and a grey-brown in reflected light; with large amounts a grey-black precipitate is formed. The test is carried out by heating for several minutes 5 c.cm. of the reagent with 1 to 2 c.cm. of urine. Carbohydrates possessing a carbonyl group respond to the test. Pentoses, hexoses, and dihexoses give positive reactions; sucrose and polysaccharids, glycoproteins, nucleoproteins, and cerebrosides reduce only after hydrolysis and subsequent neutralization. Aldehydes and ketones do not cause reduction: formic acid, chloroform, thymol, uric acid, and creatinin also do not interfere with the test.

590. Acute Methyl Alcohol Poisoning.

ACCORDING to ISAACS (*Journ. Amer. Med. Assoc.*, September 11th, 1920) wood alcohol appears to vary in its toxicity to different individuals. In extreme cases patients are found to be comatose, with cyanosis more intense over the upper portions of the body; respiration is greatly diminished in force and frequency. In general the symptoms are those of depression of the medulla and of the cranial and, at times, of the sacral autonomic system. The usual *post-mortem* findings are: oedema and numerous deep red areas of ecchymosis, in the gastric mucosa: a brownish colour of the liver, the cut section being lustreless and friable; and congestion and cloudy swelling of the kidneys. Methaemoglobinaemia is not uncommon; during life the urine may show a trace of albumin, may reduce Fehling's solution, and is usually acid; acetone bodies are usually absent. Many of the toxic symptoms are probably attributable to the acidosis, which may be associated with the production of formic acid. Except in very acute cases the symptoms disappear rapidly with intensive alkali therapy.

591. The Moisture and Ash in Maternal and Fetal Blood

ACCORDING to STANDER and TYLER (*Surg., Gyn., and Obstet.*, September, 1920) the water content of the blood during pregnancy is usually between 77 and 82 per cent. (the accepted normal limits); the tendency is toward the upper extreme, which in one-third of the cases was slightly exceeded. The blood moisture increases gradually until the seventh month of pregnancy, and subsequently remains stationary, or slowly decreases. Quantitatively the blood ash and the plasma ash are found to remain normal during pregnancy. It is not possible by estimating the blood moisture to distinguish eclampsia from nephritis; in both the percentage of water may be great enough to constitute a true hydraemia, a condition which is usually shown by cases with marked general oedema. Identical values for the ash in maternal and fetal plasma indicate that a free exchange of their inorganic constituents takes place through the placenta in accordance with the laws of osmosis.

592. Salt Content of Human Milk.

As the result of the examination of about 400 samples of milk taken from the first day to the seventeenth month of lactation, SIMON and DENIS (*Journ. Amer. Med. Assoc.*, August 28th, 1920) found that after the first week, during which slightly higher figures prevail, the average chloride content of breast milk varies but little, being about 50 mg. per 100 c.cm. of milk. The authors believe that diet is not the essential cause in the variation in the chloride content, and that some other factor must play an important part.

593. Globulin in the Serum of Cancer Patients

LOEPER and TONNET (*Compt. rend. Soc. de Biol.*, July 24th, 1920) say that the total quantity of proteins in the serum of cancer patients is often increased, even in the cachectic. They attribute this to an increased access of protein from the tumour itself. They hold that this passage of protein from the tumour to the blood is confirmed by the progressive disappearance of excess protein when the tumour is extirpated. For example, they have noted after an amputation of cancer of the breast a diminution of blood protein from 88 to 79 grams. Wishing to define the chemical nature of this excess protein, they believe they can attribute it to the globulins. What actually produces the increase is not the serum albumin, which is always diminished, but the globulin, the percentage of which is considerably above the normal. Whilst the serum of a healthy man shows twice as much serum albumin as globulin, the serum of cancerous patients shows the reverse. The diminution of the serum albumin is a function of the cachexia, and the increase of globulin is allied to the volume of the tumour.

594. Experimental Encephalitis Lethargica.

LEVADATI and HARVIER (*Compt. rend. Soc. de Biol.*, 1920, 83, and *Med. Science Abstracts and Reviews*, September, 1920) report that they have not been able, by intraperitoneal, intravenous, or intratracheal injection, to reproduce the disease in rabbits; this they had previously accomplished by intraocular injection (see EPITOME, September 11th, 1920, p. 32). Intranasal scarification followed by application of a "passed" virus caused death, with evidence of meningitis. The blood, like extracts of the bone marrow, lung, spleen, kidney, liver, and salivary glands, was not found effective in conveying the disease to other animals. Monkeys subcutaneously inoculated with the virus of encephalitis succumbed, like the controls, to subsequent inoculation with the virus of poliomyelitis.

595. The Uro-intradermo Reaction in Tuberculosis.

LEDOU (Thèse de Paris. *Journ. de Méd. et de Chir. Prat.*, September 25th, 1920) has examined this reaction in numerous cases of tuberculosis. The reaction was first described by Wildbolz; it consists in the intradermal injection of two drops of the patient's urine, concentrated by evaporation *in vacuo* at 65° C. to one-tenth its volume. The reaction is ascribed to the presence in the urine of an antigen. Ledou finds that this reaction is much less sensitive than the tuberculin test; certain sputum-positive patients may have a negative uro-intradermo reaction. The author is not able to confirm the prognostic significance claimed by Wildbolz for this test. During exacerbations of the tuberculous process the reaction becomes less well marked; it is absent in grave rapidly progressive cases.

596. Mixed Tumours of the Uterus.

ACCORDING to SCHRÖDER and HILLEJAHN (*Zentralbl. f. Gynäk.*, September 18th, 1920) mixed tumours of the uterus are excessively rare. They record the case of a 2-para of 58, in whom severe haemorrhage occurred five years after the menopause. Wide hysterectomy was performed; the uterus, which was of the size of a clenched fist, and was slightly adherent to the adjacent organs, was found on section to contain a polypoid mass filling the cavity of the body and cervix, and attached by a narrow pedicle to the unthickened uterine wall. The tumour showed much infiltration by blood; microscopically it was proved to contain fibrous tissue, fat, simple hyaline cartilage, nerve tissue containing unipolar and multipolar cells sarcomatous tissue (mixed celled, spindle-celled, chondrosarcomatous), and carcinomatous tissue (cubical-celled and squamous). The condition recurred, and the patient died twelve months after the operation.

597. Peribulbar Abscess due to Paratyphoid B Bacillus.

MESLET, LEGRAND, and AUGUSTE (*Gaz. des Prat.*, September 15th, 1920) report the case of a man aged 26 who had previously suffered from otitis media; two days after a reappearance of otorrhoea, he began to have headache, diarrhoea, and myoclonus. Pyrexia was present, together with hiccough, disturbance of deglutition and of speech, nystagmus, and nuchal rigidity. The spleen was enlarged and there were signs of congestion at the base of both lungs. Exploration of the aural cavities, of one temporal lobe, and of both sides of the cerebellum, failed to reveal an abscess. A blood culture showed the presence of *B. paratyphosus* B, which was isolated also from the pus found at autopsy in an abscess situated below the cerebellum and behind the medulla. The same bacillus was recovered from a pleural effusion.

598. Production of Diphtheria Toxin.

ACCORDING to ROBINSON and MEADER (*Journ. of Infect. Dis.*, August, 1920), diphtheria toxin can be produced in peptone broth, inoculated with the bacilli immediately after the addition of pieces of sterile guinea-pig liver. The initial reaction of the broth should range from plus 0.5 per cent. to neutral tested with phenolphthalein.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

599. Influenza and Tuberculosis.

Saxtorph (*Hospitalstidende*, September 22nd, 1920) has investigated the 240 admissions to his sanatorium between January 1st and November 1st, 1919, with a view to calculating the incidence of post-influenzal pulmonary tuberculosis. Of the 97 patients with a history of influenza only 38 had suffered from clinically demonstrable tuberculosis before they contracted influenza; the remaining 59 had not previously suffered from tuberculosis. Of these 59, 20 were in the first stage of the disease, 15 in the second, and 24 in the third. The *x*-ray picture of these post-influenzal cases was strikingly uniform in the early stages of the pulmonary disease. The glands about the hilus threw definite shadows on both sides, and beaded lines could be seen radiating outwards in both lungs, but the apices were perfectly clear. The author points out that his *x*-ray findings have been confirmed by Kieffer of Mannheim, and he concludes that in a large proportion of cases of post-influenzal pulmonary tuberculosis the disease begins with reactivation of old tuberculous lesions in the glands of the hilus. Thence the disease spreads outwards, giving rise to peribronchitis, ulceration, and cavity formation. In the early stages the clinical examination is negative; in addition to the *x*-ray picture already described there are various symptoms, such as lassitude, night sweats, cough, and fever, which persist after the acute stage of the influenza has passed off. These sequels to influenza are common, and their possible connexion with tuberculosis should not, he maintains, be dismissed simply because the physical examination of the chest is negative.

600. Incomplete Addison's Disease following Renal Tuberculosis.

Damade (*Journ. de Méd. de Bordeaux*, June 10th, 1920) records the case of a man, aged 58, who presented pronounced asthenia, low blood pressure, digestive disturbances, and lumbo-abdominal pain, accompanied by very slight pigmentation of the skin and mucous membranes. Treatment consisted in two subcutaneous injections of ½ mg. of adrenalin and the giving of 10 c.cm. of glycerinated suprarenal juice by mouth. Immediate improvement occurred, and the adrenalin was stopped in two days' time; a relapse occurred a few days later, and death took place after a period of five to six hours' coma. At the autopsy the kidneys were found studded with gross tuberculous lesions. Only slight inflammatory changes were found in the suprarenals; they were localized in the medulla, and could only be detected by microscopical examination.

601. Obliteration of the Aorta.

Achard, Leblanc, and Rouillard (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) record three cases of this rare condition, one being due to thrombosis and two to embolism. In the first case, which occurred in a woman aged 69, the subject of aortic incompetence, the lamellar arrangement of the thrombus, its adhesion to the vessel wall, and its considerable size, showed that it was a case of thrombosis which had developed owing to very pronounced atheromatous lesions in the aneurysmal aorta. In the second case, which occurred in a woman aged 34 who had mitral stenosis, the symptoms developed first in the right and then in the left lower limb; gangrene, however, was confined to the right side. In the third case, which occurred in a man aged 73, a cardiac thrombus, which had formed in the left ventricle as the result of a myocardial infarct of the apex, was the origin of an embolus; this was arrested at the termination of the aorta.

602. Paratyphoid B Infection.

R. Bauer (*Wien. klin. Woch.*, July 1st, 1920) records in a malarial subject, aged 33, a fatal case of paratyphoid B infection associated with chronic latent bacillary dysentery. Suppurative cholangitis developed, followed by pericholangitis and necrosis of the surrounding liver parenchyma and perihepatitis. *Post mortem* the paratyphoid B bacillus was cultivated from the gall bladder, which was adherent to the duodenum and communicated with it by a fistulous opening. An atoxic dysentery bacillus was grown from the intestinal contents.

603. Treatment of Pneumococcal Meningitis.

According to Kolmer (*Therap. Gaz.*, October 15th, 1920), who, in conjunction with Idzumi, has made experimental observations in rabbits, the early use of ethylhydrocuprein hydrochloride, which has been shown by Morgenroth and Levy and by Moore and Cohen to possess pneumococcicidal activity, affords the best prospect in the treatment of pneumococcal meningitis. Early diagnosis by lumbar puncture is essential; if a Gram-positive coccus is found, ethylhydrocuprein hydrochloride should be administered pending more accurate diagnosis; if the organism is afterwards proved to be a streptococcus the treatment may be stopped. The dose recommended is 1 c.cm. of a 1 in 1,000 solution in sterile salt solution for about each 4 lb. of body weight; the solution, warmed to body heat, is injected intraspinally after removal of cerebro-spinal fluid. An injection should be given every day for the first four or five days, and at least one injection a day as long as living pneumococci are present in the spinal fluid. In adults a blood culture should be made; if Type I pneumococci are found, Type I pneumococcus serum should be given in large doses intravenously.

604. Subcutaneous Injection of Ether for Pertussis.

Audrain (*La Médecine*, August, 1920) advocates this method of treatment; the ether, he thinks, has a bactericidal action. He gives doses not exceeding 2 c.cm., and for infants of less than 6 months reduces this to 1 c.cm. Three injections are said usually to suffice; they are given at the same point. Cure is said to be almost invariable in cases not complicated by inflammatory conditions or adenoid vegetations.

605. Lymphoid Leukaemia Simulating Mikulicz's Disease.

Roessingh (*Nederl. Tijdschr. v. Geneesk.*, August 7th, 1920) records the case of a girl, aged 7 years, who, after symptoms suggestive of influenza, had a pleural effusion, which was tapped on several occasions. Symmetrical enlargement of the lacrymal and submaxillary glands subsequently occurred. After a period of relative improvement the general condition grew worse, the spleen became enlarged, progressive anaemia developed, and death took place, preceded by a haemorrhagic pleural effusion, petechial eruption on the trunk and limbs, haematuria, and intestinal haemorrhage. Examination of the blood a few days before death showed haemoglobin 40 per cent., red cells 2,000,000, white cells 22,000, mononuclears predominating. The autopsy showed numerous enlarged glands in the mediastinum, and enlargement of the thymus, spleen, liver, and kidneys. On microscopical examination numerous accumulations of lymphocytes were found in the liver, kidneys and spleen, and left pleura.

606. A Cutaneous Test for Scarlet Fever.

Schulz and Charlton (*Rif. Med.*, June 5th, 1920) have found that if the serum of scarlet fever convalescents is injected subcutaneously in scarlet fever patients, about six to eight hours later the skin around the site of injection becomes pale, and the rash disappears in that area. This does not occur in measles, toxic rashes, urticaria, or paratyphoid scarlatiniform rashes. Half to 1 c.cm. of serum is injected in the lower thoracic or abdominal area. Neumann (*Deut. med. Woch.*, 21, 1920) in 64 cases obtained a positive result.

607. Two Rare Complications of Pneumonia.

Kummer (*Rev. méd. Suisse rom.*, June, 1920) reports a case of pneumococcal thyroiditis and one of pneumococcal abscess in the cavity of Retzius, in each case complicating pneumonia. In the former case the patient, a man aged 58, had enjoyed good health prior to the attack of pneumonia, apart from a goitre which did not cause him any inconvenience. The first symptom was slight oedema of the upper limbs, followed four days later by dyspnoea, which in another two days became so severe that an operation was required. A large cyst in the thyroid was enucleated, containing greenish pus, from which a pure culture of pneumococci was obtained; complete recovery took place. The presence of Gluge's corpuscles showed that a haemorrhage into the cyst was the cause of the pneumococci being in this site. The case of abscess in the cavity of Retzius occurred in a girl aged 19. The symptoms consisted in the appearance in the infra-umbilical region of a swelling the size of a child's head, with a central fluctuating area. The abscess was incised a little above the symphysis, and more than a litre of pus was evacuated, examination of which showed pneumococci. Recovery was uneventful. The cause of the abscess being in the cavity of Retzius was not determined.

608. Diphtheria with Numerous Relapses.

L. Boidin (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 3rd, 1920) records the following case: A soldier had an attack of diphtheria which was treated in the ordinary way. After the acute symptoms had subsided he remained well for six weeks and then developed a condition of chronic sore throat with periods of transient improvement. It was not until five months had elapsed that the sore throat, which had been regarded as herpetic angina, was recognized as diphtheria, and treated as such. After remaining well for six weeks, and eleven months after the primary attack, the patient had another relapse, as the result of which two other soldiers were infected.

SURGERY.

609. Traumatic Aneurysms in Childhood.

According to Vegas (*Rev. Españ. de med. y cir.*, July, 1920), aneurysms, which are not infrequent in middle age, are very rare in childhood and old age. Of 339 cases of aneurysm collected by Monod and Vanverts, 276 were in persons aged 20 to 60, 9 between the ages of 70 and 90, and only 7 between 1 and 10. Vegas reports 3 cases of traumatic aneurysm in children which were the only examples of aneurysm among 25,000 admissions to a children's hospital at Buenos Aires. Gonzaga at another children's hospital found only 4 cases among several thousand children. Vegas's first case occurred in a boy aged 15, who, as the result of a pistol shot, developed an aneurysm of the left internal carotid, followed by right hemiplegia and aphasia. A good result was obtained by ligature of the common carotid. The second case was in a boy aged 11, who developed an aneurysm of the right radial artery from cutting his arm with a piece of glass. The sac was ligatured above and below and removed. Some atrophy and paralysis of the hand followed the operation, but improvement took place under treatment by massage and electricity. The third case, which occurred in a boy aged 15, was an example of arterio-venous aneurysm at the base of Scarpa's triangle. Reconstructive endo-aneurysmorrhaphy was performed with a successful result.

610. Long Intermissions in Surgical Diseases of the Kidney.

Piroldini (*Riv. Osped.*, July 15th, 1920) states that not infrequently in surgical diseases of the kidney the symptoms disappear completely for several years. As a rule this disappearance only applies to the subjective phenomena, but sometimes the objective signs, including the changes in the urine, disappear as well. Very often these intermissions are only apparent recoveries, the disappearance of symptoms being due to complete destruction of the kidney; this occurrence is relatively frequent in nephrolithiasis and renal tuberculosis. In the former the pains and pyuria cease, and in the latter the pollakiuria and pyuria, as a consequence of a true cure of the cystitis, just as occurs after nephrectomy. After an interval of some years the disease attacks the kidney on the opposite side, when a return of the symptoms takes place, and death ensues from pyonephrosis and anaemia. In rare cases the disappearance of symptoms indicates a real cure, and the return of symptoms indicates a reinfection. As a general rule, however, the prognosis of long intermissions and still more that of short ones should be guarded. It is relatively favourable in nephrolithiasis, in which a spontaneous cure is likely to occur. On the other hand, it should be extremely guarded, if not decidedly unfavourable, in renal tuberculosis.

611. Syphilitic Joint Disease.

According to [illegible] (*Journ. de méd. et de chir. prat.*, August 10th, 1920) joint affections are frequent in syphilis. In the acquired disease they are chiefly seen in the tertiary period, between the third and thirtieth year. In hereditary syphilis, in which they are still more common, they may appear in the first days of life, or as late as the twentieth year. The knee is most frequently affected, and then the elbow, shoulder, and wrist. The following lesions may be found: (1) Chronic single hydrarthrosis, of insidious onset, painless, and often bilateral; (2) gummata and gummatous infiltration, with nodules in the synovial membrane; (3) peripheral hyperostoses; (4) necrosis of bone and fistulae. Syphilitic joint disease must be distinguished from (1) tuberculosis—in doubtful cases inoculation of a guinea-pig is required—(2) gonorrhoeal arthropathy, (3) the arthropathies of infectious disease, (4) haemophilic arthropathies. The diagnosis is usually established by the result of treatment. Biniodide of mercury is the most suitable drug and should be combined with potassium iodide. Gummata, when once their contents are evacuated, may heal up spontaneously; a process of sclerosis then occurs, giving rise to bony deformities and vicious attitudes. Fistulae, due to the presence of a sequestrum, are not affected by specific treatment and require surgical measures.

612. Protein Therapy of Syphilis.

Schreiner (*Wien. klin. Woch.*, August 19th, 1920) describes a method in which he combines protein therapy with salvarsan treatment of syphilis. The first day he gives an injection of peptone by itself, consisting of 5 c.cm. of a 1 in 1,000 solution; and on the third, fourth, fifth, seventh, and ninth days an intravenous injection of 0.15 to 0.45 gram of salvarsan in the morning and an intravenous injection of peptone four hours later, by 2 p.m. at the latest. He selects this time because the febrile reaction in such cases will have subsided by 9 p.m.

613. Removal of a Coin from the Oesophagus under General Anaesthesia on the X-ray Table.

Rossi (*Il Policlinico*, Sez. Prat., July 5th, 1920) records the case of a boy, aged 4 years, who had swallowed a coin which on *x*-ray examination was found to be caught in the usual situation in the oesophagus, at the level of the attachment of the manubrium to the clavicle. Complete anaesthesia was induced on the *x*-ray table, a long blunt-pointed Kocher's forceps introduced, and the coin readily extracted. Rossi does not know of a similar case.

614. Gastric Polyposis.

Du Bray (*Arch. of Inter. Med.*, August 15th, 1920) records the case of a male of 48 who suffered from epigastric pain, flatulence, constipation, and the loss during six months of 25 lb. weight. Physical examination was negative, save for epigastric tenderness, absence of free hydrochloric acid from the stomach juice, and a positive benzidine test for occult blood in the faeces. At operation a few enlarged lymph glands, microscopically proved free from carcinoma, were found in the omentum; the opened stomach was found, over an area of the greater curvature measuring 11 by 10 cm., to be covered by closely packed papillomatous growths. The thickening of the mucosa was not greater than 0.5 cm. After excision of the tumour gastro-enterostomy was performed; complete cure appeared to be obtained. Microscopically the tumour was proved to be diffuse papillomatous hypertrophy of the gastric glands. Gastric polyposis is comparatively rare; Balfour found one case only among 8,000 operations for gastric lesions in the Mayo clinic.

615. Rodent Ulcer of the Cornea.

According to Popovici (*Clujul Med.*, August 1st, 1920), rodent ulcer of the cornea, which was first described by Mooren in 1867, is a rare affection, only about 90 to 100 cases having been recorded, of which three have appeared in Rumanian literature. It is commonest in males, and is usually bilateral. Its course is as a rule chronic. According to Uhthoff the disease is very prevalent in Japan. Popovici records a case in a girl, aged 15, who showed scrofulous scars on her neck, caries of the left foot, and a subfebrile temperature. The Wassermann reaction was repeatedly negative, as was also the result of mercurial treatment. After subsidence of the corneal lesions typical conjunctival phlyctenules appeared. In view of these facts Popovici concludes that there is a causal connexion between tuberculosis and rodent ulcer of the cornea; this he regards as a phenomenon of local ocular anaphylaxis.

616. The Diagnosis of Renal Tuberculosis

Van Rijssel (*Nederl. Tijdschr. v. Geneesk.*, August 14th, 1920) records four cases in which a wrong diagnosis of renal tuberculosis was made and the kidney removed. In two cases the patients benefited by the nephrectomy, as they were suffering from papilloma of the renal pelvis and hydronephrosis respectively, but in the other two cases the excised kidney was normal. Van Rijssel maintains that, however great one's experience, one is not justified in diagnosing tubercle bacilli from the staining properties of the organisms in the urinary sediment. Inoculation of a guinea-pig is necessary, and it is also essential that one should be certain that the guinea-pig has been previously healthy, as these animals are subject to a disease caused by the *Bacillus pseudo-tuberculosis rodentium* (Pfeiffer); this may lead to erroneous conclusions. Examination of the guinea-pig's organs should be made with the microscope as well as with the naked eye.

617. Dysphagia caused by Disease of the Colon.

Bársony (*Wien. klin. Woch.*, August 12th, 1920) records two cases in which an extreme elongation and dilatation of the transverse colon had given rise to difficulty in swallowing owing to pressure on the subphrenic portion of the oesophagus. In the first case, which occurred in a man aged 54, the condition of the colon was found to be secondary to carcinoma of the rectum, which had hitherto not caused any symptoms. After colostomy in the lower part of the descending colon, the dysphagia disappeared. In the second case, which occurred in a man aged 40, the dilatation of the colon was apparently due to intestinal paresis following enteritis, and the condition was cured by purgatives and a Carlsbad course.

618. Tumours of the Hypophysis.

De Martel, Lacouture, and Charbonnel (*Il Morgagni*, June 15th, 1920) report three cases of operation for hypophysial growths. Two were successful and one died; improvement occurred as far as the tension symptoms were concerned, but the ocular disturbances persisted. Many methods of reaching the hypophysis have been described: some prefer a lateral rhinotomy; the best results have followed decompression of the sella turcica. Lecène (who publishes a successful case in the same journal) strongly advocates preliminary laryngotomy, so as to be able to plug the pharynx and avoid the troublesome haemorrhage which accompanies the intranasal stage of the operation. Other records of operations on the hypophysis include 26 cases by Hirsch, with 3 deaths and 15 satisfactory results; 16 cases by Eiselsberg, with 4 deaths and 12 good results; and 43 cases by Cushing. Of these, 15 were simple subtemporal decompressions, with 2 deaths and 9 complete failures; 11 curettings of the sella turcica, with 4 deaths, 2 failures, and 5 improvements; and 17 cases of sellar decompression, with no deaths, 2 slight improvements, and 15 good results.

OBSTETRICS AND GYNAECOLOGY.

619. Bacteriology of the Puerperium.

Loeser (*Zeit. f. Geburts. u. Gynäk.*, lxxxii, 3, and *Zeit. f. Gynäk.*, October 9th, 1920), as the result of careful bacteriological examination of the vaginal, cervical, and uterine secretions, comes to the conclusion that in every normal puerperium infection of the uterus occurs. A migration of the vaginal flora to the higher reaches of the genital tract takes place, he states, after normal labour. By the first day the bacteria have reached the internal os; by the second to the fifth day the placental site, which appears to possess the power of attracting micro-organisms. The rapidity of the ascent of bacteria is dependent less on the particular character of the vaginal flora in any one case than on the characters of the puerperal tract; the anaerobes, however, invade the uterus first. All the varieties of bacteria which have been isolated from cases of puerperal fever are stated to be recoverable from the normal puerperal uterus; rapid uterine invasions more than gradual ones are apt to be followed by pyrexia. Prolonged labour leads to more extensive bacterial growth in correspondence with diminished tissue resistance. The length of time elapsing between rupture of the membranes and birth of the child, or between the birth of the child and that of the placenta, is without effect on bacterial development. Growth of the ordinary vaginal flora proceeds as rapidly in the cervix and uterus as in the vagina; gonococci and anaerobic bacilli grow better in the uterus than in the vagina.

620. Operative Treatment of Chronic Uterine Inversion.

De Bengoa (*Ann. de la Fac. de Medicina*, Montevideo, August, 1920) describes a modification, successfully employed in a puerperal inversion of eleven months' standing, of Küstner's operation. Posterior longitudinal hysterotomy was performed as the initial, and not an intermediate, step of the operation; this variation was designed to permit early exploration, and thus to prevent injury (which might occur during an initial posterior colpotomy) to an intestinal loop, prolapsed or adherent in the pouch of Douglas. The exploration completed, the incision was prolonged as far as the cervical fornix, and transverse posterior colpotomy was performed. After reduction of the displacement the uterine incision was closed by an inner and outer series of interrupted sutures; a drain was inserted in the pouch of Douglas.

621. **Zaletel** (*Gynéc. et Obstét.*, 1920, ii, 2) describes the operative treatment—anterior colpohysterotomy combined with vaginal fixation—which he employs for irreplaceable uterine inversion. Anterior colpotomy is performed by means of a crescentic incision; after separation of the bladder the utero-vesical peritoneal pouch is opened. The index finger of the left hand is introduced, through the opening just made, into the funnel-shaped hollow corresponding to the inverted uterus, and the anterior wall of the uterus is divided in the middle line. The fundus being grasped by volsellum forceps, the body of the uterus is drawn forwards between the bladder and anterior vaginal wall; at the same time the Fallopian tubes are ligatured and divided. This operation is said to avoid the formation of adhesions which follows Küstner's operation and to prevent the occurrence of consecutive cystocele or prolapse.

622. Prognosis of Gonorrhoea in Infants.

Bock (*Frauenarzt*, 1919, and *Zentralbl. f. Gynäk.*, October 9th, 1920), from an examination of 37 patients treated some years previously (during their infancy) for gonorrhoeal vulvo-vaginitis, concludes that in childhood there is no tendency for ascending infection to take place; that even in the most intractable cases the disease ultimately disappears, and that susceptibility of impregnation (when sexual maturity is subsequently attained) is not lost. In no patient was the presence of the gonococcus found to have persisted; nine patients who had been discharged without clinical improvement were found to have completely recovered. Among the cases studied were some that had been complicated by proctitis, inflammation of Bartholin's glands, or arthropathies.

623. Treatment of Nursing Mothers.

Heim (*Budapesti Orvosi Ujság*) says that, in the interests of the child, "convalescent" supervision of the nursing mother should be prolonged for at least two months. The first coitus should be deferred for ten weeks. No special diet and no galactagogues are needed; beer in amounts of 8 to 12 oz. is harmless. Taken by the mother in the usual therapeutic amounts, single doses of opium, morphine, veronal, sulphonal, and medinal are without harmful effect on the child. Intensive arsenical medication should not be undertaken during the lactation period. Care of the nipples during pregnancy is devoid of influence in the prevention of sore nipples in the puerperium; it is most important, however, to secure at each suckling as complete emptying of the breast as is possible.

624. The Prevention of Repeated Abortion.

According to Remy (*Rev. méd. de l'Est*, July 15th, 1920) in cases in which the fetus has, during several successive pregnancies, died during the course of gestation, and in which the existence of syphilis in the parents cannot be demonstrated, Simpson's treatment (administration of chlorate of potash) may prove effective in prolonging the labour to term. The doses advised are 0.21 gram daily during the first six months, and 0.10 gram daily during the last three months.

625. Fetal Abdominal Sarcoma Obstructing Labour.

Maher and Musante (*Journ. Amer. Med. Assoc.*, July 17th, 1920) record the labour of a 5-para; this was normal until the head and shoulders had been born, when traction was unavailing for further delivery. Examination under anaesthesia showed the dystocia to be due to enlargement of the fetal abdomen, by puncture of which a mass twice the size of the fetal head was removed piecemeal. The tumour was proved to be myxosarcoma, probably of renal origin.

626. Vaginal Calculus causing Nocturnal Enuresis.

Winckler (*Zentralbl. f. Chir.*, June 19th, 1920) records a case of nocturnal enuresis in a girl of 13 cured by removal from the vagina (through the small central opening of an annular hymen) of a wedge-shaped stone weighing 4 grams. This was thought to be a urinary calculus resulting from stasis in the vagina of urine which had entered through the opening in the hymen.

627. Corporeal Cancer following Irritation.

SOUBEYRAN and PEYRON (*Gynéc. et Obstét.*, 1920, i, 4) record the case of a woman, aged 47, to whom, twenty-two years before, a midwife had given uterine douches for puerperal infection. The patient subsequently suffered from menorrhagia and abdominal pain; cancer of the body was diagnosed, and injections of cuprase were given. The symptoms did not subside after withdrawal from the uterus of the bony nozzle of a syringe, and the examination of the specimen removed at hysterectomy showed glandular carcinoma, which had developed at that portion of the corporeal endometrium which had been exposed to irritation by the end of the syringe.

628. Phlebitis due to Fibroids.

ACCORDING to GUILLOT (Thèse de Bordeaux, *Journ. de méd. et de chir. prat.*, August 10th, 1920), cases of phlebitis accompanying uterine fibroids may be classified as: (1) Those due to compression by the tumour of the iliac veins, with stasis and endophlebitis at the point of pressure. (2) Those, much more rare, consecutive to infection of a fibroid (usually submucous or polypoid). The former variety of phlebitis affects the external iliac vein and extends to the femoral and internal saphenous veins; it is characterized by insidious onset, and painless oedema of the leg; the latter variety, which has a similar pathology to that of phlegmasia alba dolens, has a brusque onset and may affect any vein. The danger of embolus is equal in the two cases. Pressure phlebitis is an indication for retarding the operation in cases of large fibromata; septic phlebitis consecutive to infection of a fibroid is an indication for speedy operative treatment.

629. Pregnancy after Subtotal Hysterectomy.

JACQUES (*Paris Méd.*, June 19th, 1920) relates a case in which signs of pregnancy were observed in a woman from whom four years previously he had removed the body of the uterus, both tubes, and one ovary, the other ovary being so buried by peritoneum as to be excluded from the abdominal cavity. A fetus 9 cm. long was extracted by posterior colpotomy.

PATHOLOGY.

630. Meinicke's Reaction in the Diagnosis of Syphilis.

LUZA (*Nederl. Tijdschr. v. Geneesk.*, September 18th, 1920) examined 480 serums with the third modification of Meinicke's reaction simultaneously with the Wassermann reaction. The results were as follows: 175 serums were negative, and 250 were positive with both reactions. Of the remaining 51, a total of 29 gave a positive Wassermann and a negative Meinicke reaction, and 22 gave a negative Wassermann and a positive Meinicke reaction.

631. Pleural Effusions in Acute Bronchitis.

ACCORDING to PETZÉTAKIS (*Lyon Méd.*, September 10th, 1920), who records a series of illustrative cases, pleural reactions may be observed not only in the course of intense parenchymal pulmonary inflammation but also as an accompaniment of the initial stages of ordinary acute bronchitis. In this condition a certain amount of fluid is often effused into the pleural cavity. The clinical signs as a rule are slight, and dullness may be absent; it is exceptional to hear a friction rub or aegophony. The effusions, which are often bilateral, are usually serous or serofibrinous; after becoming seropurulent they may again become clear. As a rule the quantity of fluid effused is from a few to 50 c.cm. The effusions contain numerous endothelial cells, polymorphonuclears, and lymphocytes, as well as a few erythrocytes. In effusions which are becoming purulent there is an eosinophilia of local origin. Cultures of these effusions are negative, and the prognosis is almost uniformly good.

632 Paratyphoid B Suppurative Meningitis.

[illegible] (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 5th, 1920) records the case of a man, aged 25, who on the [illegible] day of paratyphoid fever developed symptoms of meningitis. Lumbar puncture gave issue to a purulent fluid which was under increased pressure and contained a large number of degenerated polymorphonuclear cells and paratyphoid B bacilli in pure culture. Lumbar puncture was performed every other day and was followed on three occasions by intraspinal injection of 5 c.cm. of 1 per cent. solution of collargol. After the third puncture the meningeal symptoms diminished and disappeared. The last puncture, performed ten days after the first, showed a clear sterile fluid containing only a few lymphocytes. Convalescence took place on the forty-third day without a return of the meningeal symptoms. Only one previous case (reported by Tollmen and Weissenbach), of suppurative paratyphoid B meningitis is on record, although Sacquépée, Boidin, Guy Laroche, and Lecaplain have reported meningeal syndromes in paratyphoid B fever, with a clear and sterile cerebro-spinal fluid.

633. Mediastinal Lipoma.

LEOPOLD (*Arch. of Internal Med.*, September 15th, 1920) has only been able to find reports of four cases of this condition. He records the case of a man of 37, previously healthy, who had attacks of hollow coughing, followed later by dyspnoea. Nine months after the beginning of the illness physical and *x*-ray examination demonstrated a tumour filling about four-fifths of the chest and pushing the heart downwards and backwards. There was no pain, no emaciation, no dysphagia, and no aphonia; in other respects the signs and symptoms in the later stages did not differ from those usually occurring in mediastinal obstruction. At the autopsy a lipoma weighing 17 lb. 6 oz. was found in the anterior mediastinum.

634. The Relation of Influenza to Syphilis.

NEUDA (*Wien. klin. Woch.*, September 6th, 1920) has found, both from his own observations and from inquiries from others, that as a general rule the course of influenza is mild in syphilitic subjects, and that in a large percentage of cases the Wassermann reaction in the blood becomes negative after influenza, in spite of relatively little treatment, although the gold sol reaction in the cerebro-spinal fluid is not affected. Neuda concludes that, as the gold sol reaction remains positive, there is no essential change in the syphilitic process but merely a change in the condition of the Wassermann reaction. STRASSBERG (ibid.), from observations of influenza in syphilitic women, has also found that the course of influenza is not unfavourably affected by coexisting syphilis, and that influenza has a decidedly beneficial action on syphilis, especially in a serological respect. Thus the patient with a macular eruption and a well-marked positive Wassermann reaction, who had had only an injection of 0.6 gram neo salvarsan and 0.15 gram of mercury salicylate, fourteen days after an attack of influenza of eight days' duration gave a negative reaction without any further treatment. Strassberg, however, emphasizes the fact that influenza has no effect on the course of syphilis or on the Wassermann reaction unless there has been previous antisyphilitic treatment. He suggests that the favourable effect of influenza, like that of protein therapy, on syphilis is due to its febrile action. The fever of influenza, however, has a much more intense action than the artificial pyrexia caused by protein therapy. It seems that in influenza, as in erysipelas, typhoid, etc., processes take place which render the organism amenable to previous antisyphilitic treatment, while, on the other hand, syphilis has an apparently inhibitory action on influenza.

635. Vaccine Prophylaxis and Treatment of Whooping-cough.

SPOLVERINI (*Il Policlinico*, Sez. Prat., September 20th, 1920) reports from the paediatric clinic at Rome the results of vaccine prophylaxis against pertussis in 46 cases and of vaccine treatment in 98 cases. He found that prophylactic inoculation with a Bordet-Gengou vaccine, if carried out before the onset of the specific symptoms, gave excellent results, there being a failure in only 7 per cent. On the other hand, vaccine therapy as a general rule was ineffective if performed eighteen to twenty days after the onset, when typical paroxysms had already developed and the Bordet-Gengou bacillus could no longer be found in the sputum. The treatment, however, was successful if given within the first ten days of the disease, when the Bordet-Gengou bacillus could easily be found in the sputum. To ensure success large doses were required—namely, two to four or even six thousand million organisms per c.cm., according to the age of the patient; small doses had no appreciable result. The injections were repeated on alternate days. For prophylactic purposes three were usually sufficient, and for curative purposes six to seven were required. The vaccine was always harmless, no local or general reactions being produced. Systematic investigations as to the presence or absence of the Bordet-Gengou bacillus and its persistence in the sputum, and also the time most suited for vaccine treatment, showed that whooping-cough was no longer contagious thirty to forty days after the onset; isolation of cases beyond this period is therefore unnecessary.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

636. Typhus in Algeria.

GLATARD (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) records an epidemic of 206 cases of typhus at Oran (Algeria), with 47 deaths, or a mortality of 22 per cent. The incubation period varied from four to twelve days. Conjunctival injection was an early and very constant sign, being present in cases in which the eruption did not appear till late or was absent altogether. Petechiae were frequently absent, the typical lesion being a macula, which was at first bright red, and then became darker and did not fade on pressure. The duration of the disease varied from sixteen to eighteen days. In fatal cases death occurred either at the height of the disease from myocardial, pulmonary or meningeal complications, or during its decline, or in convalescence, from cardiac collapse or nervous complaints, such as bulbar paralysis or encephalitis.

637. Sclerosis of the Secretory Glands of the Face.

PORTMANN (*Journ. de Méd. de Bordeaux*, August 10th, 1920) describes two cases of sclerosis of the superficial and deep glands of the face associated with suppression of their function. In the first case, which occurred in a girl aged 19, there was hypertrophy of the parotids and atrophy of the submaxillary, sublingual, and lacrymal glands. There was intense dryness of the mouth, so that to swallow her food the patient had to drink continually while eating, and there was complete absence of lacrymal secretion. In the second case, which occurred in a woman aged 58, the salivary and nasal glands were chiefly affected, and the lacrymal glands were concerned to a slight degree only. The condition described by Portmann is distinct from Mikulicz's disease, in which there is only a hypertrophy of the lacrymal and salivary glands, and consists of a sclerosis which may be either hypertrophic or atrophic, and may affect all or some only of the superficial or deep glands of the face.

638. A Case of Indigenous Malignant Tertian Fever.

OETTINGER and DEGUIGNAND (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 5th, 1920) report a case of malignant tertian fever in a man aged 18, who had never been out of France. He had spent his youth at a place where there are no marshes and where malaria is unknown. He was probably infected in Paris during the war. This is the sixth case of indigenous malignant tertian fever reported in France. Unlike all the other cases, which had a severe attack, the present case was remarkable for its mild and almost insidious character.

639. Congenital Aortic Stenosis.

PAILLARD (*Journ. de Méd. et de Chir. Prat.*, August 10th, 1920) records a case of congenital aortic stenosis occurring in a man whose symptoms were dyspnoea on exertion (dating from childhood), enlargement of the left ventricle, and a systolic murmur at the aortic orifice conducted along the sternum to the xiphoid cartilage. Pulsating vessels on the chest and back indicated a supplementary circulation. Examination of the blood pressure showed hypertension in the upper limb (26–12 cm. with Pachon's instrument) and a low tension in both lower limbs (11.5–9.5 cm.).

640. The Action of Calcium Salts in Oedema.

HÜLSE (*Zentralbl. f. inn. Med.*, June 19th, 1920) has found that calcium chloride is of considerable value in the treatment of numerous dropsical conditions which he has met with in the war, such as renal dropsy and war oedema. In nephritis it not only acted on the dropsy but often had a surprisingly good effect on the renal process itself. Owing to the large quantities of sodium chloride in the body of oedematous patients, larger doses of calcium chloride, namely, 15–20 grams daily were required. Hülse considers that it is owing to neglect of this point that calcium chloride has not been recognized as an efficient drug in the treatment of dropsy. Small doses have no effect. Occasionally the action of calcium chloride may be increased by combining it with other neutral salts, especially salts of magnesia or urea. The calcium salts are supposed to act by exercising a sedative effect on the sympathetic and autonomic nervous system. The fall of the blood pressure following the administration of calcium chloride may be regarded as due to the specific action of the calcium salts on the autonomic nerve endings in the muscular coat of the vessels.

641. Oral Auscultation in Artificial Pneumothorax.

BORELLI (*Il Policlinico*, Sez. Prat., July 26th, 1920) emphasizes the importance of oral auscultation, which was introduced by Galvagni in 1875, in determining the condition of artificial pneumothorax. The object of oral auscultation, which is performed by approximating the ear or the chest-piece of a binaural stethoscope to the patient's mouth, is to detect the sounds produced in the lung while he breathes exclusively through the mouth. The importance of oral auscultation lies in the fact that râles are sometimes heard by this method when examination of the chest is almost entirely negative. Most authors are agreed that oral auscultation is peculiarly useful in pulmonary tuberculosis, especially in the period of cavity formation, and that oral râles are less commonly heard in other diseases of the chest, such as pneumonia and capillary bronchitis. The value of oral auscultation in artificial pneumothorax consists in the fact that during treatment the râles may appear or disappear, according as the pneumothorax is or is not complete and the lung is or is not in a state of absolute respiratory inactivity. On the appearance of the first signs of resumption of activity in the lung under treatment an immediate "refill" is indicated.

642. Pneumonia Simulating Gastric Perforation.

J. F. O. HUESE (*Nederl. Tijdschr. v. Geneesk.*, August 7th, 1920) records the case of a man, aged 42, who was suddenly seized with violent pain in the upper part of the abdomen, and was sent to hospital as a case of gastric perforation. On examination the patient presented slight cyanosis, but the heart and lungs appeared normal. The rectal temperature was 102°, the pulse 110, good and regular. The upper part of the abdomen was as hard as a board and very tender, but the lower part was supple and painless. Preparations for laparotomy were made, but the abdominal symptoms rapidly subsided, and on the following day signs of right lobar pneumonia developed, followed three weeks later by empyema. The cause of the abdominal pain at the onset was probably the localization of the pneumonia on the under surface of the lung, and involvement of the diaphragmatic pleura.

643. Chloroma in Childhood.

ACCORDING to MENSI (*La Pediatria*, July 1st, 1920), who records 3 personal cases and has collected about 40 other cases from the literature, chloroma is a disease of childhood, about half the cases occurring at this age. The youngest patients on record are aged 10, 18, and 21 months. The male sex is most affected. Of 40 cases in which the sex is given 26 were males. Heredity and previous diseases or trauma have no direct etiological influence. Mensi describes the following varieties of the disease: (1) Chloroma in which microlymphocytes predominate, the rarest form. (2) A form in which macrolymphocytes predominate, the most frequent form. (3) Chloroma associated with both macrolymphocytes and myeloblasts. (4) Chloroma characterized by the presence of myelocytes in the blood. (5) Subleukaemic or aleukaemic forms. (6) Asymptomatic forms in which the typical localization and manifestations are absent. As in leukaemia, the prognosis is unfavourable and treatment ineffective.

644. Tetany in the Adult due to Parathyroid Apoplexy.

CORDIER (*Ann. de méd.*, No. 5, 1920) records the case of a man aged 41, suffering from chronic diarrhoea (accompanied by intense cachexia, profound and progressive asthenia, and paroxysms of cervical and prelaryngeal pain), who presented tetany of the upper limbs. The autopsy showed a haematoma of the tracheo-thyroid space, which had destroyed the right parathyroid glands; there were also microscopical haemorrhages in the corresponding glands on the left side. There was no explanation of the parathyroid apoplexy, as there were no haemorrhages elsewhere, and the patient was not a haemophilic subject. During the first stage of the disease, which probably corresponded to a period of small haemorrhages in the gland, distinct benefit resulted from administration of fresh parathyroid, which proved useless during the stage of extravasation.

645. Treatment of Pulmonary Gangrene.

RATHERY and BORDET (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) record a case of pulmonary gangrene in a man aged 61 successfully treated by intratracheal, intravenous, and intramuscular injections of anti-gangrene and anti-streptococcal serum. The anti-gangrene serum consisted of a mixture of anti-perfringens, anti-vibrion septique, anti-oedematiens, and anti-histolytica serums.

SURGERY.

646. Perichondritis of the Thyroid Cartilage following Facial Erysipelas.

BONNET-ROY and MAUREL (*Rev. de laryng., d'otol., et de rhinol.*, July 31st, 1920) report the case of a woman, aged 50, who developed facial erysipelas on the day following a mastoid operation. Five days after recovery from erysipelas she began to suffer from a painful swelling over the thyroid cartilage and increasing dyspnoea. An incision was made under a local anaesthetic, and a collection of pus, from which a rich growth of streptococci was obtained, was evacuated from the left lateral ala of the thyroid cartilage. Recovery ensued.

647. Treatment of Keratitis by Tuberculin.

WISSELINK (*Nederl. Tijdschr. v. Geneesk.*, July 24th, 1920) records the case of a man, aged 20, who suffered from photophobia and showed rectilinear opacities in the form of a V and a W on the temporal half of the right cornea. In spite of treatment by atropine sulphate, quinine sulphate, and arsenic, the condition persisted for about six months. Subconjunctival injections of old tuberculin, as recommended by Haab, were then given, with a surprisingly good result, the opacities clearing up within three weeks.

648. Tuberculosis of the Cranium.

ACCORDING to ST. JOHN (*Clujul Med.*, August 1st, 1920), who records two illustrative cases, tuberculosis may cause a circumscribed necrosis of the cranium, or more rarely give rise to a progressive infiltration affecting an extensive area of the skull. The disease may be primary and isolated, without any tuberculous lesions elsewhere; it principally occurs in late childhood or adolescence. According to most authorities it begins in the diploë and then invades either the outer or the inner table, or both, causing perforation. The number of perforations may vary from one to thirty. The principal, if not the only, symptom is the formation of cold abscesses in the frontal or parietal region; otherwise there are no characteristic symptoms and the disease may sometimes remain latent for a long period. The prognosis should be very guarded. Of 16 patients treated by Koenig, 12 presented tuberculous lesions elsewhere; of these only 2 survived for ten years; of 4 with primary cranial lesions, 2 died. One of St. John's two patients was an adult, aged 30, who also had pulmonary tuberculosis, and the other an infant, aged 18 months; both patients were thus exceptions to the general rule as regards age. Recovery took place in each case after evacuation of the abscesses.

649. Sarcoma of the Clavicle.

ACCORDING to COLEY (*Annals of Surgery*, August, 1920), malignant tumours of the clavicle are comparatively rare; 16 cases only were observed by the author among 275 cases of sarcoma of the long bones. The few known cases of carcinoma of the clavicle have been metastases from a recognized or non-recognized primary focus. In most cases, sarcoma of the clavicle is associated with recent or remote local trauma. Local removal of the tumour, or even a limited partial resection, should be avoided; if the tumour is operable the treatment of choice is total excision, followed by a course of Coley's vaccine, and supplemented, when possible, by radium or *x* ray treatment.

650 The Surgical Treatment of Graves's Disease.

SCHIASSI (*Il Policlinico*, Sez. Chir., August 15th and September 15th, 1920) states that in 1899, when considerable importance was attached to the sympathetic as a factor in Graves's disease, several authorities proposed resection of a portion of the cervical sympathetic. In three cases in which this operation was performed by him improvement took place, but in two cases there was a relapse, four and seven months respectively after the operation. The third case was lost sight of. It is probable that the recurrence of symptoms in such cases is due to the re-establishment of nervous communications. Schiassi has therefore abandoned sympathectomy in the treatment of Graves's disease. In 1907, stimulated by Kocher's results, he treated six cases by ligature of two or three thyroid arteries, but four years later he reported that the favourable results had only been temporary, probably due to the re-establishment of the circulation. Since then he has always adopted resection of part of the thyroid, and his results in twenty-eight cases have been good. The principal contraindication to operation is myocarditis, to detect which a careful examination of the heart (including the use of *x* rays) is required. Other contraindications are severe gastric crises, profuse and protracted diarrhoea, and chronic oedema affecting the hands. The patient should be kept in bed for at least eight to ten weeks before the operation, and given a little morphine or veronal every evening, and by day a draught of cannabis indica, extract of belladonna, and valerian. In conclusion, Schiassi pleads for a closer collaboration than hitherto between the physician and surgeon in the treatment of Graves's disease.

651. Primary Actinomycosis of the Conjunctiva.

BRUNETIÈRE (*Journ. de Méd. de Bordeaux*, September 10th, 1920) reports the case of a soldier, aged 25, blind in the right eye, who for two years suffered from chronic left pseudo-membranous conjunctivitis, resistant to every form of treatment, and leading to blindness. At one time an organism morphologically resembling the Klebs-Loeffler bacillus was found in the smear, but after two years' treatment the ray fungus was found in a false membrane and in a piece of the underlying tissue removed from the tarsal conjunctiva. Primary actinomycosis of the conjunctiva is very rare.

652. Spontaneous Escape of Cerebro-spinal Fluid through the Nose.

CONSTANTIN (*Rev. méd. de l'Est*, July 15th, 1920) reports a case of cerebro-spinal rhinorrhoea; this has been described by StClair Thomson in England; Freudenthal in the United States; Babinski, Sicard, Claisse, and Lévy in France; Wollenberg, Nothnagel, and Adolf Meyer in Germany, and Noccioli in Italy. In only a few cases have autopsies been performed. In four a cerebral tumour was found; in other cases the escape of cerebro-spinal fluid was due to a fracture of the base of the skull or injury to the cribriform plate. In Constantin's case, however, the phenomenon occurred suddenly, without any trauma or sign of a cerebral tumour. The rhinorrhoea was observed to occur drop by drop from the right nostril exclusively at the rate of five drops a minute, or 860 c.cm. in the twenty-four hours. When the patient was in the horizontal position the discharge ceased, and the fluid was swallowed without interfering with the patient's sleep. Examination of the nasal fossae and skiagrams of the skull showed nothing abnormal.

653. Spondylosis.

CASTELLI (*Rif. Med.*, July 20th, 1920) reports two cases of spondylosis occurring in the same family. (1) A man of 42 had begun, when 27, to suffer from attacks of pain in the limbs, back, and shoulders; the pains disappeared when he was at rest. After ten years the patient noticed the gradual onset of rigidity of the spine; the hip-joints remained free. After an attack of malaria in 1916 the pains in the back became much worse, and the spine became characteristically curved; there was marked cervico-dorsal kyphosis and absolute rigidity of the spinal column, and he worked with difficulty. Radiography showed well-marked decalcification of many of the vertebral bodies; there was no evidence of syphilis. (2) A brother of this patient, aged 28, was quite well until 1915, when he was struck in the sternum by the shaft of a cart. For a fortnight he did not complain much; he could walk straight and bend his back, and such pain as he had was in the sternum rather than the back. About a week later, however, he noticed that his back was becoming curved in the upper cervical region. This kyphosis became slowly worse, affecting the dorsal and lumbar regions. After two years, in which he had slight pain only, the condition became stationary, and he is now able to do his work without difficulty, although the spine is rigid. The first case was typical of rhizomelic spondylosis of the Marie type, the second corresponded to the Bechterew type, beginning at the upper part of the spine and spreading down, with no associated ankylosis in the big joints, and no pain accompanying the gradually increasing curvature. Various treatments were tried in the first case but with no permanent benefit; the second case received no treatment.

654. Traumatic Aneurysm of the Superficial Temporal Artery.

NOVARO (*Il Policlinico*, Sez. Prat., August 30th, 1920) states that traumatic aneurysm of the superficial temporal artery is exceptional even in war surgery. He records a case occurring in a man, aged 20, in whom an aneurysm of the right superficial temporal artery developed twenty-six days after he had received (in the course of a strike) a discharge of small shot in the right temporo-parieto-occipital region. Complete recovery followed extirpation of the sac.

OBSTETRICS AND GYNAECOLOGY.

655. Dystocia from Prolapse of the Non-Gravid Horn of Uterus Didelphys.

POTOCKI (*Gynéc. et Obstét.*, 1920, ii, 1) records the case of a primipara, aged 23, admitted to hospital in labour. Vaginal examination showed the existence of two vaginas, separated in the whole of their length by a vertical antero-posterior partition. At the extremity of the left vagina a softened cervix admitted one finger and permitted palpation of the fetal head. At the summit of the right vagina the right cervix was found to be 3 or 4 cm. long; in the posterior fornix a firm rounded tumour the size of an orange was found to be situated immediately in front of the sacrum; this tumour could also be felt through the posterior fornix of the left vagina. The tumour, which was the fundus of the retroverted right uterine cornu, could not be anteflexed by manipulation. Little descent of the head had taken place after thirty-six hours' labour; accordingly laparotomy was performed. Since it was not found possible to disengage the prolapsed right fundus, Caesarean section was performed. It was found that in the true pelvis there was a thin resistant antero-posterior partition stretching from the bladder to the rectum. Reposition of the body of the right uterine horn was now possible. The author quotes other cases of dystocia due to this cause, as recorded by (1) Benicke: a primipara of 28, with slightly contracted pelvis, delivered at term by forceps of a live infant; (2) Dos Santos: a 2-para, at term, in whom the retroverted non-gravid horn was replaced under chloroform anaesthesia, and subsequent delivery was spontaneous; (3) Tauffer: malformation was not recognized till the fourth pregnancy, at the conclusion of which a well-formed infant (whether alive or dead is not stated) presented by the breech, and was extracted with some difficulty; (4) Holzapfel: a stillborn infant was delivered by version. Only in the cases of Tauffer and Holzapfel is it mentioned that a cast was expelled, or removed, from the non-gravid horn. In Potocki's case contractions of the non-gravid horn, synchronous with those of the gravid horn, were of help in the diagnosis.

656. Dystocia due to Bandl's Retraction Ring.

BRANDT (*Gynéc. et Obstét.*, 1920, i, 5) records the case of a one-para, aged 35, with rachitic pelvis. The presentation was a first vertex, and the membranes ruptured prematurely. After eighteen hours' labour the fetal heart became inaudible; nine hours later the retraction ring was felt crossing the abdomen obliquely nearer the umbilicus than the pubis. The lower uterine segment was distended, but not tender; the uterine body was soft, and in the intervals between its contractions not tender. Twelve hours later extraction was performed by forceps; the dead fetus exhibited a pressure mark running obliquely from the left shoulder around the thorax, passing 3 or 4 cm. below the right armpit; below this mark the soft parts were cyanotic and oedematous.

657. Cerebral Haemorrhage in the Newborn.

STATISTICS from the Newborn Clinic, University of Minnesota, show that *post-mortem* examinations reveal cerebral haemorrhage in more than 50 per cent. of all infants that die at birth or during the first few days of life. It was notable that these findings were often made following non-instrumental or even easy deliveries. They were especially frequent following breech presentations and in premature births. The factor of asphyxia neonatorum, to which Little, Cushing, and others ascribe the cerebral damage, RODDA (*Journ. Amer. Med. Assoc.*, August 14th, 1920) says was not always present. It was further noted that at necropsy the blood was often found only slightly coagulated or even fluid. Severe trauma results in massive haemorrhages and early death. A more frequent cause of cerebral haemorrhage is mild trauma *plus* haemorrhagic disease of the newborn, accompanied by findings of delayed coagulation time and prolonged bleeding time. A delayed coagulation time and prolonged bleeding time can be controlled by the subcutaneous injection of whole blood. This is a rational therapy in cerebral haemorrhage. In severe cases surgery should be employed early; operation should be controlled by blood studies and by the injection of blood if indicated. The coagulation time and bleeding time should be determined in every newborn child presenting unusual symptoms, or better, as a matter of routine. If the reactions are delayed, blood should be administered.

658. Pyelitis in Pregnancy.

ACCORDING to ZIMMERMANN (*Muench. med. Woch.*, 1920. 18) the appearance of transitional and flattened epithelial cells in the urine affords no reliable indication of the existence of pyelitis; such cells may be derived from other portions of the urinary tract. It is particularly important to bear this in mind in cases of pregnancy (especially the latter half), during which the appearance in the urine of epithelial cells, flattened and cylindrical, and of red and white blood cells is normally to be expected; bacteria also are commonly found. Examination of urine obtained by ureteral catheterization in twenty-four pregnant women, of whom twelve were quite healthy, showed that the diagnosis of pyelitis is only permissible when there is a very pronounced difference between the opacity of the urine of the two sides. In cases of pyelitis the side of greater urinary opacity corresponds with that of tenderness to pressure in the costo-vertebral angle. A perceptible urinary opacity could be demonstrated in perfectly healthy women. From ureteral catheterization in twelve gynaecological cases the conclusion is drawn that even if there are no local symptoms, pyelitis may be diagnosed when an opaque urine is found to contain cellular elements and numerous bacteria. Zimmermann estimates that the pressure in the renal pelvis may vary from 15 to 105 cm. of water. Since the higher pressures were found in healthy subjects he believes that the renal pelvic pressure is dependent less on damming back of secretion than on the tone of the pelvic musculature.

659. Transverse Presentations.

KACHE (Inaug.-Diss., Breslau, quoted in *Zentralbl. f. Gynäk.*, August 14th, 1920) records 400 (6.1 per cent.) transverse presentations occurring among 6,562 labours. Multiparity and contracted pelvis were the most easily traceable etiological factors. In 319 of the 400 cases, one or more complicating conditions existed, of which prolapse of the cord or of a small part was the most frequent, and contracted pelvis or placenta praevia was the most unfavourable. Spontaneous version is recorded in seven instances, of which four occurred after the birth of a first twin. If the os was fully dilated, the membranes were, if necessary, ruptured; hydrostatic dilatation was performed in cases of incompletely dilated os and of placenta praevia. Internal version was performed in 349 cases, in 15 of which metreurysis had previously been carried out. The maternal mortality was 0.25 per cent.; the mortality of the children—before, during, and after birth—was 26.3 per cent.

660. Four Years' Retention of a Fetal Bone.

LÉVY-SOLAL and VIGNES (*Gynéc. et Obstét.*, 1920, i, 5) record the case of a woman who was curetted for haemorrhage following a four months' abortion. During the ensuing four years there was some metrorrhagia and, finally, dysmenorrhoea. The uterus was found to be enlarged, and there was bilateral salpingitis. A section of the uterus, removed by supravaginal hysterectomy, showed the presence within the cavity of several small fragments of fetal skull.

661. Diagnosis of Interrupted Tubal Gestation.

PROUST (*Paris Méd.*, August 7th, 1920) states that in the diagnosis between uterine abortion with severe external haemorrhage and interrupted tubal gestation with severe internal (and some external) haemorrhage, the "signe du Douglas" may be of considerable help. This sign consists in extreme tenderness to pressure deep within the posterior fornix, together with preservation of depressibility of this region; it is present in cases of intraperitoneal effusion of fluid blood, but absent in uterine abortion. The sign is absent in late stages of interrupted tubal pregnancy, when a pelvic haematocele has been formed. It may be present in cases of intraperitoneal effusion of pus, but here the rigidity of the recti furnishes evidence of peritonitis.

662. Marriage and Uterine Cancer.

DEELMAN (*Nederl. Tijdschr. v. Geneesk.*, September 4th, 1920), in a paper based on the study of 601 cases of uterine cancer which occurred in Treub's clinic at Amsterdam between 1896 and 1918, discusses the frequency of the various forms of uterine cancer in relation to marriage and the number of children. The average age of women with carcinoma of the body of the uterus (61 years) was distinctly higher than that of patients with cancer of the cervix (49 years). Nearly 8 per cent. (48) of the uterine cancers were cancers of the body of the uterus. The much greater frequency of uterine cancer among married women was shown by the fact that of the 601 cases 571 were married and 30 only unmarried. As regards the effect of the number of children on the incidence of the two forms of uterine cancer, 15, or 31 per cent., of the 48 women with cancer of the body of the uterus were nulliparae, and the remainder had an average of 2.8 children each, while among 553 cases of cancer of the cervix 29, or 5.2 per cent., were nulliparae, and the rest had an average of 5 children each. Thus among women with cancer of the body of the uterus there were six times as many nulliparae as among women with cancer of the cervix. The greater frequency of cancer of the body of the uterus in nulliparae has been attributed by Treub to the "spring cleaning" which the uterus undergoes as the result of childbirth.

PATHOLOGY.

663. The Etiology of Lethargic Encephalitis.

OTTOLENGHI, D'ANTONA, and TONIETTI (*Il Policlinico*, Sez. Prat., September 27th, 1920) found in the blood and cerebro-spinal fluid of patients with lethargic encephalitis a virus capable of infecting a guinea-pig either by intracerebral or intraperitoneal inoculation. The virus was able to pass through a Berkefeld filter, and could be preserved in 50 per cent. glycerin; it was also fairly resistant if left to itself. It was found that both the patient's cerebro-spinal fluid and the washings of the nasopharynx were virulent after passage through a Berkefeld filter, at least for guinea-pigs, even when merely dropped into nostrils without previous scarification. The writers confirmed Bastai's observation that the cat is receptive to the virus of encephalitis, and presents symptoms of somnolence similar to those seen in man. They also found that the cerebral substance of the cat was virulent for the guinea-pig. Bacteriological examination of the specimens of blood and cerebro-spinal fluid from the patients and animals who succumbed to the infection was completely negative except in a single case of obvious contamination.

664. The Variations in the Albumin of the Cerebro-spinal Fluid in Psychoses.

RAVAUT and LAIGNEL-LAVASTINE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 5th, 1920) examined the cerebro-spinal fluid in 47 patients suffering from various mental disorders, and found that: (1) Cases of dementia praecox showed a remarkable constancy in the amount of albumin in the cerebro-spinal fluid. (2) In melancholia the albumin in the cerebro-spinal fluid varied from normal to twice the normal amount. (3) In epilepsy the amounts varied according to the time of examination and the individual. (4) In several cases of cerebral defect, such as imbecility, diplegia, myxoedema, and deaf-mutism, the albumin was constantly increased. (5) Several cases of active syphilis showed typical meningeal reactions. The writers conclude that in a certain number of psychoses the cerebro-spinal fluid is richer in albumin than has previously been supposed, and that the amount may vary from one examination to another. This excess in albumin is independent of any cellular reaction and may be the only indication of a disturbance of the central nervous system and the meninges.

665. A Case of Multiple Neoplasms.

[illegible] and OWEN (*Journ. Amer. Med. Assoc.*, September 25th, 1920) report the case of a mentally deficient woman, aged 23, in whom the following tumours were revealed at operation or *post mortem*: (1) Giant celled sarcoma of the right antrum, (2) squamous-celled carcinoma of the right superciliary ridge, (3) bilateral multiple intracanalicular adenofibromata of the breast, (4) adenoma of the thyroid, (5) a cyst of doubtful origin in the suprasternal region, (6) multiple uterine fibromata, (7) bilateral ovarian cystomata.

666. Naevo-encephaloma.

AUDRY (*Ann. de Derm. et de Syph.*, Nos. 8, 9, 1920) records a case of occurrence of a tumour, half naevus and half encephaloma, in a girl aged 3 years who had had two small swellings since birth, one on the vertex in the region of the bregma, and the other on the forehead above the outer third of the right eyebrow. There was convergent strabismus of the left eye and a slight limp of the left leg. There was no history or evidence of congenital syphilis. Both tumours were removed successfully, and histological examination showed that they originated from a malformation of the embryonic brain.

667. Complement Fixation Reaction in Tuberculosis.

OF the 6,500 reactions studied by WATKINS and BOYNTON (*Journ. Amer. Med. Assoc.*, October 2nd, 1920), 2,078 were clearly negative and 1,027 were inconclusive (over 50 per cent. haemolysis). There were 1,344 moderately positive (from 25 to 50 per cent. haemolysis) reactions, and 2,051 strongly positive (no haemolysis) reactions. Of 1,103 serums from patients definitely proved to be tuberculous, 865, or 78 per cent., gave positive reactions. The 238 negative serums in this group represent 26 moderately active, 73 arrested, and 80 acute or general cases of tuberculosis, with no detailed information regarding 59 serums. Of 521 serums from patients with clinical tuberculosis not confirmed by sputum or Roentgen-ray examination, 336, or 64.6 per cent., gave positive reactions. Of 822 serums from patients in whom tuberculosis was suspected but not established, 303, or 37 per cent., gave positive reactions. Of 554 serums from patients who were not examined for tuberculosis, 183, or 33 per cent., gave positive reactions. Of 168 serums from patients in whom examination revealed no evidence of tuberculosis 7, or 4.2 per cent., gave positive reactions.

668. Bacteriology of Influenzal Empyema.

VIDFELT (*Hygiea*, September 16th, 1920) has collected all the cases of influenzal empyema treated at the Sabbatsberg Hospital between October, 1918, and August, 1919, classifying them according to the bacteriological findings. Of a total of 127 cases, 70 were streptococcal; of these, 25, or 35.7 per cent., proved fatal. There were 43 cases of diplococcal empyema, with only 3 deaths. In 7 cases a mixed infection was present, and in 7 others the pus was sterile. Altogether there were 30 deaths, and the mortality among the 127 was therefore 23.4 per cent. In as many as 56 cases the patients' ages were between 21 and 30. The clinical picture varied considerably in association with different micro-organisms; when the infection was streptococcal, the general symptoms were severe, the patient "looked septic," and his condition often became rapidly worse. In as many as 13 streptococcal cases the empyema developed within the first week of the influenza. The course of the diplococcal empyemata was, as a rule, much more insidious, and in many cases the empyema developed a month or two after the onset of the influenza. The author found that thoracocentosis alone was seldom sufficient; free opening of the thoracic wall with adequate drainage was almost invariably necessary.

669. Bactericidal Power of Whole Blood.

THE claim is made by BLACK, FOWLER, and PIERCE (*Journ. Amer. Med. Assoc.*, October 2nd, 1920) that the bactericidal power of blood, as determined by the method of Heist and Solis-Cohen, is the most dependable criterion of the actual immunity of the animal. The development of the bactericidal power of the blood against typhoid and Shiga bacilli is practically identical with that of the serum. The route of inoculation makes no material difference in the rapidity or height of the development of bactericidal power. The agglutinins and complement fixing bodies are only roughly comparable to the bactericidal power. The leucocyte counts and phagocytic index are of no value in determining the degree of immunity.

670. Empyema containing Diphtheria Bacilli.

GOLDSCHMIDT (*Wien. klin. Woch.*, September 16th, 1920) states that though diphtheria bacilli have been found in the lungs and in bronchopneumonic foci no previous case of empyema of the pleura containing diphtheria bacilli has been recorded. He relates a fatal case observed in a girl, aged 3 years, who presented a purulent discharge from the nose and subsequently developed a left-sided empyema. Bacteriological examination of the pus from the empyema showed streptococci and rods resembling diphtheria bacilli in the smears and diphtheria bacilli in the cultures. On the other hand, the nasal discharge did not show any diphtheria bacilli.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

671. Thyroid Dyspepsia.

ESCUDERO (*Rev. Esp. de med. y cir.*, July, 1920) states that functional disturbances of the thyroid may give rise to gastro-intestinal symptoms which may be grouped together under the name of thyroid dyspepsia. Clinically two forms may be described namely, that corresponding to thyroid insufficiency and that caused by hyperthyroidism. The first form is characterized by a tendency to low gastric values, and in Escudero's opinion includes the majority of cases of hypochylia or achylia. The second form shows a tendency to high gastric values, but sensory disturbances appear first and persist. Disturbances of secretion may be absent; when present they may vary from heterochylia to permanent gastric hypersecretion. Chronic gastritis is the necessary termination of these cases if they do not clear up spontaneously or become cured by appropriate treatment (thyroid opotherapy in cases of insufficiency and antithyroid treatment in cases of hyperthyroidism).

672. Diagnosis and Treatment of Dysenteric Hepatic Abscess

PONTANO (*Il Policlinico*, Sez. Prat., May 24th and 31st, June 7th and 14th, 1920) states that the clinical and laboratory criteria of the nature of a hepatic abscess, such as the coexistence of amoebic dysentery or the presence of *Amoeba histolytica* in the stools or in the pus withdrawn by exploratory puncture, may occasionally be absent, especially when the abscess occurs as a primary condition. He regards the peculiar microscopical appearances of the fluid withdrawn as a sufficient guide for establishing the amoebic origin of the abscess. The fluid is not true pus but an albuminous fluid with cellular débris, a few degenerated cells, red corpuscles, fat cells, and crystals of fatty acids. Pontano maintains that an amoebic hepatic abscess can be cured by specific medical treatment. Emetine hydrochloride given intramuscularly is sufficient to arrest the necrotic process and cause more or less rapid absorption of the contents of the abscess. Medical treatment alone, as a rule, is indicated if the characteristic microscopical appearances described are found, even in the presence of micro-organisms which can be cultivated from the pus. In such cases these germs do not possess any pathogenic properties but are ordinary saprophytes and very easily destroyed. On the other hand, surgical intervention is indicated if the organisms show a tendency to transform the necrotic fluid into true pus. Pontano does not regard the severity of the patient's condition, or the size and duration of the abscess, as contra-indications to medical treatment, which is also a cure for the concurrent dysentery as well as for multiple abscesses, against which surgery is powerless. He claims that the amoebic hepatic abscess should be regarded as a hepatic localization of amoebic dysentery and should come within the domain of medical treatment as much as the hepatic localization of syphilis. Ten illustrative cases are recorded.

673. Meningeal Form of Protracted Malignant Endocarditis.

LEREBOULLET and MOUZON (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) state that the meningeal form of malignant endocarditis as described by Osler is an extremely acute form of the disease, in which meningeal suppuration predominates over the other visceral localizations of pyaemia. Meningeal manifestations in the protracted form of malignant endocarditis are much less well known. The writers record the case of a woman aged 27, the subject of old mitral disease, who had suffered from subintrant attacks of acute articular rheumatism since the age of 14. A fresh attack of rheumatism was accompanied by transient right hemiplegia and severe headache which persisted for four months. The cerebro-spinal fluid on lumbar puncture was found to be under increased pressure, and showed a lymphocytosis. It was only at a late stage that typical signs of malignant endocarditis appeared—namely, enlargement of the spleen, sublingual ecchymoses, and reappearance of albuminuria. The necropsy showed infarcts in the spleen and kidneys, vegetations on the mitral valves from which numerous streptococci were cultivated, and a cortico-meningeal haemorrhage on the outer surface of the left frontal lobe.

674. Protracted Malignant Endocarditis.

ACHARD and ROUILLARD (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1st, 1920) record two cases of this condition. In the first, which occurred in a girl aged 18, the subject of old rheumatic mitral incompetence, malignant endocarditis was manifested by two attacks of renal embolism, by embolism of the left upper limb and right lower limb, and finally by cerebral embolism. The duration of the disease was five and a half months. In the second case, that of a woman aged 21, who had been delivered a month previously, the infective endocarditis, contrary to the general rule, was primary, and not grafted on a pre-existing lesion; it was probably due to puerperal infection. The patient had no history of rheumatism nor had she suffered from any disturbance of cardiac function; recent lesions only were found *post mortem*. The first symptoms were those of pulmonary infarction, followed, after an interval, by symptoms of general infection, high swinging fever and renal embolism. Death occurred after an illness of about four and a half months. Blood culture revealed streptococci in the first case and staphylococci in the second.

675. Asynchronism of Palpebral Movements as a Sign of Mental Fatigue

DUTTO (*Riv. Osped.*, April 30th, 1920) has observed that asynchronism in the palpebral movements of the two eyes is a sign of mental fatigue, not only in hysterical women, but also in nervous children between the ages of 8 and 14 years attending school. He regards the sign as of some pedagogic importance as a warning to the teacher not to overtax the child.

676. Intoxication by Beta-naphthol in the Treatment of Ankylostomiasis.

SMILLIE (*Ann. Paul. de med. y cir.*, April, 1920) found that large doses of beta-naphthol (6 grams on three successive days in adults), which were given to 79 cases of ankylostomiasis, caused very severe toxic symptoms in two cases and considerable changes in the blood in two other cases. The drug chiefly attacked the red corpuscles and destroyed a large number of them, giving rise to anaemia, jaundice, enlargement of the spleen, liver, and gall bladder, and haemoglobinuria. The white cells showed little change. The liver, spleen, kidneys, and other organs were apparently affected not primarily but secondarily, as the result of anaemia. The types most susceptible to the toxic action of beta-naphthol were not determined. In three of the severe cases, however, there had been a recent attack of malaria, and it is probable that the cases in which the red corpuscles had been previously affected by that disease were most susceptible to poisoning by beta-naphthol.

677. Scarlatiniform Rash in Malaria.

GENOESE (*Il Policlinico*, Sez. Prat., August 9th, 1920) remarks that various cutaneous eruptions are not uncommon in malaria—for example, herpes, urticaria, morbilliform rashes, erythema multiforme and pemphigus. Examples of scarlatiniform rashes in malaria were described by Morton in 1696 and by Borsieri in 1785. Genoese reports a case in a child aged 6 years, whose father and mother were suffering from malaria. In addition to a generalized scarlatiniform eruption the child presented signs of meningitis. The cerebro-spinal fluid was under increased pressure and showed considerable lymphocytosis. Lumbar puncture was followed by injection of 0.5 gram of quinine, and the eruption immediately disappeared.

678. The Danger of Auscultation in Haemoptysis

PRINS (*Nederl. Tijdschr. v. Geneesk.*, September 25th, 1920) states that though every textbook forbids percussion in recent haemoptysis, no mention has hitherto been made of the danger of auscultation in this condition. He records two cases of recent haemoptysis in which auscultation without percussion was followed by fresh haemorrhage. He therefore regards auscultation, requiring as it does deep respiratory excursions, as more dangerous than percussion, and as a procedure not to be employed in these circumstances.

679. Treatment of Cardiac Failure in Influenza.

ACCORDING to SIMICI (*Arch. des mal. du coeur*, May, 1920), cardiac failure, which is so frequent in influenza, only occurs when there is a serious respiratory complication, which is specially apt to arise in a severe epidemic. Simici recommends intravenous injections of strophanthine in small doses frequently repeated (½ mg. two or three times a day) until the pulse rate corresponds to the temperature. The treatment to be successful must be started as soon as cardiac failure begins; this is recognized by permanent acceleration of the cardiac rhythm out of proportion to the temperature. It is sometimes possible to foretell the appearance of cardiac failure twenty-four or forty-eight hours in advance by observing a transitory acceleration of the heart caused by a very slight movement, such as a change from the recumbent to the sitting posture.

680. Typhus in Children.

CIUCA and BANCHERIU (*Ann. de méd.*, No. 6, 1920) record a Rumanian hospital experience of typhus among children. In children under 11 the disease takes a very mild course; bulbar or other nervous symptoms are unknown, and the few fatalities are due to bronchopneumonia. The incubation period is twelve to fourteen days; the rash appears usually on the fifth day, but may be preceded (on the second or third day) by the appearance of petechiae on the course of the small vessels of the mucous membrane of the palate. A dry conjunctival congestion was almost constantly found. In the absence of complications the fever disappeared on the fourteenth day—usually by lysis, but in one case out of four by crisis. The spleen was enlarged in all cases. No evidence of any natural immunity was observed among these children; if one child became infected, the remaining children of the family also suffered from the disease.

681. Birth Injuries as a Cause of Infantile Epilepsy and Imbecility.

SCHOTT (*Archiv f. Gynäk.*, cxiii, 2, 1920) finds that the chief factor in the etiology of epilepsy and imbecility in children is to be found in hereditary influences; injuries at birth play a very small part. From an examination of over a thousand cases he found that in only 3 per cent. of imbeciles, and just over 1 per cent. of epileptics, was injury at birth the sole circumstance to which the pathological condition could be ascribed.

682 Tetany and Chronic Diarrhoea

SAVY and LANGERON (*Lyon Méd.*, August 25th, 1920) record the case of a man, aged 42, who had contracted malaria and amoebic dysentery, eight and three years ago respectively, and suffered from chronic diarrhoea, polyuria, and cachexia. Treatment by emetine and astringents was successful on two occasions in stopping the diarrhoea, but led each time to an attack of tetany of the upper limbs. By giving raw meat and calcium chloride in conjunction with astringents it was found possible to diminish the diarrhoea without inducing tetany, but the patient died suddenly during a malarial crisis. At the autopsy the thyroid was normal, the external parathyroids could not be found, and the internal parathyroids showed no haemorrhages, inflammatory changes, or sclerosis.

683. Lethargic Encephalitis with Complete Internal Ophthalmoplegia.

[illegible] (*Rev. méd.* [illegible], June, 1920) records the case of a boy, aged 16, suffering from lethargic encephalitis, whose pupils were dilated and unequal and whose reflex to light and to accommodation was completely abolished. On the other hand, the external ophthalmoplegia consisted of slight ptosis only, and it was of much shorter duration than the internal ophthalmoplegia.

684 Ocular Lesions and Antityphoid Vaccination.

[illegible] (*[illegible]*, August, 1920), [illegible] directly and exclusively [illegible]. Herpes of the cornea, [illegible] one of the complications of [illegible], is in many cases due to a certain predisposition on the part of the subject. In syphilitic [illegible] complications, [illegible] any danger. [illegible] be performed in syphilitic, [illegible] have had lesions [illegible] taken into [illegible] that some [illegible] attributed to antityphoid [illegible] and [illegible], are merely [illegible].

SURGERY.

685. Subcutaneous Injection of Novarsenobenzol.

MINET, in a communication to the Société de Médecine du Nord (*Gaz. des Prat.*, November 15th, 1920), repeats his previously expressed opinion that novarsenobenzol may be administered, effectively and without danger or inconvenience to the patient, by frequently repeated subcutaneous injections of small doses. Following Sicard, Minet in the first cases employed novarsenobenzol dissolved in minimal amounts (1 to 1.5 c.cm.) of sterilized twice-distilled water: general reactions were not encountered, and local reactions, if present, consisted only in slight and transitory pain, erythema, or induration. Subsequently an oily vehicle was tried, with poor results; addition of novocain diminished the initial but increased the more remote painfulness. Minet now prefers to dissolve the drug in a sterilized 4.7 per cent. solution of glucose. Rapid manipulation is essential, and admixture with air—which leads to chemical alterations in the novarsenobenzol (see para. 686 below)—must be avoided. The injections must be made over the fascia lata in the upper third of the thigh. The optimum dose, according to Minet, is 15 cg. daily for fifteen days, with fifteen days' intermission; in this way 20 to 30 grams are given during the year. In certain cases, however, much larger amounts were given. Minet has had results which he describes as remarkable in primary, secondary, tertiary, and parasyphilitic cases; visceral syphilis and tabetic complications appeared particularly susceptible to this treatment. In all cases mercurial medication also is employed. Arquembourg and Duhot also reported successful results of subcutaneous administration of arsenobenzol dissolved in water.

686. The Preparation of Arsphenamine Solution.

ROTH (*United States Public Health Reports*, September 17th, 1920) found that shaking alkalinized aqueous solutions of arsphenamine for ten minutes in the presence of air caused a deepening of colour and a 60 per cent. increase of toxicity, as tested by intravenous administration to white rats. Shaking for only one minute caused a decided increase in the toxicity, and the experiments appeared to indicate that it was during the first minute of shaking that the significant alteration of toxicity occurred. Shaking a high grade neo-arsphenamine solution for ten minutes increased its toxicity more than fourfold. It is concluded that the practice of making solutions of these drugs by shaking with air, or by mixing in an open mortar or large beaker, should be abandoned. The increase of toxicity is, presumably, due to oxidation to p-oxyphenylarsenoxide.

687. Intravenous Saturated Salt Solution during Intracranial Operations.

SACHS and BELCHER (*Journ. Amer. Med. Assoc.*, September 4th, 1920), who report the following case, have also used this solution in the wards to control cerebral oedema. For brain tumour presenting marked pressure symptoms, a right-sided subtemporal decompression was undertaken. The dura was opened rapidly, but in spite of an immediate closure of the muscles the cortex ruptured at several places. The patient remained stuporous. He was given 100 c.cm. of saturated salt solution intravenously, about 1 c.cm. per minute. Before 15 c.cm. had been run in, the patient brightened up, answered questions, and showed marked signs of improvement. This improvement lasted about twelve hours, when he again relapsed into a semicomatose condition. On three successive occasions administrations of the saturated salt solution benefited the patient; after the third injection he improved steadily.

688. Precocious Neuro-syphilitic Manifestations after Arsenical Medication.

[illegible] (*Arch. Méd. Belges*, July, 1920) records the cases of six men and one woman, all of whom had recently suffered from primary syphilis, who, after a course of seven to ten intravenous injections of arsenobenzol compounds given during the course of some months, showed neuro-syphilitic or meningo-syphilitic manifestations, facial palsy, optic or acoustic neuritis—occurring abruptly, from one to four months after the last injection of the first series. In all the patients the Wassermann test had been positive at the time of the chancre, but in five cases the reaction was negative at the onset of the nervous complication. For the prevention of these accidents the author is in accord with [illegible] and others in advocating the use of mixed mercurial and arsenical medication;

intramuscular injection of mercury salicylate or of calomel is preferred. For treatment of the nervous lesion the dose of the arsenical compound was reduced and combined with injections of mercury.

689. The End Results of Posterior Gastro-enterostomy.

MÉTRAUX (Rev. méd. Suisse rom., September, 1920) investigated the subsequent history of 500 cases on which posterior gastro-enterostomy had been performed by Roux or his assistants at the Lausanne surgical clinic. He was able to examine personally with x rays or to receive detailed information in 2.0 of the 300 cases to whom he had sent a note of inquiry. All these patients had been operated on from eight months to twenty-one years previously. In 90 per cent. a good result had been obtained, in 6.6 per cent. a mediocre result, and 3.3 per cent. had died. Métraux concludes that posterior gastro-enterostomy is superior to all other operations for gastric or duodenal ulcer.

690. Mastoiditis in New York.

HAYS (*Amer. Journ. of Surg.*, September, 1920) reports that cases of mastoiditis in New York City during the course of the current year have shown increased frequency and increased severity; he has found that the majority of cases of otitis media developed mastoiditis. Most of the infections have been due to the *Streptococcus haemolyticus*, the virulence of which appears to have become greater. In many cases the zygoma has been found to be affected beyond the region of the cells usually found; severe radiating neuralgia of a supra-orbital character has resulted.

691. Syphilis in Association with Cancer of the Tongue.

CARY (*Journ. Amer. Med. Assoc.*, September 25th, 1920), from an analysis of 907 case-records, thinks that a history of syphilis, a positive Wassermann reaction, or both, may be obtained in at least one of every seven cases of fully developed cancer of the tongue. Syphilis in connexion with cancer of the tongue is approximately three times more common than in association with cancer in other regions about the mouth. It is concluded that protracted antisyphilitic treatment in tongue lesions, which may possibly be cancerous, is contraindicated even in the presence of positive evidence of syphilis.

692. Spinal Accessory Symptoms of Otic Origin.

VERNIEUWE (*Rev. de laryng., d'otol., et de rhinol.*, September 15th, 1920) records the case of a woman, aged 45, in whom the sudden development of a slight neuritis of the spinal accessory nerve rendered possible the diagnosis of a malignant tumour of the middle ear. The neuritis was manifested by a rheumatoid pain in the corresponding shoulder, two tender points typical of spinal accessory neuritis, and a slight degree of contracture in the trapezius and sterno-mastoid. The neuritis was due to compression of the nerve by the enlarged substerno-mastoid glands, which indicated the presence of a new growth. Vernieuwe concludes that whenever slight symptoms of affection of the spinal accessory appear to have an otic origin, there being no reason to suspect an extradural abscess or suppurating track in the sheath of the occipital artery, the possibility should be considered of compression of the nerves by malignant glands.

693. Cicatricial Stricture of the Oesophagus in Children.

BRINDEL (*Rev. de laryng., d'otol., et de rhinol.*, August 15th, 1920) records five cases of apparently impermeable stricture of the oesophagus in children aged from 5 to 11 years, following ingestion of caustic potash. He found that in the main the stricture was due partly to an inflammatory condition surrounding the fibrotic ring, and still more so to a spasm which in the great majority of cases could be caused to disappear by oesophagoscopy guided by radioscopy. On the other hand, he regarded oesophagostomy and electrolysis as useless.

694. Hydatid Disease of the Thyroid Gland.

LIVIC (*Clujul Med.*, May 1st, 1920), who records a case in a man aged 25, in whom a cyst was successfully removed from the left lobe, remarks that echinococcus disease of the thyroid gland is very rare, only thirty-two cases having been previously recorded. The clinical picture presents nothing characteristic. The symptoms are those of other cysts of the thyroid, and are determined by the situation, size, and pressure of the tumour on the neighbouring organs. In two cases only (Péan, Goldzi) has the diagnosis been made before the operation.

OBSTETRICS AND GYNAECOLOGY.

695. Renal Decapsulation for Severe Eclampsia.

KROPÁČ ([illegible], 1919, 25, quoted in *Zentralbl. f. Gynäk.*, September 4th, 1920) records the case of a 1-para suffering from early phthisis: in the ninth month the urine was found to contain 10 per cent. of albumin and cylindrical cysts. Medical treatment being given, the albumin was reduced to 1 per cent. at the beginning of labour. Shortly after instrumental delivery of a healthy child the patient had sixteen eclamptic convulsions in thirty-two hours, and became unconscious. She was given morphine subcutaneously and chloral by the rectum; by venesection 1,400 grams of dark, viscous, rapidly-clotting blood was withdrawn. The patient remained unconscious, with high fever and signs of threatened pulmonary oedema. Ether being administered, decapsulation of the two kidneys was performed by two surgeons operating simultaneously. After incision of its capsule, one of the kidneys is described as springing out like an india-rubber ball, and increasing in size by one-half; a viscous honey-like fluid exuded from its surface. Coma persisted three days after the operation; it was followed by pleurisy and pyrexia lasting five weeks; ultimately the patient was cured and the tuberculous condition of the lungs appeared to be healed. The author expresses the opinion that eclampsia is the result of an auto-intoxication, which is due to increase in the thrombogenic elements of the blood, and consequent affection of the liver and kidneys.

696. Pain in Cancer of the Uterine Body.

IT is widely recognized that, except as a consequence of extensive infiltration of the adjacent tissues in the later and inoperable stages of the affection, pain is a rare accompaniment of carcinoma of the cervix uteri. DANIEL (*La Gynécologie*, April, 1920) attempts to reconcile the conflicting accounts that have been given by different observers of the frequency and character of pain in those suffering from carcinoma of the body of the uterus. Putting aside the cases in which pain appears in the pre-terminal stages of the disease, in association with an extension of the growth to the neighbouring tissues or viscera, Daniel, from an analysis of cases occurring in his practice or collected from the literature, concludes that in the majority of cases of corporeal carcinoma accompanied by pain there is invasion by the tumour of the uterine musculature. The tumour may have been primarily of intramuscular origin, or may have been situated in the first instance in the mucosa; but in both cases the cancer is likely to be operable. To this classification of the causes of pain in this malady there is one exception: the rare cases of cancer of the body accompanied by intrauterine retention of secretions — whether muco-purulent or haemorrhagic—are characterized by paroxysmal attacks of violent pain, which is associated with endeavours to expel the accumulated fluid by muscular contractions of the uterus.

697. The Cause of Fetal Death after Hydrostatic Dilatation.

KÜSTNER (*Zentralbl. f. Gynäk.*, August 14th, 1920) ascribes fetal death, occurring after introduction of a hydrostatic dilating bag into the uterus in cases of placenta praevia, to (1) compression of the cord by the bag in cases where the placental insertion of the cord and the site of the perforation of the placenta are closely related; or, possibly, to (2) the increase of intrauterine pressure. According to Schutz, this pressure, between the pains, is 25 to 30 mm. of mercury; after the introduction of a bag of 100 c.cm. capacity the intrauterine pressure is increased by 7 mm. Küstner calculates that, with a bag holding 500 c.cm., this pressure will be raised in the intervals between the uterine contractions to more than 60 mm. of mercury. Since the pressure in the femoral artery of the child is 60 to 70 mm., the death of the child may easily occur when the pressure in the uterine cavity becomes equal to that in the umbilical artery. The author does not deny the useful part played by this method in the treatment of placenta praevia; but in hospital practice, where the child is alive and asepsis is assured, he advocates Caesarean section.

698. An Unusual Case of Myoma and Pregnancy.

NACKE (*Zentralbl. f. Gynäk.*, August 7th, 1920) records the case of a nulliparous married woman, aged 42, who suffered very severe pain during (about) three weeks following a menstrual period. At operation the uterus was found to be larger than a child's head, and to exhibit numerous interstitial and subserous myomata, as well as intraligamentary myomata on both sides. Supravaginal hysterectomy was performed. There had been considerable haemorrhage during the operation, and an interstitial myoma, the size of a walnut, was left in the cervix. The pelvis was drained through the posterior vaginal fornix. Examination of the specimen showed that the uterus contained a 4-months' fetus intact. Convalescence, hitherto apyrexial, was interrupted on the twenty-sixth day by pleurisy. Two months after the operation the patient was suddenly attacked with symptoms of intestinal obstruction and peritonitis; these were proved to be due to the cervical fibroid (left behind at the operation), which had become greatly enlarged, was gangrenous, and caused obstruction of the rectum. The myoma was enucleated through an incision in the posterior fornix; the subsequent progress was satisfactory.

699. Post-operative Injuries of the Urinary Tract.

SCHULTE (Inaug.-Diss., Breslau, quoted in *Zentralbl. f. Gynäk.*, July 31st, 1920) records a series of 4,716 gynaecological operations performed at the Universitäts Frauenklinik, Göttingen, from 1909–18, with 56 cases of injury to the bladder and 18 to the ureter (1.6 per cent. in all). During or after 1,172 abdominal operations there occurred 29 injuries of the bladder and 12 of the ureter (3.5 per cent.); with 1,219 vaginal operations were associated 27 injuries of the bladder and 6 of the ureter (2.6 per cent.). Of the 29 injuries of the bladder from abdominal operations 6 occurred from operations on the adnexa, 10 from total extirpation of the uterus and appendages, and 12 from Wertheim's extended hysterectomy; in the last named group the bladder injury was intentional in 4 cases, in which carcinomatous portions of the bladder were removed. Of the 12 cases of injury of the ureter from abdominal operations, 8 occurred in connexion with Wertheim's operation. After laparotomy there occurred 5 vagino-vesical and 5 uretero-vaginal fistulae; all the latter were associated with Wertheim's operation. Of the 27 bladder injuries after vaginal operations, 10 occurred after total extirpation operations, and 14 after vaginal fixation and colporrhaphy.

700. Anti-syphilitic Treatment during Pregnancy.

BRIERY (*Gynéc. et Obstét.*, 1920, ii, 1, and *Thèse Lyon*, 1919–20) recommends that, for the treatment of syphilis in the pregnant, one of the following methods be employed: (1) Two series of four injections of novarsenobenzol, in doses of 0.30, 0.45, 0.60, and 0.75 gram successively, the first series to be given in the second or third month in the case of pre-conceptional syphilis or at the time of the appearance of clinical signs; the second series to be given in the seventh or eighth month. (2) Three series of four intravenous injections of 0.10 to 0.30 gram, the first being given at the date of the appearance of signs —or during the first month of gestation in the case of preconceptional infection—the second in the fourth month, and the third in the seventh or eighth month.

PATHOLOGY.

701. The Pathological Anatomy of Lethargic Encephalitis.

GUIZZETTI (*Rif. Med.*, September 4th, 1920) has made a prolonged study of nine cases of lethargic encephalitis, and describes, with illustrations, the results of his pathological examination of brains and cords. The changes due to the disease are scattered in distinct foci and may be spread over the whole cerebro-spinal axis. The points of election are the mesencephalon, especially between the corpora quadrigemina, in the bundles of the cerebral peduncles, and in the substantia nigra. As one descends from the pons to the bulb the lesions get fewer; sometimes they reappear in the spinal medulla; in the thalamus the changes are insignificant and sometimes absent. In the author's experience other parts of the brain were very little affected, although not quite free from disease. The pia mater always showed pathological lesions, especially in the veins. Inflammatory lesions were found in the oculo-motor nerves almost exclusively in their intracranial course, rarely in other cranial nerves and still more rarely in the spinal roots. In [illegible] cases there was some form of inflammation in the Gasserian ganglion. Although the author could not isolate any specific germ, he has no doubt that the disease is an infective one, due to some specific organism propagated by way of the blood vessels, as is suggested by the changes in the veins and the form of the inflammatory centres at the onset. Conveyance of the infection through the lymphatic sheaths of the nerves is excluded, since the inflammatory lesions in the cranial nerves were usually limited to their intracranial course. Whatever the germ may be, its action is relatively mild, as shown by the lymphocytic type of infiltration, the limited type of karyokinesis, and the constant absence of true necrosis. After about three weeks from the onset the germs begin to disappear from the nervous tissue and processes of repair set in.

702. The Cerebro-spinal Fluid in Lethargic Encephalitis.

ACCORDING to MESTREZAT and RODRIGUEZ (*Arch. de Neurobiologia*, June, 1920), the usual findings in the cerebrospinal fluid from cases of encephalitis lethargica are: (1) Clarity, rather than turbidity; (2) the presence of normal amounts of albumin; (3) a normal chloride content; (4) an increased sugar content; (5) approximately normal urea; (6) a cellular content which, in contrast to the hyperalbuminosis, is little increased. BOVERI (*Journ. of Nerv. and Ment. Disease*, October, 1920), from an examination of the fluid in sixteen cases, finds that (1) the pressure is normal or slightly increased, and the fluid clear; (2) the amount of albumin is little altered; (3) the reducing power is usually increased, sometimes normal, and occasionally lessened; (4) slight lymphocytosis occurs, which as a rule follows *pari passu* with the hyperalbuminosis. The different clinical types are not marked by characteristic findings in the cerebro-spinal fluid.

703. Hyperhidrosis in Myelopathies.

PARI (*Il Policlinico*, Sez. Prat., August 16th, 1920) has found by experiments on cats that there may be a secretion of sweat below a spinal lesion, either temporarily after the trauma or for a longer period (from direct stimulation of the sweat centres and tracts by the mechanical action of the lesion and by inflammatory irritation at the site of the spinal lesion). In myelopathies two mechanisms may give rise to hyperhidrosis: (1) Direct irritation of the sweat centres in the cord; (2) hyper-excitability of these centres by thermal stimuli. Hitherto in the clinical study of myelopathies no account has been taken of the distinction between spontaneous sweating and hyperhidrosis due to a thermal stimulus. Experimental physiopathology has not yet explained why spinal lesions in some cases give rise to anhidrosis, and in others to hyperhidrosis, nor have clinical observations accounted for this difference. Clinically anhidrosis and hyperhidrosis appear to occur according to the nature of the morbid process, hyperhidrosis being more frequent in syringomyelia compared with other myelopathies.

704. A Localized Typhoid Outbreak.

LEAKE and MESSER (*United States Public Health Reports*, September 17th, 1920) record a small outbreak of typhoid traced to mayonnaise sauce prepared for a public dinner by a person who, seven days later, took to her bed and suffered from an attack of typhoid fever. Forty-nine of the ninety persons attending the dinner became ill enough to be confined to bed within from five to twenty-three days. The special features of the outbreak were: the brief average incubation (ten days), the frequency of acute onset, the high incidence (54 per cent.) among those exposed, and the mild and short course of the disease, with many atypical cases. Of those attacked, 51 per cent. had previously been vaccinated against typhoid, and 7 per cent. had had typhoid fever; of those who attended the dinner, but did not become ill, about 70 per cent. had been vaccinated and about 40 per cent. had had typhoid fever. Blood cultures were positive in eight out of eighteen cases tested.

705. Virulent Diphtheria Bacilli Carried by Cats.

SIMMONS (*Amer. Journ. Med. Sciences*, October, 1920) records the case of a patient who developed a fatal diphtherial laryngitis after close contact with a cat which had been ailing for a week. A second cat which had been in contact with the first became ill and died ten days later. The patient had a greyish-brown pseudo-membrane covering her uvula, tonsils, and posterior pharyngeal wall. The first cat had a small yellowish-grey pseudo-membranous ulceration of the left portion of the naso-pharyngeal roof; the second cat showed ulceration of both vocal cords, which were covered with a greyish-white false membrane. Diphtheria bacilli, of intermediate virulence for guinea-pigs, were isolated from all three lesions.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

706. Auscultation in the Knee-elbow Position.

TORNAI (*Wien. klin. Woch.*, August 19th, 1920) remarks that as a general rule a murmur caused by a valvular defect is all the more distinct (1) the larger the volume and rapidity of the blood passing through the cardiac orifice, and (2) the nearer the cardiac orifice is to the anterior chest wall or to the site of auscultation. A ventral or thoracic decubitus is the position in which the heart and great vessels come closest to the anterior chest wall, and in this position the cardiac chambers, especially the left, are best filled. Auscultation can be best carried out by making the patient assume a "knee-elbow position," or support his body on both knees and palms, keeping the thorax as horizontal as possible. If for any reason it is impossible for him to assume this position, he should be examined by making him bend forward as much as is practicable, when the sounds are heard more distinctly than in the vertical or any other position, if not so distinctly as in the knee-elbow position. Another advantage of auscultation by this method is stated to be that one can at once determine whether the left heart is hypertrophied or not. The question is of special importance when one has to decide whether the patient is suffering from a cardiac neurosis or has some more serious condition. It is important that a very short stethoscope should be used, and applied at right angles to the point auscultated.

707. Isolated Paralysis of the Serratus Magnus following Influenza.

GUILLAIN and LIBERT (*Ann. de Méd.*, No. 5, 1920) report a case of isolated paralysis of the serratus magnus in a man aged 31. This is of interest, first, because influenzal neuritis has been relatively rare in the recent epidemic, and secondly, because only a few cases of isolated paralysis of the serratus magnus following infectious diseases have been recorded. The attack of influenza was severe, being complicated by pneumonia; the paralysis developed in convalescence.

708. Boeck-Darier Sarcoids.

CIVATTE and VIGNE (*Ann. de Derm. et de Syph.*, No. 5, 1920) record a case of this disease in a woman aged 26; the diagnosis was established by histological examination. Intradermo-reaction to tuberculin was positive, but the Wassermann reaction performed with various antigens was persistently negative. Treatment by arseno-benzol caused an apparent disappearance of the lesions, though histological examination showed them to be still present. The writers' conclusions are as follows: The Boeck-Darier sarcoids form a definite clinical type. Their nature and etiology cannot yet be definitely established. They probably belong to the tuberculides, and there is no proof that they can be produced by syphilis. The successful result sometimes obtained by injections of novarsenobenzol does not allow one to infer the syphilitic nature of such cases; a cure by this method is as inconstant as by other methods, and is not anatomically complete nor lasting.

709. Tabes and Psychoneuroses.

ACCORDING to SANZ (*Rev. de med. y cir. pract.*, June 28th, 1920), mental introspection and aboulia are the principal features of the mental state of the tabetic subject; to these may be added egoism, affective indifference and lack of interest in everything that does not concern the patient's illness. Apart from this mental state peculiar to tabes, it is not uncommon to find tabes associated with other psychoneuroses, the commonest of which are psychasthenia and hysteria, either separately or in combination. Simple affective depression, though not so frequent as the other two psychoneuroses, is not uncommon in tabes, and when very pronounced forms a sort of connecting link with tabetic melancholia. The other two psychoneuroses—namely, neurasthenia and anxiety neurosis—are less frequent. The presence of these psychoneuroses has an unfavourable influence on tabes, for it interferes with the carrying out of the energetic treatment required in this disease.

710. Sex and Age Incidence of Pellagra.

GOLDBERGER, WHEELER, and SYDENSTRICKER (*U.S. Public Health Service Weekly Report*, July 9th, 1920) made the following observations in pellagra cases occurring among whites in cotton-mill villages in South Carolina. In a population of 4,399, 115 cases (2.61 per cent.) were recorded; the inclusion of 73 "suspects" brings the percentage to 4.27. The disease was rare in children at the age of 2 and under; among both males and females up to 20 years old the incidence was similar, being higher from 2 to 10 than from 10 to 20. Among adults from 20 to 54 years old the incidence was many times greater in females than in males.

711. Treatment of Trichophytosis.

FUHS (*Wien. klin. Woch.*, July 22nd, 1920) has employed a vaccine prepared according to Joannovics's directions from trichophyton cultures in 26 cases of trichophytosis (23 of parasitic sycosis and 3 of tinea tonsurans). He found that it was equally effective whether given subcutaneously or intracutaneously in doses up to 0.5 c.cm. The injections were given twice weekly on the inner side of the right and left forearm alternately. The favourable effect of the treatment was not as a rule seen till after the third or fourth injection. Five or six injections were usually required. There was generally a well-marked local reaction six to twelve hours after the injection, but general disturbance occurred in only one case.

712. Contagiousness of Lethargic Encephalitis.

LÉVY (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 15th, 1920) records three cases of lethargic encephalitis in the same family, each presenting different forms of the disease. The first case was in a girl aged 13, who had a meningeal form ending in sudden death. No tubercle bacilli were found in the cerebro-spinal fluid, and inoculation of guinea-pigs was negative. The second case was that of her brother, aged 8 years, who had an ambulatory attack revealed only by palatal paralysis. Diphtheria could be excluded, as Schick's reaction was positive. The third case occurred in a younger brother, who developed a myoclonic attack. None of the cases showed any ocular paralysis.

713. Symptoms of Addison's Disease after Malaria.

FURNO (*Il Policlinico*, Sez. Prat., June 28th, 1920) records the case of a man, aged 42, who, about six months after his first attack of malignant tertian fever, developed the principal symptoms of Addison's disease—namely, adynamia, fall of blood pressure, and pigmentation of the skin and mucous membranes. Considerable improvement occurred under administration of suprarenal extract, and the patient was able to resume his occupation as porter. He was a vigorous man, without any family or personal history of tuberculosis, and careful examination of the chest, including the use of x rays, failed to show any signs of that disease. Furno therefore concludes that the symptoms of Addison's disease were due to malaria.

714. Malignant Tertian Fever Complicated by Meningism and Suprarenal Deficiency.

RUSCA (*Il Policlinico*, Sez. Med., July 1st, 1920) records a case of malignant tertian fever in a soldier, who developed symptoms of meningitis and signs of suprarenal deficiency—namely, asthenia, low blood pressure, and vomiting. The autopsy showed an absence of meningitis and the presence of bilateral caseous tuberculosis of the suprarenals. The case shows that in malignant malaria symptoms of suprarenal deficiency should not necessarily be attributed to a malarial lesion of the suprarenals.

715. Tetany of the Bladder.

SCHWARZ and WAGNER (*Wien. klin. Woch.*, July 5th, 1920) record two cases of tetany of the bladder occurring in a boy aged 4 years and a female infant of 18 months respectively. Retention of urine was associated with other symptoms of tetany, such as Chvostek's and Trousseau's signs, and increased galvanic irritability in the boy, and carpopedal spasms in the girl. Complete recovery occurred in each case after intravenous injection of a 10 per cent. solution of calcium chloride and urea. The writers attribute the retention to increased tonicity of the striped muscular part of the vesical sphincter.

716. Sodium Citrate Treatment of Pneumonia.

VIVALDI (*Gazz. d. Osped.*, 1920, 40) reports two cases of pneumonia successfully treated by administration of sodium citrate. According to Weaver, who had forty-five successful results in forty-seven cases, sodium citrate acts (1) by decreasing the coagulability of the blood and thus aiding the re-establishment of the cardio-pulmonary circulation, and (2) by maintaining the alkalinity of the blood. To adults hourly doses of about 1 gram should be given day and night. MARCIALIS (*Il Policlinico*, Sez. Prat., October 25th, 1920), who records two illustrative cases, also recommends sodium citrate in the treatment of pneumonia. He attributes the priority for this suggestion to Luccarelli. The dose of sodium citrate prescribed by Marcialis was 1 gram in soda water every two hours day and night.

717. Tabes with Multiple Cranial Palsies and Glycosuria.

URECHE and VATIANU (*Clujul Med.*, June 1st, 1920) record a case of tabes in a man aged 43, associated with paralysis of the external rectus, paralysis of the three branches of the trigeminal, and glycosuria. Treatment by mercury and salvarsan was instituted, but was without benefit. After two months' treatment the paralysis became more marked and the oculo-motor nerve became affected. The glycosuria, however, disappeared; it was probably caused either by a lesion of Claude Bernard's area or by a patch of meningitis in the inter-peduncular space.

718. Neuromata in von Recklinghausen's Disease.

BRIZARD (*Bull. Soc. Franç. de Derm. et de Syph.*, April 21st, 1920) reports the following case: A woman, aged 49, who had shown a generalized eruption of molluscum fibrosum since the age of 25, sought advice for a tumour in the course of the sciatic nerve. It was the size of a large orange, and in walking caused considerable pain in the lower area of the distribution of the nerve. Two other small neuromata were present on the forearm in the course of the radial and ulnar nerves. The tumours on the nerves had existed for more than ten years, but only the neuroma on the sciatic had shown any tendency to increase in size.

719. Lethargic Encephalitis simulating Dementia Praecox.

WIDAL, MAY, and CHEVALLEY (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 1, 1920) record the case of a man, aged 20, in whom the ordinary symptoms of lethargic encephalitis were accompanied by mental disturbance of twenty-five days' duration closely resembling the katatonic form of dementia praecox; complete recovery, however, took place. The writers suggest that the anatomical lesions of dementia praecox, like those of paralysis agitans, may be related to those of lethargic encephalitis.

720. The Diagnosis of Spleno-pneumonia.

ACCORDING to FRANCO (*La medicina pratica*, July 31st, 1920) one of the best methods of diagnosing Grancher's disease, or spleno-pneumonia, from pleurisy with effusion is phonacoscopy, when Grocco's paravertebral triangle and [illegible] retro-sternal dulness are absent and Traube's semilunar space remains unaffected. Phonacoscopy consists in combined auscultation and percussion by means of a bell-shaped resonating chamber which is held on the front of the chest by the patient while the physician listens at the back. In spleno-pneumonia the percussion note is said to be reinforced, while in pleurisy with effusion it is weakened.

721. The Moussous-Leiner Syndrome.

[illegible] (*Il [illegible] Pediatria*, July 15th, 1920) states that the majority of writers are agreed that the Moussous-Leiner syndrome, or erythrodermia desquamativa, if it does not represent a true clinical entity but rather a syndrome due to [illegible] causes, should nevertheless be distinguished from exfoliative dermatitis, or Ritter's disease, which is a morbid process due mainly to infective causes. [illegible] reports two cases in infants aged 22 and 40 days respectively, each representing distinct types of the disease. In the first case the whole of the skin, including that of the face, was affected, while in the second the skin of the face remained almost intact. The desquamation of the skin also differed in the two cases. While in the first case there was a formation of epidermal [illegible], in the second there was a formation of small, silvery, [illegible] scales. The second mode of desquamation seemed to indicate a milder form of the disease, which was also accompanied by a less extensive affection of the skin and [illegible] duration of the process.

SURGERY.

722. Tuberculous Peritonitis.

MAYO (*Rif. Med.*, August 7th, 1920) says that the dry forms of tuberculous peritonitis are often overlooked, especially when coexistent pulmonary disease is present. Out of 2,421 collected cases of pulmonary tuberculosis 11 per cent. were found to have tuberculous peritonitis. This may be either primary or—from rupture of mesenteric glands, tuberculosis of the appendix or Fallopian tubes—secondary. Diagnosis is not easy; about 50 per cent. of the cases have albuminuria and vesical irritability is frequent. An exaggerated rotundity of the abdomen and the presence of fatty lobulation of the abdominal parietes is often found in tuberculous peritonitis. Supposed cysts frequently turn out to be cystic accumulation of peritoneal fluid due to old tuberculous adhesions. About 50 per cent. of the cases of tuberculous peritonitis get better with or without medical treatment. Surgical treatment is necessary if there are signs of obstruction, but is contraindicated if there are active pulmonary lesions. If miliary deposits are found on the peritoneal surface of the Fallopian tube, the author does not advise removal—simple distension gives better results. Prognosis in general depends on the localization, the activity of the disease, the associated infections, and the age; about 50 per cent. die, but death is to be attributed more to the effects of the tuberculous infection on the general health than to the peritonitis as such. Between 1908 and 1920, 195 cases of tuberculous peritonitis were operated upon in the Mayo clinic—153 females and 42 males; the mortality was 1.5 per cent.

723. Acute Purulent Osteomyelitis of the Ribs.

PIZZETTI (*Il Policlinico*, Sez. Prat., September 13th, 1920), who records a case occurring in a man aged 32, states that acute purulent osteomyelitis of the ribs is a relatively rare affection. In the great majority of cases there is a history of some kind of trauma, and examples of costal osteomyelitis without any previous history—as in Pizzetti's case—and as the expression of a haematogenous infection are very rare. The affection may occur at any age; as a rule the most severe and frequent forms are seen during the period of growth of the bones—that is, up to 25 years of age. Of sixty-eight cases of costal osteomyelitis collected by Fritz, only one-fifth occurred in individuals over 25. The inflammation has a predilection for the regions in the immediate neighbourhood of the costo-chondral articulation and of the dorsal extremity of the rib. The ribs most frequently affected are the last four, and those from the fourth to the seventh. As regards the pathogenic agent, in the great majority of cases, including Pizzetti's, the *Staphylococcus pyogenes aureus* has been isolated; in other cases the gonococcus, *Staphylococcus albus*, and pneumococcus have been found.

724. So-called Neuralgic Angiomas.

ACCORDING to TROGU (*Il Policlinico*, Sez. Prat., September 20th, 1920), who reports a case occurring in a man aged 54, in whom the tumour was situated close to the upper end of the fibula, in all cases of neuralgic angiomas hitherto described the pain does not develop until some time after the appearance of the tumour. He therefore concludes that the pain is due not to the histological structure of the tumour, but to the pressure which it exercises on the nerve fibres in contact with it. Operation should always be recommended to insured workmen suffering from this condition, and if they refuse operation they should not be granted any benefit for their reduced capacity for work.

725. Treatment of Anthrax with Ox Serum.

RAMOS (*Ann. Paul. de med. e cir.*, May, 1920) records ten cases, all but one of which were successfully treated by subcutaneous injections of normal bovine serum. Not more than two injections were given, the doses ranging from 30 to 100 c.cm. (See BRITISH MEDICAL JOURNAL, December 4th, 1920, p. 865.)

726. Multiple Mammary Chancres.

[illegible] (*Arch. Latino-Amer. de Pediatr.*, Buenos Aires, May-June, 1920, and *Journ. Amer. Med. Assoc.*, October 16th, 1920) relates that three women developed multiple mammary chancres at the Cuna Institution at Montevideo while nursing children who were not suspected of syphilis; one of the women infected another child whom she was nursing. Out of the total of [illegible] women who have given the breast to children at the institution only four have been infected by syphilitic nursings.

727. Transfusion of Duodenal Contents.

DONK (*Journ. Amer. Med. Assoc.*, November 13th, 1920), in a patient who, after showing evidence of hypochlorhydria with enterocolitis, angiocholitis, and jaundice, developed signs of pancreatic insufficiency, practised during two weeks insertion into the duodenum (by means of a duodenal tube) of the duodenal contents, 40 to 100 c.cm. in volume, obtained from a healthy donor in whose duodenum a tube had been left either overnight or during two early morning hours. After a slight symptomatic improvement had occurred the patient's weight returned to its former figure, and cholecystotomy was performed.

728. Calculus of Wharton's Duct.

BUQUEL and GRENIER (*Bull. et Mém. Soc. Anat. de Paris*, July, 1920) record a case of salivary calculus in a woman, aged 56, who had first noticed it thirty-two years previously, when she had refused an operation for its removal. As, however, the swelling had recently increased in size she submitted to operation. An incision was made under local anaesthesia through the floor of the mouth into a very hard bleeding tissue which was taken to be a malignant growth. The operation, therefore, was stopped. Five days later, however, while gargling her throat, a calculus the size of an olive kernel was expelled from Wharton's duct.

729. Congenital Malformation of the Ear with Facial Paralysis.

BONNET-ROY (*Rev. de laryng., d'otol., et de rhinol.*, August 15th, 1920) records the case of a boy, aged 5 years, in whom the right pinna was reduced to a triangular projection, with the apex downwards, and the base not reaching above the upper pole of the tragus. There was atresia of the external auditory meatus and incomplete facial paralysis on the same side. The boy's mental and physical development was otherwise normal. The facial paralysis, which was not of obstetrical origin, was probably due to defective development of the petrous portion of the temporal bone, for on *x*-ray examination the mastoid process, which was normally developed on the left, showed only a few cells above the shadow of the lateral sinus on the right side.

730. Epithelioma developing in a Hernial Sac.

THOUVENIN and LORY (*Bull. et Mém. Soc. Anat. de Paris*, July, 1920) record the following case: A man, aged 59, who had had a right inguinal hernia for some time noticed that it was progressively becoming irreducible and daily increasing in size. A diagnosis was made of adherent epiplocele and the inguinal canal was opened. A large hernial sac was found, the walls of which were the seat of an epitheliomatous process. The sac was removed and a radical cure performed by Bassini's method. The patient recovered from the operation, but examination of the abdomen showed that the peritoneum was affected, and death took place about three months after the operation. There was no autopsy, but the hernial cancer was assumed to be secondary to an intestinal cancer.

731. Rectal Anaesthesia.

ALOI (*Rif. Med.*, October 9th, 1920) has anaesthetized dogs by giving rectal injections of ether and olive oil. As the result of his series of experiments, he says that the harmful effect of ether on the intestinal mucosa cannot be avoided. Superficial inflammation is set up, or a marked dryness of the mucosa, which may even crack and bleed, leading to tenesmus, bloody diarrhoea, and proctitis. These changes in the rectal mucosa are transitory when the narcosis is only short and the rectum well washed out afterwards. The epithelial layer is unchanged. In dogs, at any rate, it was very difficult to obtain deep narcosis of prolonged duration.

732. Angioma of the Liver simulating Malignant Disease of the Stomach.

ALIVISATOS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 5th, 1920) records the case of a woman, aged 52, a sufferer from dyspepsia of ten years' duration, who for five months had been losing flesh, and had suffered from dysphagia and anorexia; examination showed a tender tumour high up in the epigastrium. These symptoms suggested either a new growth in the upper part of the lesser curvature in the neighbourhood of the cardiac orifice, or an old ulcer with perigastritis. These diagnoses, however, were precluded by the absence of blood in the stools and the negative results of radioscopy. Exploratory laparotomy revealed the presence of an isolated angioma of the liver; complete recovery followed its removal.

OBSTETRICS AND GYNAECOLOGY.

733. Premature Delivery for Pelvic Contraction.

GROTE (*Monats. f. Geburts. u. Gynäk.*, July, 1920), in cases of contracted pelvis with a true diameter of 7.5 to 8 cm. or more, believes that the date at which induction is performed should be decided not by the duration of the pregnancy, but by the relative size of the fetus, and by the true diameter measured with a Zangemeister gauge. The premature delivery should be induced by means of a dilatable bag. In 22 cases falling in this category, at the Marburg clinic, among 1,880 deliveries during a period of four years, the children were all delivered alive, one macerated fetus excepted. In the antecedent child-births, 42 in number, 20 per cent. of the children spontaneously delivered, and 50 per cent. of those requiring instrumental extraction, had died.

734. Deciduoma Malignum.

SUNDE (*Gynéc. et Obstét.*, 1920, i, 5) records 38 cases of deciduoma malignum and 240 of hydatidiform mole from the practice of the clinics at Upsala, Stockholm, and Christiania. Of the 38 cases of deciduoma malignum, 12 were cured; 6 out of 18 operable cases proved fatal. The preceding gestations were in 10 cases hydatidiform mole, in 7 cases abortion, in 8 cases normal birth, and in 1 case extrauterine pregnancy. In 11 of the 12 cured cases the tumour followed a hydatidiform mole; in explanation the author suggests that since irregular haemorrhages excite more suspicion of deciduoma malignum when there has been a hydatidiform mole than when they follow an abortion or normal labour, treatment in the former case is secured earlier and the outlook thus becomes more favourable.

735. Precipitate Labour.

ACCORDING to WIÉGMINK (Inaug.-Diss., Göttingen, quoted in *Zentralbl. f. Gynäk.*, August 14th, 1920) precipitate labour occurred in twenty-six (or 0.26 per cent.) of 9,780 births, seven times in 1-parae, nine times in 2-parae, and ten times in 3 to 8-parae. Six births occurred in the street and three on the way to the clinic, eleven patients were confined while walking about. One case was delivered in epileptic, and one in eclamptic, coma. Rupture of the perineum occurred in five cases, but was complete in one only. Atony of the uterus followed in one case. No deaths occurred among the mothers, and the children, of whom 60 per cent. weighed less than 3,000 grams, were all born alive. The cord was torn in six cases; in no case was the child's skull injured.

736. Extraperitoneal Caesarean Section.

ACCORDING to SCHEYER (*Zentralbl. f. Gynak.*, September 11th, 1920), 53 Caesarean sections undertaken at Breslauer Frauenklinik were made by cervical incision—transperitoneal in four, extraperitoneal in 49 cases. In six cases there was an injury in the bladder, leading in one case to uretero-vaginal fistula. Caesarean section was undertaken for a second time in eight patients, and in one patient for a third time; in seven of these patients the scar was unaffected by the post-operative pregnancy. Of the 53 cases one died shortly after the operation from heart failure, and two succumbed later to tetanus and pulmonary tuberculosis respectively. The fetal mortality was 7.5 per cent.

737. Sequels of Lumbar Puncture.

FÖRSTER (*Deut. med. Woch.*, 1919, 33) records three cases which occurred in the practice of a neurological clinic. Lumbar puncture was followed in the first case by abortion (the patient was syphilitic), and in the second by the reappearance of menstruation, which had been suspended for fourteen months. In a third case lumbar puncture had no influence on an eight months' gestation.

738. Prolapse of an Arm in Vertex Presentations.

HAGNER (Inaug.-Diss., Breslau, quoted in *Zentralbl. f. Gynak.*, August 14th, 1920) refers to 59 cases of prolapse of an arm in vertex presentations. Of these, 21 were complicated by prolapse of the cord, 18 by contracted pelvis, 3 by occipito-posterior presentation, and 3 by placenta praevia. In 47 a living child was born; in two only was birth spontaneous, and both these were cases of small twins. Of the 59 cases 34 were treated by version, 6 by successful reposition of the arm, 3 by forceps extraction, and one by extraperitoneal Caesarean section.

739 Unusual Uterine Adenomyoma and Cystic Ovary.

CASTLE (*Surg., Gyn., and Obstet.*, August, 1920) records what he believes to be the unique case of a woman, aged 39, who complained of menorrhagia of two years' and metrorrhagia of two months' duration; at operation panhysterectomy and right salpingo-oöphorectomy were performed. The enlarged uterus contained, besides a few interstitial myomata, one large and several small liver-coloured polypi almost filling the cavity. The surface of the polypi was smooth; microscopically they were found to be adenomyomatous, with overgrowth of embryonic stromal tissue, infiltrating and strangulating the muscle bundles of the uterine wall. The adenomyoma did not contain glands. The patient maintained that menstruation persisted after the operation, although in diminished quantity. Four years after the operation she had an attack of subacute intestinal obstruction: the track of the old vaginal drain had opened slightly, and an irregular cystic mass could be felt in the region of the left ovary. At a second operation a left ovarian cyst the size of grape-fruit, pressing on the sigmoid, was removed, together with a segment of intestine. The patient died on the tenth day from mesenteric thrombosis; no autopsy was permitted. The interior of the loculated cyst was found to be lined for the most part by a smooth polypoid vascular tissue, the inner portion of which exhibited all the characters of uterine mucosa, with cylindrical ciliated epithelium, a basement membrane, and characteristic uterine glands.

740. Pregnancy with Aortic Aneurysm.

CLEISZ and POWILEWICZ (*Gynéc. et Obstét.*, 1920, i, 6) allude (1) to Macé's case of aneurysm of the aortic arch occurring in a non-syphilitic 4-para aged 29; (2) to Tissier's case, in which a non-syphilitic primipara of 26 had an aneurysm associated with aortic disease; (3) to the case of Commandeur, which occurred in a syphilitic 7-para of 32, whose aortic valves were regurgitant. In these three patients labour was normal; this was also the case in the observation related by the authors. A primipara of 27, who had suffered a series of attacks of acute rheumatism and was the subject of aortic disease, was found during routine examination to have a dilatation of the aortic arch, due probably to rheumatic panaortitis, and producing a pulsatile tumour in the root of the neck. This patient also had albuminuria, which persisted before and after the birth of the child.

741. Obstetric Rupture of the Spinal Cord.

[illegible] (*Journ. of Nervous and Mental Dis.*, July, 1920) describes the case of a boy who died from pyaemia at the age of 8½: at the autopsy the spinal cord was found to be almost completely ruptured in the ninth and tenth thoracic segments. This child had been born after version and extraction; trophic lesions appeared on the buttocks at the age of 3 days, and at the age of 3 years the legs were spastic and paretic.

PATHOLOGY.

742 The Colloidal Gold Reaction in the Cerebrospinal Fluid.

ACCORDING to [illegible] (*Ann. de Derm. et de Syph.*, No. 8, 1920), the colloidal gold reaction invented by Lange in 1912 appears to indicate the amount of globulin in the cerebro-spinal fluid, and indirectly the amount of albumin. Although the reaction has some clinical value, it must not be forgotten that it is always accompanied by a cerebro-spinal pleocytosis and an increase of globulin. Its advantage consists in its being the last reaction to persist after intravenous or intrathecal treatment, and also in its appearing earlier than the Wassermann reaction. The colloidal gold reaction, however, is not superior, either from a diagnostic or prognostic point of view, to cytodiagnosis and the albumin reaction described by Ravaut.

743 The Chemistry of Pernicious Anaemia.

GETTLER and LINDEMAN (*Arch. of Internal Med.*, October 15th, 1920) report the results of 87 blood analyses in [illegible] of pernicious anaemia. They found that: (1) The non-protein nitrogen, urea, and creatinin values were somewhat higher than normal; this was probably due, not to a permanent kidney lesion, but rather to the decreased amount of circulating blood. (2) The uric acid was much above normal. (3) The amino-acid content was greatly increased, probably as a consequence of excessive destruction of serum protein. (4) The blood sugar was abnormally high. (5) The alkaline reserve was subnormal. (6) The refraction and specific gravity were both remarkably low, indicating deficiency in serum albumin, serum globulin, and fibrinogen. (7) In most instances the freezing point was very near to normal—it was slightly raised in a small percentage of cases; this was due to the small increase of non-protein nitrogenous substances and to the presence of normal or slightly increased amounts of inorganic salts. The third, fourth, and fifth findings point to the fact that in pernicious anaemia the power of oxidation within the cell has been reduced to an abnormally low level.

744. The Wassermann and Sachs-Georgi Reactions in the Diagnosis of Syphilis.

MARCORA (*Il Policlinico*, Sez. Prat., October 4th, 1920) examined the serums of 301 cases by the Wassermann reaction simultaneously and under the same conditions with the Sachs-Georgi reaction; he obtained concordant results in 93.6 per cent. and discordant results in 6.4 per cent. He explains the latter as due mainly to ill-marked reactions which were therefore of little practical value. He concludes that the sensitiveness and specificity of the two reactions are almost equal; the Sachs-Georgi reaction possesses the advantage of being simpler than the Wassermann reaction.

745. Micrococcus melitensis.

MEYER and SHAW (*Journ. of Infect. Dis.*, September, 1920), from a comparative study of twenty-one cultures of *Micrococcus melitensis* obtained from various regions of the world, and of thirty-two cultures of *B. abortus* (Bang), conclude that the organism causing undulant fever in man and Malta fever in goats cannot be distinguished morphologically or biochemically from the organism producing abortion in domestic animals. The so-called *Micrococcus melitensis* appears in cultures as a short rod, and therefore should be described as a bacterium.

746. The Wassermann Reaction in Old Serums.

ACCORDING to RENAUX (*Le Scalpel*, October 30th, 1920), certain syphilitic serums, which when warmed to 56° C. give a positive Bordet-Wassermann test, lose, as a consequence of being allowed to remain at room temperature, their power of producing deviation; on being again heated to 56° C. the serums regain this property, which disappears again as a result of a second cooling. These phenomena are only demonstrable in serums that are at least forty to fifty hours old.

747. Prevention of Anaphylaxis.

IN a communication to the Académie des Sciences, made on October 18th, 1920 (*La Vie Méd.*, October 29th, 1920), LUMIÈRE and CHEVROTIER expressed the opinion that the phenomena of anaphylaxis are due to disturbances of the cerebral capillary circulation, as a result of production of a flocculent precipitate in the blood serum. The authors have found that the reaction may be prevented by the use of sodium sulphocyanide, sodium-ethyl-sulphate, or sodium hyposulphite, of which the last named is the least toxic. After subjecting guinea-pigs to a first injection of ass's serum, a second injection was given at the end of thirty days to two batches of animals; the first group, which received an injection of serum alone, succumbed to an anaphylactic crisis, but the second, which received an injection of serum mixed with sodium hyposulphite, were not affected.

748. Streptococcal Purpura Fulminans.

REH (*Rev. méd. Suisse rom.*, October, 1920) reports a case of generalized purpuric eruption in a girl, aged 6 years, which occurred three weeks after an attack of enteritis, and proved fatal in less than twelve hours. Cultures of the blood and spleen showed streptococci. At the autopsy ecchymoses were found in Peyer's patches, the mucous membrane of the large intestine, suprarenals, ovaries, and peritoneum.

749. The Influence of Fatigue on Phagocytosis.

DI MACCO (*Lo Sperimentale*, Fasc. i-iii, 1920), by experiments on guinea-pigs, found that when they were subjected to severe fatigue in a revolving cage worked by an electric motor there was a decided lowering of the phagocytic value; the loss was attributable to the action of the toxins of fatigue on the various constituents of the blood, the lowering of the value being to about 25 per cent. of the normal.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

750. The Early Diagnosis of Tuberculosis.

M. BORGOGNO (*Il Policlinico*, Sez. Prat., July 12th, 1920), as director of a diagnostic station for tuberculosis in soldiers, found two simple methods of great value in the early diagnosis of pulmonary tuberculosis. The first was that introduced by Daremberg, and consisted in taking the patient's temperature before and after half an hour's rapid walk. If there was a difference of 0.5° C. the patient was made to rest for an hour, and if at the end of that time the difference had disappeared, he was regarded as tuberculous. The other test, which was devised by Maragliano, consisted in the administration at night of 1 to 2 grams of potassium iodide, which, like tuberculin, rouses latent foci into activity, but does not cause any constitutional disturbance. Examination of the chest is made the following morning, when the presence of crepitant râles is often detected where previously only a slight weakness or roughness of breath sounds has been heard. Moreover, the congestive action of the iodide often gives rise to a persistent cough which may not have been present before.

751. Nascent Iodine Treatment of Tuberculosis.

THOMPSON (*New Zealand Med. Journ.*, August, 1920) pleads for the more extensive trial of this method of treatment. During a period of five years he has treated six cases of advanced phthisis with one favourable result; nine moderately advanced sputum-positive cases, with five apparent cures; and ten early cases, with absent or scanty sputum. Of the last group five were apparently cured, and the others became improved. The author has also employed this treatment for puerperal fever, influenzal septicaemia, and for pyelitis. He believes that too large initial doses have been used in the past, and recommends 15 grains of potassium iodide given in half a pint of water at 7 a.m., followed at 11 a.m. and again at 1 p.m. by an ounce of chlorine water in half a pint of lemonade. In certain cases the dose of potassium iodide should be increased after about three weeks to 20 grains, and a third ounce of chlorine water should be given at 3 p.m.

752. Intestinal Tuberculosis.

ACCORDING to PATERSON (*Amer. Rev. of Tuberculosis*, August, 1920), this complication may occur at all stages of pulmonary tuberculosis. The early symptoms are indefinite, but anorexia, pain, fever, and general malaise are not uncommon. Diarrhoea is often only found in the advanced stages. The *x*-ray examination of a barium meal is of the greatest help in the diagnosis. If ulceration be present, hypermotility of the intestine is very striking; there is an increased rapidity of the progress of the barium. In other cases there is "ileal stasis," the barium being held up at the ileo-caecal valve. In a third set of cases there is a defective filling of the diseased parts; the caecum and colon, instead of being evenly filled, show an irregular outline. Surgical treatment offers the best chance of cure.

753. Vincent's Angina.

VOSS (*Norsk Mag. for Laegevidenskaben*, August, 1920) finds that Vincent's angina is on the increase in Christiania; in the department for infectious diseases at Ullevaal the average number of cases used to be only 3 to 5 a year, whereas during the past four months as many as 16 cases were admitted. He distinguishes two types, the diphtheroid and the ulcero-membranous. The former is comparatively benign, and lasts only about eight days; the latter is apt to persist for months unless adequately treated. In 15 out of the 16 cases the patients were men, and their ages were from 17 to 23 years. All presented the ulcero-membranous type of the disease, and all were admitted with the diagnosis of diphtheria. The disease was unilateral in 15 cases; in the remaining case there were multiple ulcers of both tonsils, the uvula, and velum. The typical fusiform bacilli and spirochaetes were found in smears in every case, but cultures on serum yielded only cocci. For treatment the author finds that salvarsan is absolutely specific, and he uses a 2 per cent. solution in glycerin.

754. Benzyl Benzoate and Vaso-dilatation.

MACHT (*New York Med. Journ.*, August 28th, 1920) describes a new application of the depressant action of benzyl benzoate on non-striped muscle; after injection of benzyl esters there is a prolonged fall of blood pressure due to peripheral vaso-dilatation. The drug has been found to be most useful in cases of idiopathic hypertension without demonstrable affection of the kidneys. Both systolic and diastolic blood pressures are reduced, and the duration of the effect is much longer than in the case of the nitrites, with a possible exception of erythrol tetranitrate. As in the case of nitrites, patients after a time become habituated to benzyl benzoate; this drug is effective, however, in cases which have become habituated to nitrites. The dose recommended is 20 to 30 drops of a 20 per cent. alcoholic solution administered by the mouth in either cold water or milk, three or four times a day; after the desired therapeutic effect has been secured a reduced blood pressure may be maintained by giving considerably smaller doses.

755. Treatment of Spasmodic Rhinitis.

MIGNON (*Rev. de laryng., d'otol., et de rhinol.*, August 31st, 1920) has found that in the case of a patient with spasmodic rhinitis, of which attacks are caused by the presence of an animal, such as a horse, sheep, or dog, the serum of this animal is the best cure, but in certain cases it may be necessary to prepare a special serum from the animal's proteins, hair, or skin. The doses given by Mignon were as follows: First day $\frac{1}{4}$ c.cm., second day same dose, third day $\frac{1}{2}$ c.cm., fourth day $\frac{3}{4}$ c.cm., fifth day 1 c.cm., sixth day 2 c.cm., seventh day 4 c.cm., eighth day, 6 c.cm., ninth day 10 c.cm., tenth day 10 c.cm. After the tenth day the patient proved to be immune, and did not show any sign of anaphylaxis with regard either to injections (as happened at first) or to the presence of the animal.

756. The Frequency of Syphilitic Hemiplegia.

VEDSMAND (*Ugeskrift for Laeger*, August 19th, 1920), with a view to determining the part played by syphilis, has investigated the cases of hemiplegia occurring in a home for the aged in the period October, 1919, to February, 1920. There were altogether 84 cases (30 men and 54 women); only in 3 was there a record of syphilis in the history, but Wassermann's reaction was positive in 13 cases—that is, in 15.5 per cent. There were also 2 cases in which Wassermann's reaction was negative and the cerebrospinal fluid was normal; the inclusion of these cases among the syphilitic was determined by the Argyll Robertson symptom-complex. The ratio of syphilitic cases was thus increased to 17.9 per cent. The author asks: How many of these 15 cases of hemiplegia were due to syphilis? In how many was the hemiplegia independent of the coexistent syphilis? After weighing up the evidence in individual cases, he comes to the conclusion that in 5 cases the hemiplegia was a direct result of syphilis, while in 10 cases the relation between the two was uncertain. In one of these cases the existence of high blood pressure and chronic nephritis was enough to account for the hemiplegia without invoking syphilis as a factor. An instructive feature of these investigations was the observation that with only one exception a positive Wassermann reaction was always accompanied by some clinical evidence of syphilis. In 4 cases the pupils reacted to accommodation, although one or both eyes failed to react to light; in 6 cases the patellar reflex was absent on the non-paralysed side, and in one case both pupil reflex and patellar reflex were absent. Other syphilitic stigmata associated with a positive Wassermann reaction were cicatrices of the nose and breast and ulcers of the legs.

757. Palatal Palsy in Lethargic Encephalitis.

DUFOURMENTEL (*Rev. de laryng., d'otol., et de rhinol.*, August 31st, 1920) records the following case: A child, aged 6 years, whose sister had died of lethargic encephalitis in January, developed in May a febrile condition, followed by paralysis of the palate, as shown by a nasal enunciation and regurgitation of fluids through the nose. There was no other evidence suggesting diphtheria; Schick's reaction was positive. The paralysis was strictly limited to the right half of the palate and pharynx, indicating a lesion of the cells of the upper part of the nucleus ambiguus of the opposite side. In June a younger brother, aged 5 years, developed the myoclonic form of lethargic encephalitis, so that the present case was regarded by Netter as an attenuated form of the disease which served as a connecting link between the sister's attack in January and the brother's in June. Gradual improvement took place, and complete recovery seemed probable. Dufourmentel suggests that a certain number of cases of palatal palsy of obscure causation are really due to lethargic encephalitis.

758. Auditory Neuritis in Meningitis.

MILESI (*Il Policlinico*, Sez. Prat., August 23rd, 1920) states that one of the most frequent symptoms in meningitis, especially cerebro-spinal meningitis, is affection of hearing. The deafness which is fairly frequent in cases of cerebro-spinal meningitis which recover lasts for several months, and sometimes for life. Milesi records a fatal case of cerebro-spinal meningitis in a man aged 28, in whom the auditory nerve *post mortem* not only participated in the inflammation of the meninges, but also exhibited very severe lesions, the nerve trunk and not the nerve sheath exclusively being affected. He also records three cases of tuberculous meningitis in adults aged from 20 to 30, in whom similar changes were found in the auditory nerves at the autopsy.

759. Acute Leukaemia of the Myeloid Type.

CAILLIAU (*Bull. et Mém. Soc. Anat. de Paris*, July, 1920) records a case of acute leukaemia, occurring in a woman aged 43, remarkable for the rapid course, death taking place after one month's illness. The temperature ranged between 100.4° and 102.2° F., without any remission. There was an entire absence of haemorrhages, which is unusual in acute leukaemia. Other noteworthy features were the degree of leucocytosis (which reached and even exceeded 50,000 per cubic millimetre), the presence of numerous myelocytes in the blood, and the absence of any appreciable adenopathy.

SURGERY.

760. Gas Cysts of the Intestine.

WEIL (*Ann. de Méd.*, July, 1920) describes a condition characterized by the appearance of gaseous cysts in the coats and on the surface of the intestine as well as in the omentum and mesentery; in some cases they are extremely numerous. Their size varies from microscopical dimensions to that of a hazel nut or even a hen's egg. They are free from any liquid contents, and are distended by a mixture of carbonic acid, hydrogen, oxygen and nitrogen in varying proportions. As a rule, the condition is latent or is obscured by the more obtrusive manifestations of the accompanying affection. Cystic pneumatosis is rarely an isolated condition, but as a rule is associated with a gastric ulcer, especially one which has reached the cicatricial and stenotic stages. Thus, in 32 out of 54 cases collected by Weil, there was an ulcer of the stomach or pylorus which in at least 72 per cent. had a stenotic character. The other conditions with which gaseous cysts of the intestine have been associated are intestinal tuberculosis, chronic appendicitis, chronic gastro-enteritis, cancer of the pylorus, pernicious anaemia, uraemia, and myocarditis. Owing to the variety of the symptoms three forms may be described: (1) A pseudo-appendicular form, in which the symptoms resemble appendicitis; (2) a peritoneal form, simulating tuberculous peritonitis or acute perforative peritonitis; (3) an obstructive form, simulating acute or chronic intestinal obstruction. Although the diagnosis is particularly difficult, a special diagnostic value is possessed by certain signs, the most frequent of which is considerable distension of the abdomen accompanied by a soft and readily compressible [illegible] wall. Other symptoms described are a sensation of elastic resistance in a region which is sonorous on percussion, peritoneal crepitation, abdominal transparency, and the presence of gaseous ascites. (See also EPITOME, September 18th, 1920, para. 274.)

761. Rupture of Pancreatic Cysts.

A[illegible] (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 6th, 1920) records the case of a woman aged 26, who had suffered for a year from symptoms of ordinary dyspepsia, and for six months had had a pain in the left [illegible] after her monthly periods. Two years after her last [illegible] her abdomen progressively increased in size so as to cause a slight oedema of the lower limbs and dilatation of the subcutaneous abdominal veins. Two months before death she rapidly lost flesh and developed dyspnoea due to a pleural effusion. The autopsy showed polycystic disease of the pancreas, the gland being almost completely destroyed. The cysts had ruptured into the abdomen and their contents had penetrated into the pleural cavity.

762. Torticollis.

BASSETTA (*Arch. di Ortopedia*, Fasc. 1, 1920) gives statistics of 95 cases of torticollis, 17 of which were acquired and 78 congenital, treated at the Milan Orthopaedic Clinic. He comes to the following conclusions: The differential diagnosis between congenital and acquired torticollis is founded not only on the history and personal antecedents, but also on direct examination of the deformity. The acquired type shows (1) marked inequality in the three elements which compose it, namely, lateral flexion, rotation, and anterior flexion; (2) frequent absence of any retraction of the muscle, and (3) relative frequency of a paradoxical contraction of the muscle of the opposite side. In these cases the treatment is naturally variable, symptomatic, and directed to the special lesion which is responsible for the vicious attitude. Congenital torticollis is more frequent in the female sex. The most usual form is a purely sternal or predominantly sternal type. Only in the first few months of life can bloodless treatment of congenital torticollis be carried out (by Schanz's collars), but non-operative treatment at a later date—whether manual or instrumental—has lost all its supporters. The best results, both as regards attitude and function, are obtained from operation, which consists in simple section of the two lower heads of the muscle, followed by oblique traction of the head and traction on the arm. It is advisable to apply an immobilizing apparatus for some time afterwards, and gradually to relax the head with successive Schanz's collars. In cases which are exclusively or principally sternal, and in which the retracted tendon is readily accessible, the best results may be obtained by subcutaneous section of the upper and lower heads of the muscles at a single sitting, followed by traction and immobilization. This method avoids the formation of a scar at the base of the neck or over the tip of the mastoid.

763. Laryngeal Tuberculosis.

ACCORDING to LABERNADIE (*Rev. de laryng., d'otol., et de rhinol.*, September 15th, 1920) tuberculosis affects the parts of the larynx in the following order of frequency: (1) the interarytenoid space, (2) the vocal cords, (3) the epiglottis, (4) the arytenoid cartilages. Two forms of laryngeal tuberculosis may be distinguished: (1) an upper form, which affects the epiglottis, arytenoids, and crico-arytenoid articulations, giving rise to oedema and dysphagia, and always associated with a grave prognosis; (2) a lower form, attacking the vocal cords and interarytenoid space, and often manifested only by hoarseness; the prognosis in such cases is often good apart from the lung condition. In the lower form excellent results are obtained by topical applications and rest. In the upper form destruction of the affected parts by the galvano-cautery and removal by forceps are excellent means for combating the bacillary invasion; the dysphagia may be remedied by injections of alcohol into the superior laryngeal nerve. All active surgical treatment, however, is contraindicated in the presence of fever and tachycardia, which are very alarming symptoms in laryngeal tuberculosis.

764. Dilatation of the Oesophagus.

CHABROL and DUMONT (*Paris méd.*, September 25th, 1920) record the case of a neuropathic woman, aged 32, suffering from dysphagia of nine years' duration. During the last two years the taking of too large a meal had been followed by a mediastinal syndrome consisting in a sensation of suffocation and hoarseness of the voice, which was relieved by vomiting. The sudden appearance, intermittent character, and variations in the site of the oesophageal obstruction, which at the onset was high up and later in the region of the cardiac orifice, all pointed to the spasmodic character of the affection. X-ray examination after a bismuth meal showed considerable dilatation of the oesophagus. In discussing whether the dilatation was due to primary dilatation of the oesophagus or to spasm of the cardia the writers, while admitting that congenital muscular atony may occur in some cases, maintain that cardiospasm is mainly responsible for dilatation of the oesophagus. In the present case the suggestion of primary atony was negatived by the occurrence of peristaltic waves in the oesophagus as seen on *x* ray examination.

765. Gastric Myomata.

ACCORDING to NEUBER (*Wien. klin. Woch.*, September 16th, 1920) three forms of gastric myomata may be described. The first, which is situated at the pylorus, is manifested by symptoms of pyloric obstruction which may simulate gastric ulcer or carcinoma. The second form is a subserous myoma, which grows outwards into the abdominal cavity and may be mistaken for an intestinal or omental tumour on the one hand or for a tumour of the pancreas or retroperitoneal glands on the other. The third form is a pedunculated tumour which projects into the cavity of the stomach and gives rise to attacks of gastric cramp and vomiting, so that it may be mistaken for gastric ulcer or carcinoma. Neuber reports an example of this third form occurring in a woman, aged 62, in whom the tumour was successfully removed.

766. Tetanus following Wounds of the Eye.

ACCORDING to VAN DER HOEVE (*Nederl. Tijdschr. v. Geneesk.*, September 25th, 1920), who records two illustrative cases, tetanus following wounds of the eye assumes a severe form. It always begins as cephalic tetanus, the earliest symptoms being trismus and facial paralysis. The diagnosis is often rendered difficult by oedema and swelling of the surrounding parts. Of fifty cases collected by Wagenmann in 1907, only nine recovered—a mortality of 82 per cent. Most of the cases were wounds of the orbit and eyelids, but the eyeball itself may be a portal of entry for infection. Wounds of the conjunctiva due to fragments of wood, as occurs in javelin throwing—a favourite sport in Holland—are specially dangerous. Van der Hoeve recommends that the general practitioner should send all patients with wounds of the eye which he cannot fully examine himself to the ophthalmic surgeon, and that antitetanic serum should be given at once in cases of wounds of the orbit, eyeball, and conjunctiva.

767. Diverticula of the Bladder.

PAUCHET and DE BUTLER ORMOND (*Journ. d'Urol.*, x, 1, 1920) state that true diverticula of the bladder are congenital. They are most frequently situated on the sides and back of the organ. Sometimes they are connected with the trigone, and in exceptional cases with the apex or anterior surface of the bladder. In form they are spherical or ovoid, and they are more or less adherent to the neighbouring organs, especially the ureter and rectum. Usually single, there are rarely more than two or three at most. Their size varies from that of a hazel nut to that of a child's head; as a rule, the diverticula are only discovered during cystoscopy for some urinary disturbance due to some other cause. As long as they are small and uncomplicated they cause little trouble, but when infection takes place the signs are more characteristic, and consist in frequency, pain and difficulty in micturition, sometimes amounting to retention. In some cases there is incontinence; haematuria is rare. The most important symptom is micturition in two stages, the first jet of urine being clear, and the second definitely turbid and purulent. The physical signs consist in the presence of a pelvic tumour, which may be recognized by inspection if the tumour is large, or by hypogastric palpation with rectal examination. Complications include ulcerative cystitis; signs of compression of the rectum or ureter; pyelitis, pyelonephritis, and peridiverticular abscess opening into the rectum, vagina, or integument; and peritonitis. Calculi are very frequent, and aggravate the vesical symptoms.

768. Chancre of the Tonsil.

RENDU (*Rev. de laryng., d'otol., et de rhinol.*, September 30th, 1920) states that, whereas in Fournier's statistics only 69, or 6.13 per cent., of 1,124 extragenital chancres were situated on the tonsils, as compared with 75 lingual and 567 labial chancres, in more recent statistics the tonsil is the commonest site for extragenital chancres. Thus Brobie in 1914, out of 324 extragenital chancres in women, found 97, or 29.7 per cent., situated on the tonsil, 57 on the upper lip, and 45 on the lower lip. Brobie calculated that tonsillar chancre represented 7.80 per cent. of all cases of chancre, genital and extragenital combined. Rendu reports two unusual cases, one of which simulated cancer and the other simple hypertrophy of the tonsil. He states that tonsillar chancre is so often overlooked because the possibility of its occurrence is not considered. It is, in fact, so protean in its manifestations that less importance should be attached to its appearance than to its unilateral position, its induration, and the accompanying glandular enlargement. Dysphagia of more than three weeks' duration should always suggest syphilis (Garel). It should also be remembered that most tonsillar chancres are accompanied at their onset by misleading febrile symptoms. Finally, secondary symptoms are much earlier in their appearance in tonsillar chancre than with chancres situated elsewhere, and are often present when the chancre is first discovered.

769. Syphilis of the Nasal Cavities.

BY employing Wassermann's test as a matter of routine in all his cases of disease of the nasal sinuses, SCHMIDT (*Hospitalstidende*, September 1st and 8th, 1920) has come to the conclusion that syphilis plays a far more important etiological part than has hitherto been recognized. During two years he saw 81 patients with disease of the nasal sinuses, and in 14, or 17.3 per cent., the disease proved to be syphilitic. In 6, or 9.9 per cent. of the total, the disease was confined to the accessory sinuses of the nose. The author admits that the subjects of syphilis may suffer from non-syphilitic infections of the nasal sinuses, and in a series of 70 cases of syphilis he found 2 in which suppuration of a nasal sinus was refractory to potassium iodide, mercury, and salvarsan, and was undoubtedly non-syphilitic. But his 14 cases reacted so promptly to ambulant antisyphilitic treatment, that there could be no doubt as to the etiology of the disease. The author's thesis is a plea for systematic examination of all cases of sinus disease by Wassermann's test, which may often be the only pathognomonic sign of syphilis, and which may save many patients from the discomforts of ill-advised operative treatment.

770. Lymphosarcoma Treated by Coley's Fluid.

ROUSSEL (*Med. Record*, October 9th, 1920) related to the American Therapeutic Society the case of a woman, aged 32, who for two years had had progressively increasing enlargement of the cervical, inguinal, and bronchial glands. Microscopical examination of a gland showed the condition to be due, not to Hodgkin's disease, but to lymphosarcoma. After sixteen injections of Coley's fluid, given during six weeks, the superficial glands became invisible, and with one or two exceptions impalpable; the *x*-ray picture showed a nearly normal chest.

OBSTETRICS AND GYNAECOLOGY.

771. Autogenous Puerperal Infection.

POTEN (*Archiv f. Gynäk.*, cxiii, 2, 1920) discusses the relative parts played by autogenous and exogenous infection in the causation of puerperal fever. From an examination of about 20,000 labours, occurring during twenty-three years, he found only in about three-fourths was the puerperium entirely free from pyrexia. Two groups, each comprising about 5,000 cases, were compared; in the first group no vaginal examination, no operative or manipulative treatment, and no perineal suture had been performed; in the second group one or more of these interventions had had to be undertaken. The percentage incidence of puerperal pyrexia in the first group was about 22 per cent., in the second group about 44 per cent. In the first group infection led to death in three instances, and in the second group in 24. These statistics are regarded as showing that while there is a distinct possibility that the dangerous infection may occur as a consequence of exogenous implantation of bacteria, the great frequency of pyrexia in cases in which exogenous infection during labour has not been possible indicates that autogenous infection plays a more important etiological part than has hitherto been recognized. It is argued that many cases of puerperal infection have been wrongly ascribed to imperfect aseptic and antiseptic technique. With the increased employment of these techniques a definite reduction in the proportion of puerperal infections has occurred; the limits of this reduction, however, appear to have been reached, and the residuum of cases still occurring is regarded as due to autogenous infection.

772. Gravid Uterus Didelphys with Haematocolpos.

BAUDET (*Bull. et Mém. Soc. Anat. de Paris*, July, 1920) records the case of a married primipara of 25, in whom menstruation had regularly lasted eight days, during the first four or five of which there had been dysmenorrhea. After four and a half months' amenorrhoea, with frequent vomiting, she suffered an acute attack of pelvic pain accompanied by difficult micturition and by constipation. The abdomen, which was not distended, was slightly more prominent in the left than in the right iliac fossa. Palpation showed the existence of three tumours, of which the first rose to the height of three fingerbreadths above the pubis in the middle line, and had a regularly convex upper border; the second, which was about the size of a fist, was softer, less well defined, and occupied the left iliac fossa; the third had the dimensions of a hen's egg, was harder and more superficial than the others, and was situated towards the inner part of the right iliac zone. The three tumours were very sensitive. The cavity of the vagina was compressed from before backwards, and examination was difficult. During the next week the symptoms increased in severity. The suggested diagnosis was extrauterine pregnancy or twisted ovarian cyst, associated possibly with vaginal thrombosis or cyst. At laparotomy it was found that there was uterus didelphys, of which one-half was gravid and constituted the tumour which had been felt in the left iliac fossa; the swelling occupying the right iliac fossa was the unimpregnated horn. This communicated with an imperforate vagina, which had given rise to a haematocolpos (the median tumour). The left ovary contained a corpus luteum of pregnancy. Hysterectomy was performed.

773. "Évidement" for Incarcerated Fibroids.

BÉGOUIN (*Gynéc. et Obstét.*, 1920, i, 5) recounts three more cases of fibroma treated by scooping out a cervical remnant. In the case of large fibroids filling the pelvis, access to the broad ligaments—and, therefore, ligature of the uterine artery as a preliminary to hysterectomy—may be very difficult. In such conditions Bégouin, after fixing the upper pole with volsella, makes a circular incision around the lowest easily accessible portion of the fibromatous uterus. The point of a knife being directed downwards and inwards, successive cuts are made into the substance of the fibroma, so that eventually a conical portion is removed and the portion remaining *in situ* has the shape of a dome, the concavity of which is directed upwards. If the cut be made into the substance of the fibroma, the capsule being avoided, this procedure is attended, as a rule, by little haemorrhage. Should the haemorrhage be serious, its control speedily becomes possible; the main mass of a tumour having been removed, approximation of the diametrically opposed regions of the circumference of the fragment makes access to the vessels of the broad ligament comparatively simple. It is possible during the circular incisions to open into an elongated vagina or infected uterine cavity; in such a case soiled instruments should be discarded and the stump temporarily closed off.

774. Corpus Luteum Extract in the Treatment of Pernicious Vomiting.

ACCORDING to LACOURBAS (*Thèse de Paris*, 1919, 71) functional insufficiency of the corpus luteum is the essential cause of the auto-intoxication of which hyperemesis gravidarum is a result. Pottet showed that lethal cases of this condition were characterized by lesions of the corpus luteum, and Hirst had 99 successful results in a series of 111 cases treated by administration of 1 mg. (corresponding to one-eighth of the structure) of a corpus luteum extract. Lacourbas records five cases in which administration of corpus luteum extract, combined with eliminative treatment, was followed by cure.

775. Placenta Praevia Succenturiata.

[illegible] (*Casopis lékaruv ceskych*, 1919, No. 42, quoted in *Zentralbl. f. Gynäk.*, September 11th, 1920) records a case of severe haemorrhage occurring two and a half hours after commencement of labour in a 2 para 24 years old; placental tissue could not be felt through the dilated cervix. The bleeding ceased spontaneously, but returned ten minutes after the birth of the child and immediately after the expulsion of the placenta, which was of normal form and dimensions but was associated with succenturiate placentula (3 × 2.5 cm.). The haemorrhage is ascribed to the situation of the placental islet. It is noteworthy that so considerable a haemorrhage was apparently produced by a very small islet of placenta situated at least 8 cm. from the placenta proper.

776. Retroversion of the Uterus.

[illegible] the majority of gynaecologists, QVISLING (*Gynéc. et Obstét.*, 1920, i, 5) believes that the importance of this condition is not sufficiently recognized. It constitutes, he considers, the most frequent malady of the female genital organs, and gives rise in the vast majority of cases to symptoms calling for correction, which is best secured by the Alexander-Adams operation. Qvisling believes that neglect of the condition leads to prolapse.

PATHOLOGY.

777. Endocarditis due to Pneumococcus Type I.

ALTHOUGH, as shown by Preble's analysis of 141 cases in 1904, pneumococcic endocarditis is both frequent and a matter of common knowledge, comparatively few cases have been reported since the four types of the pneumococcus were established in America. H. M. THOMAS, jun., and DWIGHT O'HARA (*Bull. Johns Hopkins Hosp.*, 1920, xxxi) report a case of pneumonia due to pneumococcus Type I, which was treated by antipneumococcic serum Type I, and, after a fall of temperature somewhat obscured by serum sickness, was found to have the pneumococcus Type I in the blood; Mulford's Type I antipneumococcus antibody extract was given intravenously, in order to avoid anaphylactic shock, and subsequently, after desensitization, intravenous serum therapy was resumed; but the treatment was without any beneficial effect. After death vegetative endocarditis confined to the tricuspid valve was found; this is a rare condition, for out of Preble's 141 cases there were only 12, or 8.5 per cent., with lesions confined to the tricuspid, and a search through the literature since that date has brought but 5 additional examples to light, thus making 17 in all. Some figures are brought forward to show that in all probability—though further statistical data are necessary before a positive statement can be made—pneumococcus Type I has a special tendency to cause secondary infections, to invade the blood, and to be the cause of pneumococcic endocarditis. Further, it is significant that morphologically and culturally pneumococcus Type I is often indistinguishable from a *Streptococcus viridans*, which is the commonest cause of malignant endocarditis. The case suggests the advisability of frequent and early blood cultures during convalescence from pneumonia whenever a rise of temperature occurs, as serum treatment, although not very promising—as is shown in this case—is the only means at present likely to have any effect in combating pneumococcic endocarditis.

778. Diabetes Insipidus and Pituitary Infantilism.

ANTONELLI (*Il Policlinico*, Sez. Prat., October 25th, 1920), who records an illustrative case, states that Strauss in 1912 first drew attention to the relation between diabetes insipidus and arrest of development. Ebstein reported a case of eunuchoidism in diabetes insipidus, with bitemporal hemichromatopsia and atrophy of the genitals, due to a pituitary tumour. Kopczynski saw a case of pituitary tumour associated with infantilism, adiposogenital dystrophy, and diabetes insipidus. Lereboullet, Faure-Beaulieu, and Vaucher also described a case of diabetes insipidus with infantilism. Souques and Chauvet published a case of dwarfism of the pituitary type associated with diabetes insipidus. In Antonelli's case, which occurred in a man aged 23, in whom arrest of development took place at the age of 13, affection of the pituitary was shown by intense polyuria amounting to 8 litres in the twenty-four hours, polydipsia, attacks of headache and giddiness, asthenia, optic atrophy, bitemporal hemianopsia, arterial hypotension, and somnolence. In the absence of an autopsy the nature of the pituitary tumour could not be determined, but, in view of the long history, it was probably benign.

779. The Bacillus coli in Experimental Peritonitis.

GÁL (*Wien. klin. Woch.*, September 30th, 1920), as the result of his experiments, found that guinea-pigs infected by intraperitoneal injection of various organisms could usually be kept alive by a subcutaneous autolysat consisting of *B. coli*. The autolysat had no influence worth mentioning on the opsonic index, or on the bactericidal properties of the serum, but produced a leucocytosis and considerable phagocytosis of various bacteria in the abdominal cavity, and thus indirectly deprived the bacteria of their toxicity before they left that cavity. The great omentum was the principal place where the battle between the bacteria and the autolysat took place.

780. The Blood Alkali Reserve in Experimental Infections.

[illegible] (*Journ. Amer. Med. Assoc.*, October 30th, 1920) gives a preliminary report of the examination, by Van Slyke and Cullen's method, of the alkali reserve of the whole blood in rabbits injected with bacterial suspensions. The alkali reserve was lowered coincidentally with the leucopenia; during the subsequent increase of the leucocytes it rose to, or exceeded, the level determined originally for the animal. These changes occurred within about twenty-four hours.

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